

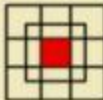
JAMIA HAMDARD UNIVERSITY NEW DELHI

EXECUTIVE SUMMARY

COMPREHENSIVE MASTERPLAN 2015-2030



Client
Jamia Hamdard University
New Delhi



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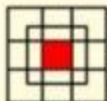


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2015-2030



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“ Perhaps I should call the University and the network the Hamdard family. Or should it be called the Hamdard movement? My knowledge of it is insufficient, but I know that Hakeem Abdul Hameed Saheb and Hamdard have tried for long to reduce the suffering of human beings on our subcontinent, and that is enough to move me. In fact the name Hamdard is enough to move me. I think it is one of the finest words, and one of the finest sounds, of the subcontinent and of the world ”.

RAJMOHAN GANDHI
(Grandson of Mahatma Gandhi)



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EXECUTIVE SUMMARY

Hakim Sahib had his early education in Madarsa Rehmani and in 1915 was admitted in a school. He obtained knowledge of English from an English teacher of the Anglo Arabic School named Aziz Ullah Begh and Persian from Maulvi Naseeruddin. In 1925 he was admitted in Tibia College from where he completed his education. Simplicity was the hallmark of his personality. He was a man of great poise who took every adversity in its stride, bearing a smiling face. He led an austere and disciplined life. All through he woke up before dawn, prayed and went for long walks. He ate simple food and led a simple life, sleeping on a plain cot.

Even as India's one of the top 50 rich men, he continued with the same lifestyle. He imbibed Islamic values in his life completely and was a model par excellence of Islamic code of conduct. He dedicated himself to the cause of Education, which alone, he thought, was the way to betterment of society. He founded many institutions including Hamdard Dawakhana, Hamdard National Foundation, Majeedia Hospital, Hamdard University, Hamdard Education Society, Hamdard Public School, Rabea Girls Public School and Ghalib Academy.

The contribution of Hakeem Abdul Hameed to promote the cause of education, health and social service was acknowledged by the Government of India in 1965 when he was awarded Padma Shri for his valuable contribution and for his personal qualities of sacrifice, devotion and commitment to the cause of education. He was also awarded the Padma Bhushan in 1991. The services rendered by Hakeem Abdul Hameed to the cause of education of Muslims have been acknowledged not only in India but in other countries too.

Jamia Hamdard has experienced tremendous physical growth in recent years and many changes in the physical character of the Campus. In order to ensure that further growth and evolution to positively impact the unique character of the campus and its setting, the University determined that a Comprehensive Master Plan-CMP is required to guide the future development.


Jamia Hamdard University
Mehrauli - Badli Pur Road, Hamdard Nagar,
New Delhi, Delhi 110062



SCOPE OF CMP

01. The CMP will be driven by academic priorities and support the goals and aspirations of the University as it guides the campus's physical development over the next 15 years.

02. The scope of the master plan will be broad addressing all facets of the physical campus, including the way Jamia Hamdard uses its land, the arrangement and scale of buildings, and the nature and function of the landscape.

03. The transportation network and various utility systems will be important considerations.

04. The CMP will set the context for physical changes on campus to realize the University's research, teaching, administrative, residential and recreational priorities. CMP will respond to the unique natural setting of the campus and the character of its surrounding neighborhoods.

05. The CMP's focus will be the next 15 years (Three Five Year Plans), it may recommend initiatives that will require implementation over a longer time period



CONTEXT & SURROUNDINGS

Delhi, also known as the National Capital Territory of Delhi is a metropolitan region in India. Such is the nature of urban expansion in India that its growth has expanded beyond the NCT to incorporate towns in neighbouring states and at its largest extent can count a population of nearly 27 million residents as of 2014, and is the largest urban agglomeration in India by land area and population. It is also the 2nd most populous city on the planet. The NCT and its urban region have been given the special status of National Capital Region (NCR) under the Constitution of India's 69th amendment act of 1991. The NCR includes the neighbouring cities of Gurgaon, Noida, Ghaziabad, Faridabad, Greater Noida, Sonapat, Panipat, Karnal, Rohtak, Rewari, Baghpat, Meerut, Alwar, Bharatpur and other nearby towns. A union territory, the political administration of the NCT of Delhi today more closely resembles that of a state of India, with its own legislature, high court and an executive council of ministers headed by a Chief Minister. New Delhi is jointly administered by the federal government of India and the local government of Delhi, and is the capital of the NCT of Delhi.

Delhi has been continuously inhabited since the 6th century BC. Through most of its history, Delhi has served as a capital of various kingdoms and empires. It has been captured, sacked and rebuilt several times, particularly during the medieval period, and modern Delhi is a cluster of a number of cities spread across the metropolitan region.

The Jamia Hamdard University is located in the Tughlakabad Institutional Area, Tughlakabad, and is easily accessible both by Urban Transit and the nearest metro station is situated at Badarpur and Govindpur. The main entry to campus at present is on Mehrauli - Badarpur road along major traffic corridor. The secondary road towards the eastern side also experiences major traffic as it is the major connector to south Delhi from Faridabad. The campus is located opposite the Tughlakabad Fort on the terminal end of the aravali range.



Tughlakabad Fort is a ruined fort in Delhi, stretching over 6 km, built by Ghiyas-ud-din Tughlaq, the founder of Tughlaq dynasty, of the Delhi Sultanate of India in 1321. It lends its name to the nearby Tughlakabad residential-commercial area as well as the Tughlakabad Institutional Area.



Tughlakabad area is Gurjar dominated in South Delhi Tughlakabad village has minimum 30,000 Gurjars.



Jahanpanah City Forest at Chirag Delhi has a 6.7 km running trail in the middle of the south Delhi. It is a great running location, considering that the forest is surrounded by really crowded, high traffic areas - Alakhanda, Chirag Delhi, Lado Sarai, Greater Kailash-2, OK-3, OK-4, Tughlakabad Extension, Saket, etc.



Batra Hospital & Medical Research Centre established in 1987 by Ch. Ashi Ram Batra Public Charitable Trust with an infrastructure comprising of 495 beds, 14 Operation Theatres, 112 ICU Beds, 24x7 Emergency facilities, full range of state-of-the-art diagnostic laboratories and a comprehensive rehabilitation facilities.

3.1A) CAMPUS EVOLUTION

Jamia Hamdard began with the establishment of a small Unani clinic in the year 1906 by Hakeem Hafiz Abdul Majeed, one of the well-known practitioners of Unani System of Medicine of his time. Hakeem Hafiz Abdul Majeed had a vision of making the practice of Unani Medicine into a scientific discipline so that Unani medicines could be dispensed in a more efficacious manner to patients. He gave the name "Hamdard" to his venture which means "sympathy for all and sharing of pain".

His illustrious son, Hakeem Abdul Hameed the founder of Jamia Hamdard, carried forward the philosophy and objectives of Hamdard in independent India. Even at the time of partition of India in 1947, Hakeem Abdul Hameed was dreaming of setting up a complex of educational institutions which would concentrate on highlighting the contribution of Islam and Islamic culture to Indian civilization and development of Unani medicines for curing diseases.

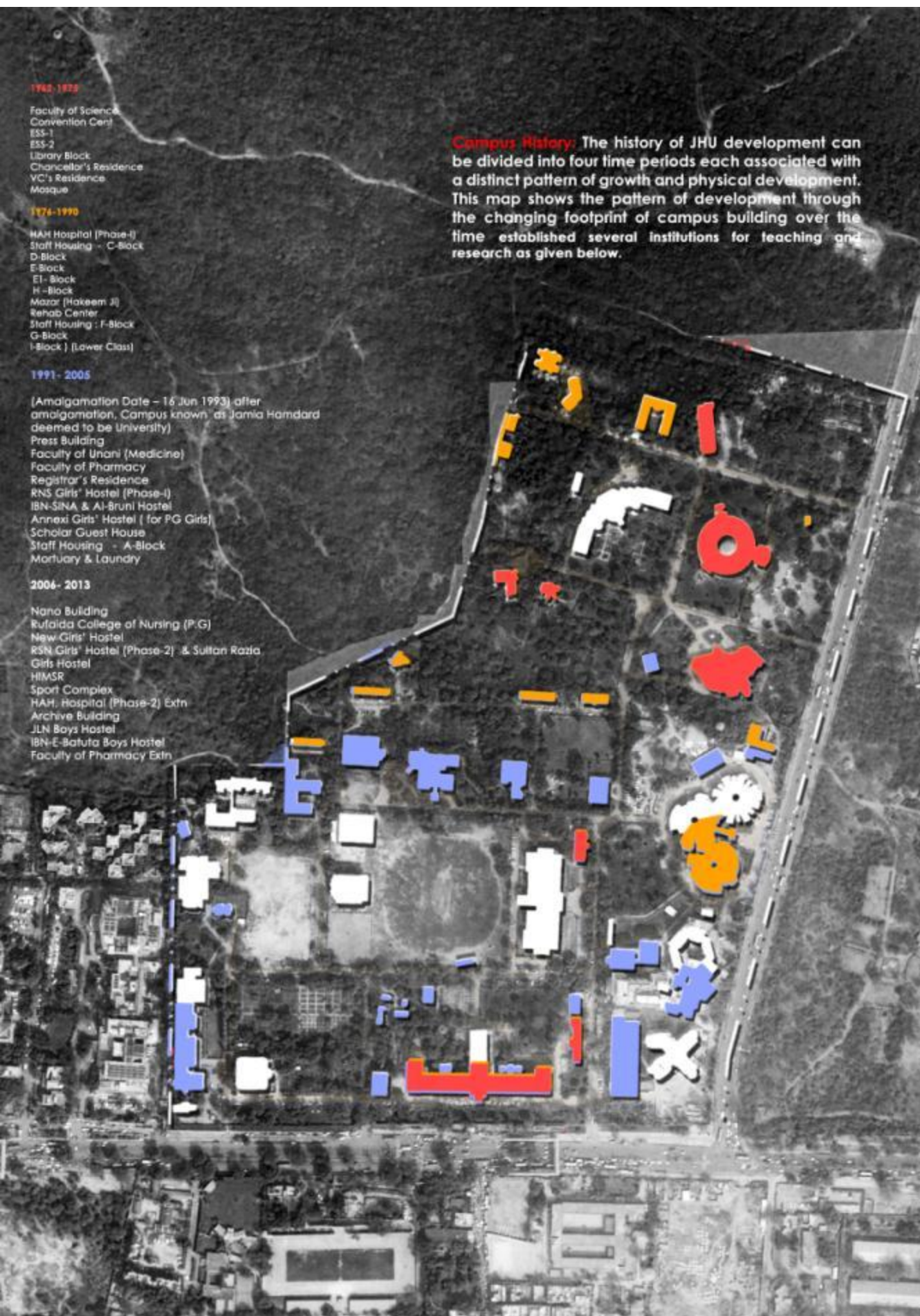
On 28 August 1948, Hamdard, which was a commercial enterprise at that time, was converted into a Wakf, with the object of giving effect to Islamic teachings of public charity including health and education. In 1964, Hamdard National Foundation was created with a view to receive and disburse the profits earned by Hamdard (Wakf) Laboratories.

Hamdard National Foundation was to take up charitable causes in the areas of education, medical relief and the advancement of knowledge, consistent with the principles of the true teachings of Islam. The educational backwardness of Indian Muslims was always a source of concern in the sensitive mind of Hakeem Abdul Hameed and he took the initiative to address the problem by taking positive steps which could directly benefit the Muslim community in their search for modern education.

Hakeem Abdul Hameed purchased a piece of land in Tughlaqabad area of South Delhi which was hardly inhabited in those times for setting up a complex of research and educational institutions. In order to implement and execute the objects of Wakf as enshrined in the Wakf deed, Hakeem Abdul Hameed and his Muslim associates.

THREE
CAMPUS
AS IT WAS





In 1962, Hakeem Abdul Hameed set up the first institution namely the Institute of History of Medicine and Medical Research, the foundation of which was laid by Late Prime Minister Jawahar Lal Nehru with the object of promoting education and research in the history of medicine, besides appraising the principles of medicine. Pt. Nehru in his speech had said that "this unique institution on the history of medicine would provide a new insight into India's unique contribution to the development of Unani-tibb in the sub continent!". Hakeem Abdul Hameed had realized that Unani tibb is a unique heritage of interaction between Indian and Central Asian knowledge stream and it was in India that the tibb had flourished under the patronage of the moughals.

In 1963, Hakeem Abdul Hameed and his Muslim friends and associates set up Indian Institute of Islamic Studies with a view to promote the study of Islamic Culture and Civilization especially its contribution to Indian society and culture. During the late fifties post independence education was still considered to be a primary function of the Government. Prior to India embracing the concept globalization and privatization, this was then a concept of Public Private Partnership had already taken shape following declaration of Jamia Hamdard a deemed University with equity of both Government of India and Hamdard National Foundation.

In 1963, Hamdard Tibbi medical College was set up in Gali Qasim Jaan, Old Delhi. It was later shifted to Jamia Hamdard Campus in 1980 to provide education in Unani Medicine to students so that the heritage of Unani Medicine largely available in Arabic and Persian is passed on to the students of next generation.

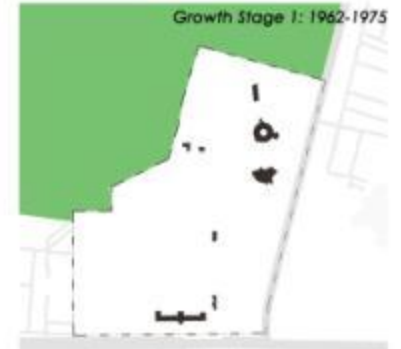
In 1972, Hamdard College of Pharmacy was set up with the objective of providing education and training in all branches of pharmacy. The year 1989 saw the fulfillment of the dream of Hakeem Abdul Hameed when Jamia Hamdard was given the status of Deemed to be University by the Ministry of Human Resource Development on 10 May 1989. All the above named institutions set up by Hakeem Abdul Hameed and his friends and associates were amalgamated into Jamia Hamdard. In a brief period of only ten years, Jamia Hamdard has evolved into an institution fulfilling the objects of the wakt, which has funded it.

Jamia Hamdard was inaugurated by Late Shri Rajiv Gandhi on August 1, 1989. In his impressive speech, the Prime Minister lauded the efforts of Hakeem Abdul Hameed in setting up institutions of learning which were emerging in the form of a "Deemed to be University". He said, "This will enable (the Muslim) minority to go forward and help India to march forward".



EXECUTIVE SUMMARY

Growth Stage 1: 1962-1975



Growth Stage 2: 1976-1990



Growth Stage 3: 1991-2005



Growth Stage 4: 2006-2013



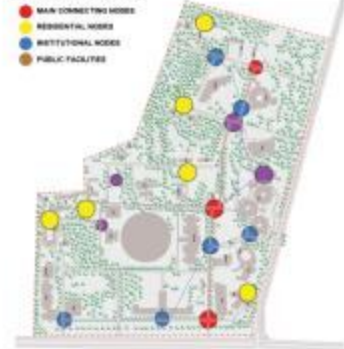
01. MOVEMENT STRUCTURE ANALYSIS



02. TRAFFIC VOLUME ANALYSIS



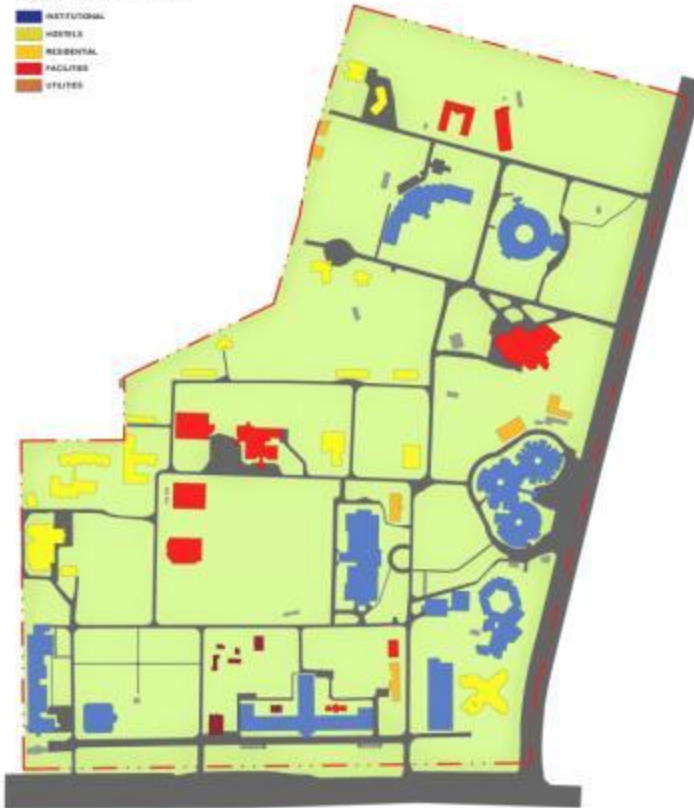
03. NODE ANALYSIS



04. LANDFORM ANALYSIS



05. BUILT-USE CONDITION



3.1B) EXISTING CONDITION & OPPORTUNITIES

SITE SLOPE & DRAINAGE: The Northern end of the site is the termination of Aravali range and it slopes towards the southern side with rocky strata covering approximately 40% of the site while the balance area is flat. The variation in the topography provides opportunities in generating interesting campus form. The site has distinct valley in the middle of the northern edge with slopes towards the southern sides. There is a gradual slope in north-south direction. The ridges comprise of "Kikar" trees as part of the adjoining Urban forest.

EXTENT OF UNIVERSITY LAND: The University has an area of 91.6 acre single contiguous piece of which is abutting the Jahaapanah forest and Batra Hospital on west and Tuglakabad fort on east. The ITBP center is to the south of the campus and are major institutional campuses in the vicinity of this campus premises. The entire bulk disposition of the site is extremely unbalanced which is a consequence of adhoc developments and have no definite campus planning strategy. The buildings are loosely placed without any relationship to the adjoining buildings having amorphous appurtenant land.

MOVEMENT STRUCTURE: The University is well connected with road infrastructure with the city of Delhi. Within the campus premises also it has developed road infrastructure, which connects various functional building blocks of the University. The road network follows the grid iron pattern superimposed on the landform which is higher towards the northern side and sloping towards the south with a level difference of 15m. At present there is no particular direction of flow of traffic which causes confusion within the movement system of the campus.

VOLUMETRIC CONDITION: Predominantly the buildings are G+3 /G+4 storey structures. The campus has potential for vertical expansion which preferably should be done away from the periphery to create variations in the built form. The campus has variation in scale and presents diverse architectural vocabulary without any continuity in expression and material application.

PRELIMINARY ANALYSIS

1) Variety of user group and their needs to be addressed. 2) Campus transformation with respect to existing Urban Context and future proposals. 3) Under utilized public transport facilities. 4) Neglected parcels of land. 5) Campus Mixed Uses are more and adhoc developments are complicated and incongruous. 6) Use Components of Zones, its functionality, Scale and the image is bot balanced. 7) Existing Data on available infrastructure is not collated and documented. 8) ACCESSIBILITY, PERMEABILITY and ROBUSTNESS of the edge condition along with the IMAGIBILITY of the campus has to b enhanced. 9) Comprehensive integration of campus services not undertaken. 10) Partial Water Management Initiative. 11) No comprehensive Waste management plan. 12) Gross Energy Mismanagement. 13) Sustainability Initiatives Minimal

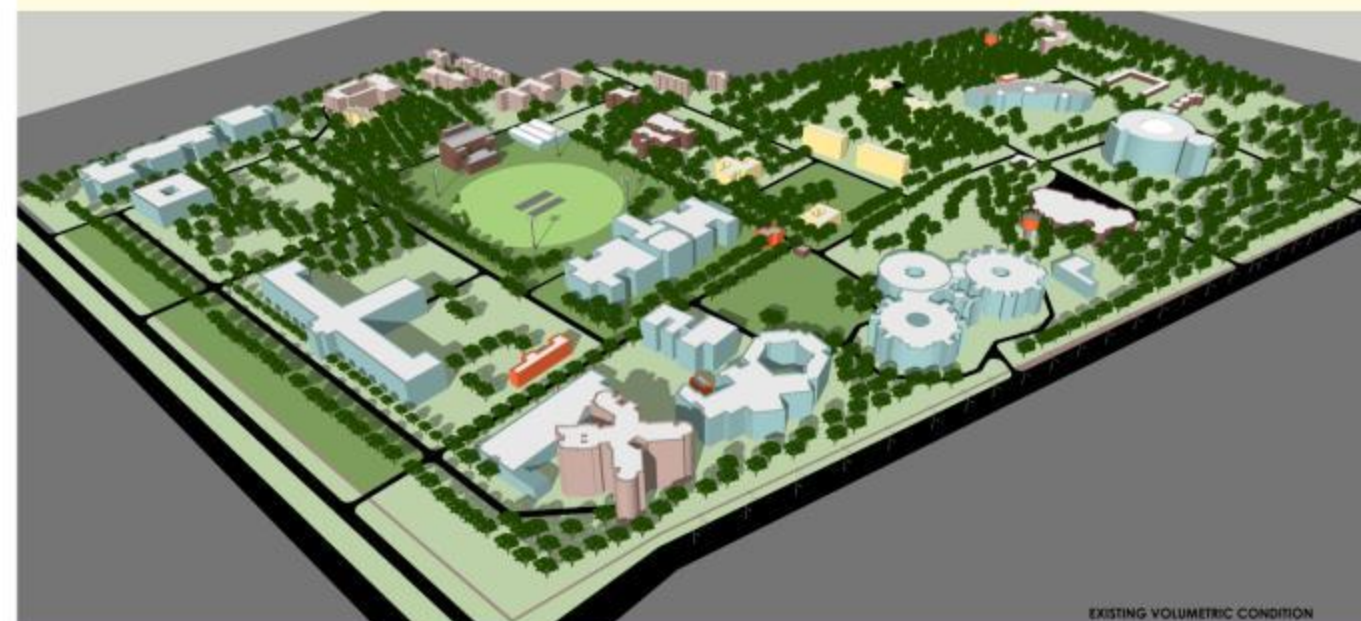
SWOT ANALYSIS

STRENGTH: The preliminary S.W.O.T analysis reflects that there is tremendous potential for development with respect to growth and emerging activities public places, parking areas. Integration of significant development its landscape to public art, urban furniture, and signage transforming the public spaces. As a potential of transforming into a significant cosmopolitan campus.

WEAKNESS: There are multiple roads which terminate in the corridor with lack of public facilities and infrastructure along the site. The edges are not well defined and the street are not coherent. The development control need to be worked out to maintained scale and degree of enclosure along the corridor.

OPPORTUNITY: Space along the corridor has potential of an urban space that can provide an integral area of social activities and can provide public places, parking etc. for the city. Addition of green buffer can enhance the area character and provide a healthy environment along the corridor. Designed urban fabric can provide a vigorous city growth and development in future. To be added layer of metro creates immense potential to the corridor.

THREATS: The incompetent hierarchy of spaces and non-uniformity of road edge led to chaos and unevenness to the city fabric. Multiple roads, unorganized urban services and lack of green buffer all defined a weak urban space of that does not support any urban activity of such sort. The total transport scenario will be disturbed while introducing metro. Coexistence of metro with the Car- Culture is a threat to be taken care of.



EXISTING VOLUMETRIC CONDITION

VISION: Jamia Hamdard University positions itself as a global Centre for excellence in interdisciplinary professional education with focus on research and development. The emphasis on human values is ingrained in the philosophy of the Institution which was nurtured as a philanthropic initiative of Late Hakeem Abdul Hamid. The goal of the University is to foster multi cultural linkages through integration of research by transcending the boundaries of disciplines and to impart quality education to the stake holders. In pursuit of the above, the University plans to upgrade its existing academic and physical infrastructure to fulfill the above goals and objectives

FOUR STRUCTURE PLAN

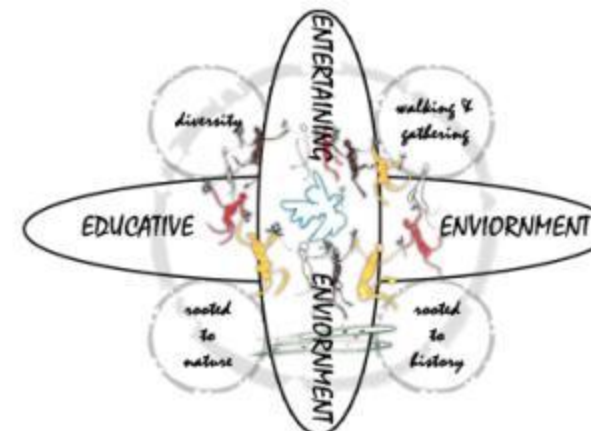
GOAL: Can we transform this?



Campus

Public space

Image



Jamia Hamdard needs an effective master plan and more inclusive planning processes. There is universal admiration for Jamia Hamdard's campus. JHU's wealth of outstanding academic facilities – an excellent starting point for the Master Plan – there is also widespread and growing focus on its future. The importance of a comprehensive vision and consistent guidelines to guide future development decisions is widely recognized. There is a general belief that new models for how Jamia Hamdard uses and cares for its land and how it plans and finances development. The inherent need for capacity building and up gradation of existing facilities has to be addressed with priority. Efficient and optimum utilization of land and built resources through energy conservation, water and waste management implementation of state of the art information technologies and non conventional energy sources leading to a Sustainable Campus. Jamia Hamdard needs to position the University to both lead and respond to the tectonic social and environmental shifts occurring in the world. As a result, a strong emphasis on "Knowledge Urbanism" will be established.

"A comprehensive master plan is seen as critical to guiding growth and change and helping ensure Jamia Hamdard remains one of the world's great universities and most beautiful campuses."

FIVE KEY ELEMENTS

The CMP team advocates planning practices that establish a balance between economic, environmental and social priorities. Improving environments for the benefit of all people and ecosystems.

Planning for sustainability involves more than simply green buildings or efficient systems. Sustainability begins at the community, campus or regional scale with formative questions, which then lead to detailed decisions regarding on –the-ground sustainable measures.

Process | Movement | Public Realm | Land Management | Infrastructure



KEYTHEME 01 Promote Unique Natural Features



Open-space structure plan has retained the green character of the campuses with 15% of the campus open areas have been developed as designed green open spaces. The hierarchy of open spaces has been created in a manner to develop large public spaces and small courtyard spaces within the buildings. Also It has attempted to visually and physically



connect these spaces to generate variety of experiences for the user each having a specified treatment of hard and soft landscape.



Recommendations: a) Preserve natural features and memorable open spaces. b) Compose new spaces that respect the topography, native ecology, and view-sheds. c) Ensure that new architecture creates meaningful and appropriately scaled exterior spaces. d) Maintain a natural, informal landscape character across campus, balanced with the preservation of existing classical and romantic landscapes. e) Sustainably manage physical and natural resources.



Structure plan was conceived based on the following principles:

a) BUILT & NATURAL ENVIRONMENT: Emerging vocabulary is mix of vernacular and modern to create post modern buildings with introduction of new material, re-interpretation of vernacular expression in modern forms integrating with natural and built environment.

b) VITALITY OF SPACES: Holistic vital spaces comprises of public spaces like building forecourts, canteens, maintained landscapes in Campus.

c) PUBLIC ACTIVITY: Main public areas such as Mosque, Cafeteria, recreational areas and other open spaces are fairly active during Campus hours which makes Campus environment alive.

d) VISUAL EXPERIENCE: It consists of – The organization & re-organization of space - perspective of space, light and power of belief. How we use color, texture, pattern & optical phenomena.

e) STYLISTIC: Campus has evolved through several decades through variations in stylistic expression in buildings in which include a hybrid of vernacular elements of Islamic architecture expressed through modern construction techniques.

Any good campus offers a combination of an educative as well as entertaining environment to its users. So, while visualizing the overall structure plan, some basic priorities were given to nature, history/culture, diversity & public realm so that the required environment gets ensured holistically. As a result, four key-themes were formed to guide the overall structure plan...

a) Promote unique natural features. b) Commit to a walk-able campus. c) Preserve & Reinvigorate Campus History. d) Create diverse neighbourhood

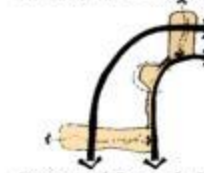
KEYTHEME 02 Commit to a Walkable Campus



One of the most powerful ideas of the Campus Structure Plan is to contract, or compress the campus closer to the core. Simply stated, it aims to develop a long-range strategy to relocate from the perimeter and repopulate the centre. An important corollary of this commitment to a



walk-able campus is to replicate the density, character, and spatial order of the best elements of the historic core in underdeveloped areas of campus. This will positively affect the density, interaction, and quality of space for campus areas adjacent to the core.



Recommendations: a) Create a compact, walk-able campus. b) Use class change times and walking distances as a determinant for facility placement. c) Strengthen pedestrian connections and enhance the pedestrian experience. d) Use structured parking in lieu of surface lots to preserve land resources.

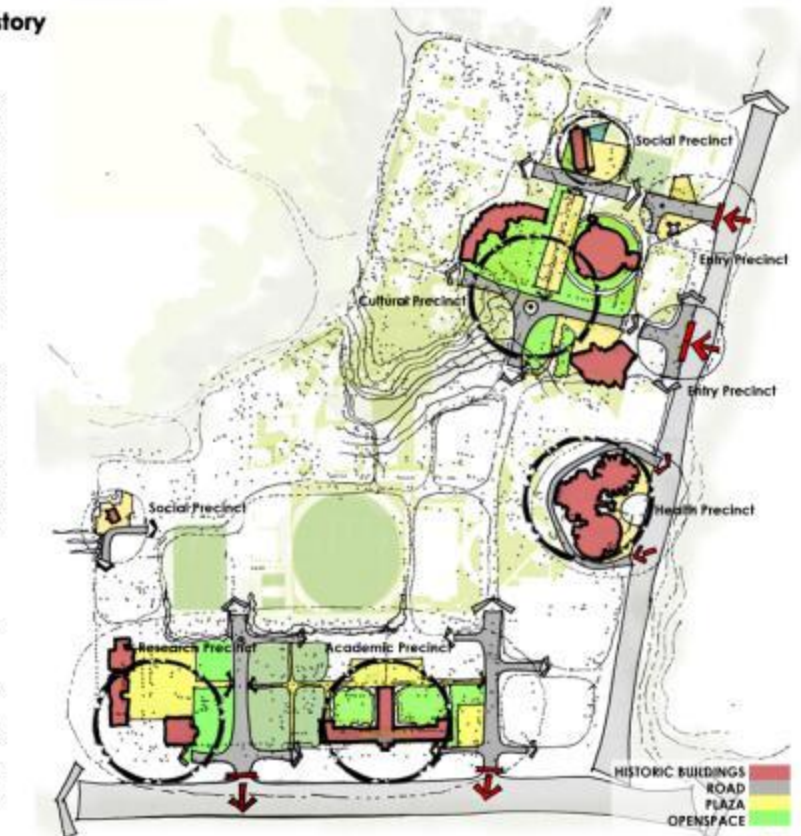
KEYTHEME 03 Preserve & Reinvigorate Campus History

The Campus Structure Plan recommends the conservation of certain facilities in the historic cores. Strategic framework related to academic/research/cultural/social precinct will emphasize their importance through a re-engaged learning environment. This can be accomplished by selectively replacing administrative functions with academic units and better transport & open-space management. This strategic repurposing will energize the historic core with student life, activity, and academic purpose.

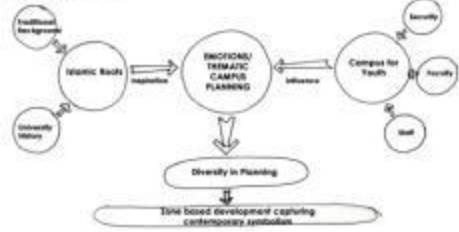
In addition to repurposing buildings, the renovation and construction of new academic buildings should create opportunities for greater interaction among students, faculty, and staff, across different disciplines and departments. Enhanced gathering spaces (both inside and outside of buildings), provide an alternative informal learning environment just as critical as formal classrooms and labs.

Recommendations

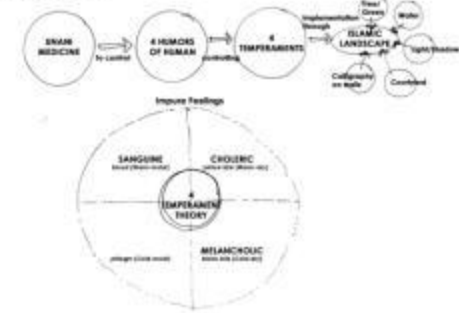
a) Respect the character of the historic core.
b) Selectively re-introduce academic and residential functions into the core.
c) Preserve and renovate historic buildings.
d) Repurpose historic buildings with programs compatible with their size.
e) Program and energize underutilized campus spaces and landscapes.
f) Increase places for un-programmed, social interaction within buildings and in the external campus environment.



METHODOLOGY



INSPIRATION



KEYTHEME 04

Create Diverse Neighbourhood

For any institute, the 'YOUTH' is always considered to be the pre-dominant user group. Thus, to make them more associated with the 'place', campus environment should address diversity. While giving proposal for concerned Jamia Hamdard University Masterplan, this idea of diversity was inspired from the '4 temperament theory' which is actually in relation with 'Unani Medicine', historically considered to be the prime focus of this institute itself.

'Four temperaments' is a proto-psychological theory that suggests that there are four fundamental personality types, sanguine (optimistic leader-like), choleric (bad-tempered or irritable), melancholic (analytical and quiet), and phlegmatic (relaxed and peaceful). Most formulations include the possibility of mixtures of the types.

The Greek physician Hippocrates (c. 460 – c. 370 BC) incorporated the four temperaments into his medical theories as part of the ancient medical concept of humors, that four bodily fluids affect human personality traits and behaviors. Unani medicine is based on the concept of the four humors: Phlegm (Balgham), Blood (Dam), Yellow bile (Dafra) and Black bile (Sauda). Essentially, this theory holds that the human body is filled with four basic substances, called humors, which are in balance when a person is healthy. All diseases and disabilities supposedly resulted from an excess or deficit of one of these four humors. These deficits were thought to be caused by vapors inhaled or absorbed by the body. The four humors are black bile, yellow bile, phlegm, and blood. These terms only partly correspond to the modern medical terminology, in which there is no distinction between black and yellow bile, and in which phlegm has a very different meaning.

Based on these ideas of 'human emotions', the campus has been divided into two metaphorical 'pure zones' & two 'impure zones', spatially with reference to the historical 'charbagh concept'. Conceptually, each 'Impure Zone' was further divided into four zones with reference to '4 temperament theory'.



ZONE BASED GENERIC CONCERNS

CHOLERIC ZONE	SANGUINE ZONE	MELANCHOLIC ZONE	PHLEGMATIC ZONE
Mood: Ambitious	Mood: Sociable, Informal, Happy	Mood: Silent, Analytical, Unsociable, Rigid	Mood: Quiet
Functions: Education Blocks/Precinct, Entrance precinct	Functions: Playfields, Recreation precinct	Functions: Residence Precinct, Research Precinct	Function: Mosque Precinct
Concerns: Scale, Frame, Order, Monumentality, Formal Courts, Shaded places	Concerns: Informality through patterns, seatings etc., Flowering vegetation to be prioritized	Concerns: Humane nature, inward spaces, Ordered, Earthy nature	Concerns: Vastness, Dryness

DESIGN DEVELOPMENT



EXECUTIVE SUMMARY

PROPOSED STRUCTURE PLAN



5. ILLUSTRATIVE MASTERPLAN

Jamia Hamdard has experienced tremendous physical growth and many changes in the physical character of the Campus in recent years. In order to ensure that further growth and evolution positively impact the unique character of the campus and its setting, the University determined that a plan to guide future development was needed.

The CMP will be driven by academic priorities and support the goals and aspirations of the University as it guides the campus's physical development over the next 15 to 20 years. The scope of the master plan will be broad, addressing all facets of the physical campus, including the way Jamia Hamdard uses its land, the arrangement and scale of buildings, and nature and function of the landscape. The transportation network and various utility systems will be important considerations. The CMP will set the context for physical changes on campus to realize the University's research, teaching, administrative, residential and recreational priorities. It will respond to the unique natural setting of the campus and the character of its surrounding neighborhoods. While the plan's focus will be the next 15 years, it may recommend initiatives that will require implementation over a longer time period.



**FIFTH
PROPOSED
MASTERPLAN**

PROPOSED MASTERPLAN

LEGEND:

- INSTITUTIONAL BUILDING (EXISTING)
- INSTITUTIONAL BUILDING (PROPOSED)
- STAFF HOUSING (EXISTING)
- STAFF HOUSING (PROPOSED)
- STUDENT HOUSING (EXISTING)
- STUDENT HOUSING (PROPOSED)
- FACILITIES & SERVICES (EXISTING)
- FACILITIES & SERVICES (PROPOSED)



PROPOSED VOLUMETRIC SCHEME

5.1 PROPOSED MASTERPLAN FEATURES:

- 01.** The new Master Plan attempts to bring the similar uses together and create character districts. The institutional and residential zones are segregated which provides distinct identity to uses through scale and architectural expression. The building blocks are placed at the periphery of the site so the central part can have larger open space to cater the required function of recreational and open space system of university.
- 02.** The figure ground is dense at the periphery and central area is kept loose to provide openness and conserve the natural landscape. These areas are developed as green area, play ground and left for vegetation growth.
- 03.** The new Master Plan attempts to retain the existing typology. The tall buildings are placed at the periphery to maintain the human scale within the premises. The stack effect is being proposed to avoid the feeling of narrow street while walking along the street of this campus.
- 04.** A system of separate entry and exit has been developed to maintain the flow of traffic in the university, for the safety of users within university. The various entry point provides access to various level of services in the university. The residential area has been given privacy by providing check point, to maintain the flow of traffic into those areas.
- 05.** The Master Plan proposal has retained the green character of the campuses with 15% of the campus open areas have been developed as designed green open spaces. The hierarchy of open spaces has been created in a manner to develop large public spaces and small courtyard spaces within the buildings. The structure plan has attempted to visually and physically connect these spaces to generate variety of experiences for the user each having a specified treatment of hard and soft landscape. The streets constitute a very significant part of this network which have been developed as boulevard streets with appropriate selection of trees and their species.

In CMP the overall area are given the equal priority and the zoning is formulated based on the similar building function. Most of the existing building were proposed for demolition because of it's unsuitable zoning. The function of the campus building are well organised so that one activity does not disturb the other activities within the campus premises. The green area is maintained and the natural landscape is being preserved in the new master plan. The ambience created by the landscape and vegetation within this campus premises have been properly thought to merge the nature with building. The natural landform is preserved to maintained the drainage system.

The analysis identified the strengths, weaknesses and opportunities of the campuses and subsequently resulted in formulating a vision for campus development. Also in the first phase the design team compiled a series of parametric analysis & drawings to examine the campus and its surroundings by its different systems.

A detailed Area Program was developed for all the Academic Departments, Central Core facilities, Staff and Students Housing, Sports and Recreational facilities and other supporting infrastructural services. The Building Audit Identified the utilization of existing spaces and supporting services in each building, the future needs of all departments and projections have been considered towards development and rationalization of the Final Area Program.

5.2 CAMPUS DEVELOPMENT

The new Master Plan attempts bring the similar uses together and create a character district. The institutional and residential zones are segregated which provides distinct identity to uses through scale and architectural expression.. The building blocks are placed at the periphery of the site so the central part can have larger open space to cater the required function of recreational and open space system of university.

A Comparative understanding of the "EXISTING" & "PROPOSED" condition.

The campus redevelopment plan was prepared by restructuring the existing campus through appropriate renewal initiatives. The structure plan defined the hierarchy of movement, open spaces and creation of public realm in the campuses through design and development of legible public spaces.

The campus has large amounts of land cluttered with temporary dilapidated and inefficient single storey buildings. The clearance of these building generated substantial space for redevelopment. The figure ground plan has been proposed with respect to the area program for the campuses to meet the future and current needs of the university. The entire land was subdivided into smaller parcels with specified landuse disposition.

The development parcels were created after identifying the potential of development for each landuse and by restructuring of open and built up spaces. The building zones have been defined by regulating the circulation pattern and each parcel has been completely developed which integrates itself with the larger whole of the campuses.

The parcels have been created in a manner which will support phased construction specified through the master plan implementation strategies through the phasing and scheduling after creation of basic infrastructure of campuses to include all campus services, roads, pathways, parking areas and landscape. The table illustrates the campus and development parcel codes.

The development calculations assume:

The building ground coverage is assumed too be an average of 30%. In some cases the building coverage may be higher or lower.

The floor area ratio is assumed to be 1 which means the average height is 3 floors. In some cases FAR will be greater and less in others.

The calculations are based on the figure ground plan which includes a number of buildings in the current building program which are existing, some for which the envelopes have been developed but not yet built. It also includes all the new proposed development after clearing of old dilapidated and inefficient structures.

COMPARATIVE CONDITION OF FIGURE-GROUND - BEFORE & AFTER



COMPARATIVE CONDITION OF BUILT-USE - BEFORE & AFTER



DEFINED ZONES IN THE CAMPUS



COMPARATIVE CONDITION OF MOVEMENT STRUCTURE



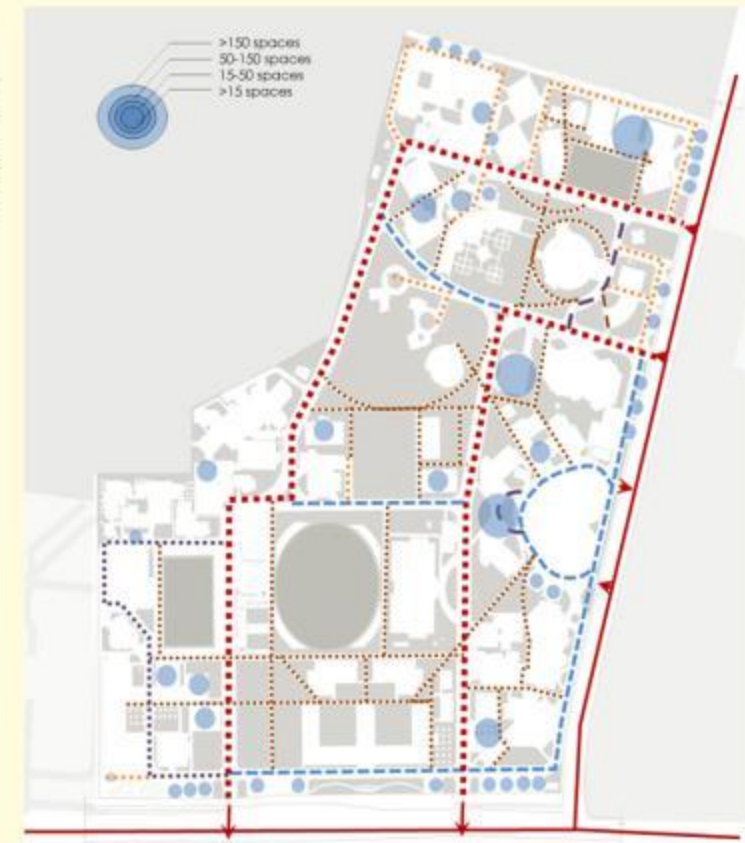
5.3 CIRCULATION & PARKING

A system of separate entry and exit has been developed to maintain the flow of traffic in the university, for the safety of users within university. The various entry point provides access to various level of services in the university. The residential area has been given privacy by providing check point, to maintain the flow of

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5.4 ARCHITECTURAL TYPOLOGY

The physical character of the space and buildings depicts the typology of campus planning process. Before the redevelopment of Masterplan, the typology of campus planning process was diversified and there was lack of coherence in the overall planning of campus. Most of the typology of spaces are introvert as the activities was within the buildings and the external planning of spaces was not the part of building itself. The architectural typology of campus was unique as it was designed by different architects which depicts the historical journey of campus planning.

The present Masterplan tries to bring uniformity in space planning process and the design of building itself. Through the external space that has been provided outside the building offers various activities to the users and it is the intergral part of building design as well. The spaces outside and inside the building are integral part of the planning process. The most of the building are provided with courtyard or frontyard where activities can take place immediately outside the building for the users. The linear block of are provided for academic zone to run classes paralely with abundance of natural light and ventilation.

The present design of building tries to bring uniformity in campus design and ties the spaces that has remained unplanned. Various form of building has been supported with scale of open spaces immediately to that block to celebrate it's architectural character and create building related activities along it. The typology depicts the modern architectural character at the same time repect the existing character of the campus.

Individual buildings have been designed considering:

- Spatial Condition
- Structure and Economy
- Width of building
- Flexible Space Design
- Porosity in room
- Basement and still
- Orientation
- Height
- Selection of Material
- Building Skin
- Location of Entry and Exit
- Location Based on Building Use
- Hospital- Entry
- Intent of building

Each new building shall be oriented and designed to take advantage of solar angles and wind direction to reduce energy consumption. The design shall include consideration of shading options on south and west exposures to reduce heat gain in summer but admit natural light in winter. Shading options shall include landscape element, such as deciduous trees, as well as architectural elements.

Campus edges and entrances should create a positive first image of both the campus and its synergy with the interface around it. New buildings at the core of campus perimeter should be sited and designed to accommodate a more coherent and unifying landscape treatment.

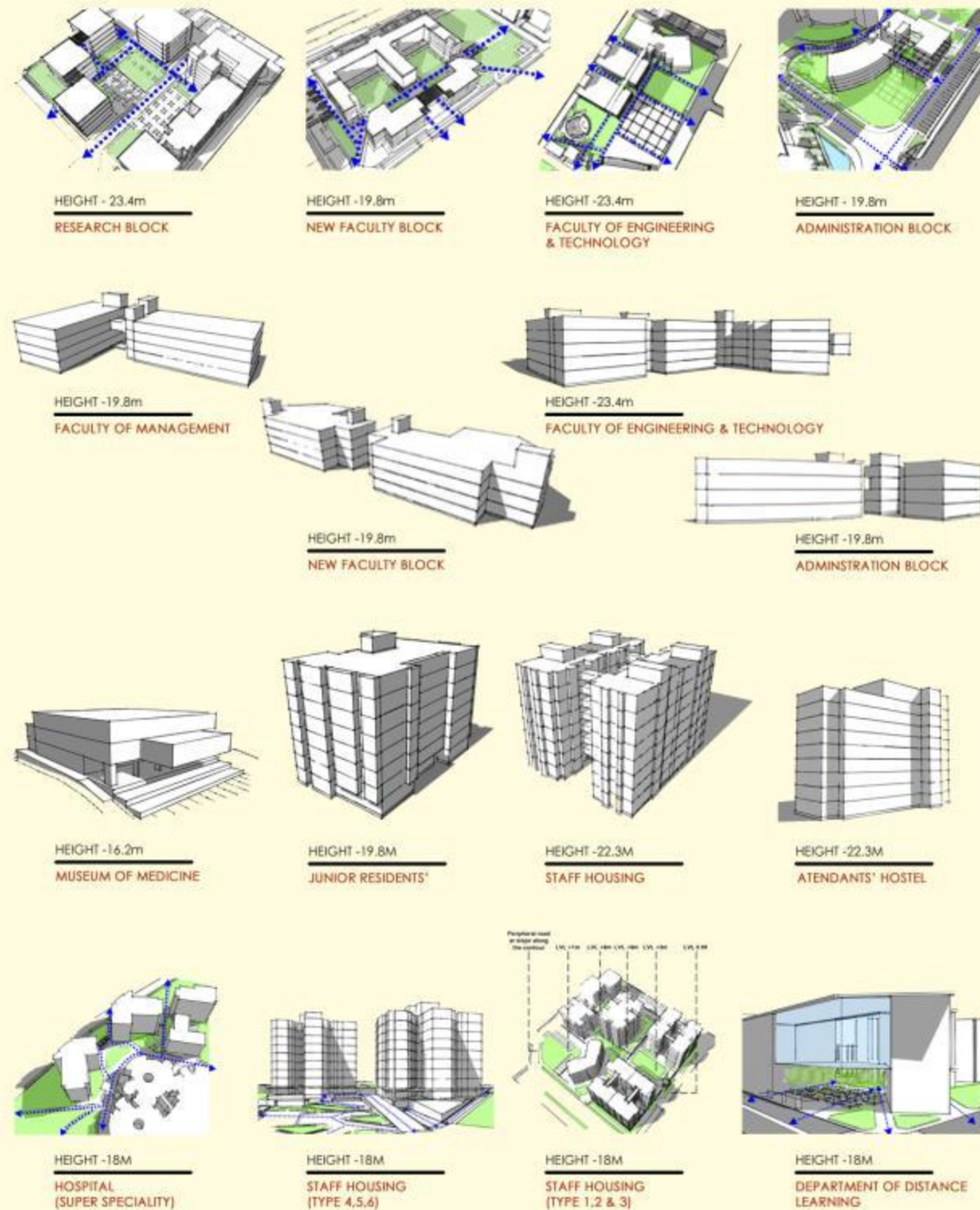
Buildings shall be set back to accommodate a formal, urban, but generous landscape treatment along both frontages. The Landscape Master Plan shall define a palette of planting and paving materials and typical details for these setbacks.

Places of Interaction: Buildings facing places of interaction shall be scaled to admit sunlight to the place and impart a comfortable human scale. Spatial sites may present relationships that require lower heights along the build to line.

Each building shall be a coherent architectural composition, and shall employ a single unifying vocabulary of forms, details and materials on all buildings facades.



TYPOLOGY PLAN





5.5 CREATING 'PLACE FOR PEOPLE'

"The nature of the buildings and streets of the cities where we live affects our behaviour, affects the way we feel about ourselves and importantly how we get along with others."

-C.M. Deasy FAIA

For any good campus, it is always desirable to have a series of places, making its experience more meaningful to people. Any campus design should focus on creating an educative environment holistically for students. Henceforth it is more important to design the outdoor spaces more carefully instead of giving priorities to indoor space design only.

Proposal for Jamia Hamdard University also addresses this necessary idea of providing 'places' for 'people' quite efficiently by means of its diverse ambience as well as flexibility of acknowledging its users of different age groups as the core idea revolves around the practical context of giving importance to not only the students' psychology but also understanding the need of faculties/staffs/residing communities parallelly.

Among all these designed 'places', this segment will describe six most important precincts of the campus. Henceforth, this will give a clear idea on how these 'places' different from each other conceptually as well as physically by means of its core philosophy, physical articulation, scale & style [appearance based on its vegetation typology, surface material, urban furniture, building fenestration and so on]

All these places have been categorized into three groups which are: a) Image Centres b) Quads c) Social Needs.

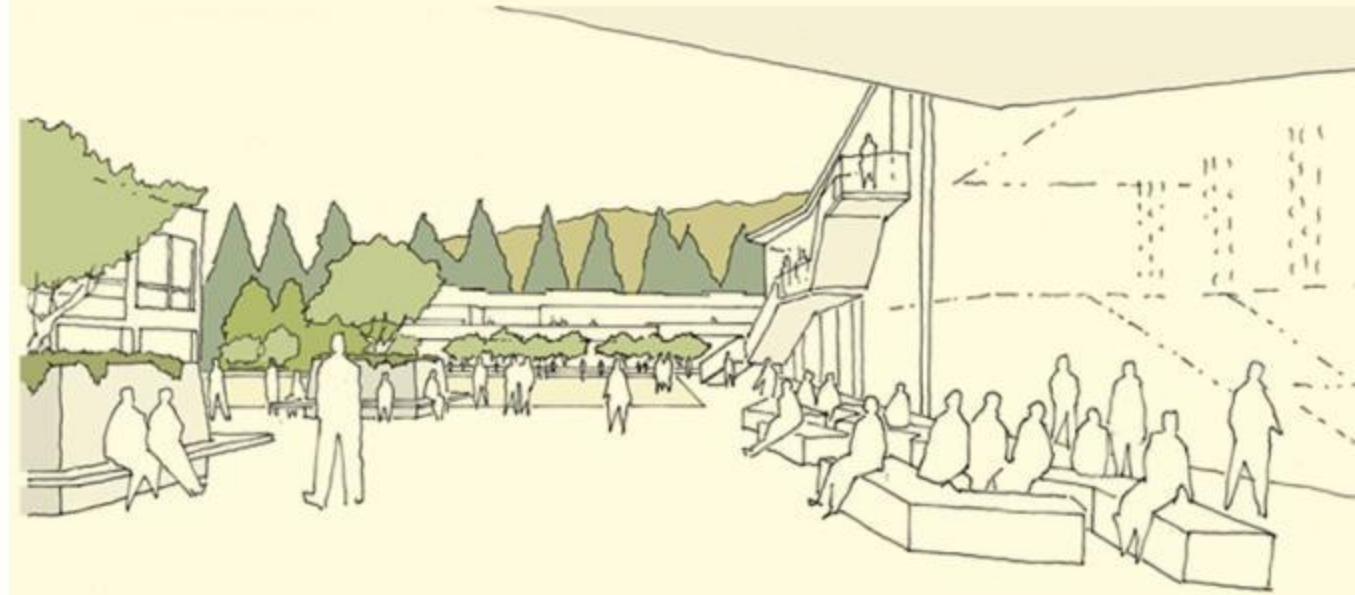


Image Centres

Image centres are those places of a campus which generates a very strong unique identifying image of the campus to people. Entry precinct as well as Central informal precinct are such places where this type of environment is required logically based on its surrounding functions/activities along with the metaphorical idea behind 'the journey' concept...



Quads

Quads are more formal landscape courts which gets formed in front of important academic buildings. These places are designed with more generic approach in comparison with previous image centres...



Social Needs

Any campus becomes successful when it starts addressing people from its surrounding communities also besides its core users. The existing mosque within the campus offers an evident platform where students/faculties and residing community can be acknowledged with equal priority. Henceforth, this justifies a social role of the campus beyond its boundary...



a

IMAGE CENTRE 01 JHU ENTRY PRECINCT

Though University has multiple entries to it, but it leads to the various functional zone of the campus. To eliminate the confusion of movement in the campus and to shape and organize the entry and exit point in the campus it has been considered in more sensitive way and planning is based on that. The entry is kept Grand to give the overview of campus but still kept simple in design which always depicts the character of campus which it is known for. The security check at entry level keeps the campus more safe and secure from this level of entry itself. The information about services in the campus is provided at the entry level itself which guide the visitors to the campus. Proper care has been taken for the universal access for all user groups which makes the campus user friendly in all terms for differently abled person.

The entry level is legible in all aspect whether it is in terms of building or landscape. The landmark in the campus orients the users and guide them throughout the campus premise. Trees and natural bodies have been tried to preserve and make the integral part of the campus planning so based on that landscape is created considering the natural condition of the campus.

The road is designed parallel to the axis of building, so as the person move along this road can experience the beautiful campus with green area which is pleasing to eyes of viewers. The axis is being intersected at certain distance to break the monotony of movement and at such place, various public art has been proposed. Like memorial for Hakeem Sahaab in the memory of Late Janab Hakeem Abdul Hameed. In between the movement corridor plaza has been created which seam the campus fabric.

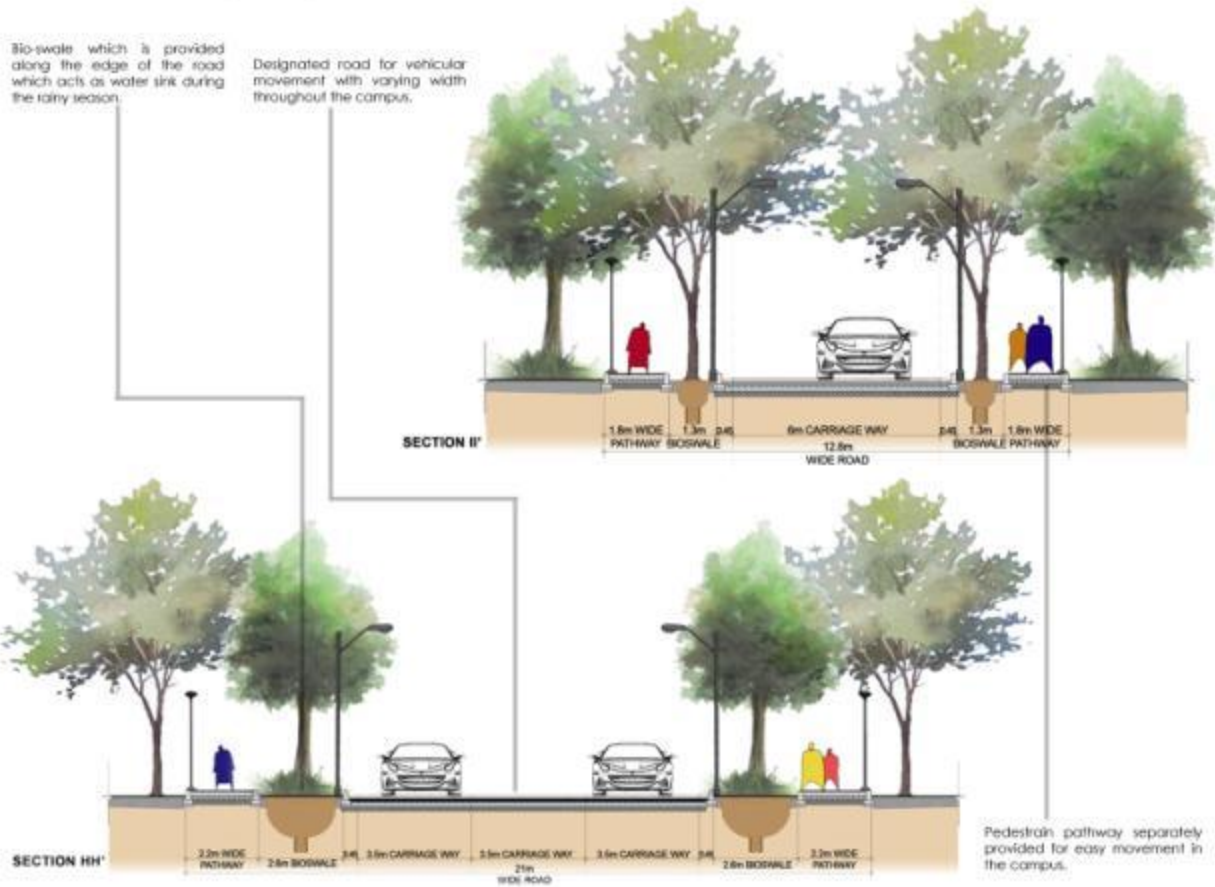


Pedestrian pathway kept at one level same as the entry level to provide easy accessibility to the different user group visiting to campus for easy movement and connectivity from road level to pedestrian level

Water body is designed as an element to give the pleasing experience at the entry area and also to maintain to micro climate in the campus.

Parking area which will cater to the visitors of the campus at the entry level and also e-rickshaw stand for smooth mobility within the campus.

Main entry to the Campus premise which has grand gate which represents the grandeur of the campus at the same time it provide check point for the visitor to the campus.



PLAZA NEAR CONVENTION CENTER:

Plaza near Convention center and Library creates a seam between two distinct functional zones. This is essential to unify the parcel of land as one component and also creates visual hierarchy around this existing building and the New Administrative building. It also enhance the visual experience when people move along this area. This plaza acts as the vantage point for important buildings like Library, Museum and Archive building.

MEMORIAL OF LATE JANAB HAKEEM ABDUL HAMEED:

The memorial for Hakeem is a tribute to the vision of this great philanthropist whose belief was in grained in the fact that education is a key to growth and development of any society. A man with simplistic life style was tall in stature and was a pure soul. The creation of the memorial for Hakeem Sahab finds its inspiration from his values and life style which comprises of square vertical tower inscribed within geometry of peripheral wall with 4 entrances. The square is a pure geometry which symbolizes the Hakeem Sahab character and vertical tower symbolizes his stature. This singular use of material in natural form further enhances the above characteristics. The memorial has been envisaged as landmark in the campus and has been located on the highest point in the campus terminating into visual foci on the main spine and it binds together the entire space around it. This landmark has been supported by lighting which will also contribute to the legibility in the campus.

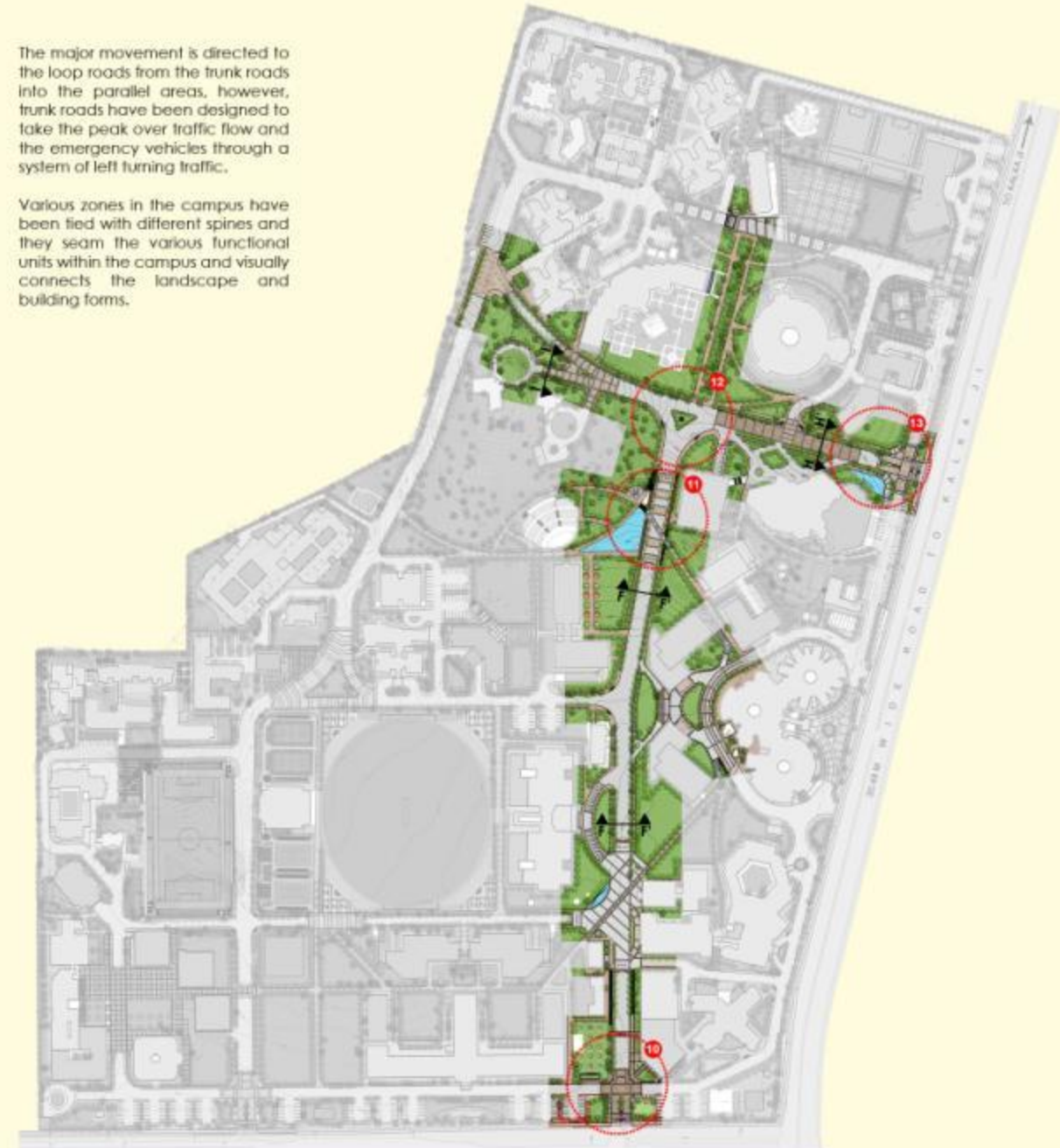


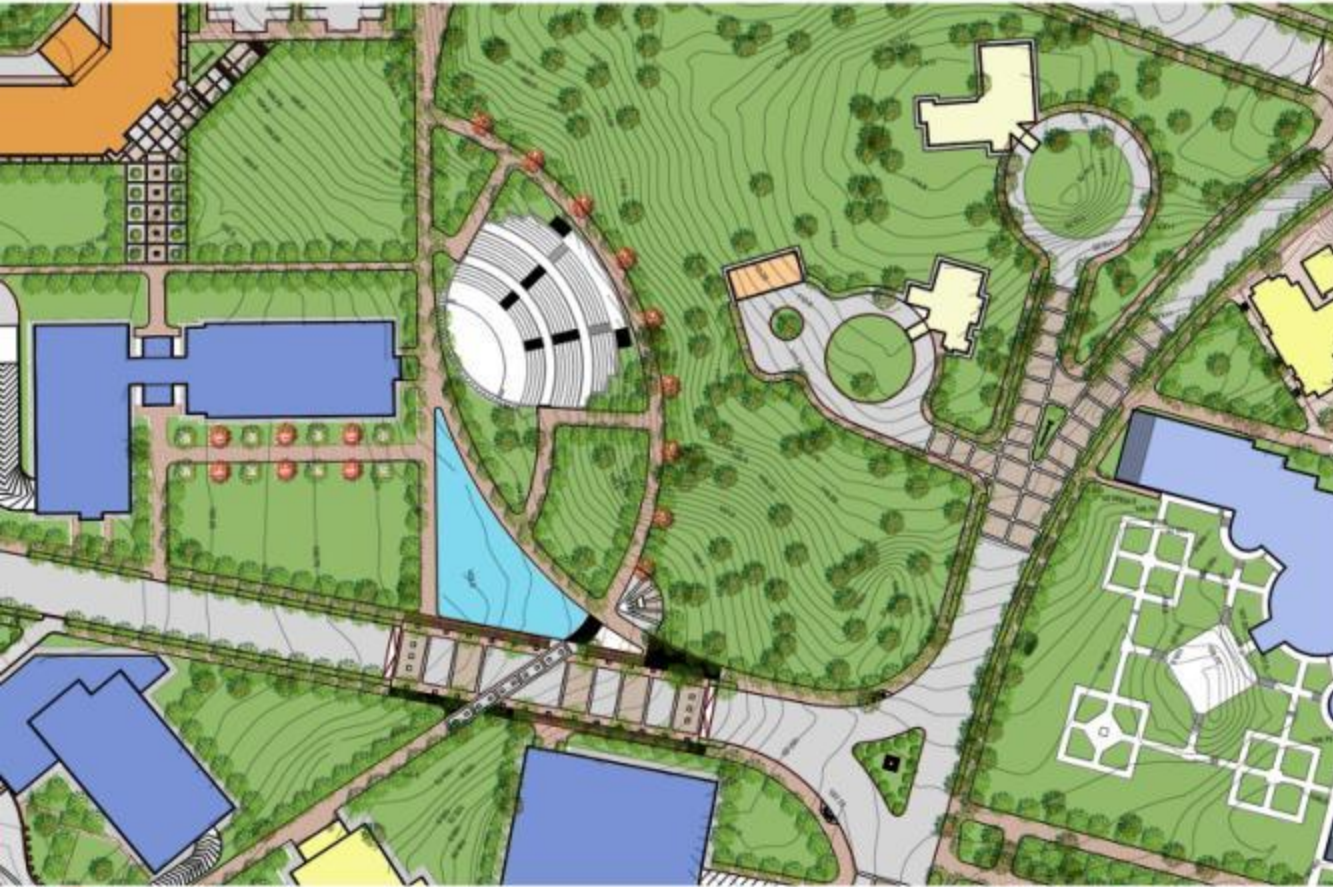
SPINE 2: THE MAIN TRUNK



The major movement is directed to the loop roads from the trunk roads into the parallel areas, however, trunk roads have been designed to take the peak over traffic flow and the emergency vehicles through a system of left turning traffic.

Various zones in the campus have been tied with different spines and they seam the various functional units within the campus and visually connects the landscape and building forms.





C

IMAGE CENTRE 02 NATURE PRECINCT

This area is part of the natural conservation zone of the site. Thus sustainable development strategies have been developed to cause minimal damage to the site. Respecting the eco system and landform character the slopes are being negotiated to make the entire space as a serene public space set within the natural landscape using the existing local materials.

This area will be duly graded and provided with ground cover along with urban furniture & lighting, which would enhance the quality & prevent the natural outcrop. There by creating a public space within the natural setting.

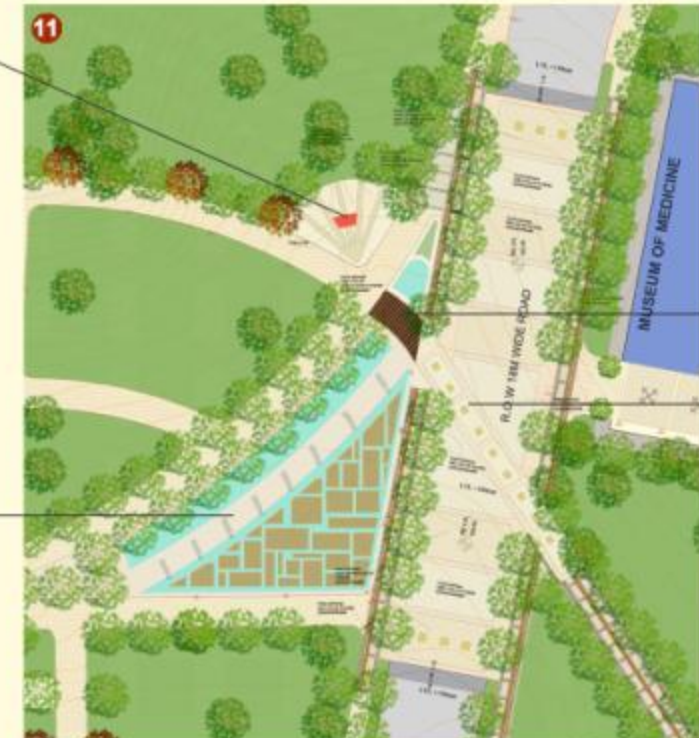
Nature zone will celebrate the beauty of nature by using natural slopes as guiding factor for designing the OAT in an organic way. Use of trees, water along with sculptures with a strong inspiration from 'Kund Style' will make it more unique & enjoyable for students.

Master plan has been conceived as a sustainable master plan which is inspired by existing natural environment and the modern approach towards the design, the master plan develops an "environmental synergy between landscape and urbanity." The design strategy combines the modern resourceful use of energy but also by its "respect for the natural conditions of the site and creating a liveable campus



Presence of public art will create visual quality in the campus premise and will also enrich the quality of landscape in within this campus.

Soft landscape in addition with water body is essential element which will help to maintain the micro-climate within the campus.



Bridge, a landscape element used to tie the pathways across the water body thus retaining the continuity of the designed pedestrian spine.

This plaza is also essential in front of Museum of Medicine as secondary entry to this building.

Jamia Hamdard was conceived as a seat of higher learning in Unani Medicine, Islamic Studies, Biosciences, Pharmacy, Nursing and other areas of knowledge by its founder as a means of fulfilling



THE ENTRANCE GATE:

The Entrance Gate to the University has been designed to depict the grandeur of the campus but still using simple design and elements. The Jaali work in the wall of gate will enhance the beauty of this Gate with guard room being placed in the centre of entry so to cater both the entry point and exit point. Totem has been placed on the main entry to give general information about the facilities in the campus to the user or to the pedestrian. The green area has been merged with gate to give the pleasing look to the user while entering into the premise.

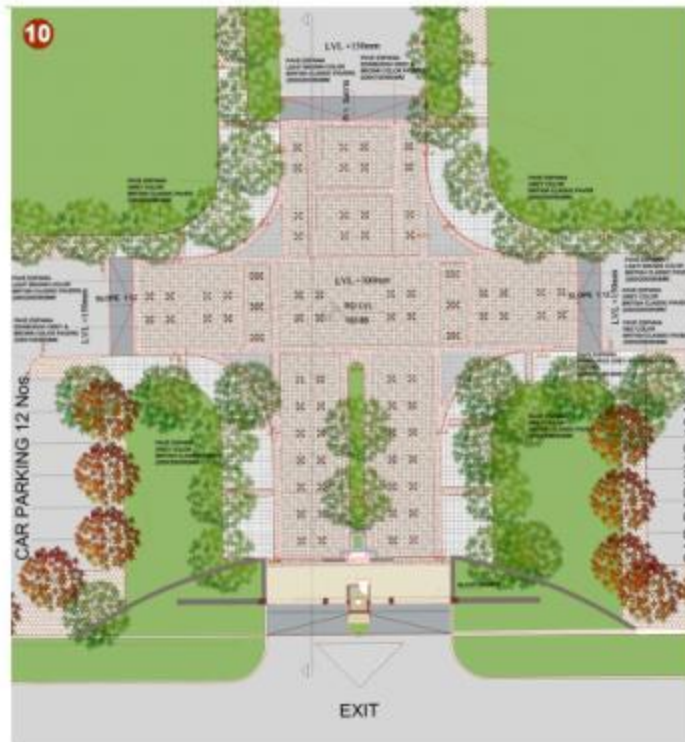
Policy : To provide security at entry level and also welcoming entry to the campus. Entry plaza being at one level provides smooth accessibility to the user group visiting to the campus for easy movement and connectivity from road level to pedestrian level.

Strategy : Entry is provided with guard room with two separate entry and exit to the campus and the plaza is created for easy access to the campus.

Opportunity : Direct access from the main road with grand space immediate to the entry level.

Design Intent :

- Separate entry and exit to the campus which improve pedestrian safety and visual image at the campus entry.
- The table top which reduces the speed of vehicular movement helps in reducing the chances of any accident in the campus.
- Water body as design element to give the pleasing experience at the entry area.
- Parking area which will cater to the visitor to the campus at the entry level and also a e-rickshaw stand for smooth mobility within the campus.



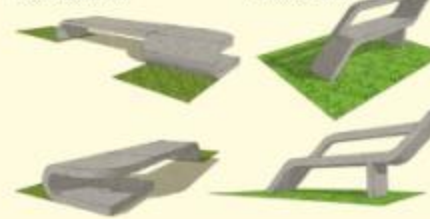
URBAN FURNITURE PALETTE

SEATS AND BENCHES



01. PLAZA SEAT
550W X 450H X 1500L mm

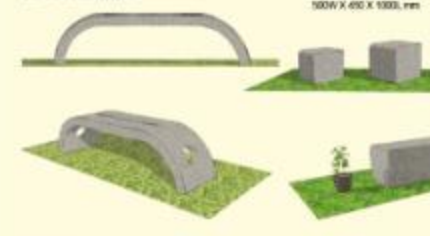
02. BENCH
450W X 450H X 2000L mm



Seats and benches are major landscape element in the design of Jamia Hamdard University. All the major open green area will be supported with seats and benches for the different users group which will enhance the quality of such open green space. The design has been done in such a way to revitalize the various plaza. The urban furniture design has been kept modern design to enhance the quality of such space. The space is only celebrated by the kind of furniture or opportunity for the user has been provided. The designs are simple which can merge to the proposed landscape yet

03. BENCH
500W X 450H X 1500L mm

04. BOX BENCH
500W X 450H X 1500L mm



05. BENCH
500W X 450H X 1500L mm

06. BOX SEAT
500W X 450H X 1500L mm



BOLLARDS



01. BOLLARD
700H X 200 mm

02. BOLLARD
100W X 700H X 100L mm

03. ARCH BOLLARD
100W X 450H X 200L mm



The bollards are another set of urban furniture that has been proposed to fill the pedestrian pathway. They will be inserted with light inside which will collectively appears as single unit designed bollard.

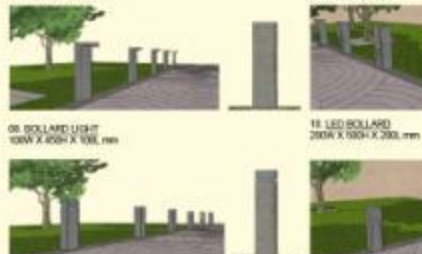
TRELLIS



Trellis is proposed at various location in the campus which comes mostly along the pedestrian pathway. These are the pause point in the campus supported with seats and benches along with public art to celebrate the

07. LED BOLLARD
100W X 450H X 150L mm

08. LED BOLLARD
200W X 100H X 200L mm



PERGOLA

THE TREE
2000W X 2500H X 2500L mm



TREE PROTECTOR



Pergolas are the major landscape furniture which will come along the bus stand and in the open green area.

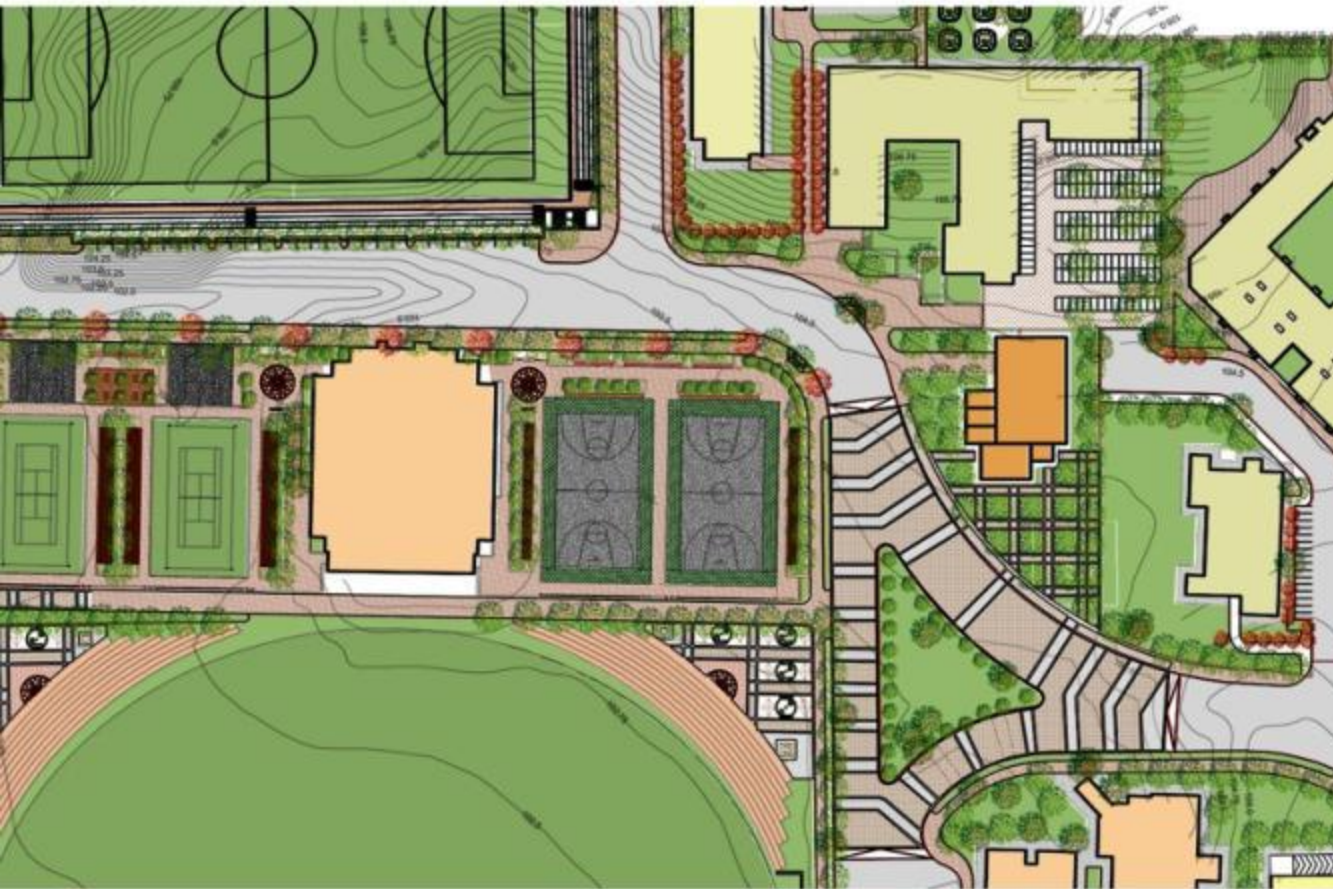
Tree protector is used around trees to keep it safe at the same time it has been supported by seating around it. These are social space that has been perceived in the campus.

09. TRELLIS
300W X 2500H X 4500L mm



10. TRELLIS
300W X 2500H X 4500L mm





F

IMAGE CENTRE 03 CANTEEN PRECINCT

Grand entrances leading to wide tree lined avenues and large landscaped open spaces are envisaged, for giving the campus an impression of vastness and grandeur. Landscape spaces would incorporate plazas, squares and courtyards connected with pedestrian pathways.

The focus during the design development is to continue the same by respecting the character of the campus. From the entry level to the exit level one gets to experience large and small open spaces with various types of enclosures within walk-able distance. The pause between these point area is also interesting as it is supported with large green area with designed landscape where one can experience feature of landscape element, sitting area, amphitheatre and many more.

The larger framework for creating an optimum environment for learning and research is considered, and essential background data have been developed. As pedagogy evolves, the learning environment is no longer restricted to the lab and classroom, but includes space for formal and informal learning throughout the campus.

Table top crossings have been proposed in this zone for easy accessibility for all the people and to reduce the vehicular speed within this zone which will prevent accidents as such.



Table top crossings have been proposed in this zone for easy accessibility for all the people and to reduce the vehicular speed within this zone which will prevent accidents as such.



Plaza around the cricket stadium offers various recreational activities to the players as well as the visitors. The space under the viewers sitting area has been proposed for eatery zones and at the same time, it offers shading area for the visitors during a hot sunny day.

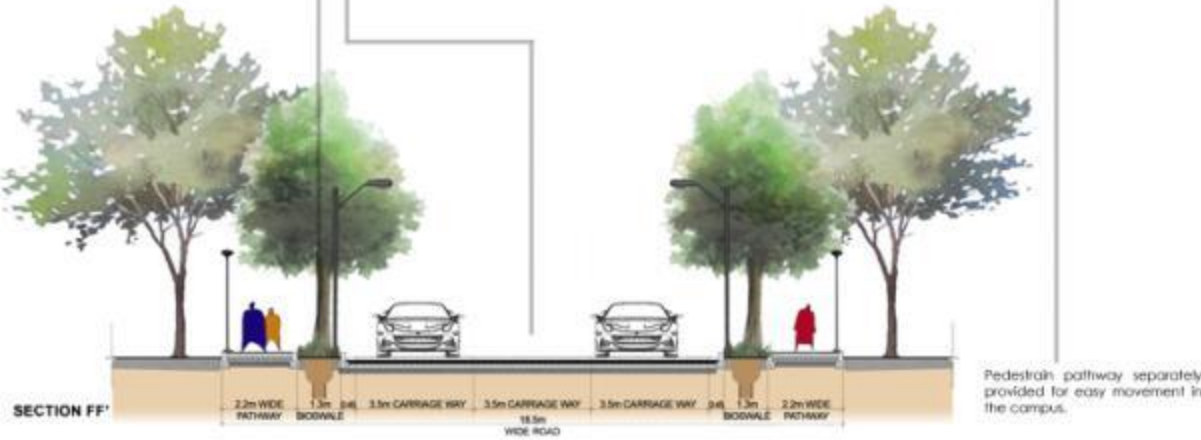


Bio-swale which is provided along the edge of the road which acts as water sink during the rainy season.

Designated road for vehicular movement with varying width throughout the campus.



SECTION GG'



SECTION FF'

Pedestrian pathway separately provided for easy movement in the campus.

Guidelines for plazas propose the adoption of a uniform philosophy through shared vision for open spaces and plazas within Campus centers. This vision would result in the focus on pedestrian activity pre-eminently over vehicular modal transport in Campus settings. These guidelines adopt the principle that open spaces and plazas are public spaces, and that these natural public amenities encourage human occupancy, safety to the users and add visual quality in the overall campus. It connects the various isolated zones and stitches them to act as unified space in the campus design. Plazas have been developed to enhance the campus landscape and to seam the various buildings in the campus. They are configured to respect and enhance architectural relationships and to enhance the spatial qualities in the campus premises. Open spaces as landscape and new buildings are crucial for the improvements of campus planning process and it also elevates the quality of campus life.

THE MAZAR AREA:

The Mazar of Hakeem Sahab will be developed with network of pathway and also screening will be done to restrict it from direct visual connection. At the same time water elements with cascade wall is used as design feature to respect the simple nature of Hakeem Sahab and the purity of his soul. The Mazar for his son is also added next to his Mazar with smaller scale with similar material that is existing there. Series of trees have been added to make this area safe and secure and keep it restricted from entry to the common people.

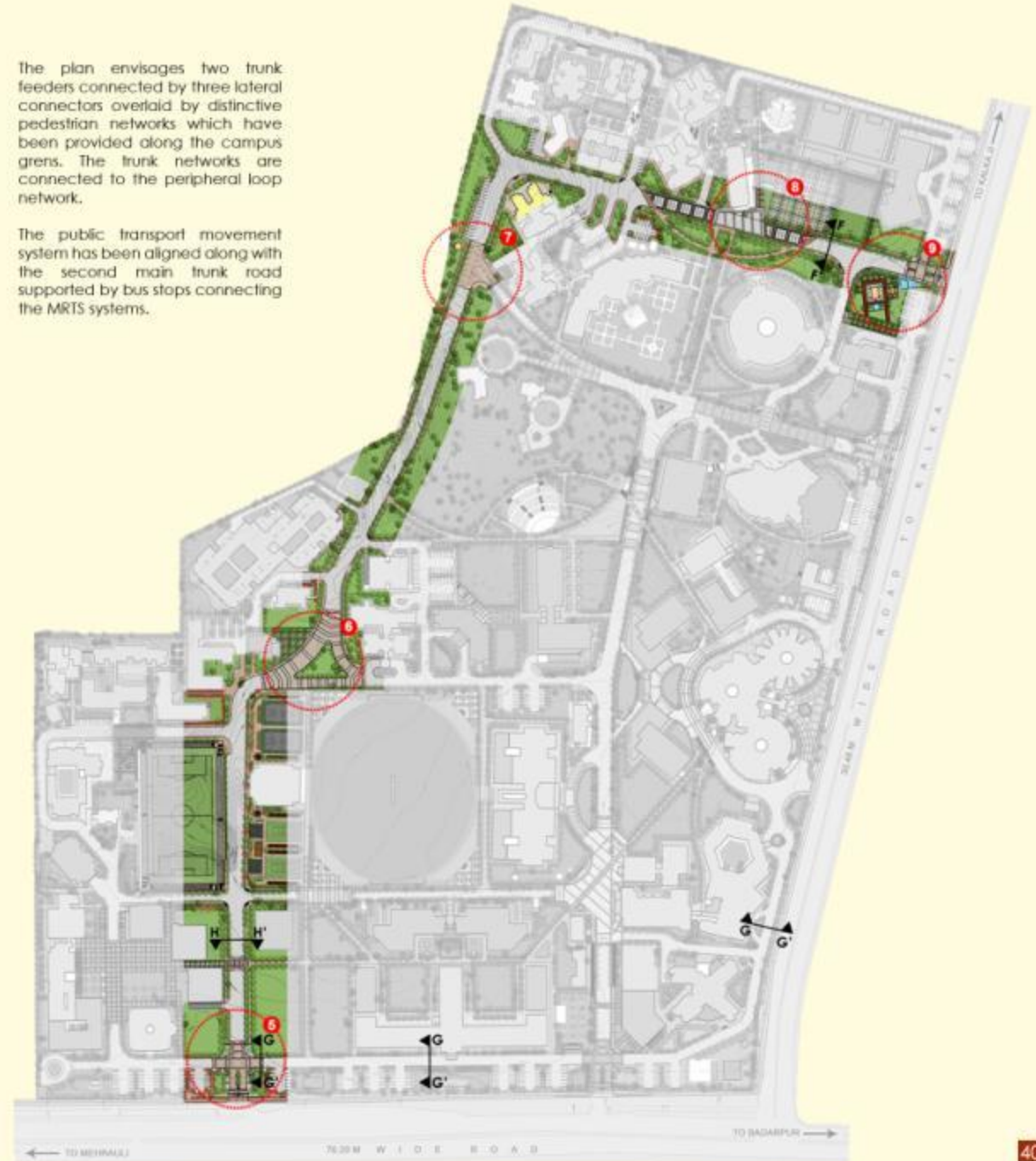


SPINE 2: THE MAIN TRUNK



The plan envisages two trunk feeders connected by three lateral connectors overlaid by distinctive pedestrian networks which have been provided along the campus greens. The trunk networks are connected to the peripheral loop network.

The public transport movement system has been aligned along with the second main trunk road supported by bus stops connecting the MRTS systems.





D

QUAD 01 ACADEMICS PRECINCT

The exterior space of the campus landscape is beautiful, few places are designed and furnished to be conducive to social interaction and even fewer have any sort of visual link to the activity within the buildings around them. This is a special dilemma for the growing numbers of students, faculty and staff who use the campus at night, after dark, exterior space unlit and unobserved by active interior spaces are perceived as unsafe. Because research and interaction today are increasingly team based and multidisciplinary, the campus must be re-envisioned to foster the interaction and information-sharing this new community demands. Leading edge companies in biotechnology, information technology and creative service understand the value of places of interaction and design for them as a matter of course: they are just as crucial to the work of the university.

Policy: To provide new block this can provide space to meet for future demand for increasing number of faculty. To tie the existing immediate building and create interesting space around it.

Strategy: Basement facility be accommodated to meet the parking need. To tie this building with immediate contextual building to create public space in this campus as series of network.

Opportunity: The location of building comes next to the existing administrative building which makes this linear building to come in harmony next to existing building. The shape of this building creates public space to come in between two building which is interesting component.

Design Intent: The linear shape to this building which allows natural light and ventilation in all parts of this building. The building are designed in two separate block but still being tied through bridge to make the space looks more interesting at the same time it establish connectivity in the building level. The underpass below it connects the two different spaces and adds porosity in the movement structure of campus. The building is supported with basement facility to meet the demand of parking in future keeping it separate for entry and exit point. The orientation of building is taken reference from the existing building and yet with material selection for this building, makes it modern in expression.



- Make spaces conducive to creative interaction a priority in new capital investment.

- Create 'places of interaction' at key nodes of campus activity.

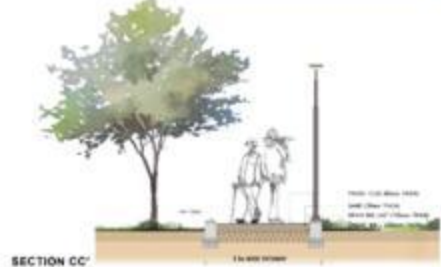
- Enhance the role of the library as an intellectual commons.

- Site and design interior and exterior common spaces to create a true 24-hour campus.





SECTION AA'



SECTION CC'



SECTION BB'

The campus has been provided with 22 designed open spaces which have been created at different locations and which finds its response to the spatial structure, the movement pattern & the activity structure in that area. The design is sensitive to the scale, use & functionality.

Zone 1 is dominated by the hospital building and other buildings that support the functions of hospital. New buildings within this zone shall enhance the integrity, ensemble and complement rather than compete with the existing historic buildings. Most of the proposed buildings have come as extensions of existing facility to meet the future need and demand of related facility. Since this area is rocky the proposed buildings do not have basement and natural site condition is retained so as not to disturb the site condition. The level of site has been negotiated to provide access to all the proposed building.

Plaza between Hospital Block and proposed Super Specialty Block provides buffer zone between two block. This plaza at the same time creates seam between two distinct block with green area. Trellis is being used as design element which connects two super specialty block and provides shaded pathway.

The plaza formed by the building around it makes an enclosed space which when developed will cater the immediate buildings and can be the functional part of the building part as well. This designed space can be used as the gathering space for different users coming to the hospital.

For walking within the campus, it becomes imperative to design intelligent pedestrian movement patterns, which not only caters to the walking population but also adds to the internal accessibility within the campus.

The development of the pedestrian spine has been done so as to create interesting views and create a sense of intelligent walking for the people in the campus.



SECTION DD'



SECTION EE'



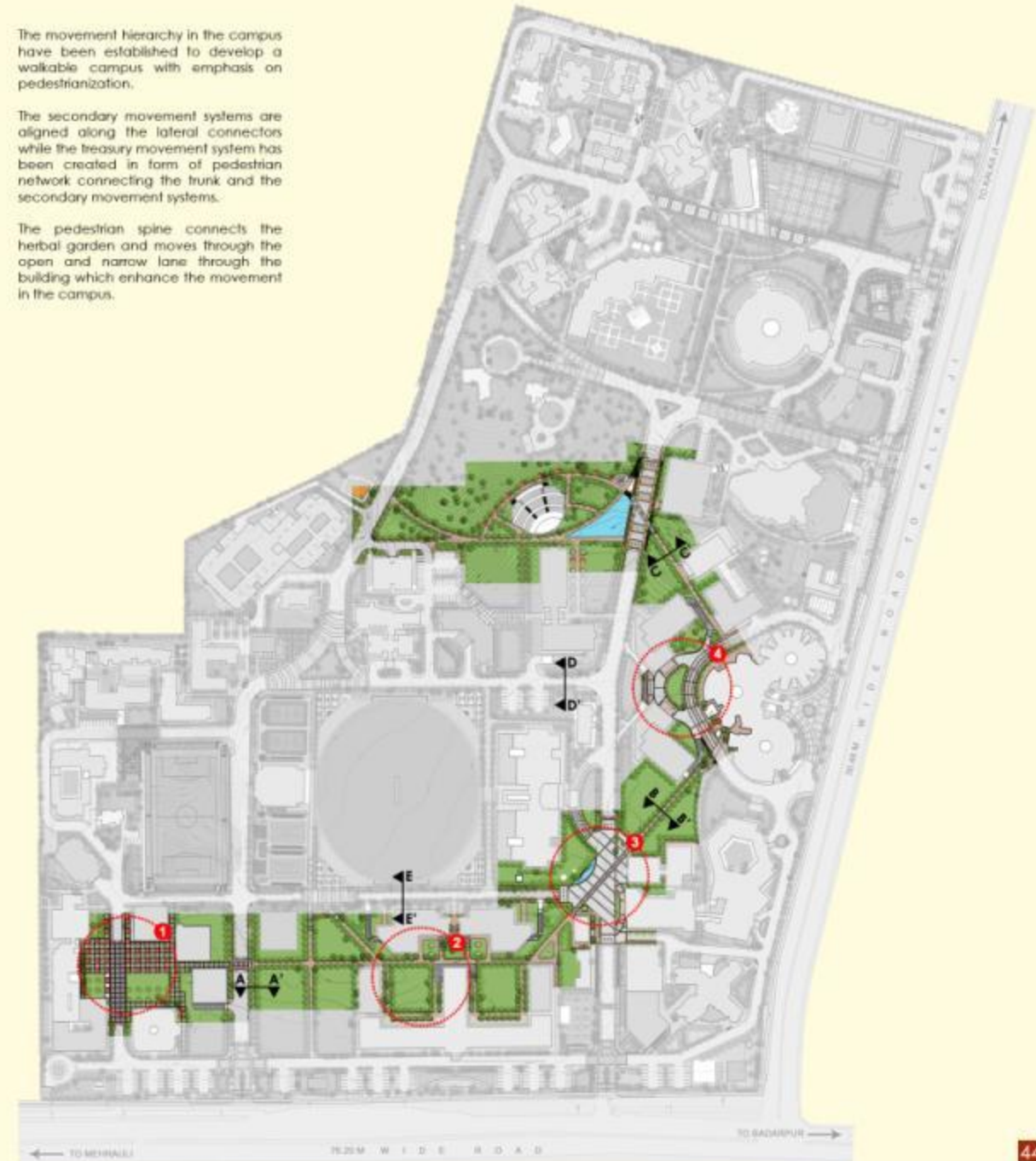
SPINE 1: THE PEDESTRIAN SPINE



The movement hierarchy in the campus have been established to develop a walkable campus with emphasis on pedestrianization.

The secondary movement systems are aligned along the lateral connectors while the treasury movement system has been created in form of pedestrian network connecting the trunk and the secondary movement systems.

The pedestrian spine connects the herbal garden and moves through the open and narrow lane through the building which enhance the movement in the campus.





E

QUAD 02 RESEARCH PRECINCT

The creation of quad is typological response to existing building profile, scale and use. The quads are enclosed spaces defined through built form and landscape which address the building and provides for the adjunct open space to meet the requirements of the surrounding building. The manifestation of the quad is overall structure in classified by intensity of activity and their scale has been articulated to address the above. The variable scale of space is key to the composition of the campus structure plan which constitutes the designed open space structure.

Research quad is perceived and designed with research building around it. The quad is provided with sitting area with trees which will offer shade and shadow to the users. The Research Plaza has abundant of green space which will add to maintain microclimate within the campus. It reduces the heat island in the campus planning process. The Plaza also connects the research buildings and the pharmacy block.

Policy: To provide building where various research work can be conducted in the campus.

Strategy: To conduct research work of various subjects at different building level but still it should be tied with some design element for building to act as one entity. The space being created by of form by this building should cater the recreational space for the researchers.

Opportunity: Availability of parcel of land next to research block which creates boundary to develop the research plaza next to this building.

Design Intent: The three different block and provide space to conduct various research work. The shape of this building is chosen to accommodate various functional zone within this building level. The bridge and skywalk connects this building at various level at the same time if required keeps the functional unit of building separate. The location of three different block creates spaces outside which becomes the plaza where various recreation can be conducted. This space can become library for intellectual discussion as it offers various sitting space.



Road has been designed with similar character with the plaza around to retain the similar character in this area.

Soft landscape has been provided for party and also to maintain green.

Narrow pathway connects the larger open area which creates interesting and also an element of surprise.

Planters with seating provides option for shading as well as sitting.



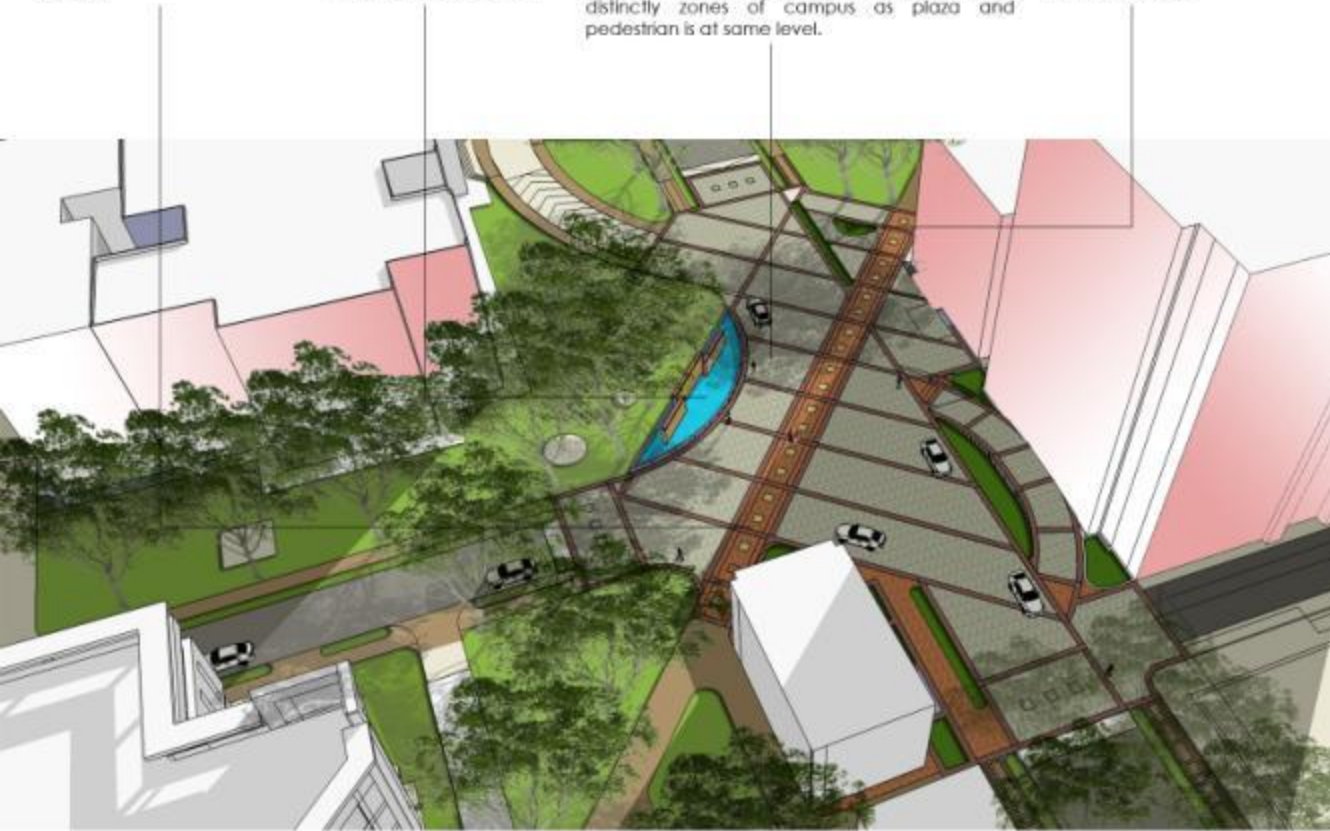
Jamia Hamdard University Masterplan

Continuity of visual axis has been emphasized by these pavers.

Water body with free standing wall structure acts as a landscape element.

Uniform level has been maintained for easy accessibility for the differently abled people who comes to the hospital and it also ties the two distinctly zones of campus as plaza and pedestrian is at same level.

Public art as enhance the visual quality of the designed space.



The plazas provide interest for the pedestrians & enhances the experience within the campus. The plazas have been designed to leave a huge impact in the memory of the students who would cherish their associations with the campus.

The material application, planting, lighting, urban furniture, universal accessibility are the ingredients of the development of these designed open spaces. The vitality of the plazas has been achieved by the use of colour through planting, public art elements and signage system.

The variable scale of space is key to the composition of the campus structure plan which constitutes the designed open space structure. The emphasis has been laid on the users of the campus & to create public space through articulation of form & space relationship; and space & space relationship.

HOSPITAL PLAZA :

This plaza which comes immediately after the main entrance gate serve the purpose of real public space in the campus.

It not only ties the space and building around it but also provides uniform flow for the pedestrian and also for the differently-abled people as the plaza continues.

Table top crossings have been proposed here for easy accessibility to the hospital for all people and to reduce the vehicular speed within the hospital area which will prevent accidents as such.



PUBLIC ART

Public Art has the power to transform communities, invigorate and energize their population, inspire passion and enthusiasm about the built environment, and engender ownership in artworks and the neighborhood at large.

Public Art has turned communities from anonymous series of spaces into rich landscapes that reflect history, embrace and honor cultural differences, teach social values, and help us to be better citizens.

Public art has the power over time to transform the image of a campus by making it more interactive and vibrant.

This always surprises and delights the citizen. Public & Community Art is most successful when it is considered from the very beginning of a development.

Public art defines our community identity, where every art reveals its unique character and the character of its owner.

Public art installations (permanent and temporary), and interactive landscapes into public spaces, with subjects and locations that engage passers-by and prompt spontaneous interaction.

An Arts strategy has been adopted that aims at creating an environment in which art activities can flourish, prosper and reach all aspects campus.

Its aims are many-fold such as raising the visible profile of Indigenous art and culture; examining regional, national and international perspectives; engaging communities and cultural development; interpreting heritage and history.

There are many ways in which art can be reflected in the fabric of a campus and its social and physical environments.

PRECEDENT IMAGES OF PUBLIC ART IN ZONE 1



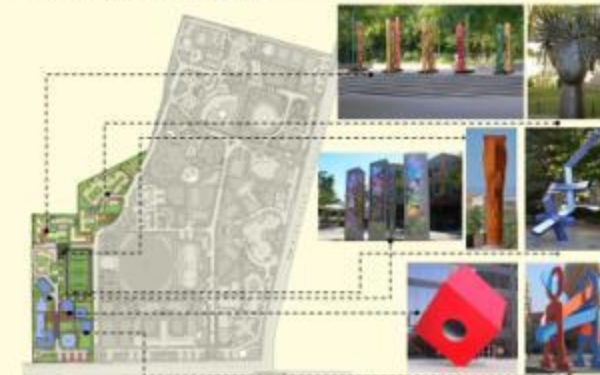
PRECEDENT IMAGES OF PUBLIC ART IN ZONE 2



PRECEDENT IMAGES OF PUBLIC ART IN ZONE 3



PRECEDENT IMAGES OF PUBLIC ART IN ZONE 4





B

SOCIAL NEED MASJID PRECINCT

Outdoor open areas has been designed as "outdoor rooms," developing a hierarchy of usable spaces that create a sense of enclosure using landscape, paving, walls, lighting, and structures. Each public space has been designed with a unique character, specific to its site and use and to accommodate a variety of artistic, social and recreational opportunities.

The Faculty of Engineering and Technology is designed to reduce the mass and to impart a human scale to the campus. It will meet the future need of the campus to develop the campus as additional technical teaching study. Building provides the place for interaction as it forms enclosure for the plaza of Masjid. This places turns into huge gathering space due to presence of Masjid near by this building. The form of shape of Engineering block has been selected such as to create enclosure and it utilizes the large parcel of land in the campus.

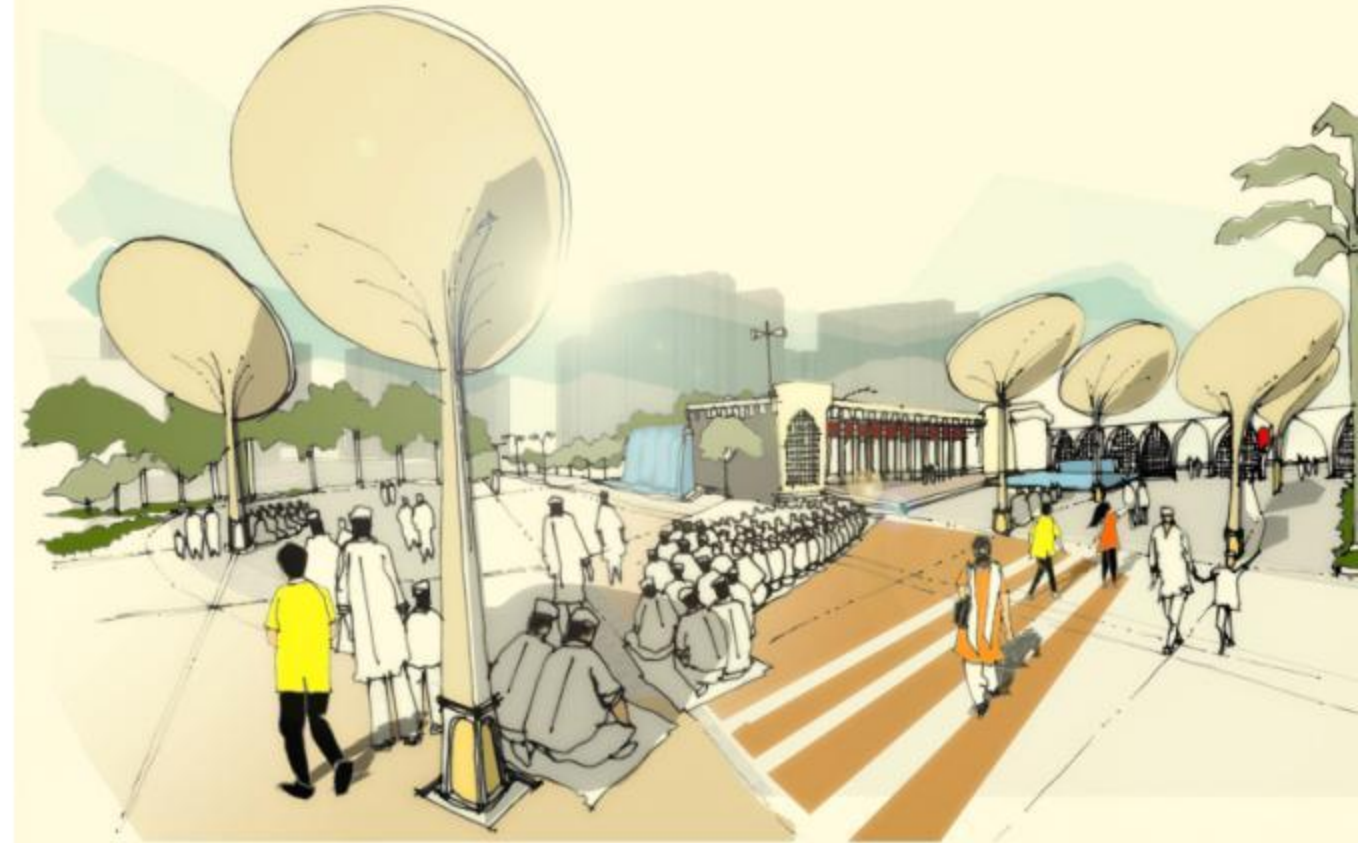
- This plaza enhances the entry to the Mosque.
- Green area is created with public art as an element of attraction and divides the two movement lines from main line.
- Planting to provide shade to visitors who come for prayers, along with defined sitting areas where they can sit during prayer time.

Policy: To create soft and organized landscape for visitors who come for the prayers at the mosque.

STRATEGY: Planting to provide shade to visitors who come for prayers with defined sitting area where they can sit during prayer time.

Opportunity: Large space available in front of the mosque and defined enclosure is for the plaza is being created by building like proposed engineering block and library at near vicinity.

Design intent: Green area is created with public art as an element of attraction and divides the two movement lines from main line. The plaza is being created which visually ties the two distinct building uses of the campus.



The table top which reduces the speed of vehicular movement helps in reducing the chances of any accident in the campus.

The plaza near the mosque enhances the entry.

Prayer area for the mosque has been designed considering the soft area with shades for comfort of the prayers



FOOTBALL GROUND:

Concept: To utilize the existing landform to preserve the natural setting of the site which will cater facility to the students of the campus. Existing site condition is major supporting element to propose the football ground in this location.

Policy: To provide facilities for male and female players

Strategy: Based on Natural landform the entry to the football ground is defined, space below the steps of football ground is being used for parking as well as the facility can be provided below it.

Opportunity: The ancillary area below the football ground is an opportunity for providing the facilities.

Design Intent:

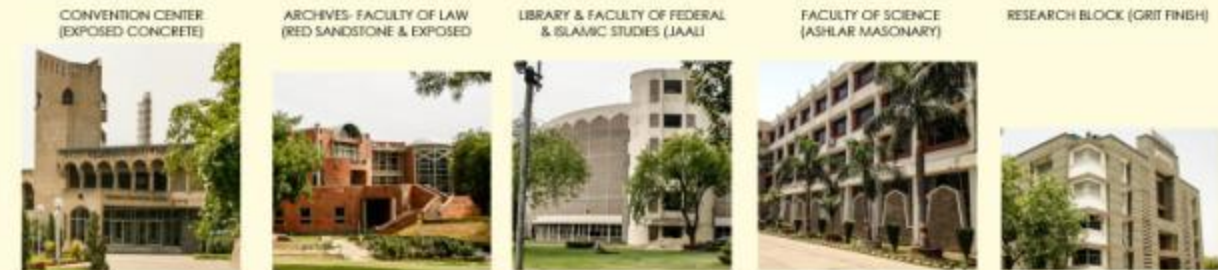
- The Concept behind developing football ground at this pocket is to utilize the natural landform which is existing in this area so that negligible intervention to the natural landform is there.
- Also, at the same time to create amenities and players' area an ancillary area below football ground has been proposed.
- Idea is to provide the students some play area near the residential complex, as well as develop the area into such a kind of stadium where state level could be organized.
- Separate area for both male and female players have been given, with proper changing rooms and restrooms.



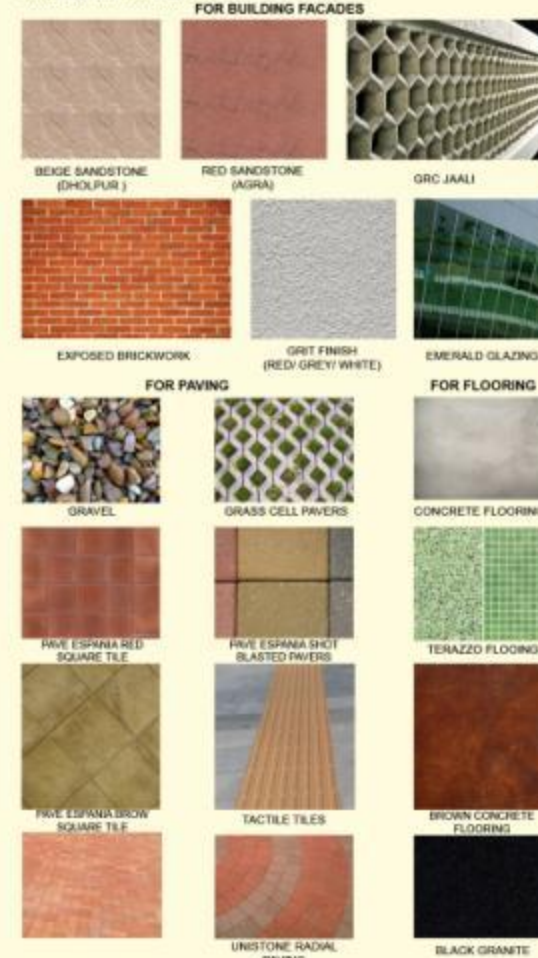
INSPIRATION & MATERIAL PALETTE



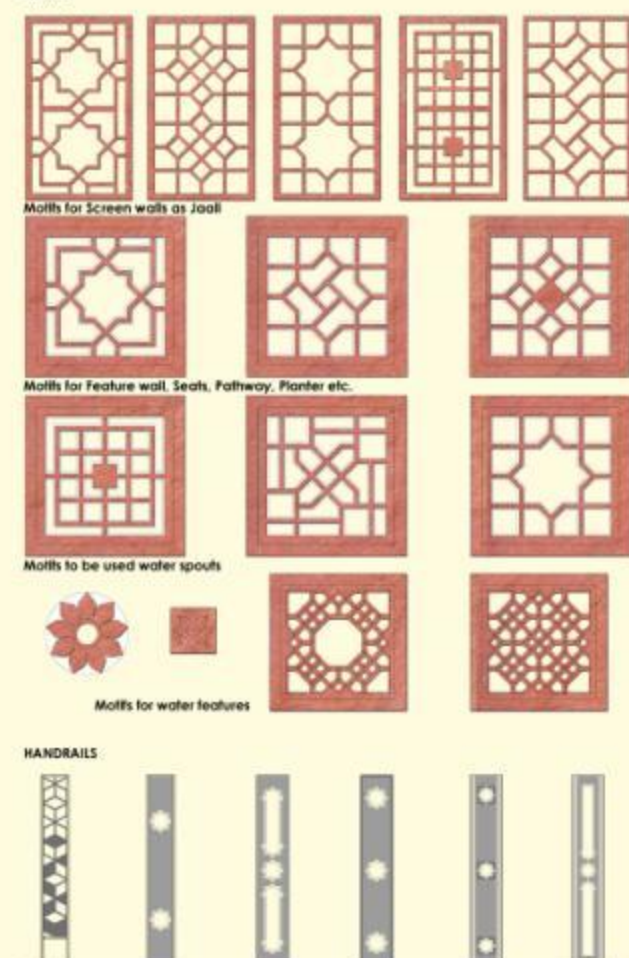
EXISTING MATERIAL PALETTE



PROPOSED MATERIAL PALETTE



MOTIFS





5.5 LANDSCAPE CONCEPT

The physical character of any campus is primarily defined by its landscapes. Places of higher education, marking the turning point in an individual's life, need to reflect the character of the learning they impart. They need to be places individuals can look up to and epitomize in their lives.

The Jamia Hamdard Campus even today seems to have been carved out by clearing the ridge woodlands as and when academic facilities were added. Most of the site is still in its naturalized woodland state. But growing demands on the campus require greater infrastructural and academic needs, needing a complete overhaul in keeping with the times.

The concepts that would reflect the ideals of the Jamia Hamdard University in shaping the landscape of its open spaces may be enlisted as under:

- Grandeur of scale
- A sense of place as an institute of higher learning setting it apart from its noisy neighborhood and yet contemporary in its approach.
- Landscapes designed on principles of sustainability and value for the existing natural resources.

VISION FOR GRANDEUR OF SCALE

The existing campus is a 90-acre site abutting the Jahanpanah forest, and consisting of large tracts of subtropical woodlands, characteristic of the Delhi Ridge type ecosystem. The buildings for the institutions and accommodation have, to date, been added without a clear layout. The entrances lack character and emphasis. The roads are narrow, directions are unclear, and the scales associated with such places of higher learning are absent. Symbolically people read such spaces as having limited vision and

limited courses for higher education.

Grand entrances leading to wide tree-lined avenues and large landscaped open spaces are envisaged, for giving the campus an impression of vastness and grandeur. Landscape spaces would incorporate plazas, squares and courtyard connected with pedestrian pathways.

A SENSE OF PLACE

The university campus sits today tied to the dense urban settings of South Delhi. The site however has changed little with the changing scenario outside. The landscape would on one hand attempt to weave the public places of the campus with the fabric of the city, at the same time careful planning would ensure the continuation of the original character of the site as a retreat for the scholars.

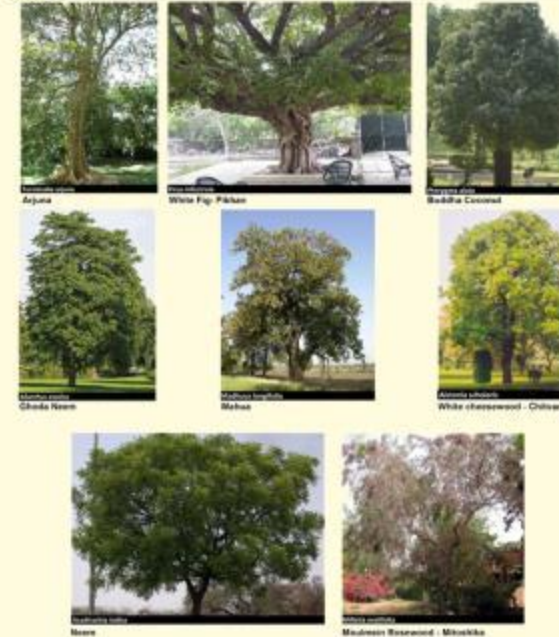
LANDSCAPE SUSTAINABILITY

The landscape programme would aim at creating a richer, more ecologically responsive landscape by adopting techniques such as rainwater harvesting, preserving existing trees, maintaining naturalized areas, preserving topsoil and climate responsive site planning. The idea is to preserve the essential character of the site while accommodating more academic facilities.

VISION FOR THE PROJECTS

- 1) Support the educational mission, values and purpose of college develop an program in general conformance with the campus material palm.
- 2) Incorporate visionary thinkup with regard to sustainability, accessibility, security, maintainability, and information-technology
- 3) Develop fiscally responsible plan.

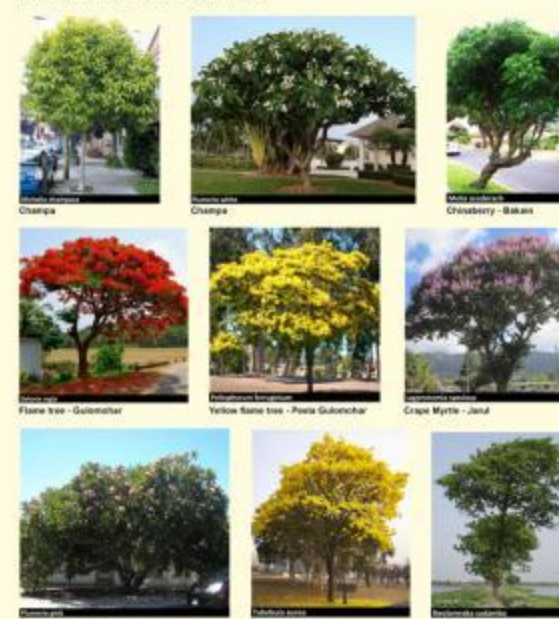
AVENUE TREES



INSTITUTIONAL AREA



RESIDENTIAL AREA/ INTERNAL COURTYARDS



PEDESTRIAN PATHS



BOUNDARY PLANTING



CONSERVATION AREA



Preserve Green Space:

- Wherever possible, retain existing vegetation areas on campus.
- Build on any barren lands before developing on green spaces, such as grass or forest.
- Forests sequester carbon dioxide from the atmosphere and often contribute to maintain the local ecosystem.
- Fields and forests also of fuel solar radiation, unlike black tops which tend to increase local temperatures.
- Open fields and forests on college campuses to act as recreational spaces and living laboratories.

The green network seen as an entity which binds the whole environment of the campus in a singular manner.

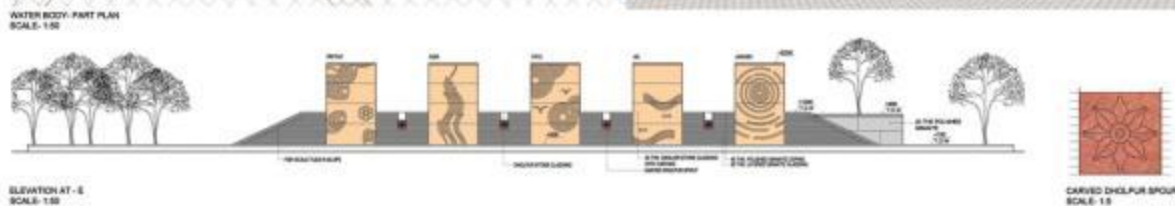


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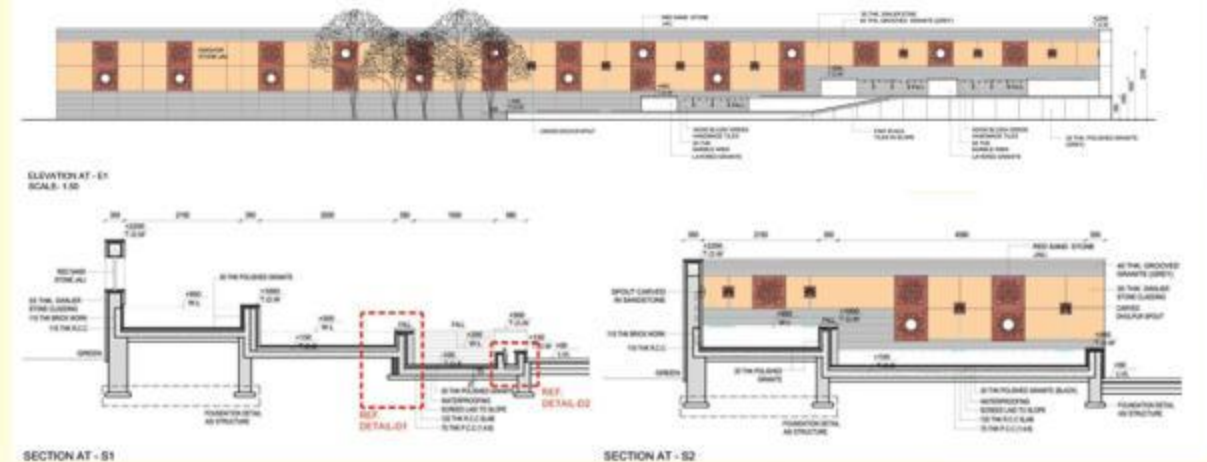
The overall idea for the landscape is to give one single identification to the campus. In present condition the all the building block are have own identification from different architects so now landscape is the beautiful medium to stich the overall campus in single unit with the help of planting, circulation, focal points/ plazas & some water features. Integration of open spaces by adopting ISLAMIC CHARACTER as a theme for landscape design to the counter built mass.

- The first is a holistic approach to landscape understanding, integrating abiotic, biotic and Cultural landscape components.
- The second is a dynamic approach in which landscape is investigated along two continuums: a spatial one, i.e. movement between a larger scale and a local one; and a temporal one representing the evolutionary historical development of the Landscape.





- The third is ecological landscape design's responsiveness to the constraints and Opportunities of context whether natural, cultural or a combination of both. Responsiveness also dictates an anticipatory approach that considers the impact of the design on existing Ecosystems and resources.
- Finally, ecological landscape design is intuitive, encompassing not only the rationality of the outer world but also the neglected 'intangible relationships' of the inner world. This intuitive approach embraces a new definition of creativity that departs from the formal, i.e. object-centered, appearance-oriented aesthetics to a phenomenological participatory aesthetics where the emphasis is on the totality of human experience of the object.
- Integration of internal and external space along with the climate responsive campus planning , stressing the exchange between spaces since campus does not only fulfill the knowledge imparting function, but also cultivate living environment for all around development. Clarity in circulation system is very important factor for campus design.
- Different zones are created in these potential open spaces based on the activity pattern and functional requirements offering variety of experiences along the journey by providing appropriate visual focus.
- Informal seating space that would be conducive to bringing learning out of the classroom and outside as well as provide many different possibilities for play, entertainment and rest, allows people from various disciplines to interact and share knowledge during breaks and lunch time.



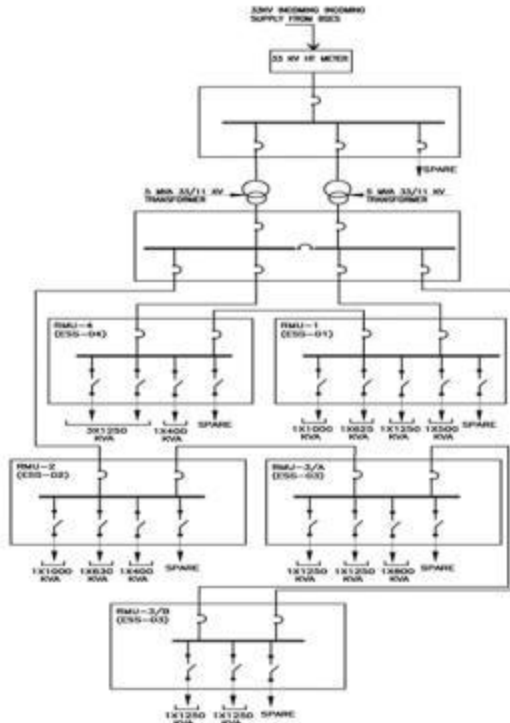
SUSTAINABLE LANDSCAPE

Modifying microclimate through energy efficient
 enviroscaping. Use of native and naturalized plant
 species, Planting trees for the purpose of providing
 shade, which reduces cooling costs, Water body,
 Reducing the heat island effect with pervious
 paving. High albedo paving, shade, and minimizing
 paved areas, Site lighting with high efficiency fixtures
 with LED lamps & solar panels, Rain water harvesting,
 Rain garden/swale.



SYSTEM PROPOSED FOR 33KV SYSTEM(NON RESIDENTIAL LOADS)

THE SKETCH BELOW SHOWS THE POWER DISTRIBUTION SCHEME FOR REDEVELOPMENT OF ELECTRICAL INFRA LEVEL WORK.



5.6 CAMPUS INFRASTRUCTURE

5.6 a) ELECTRICAL SYSTEM

Policy:

1. In order to conserve the electrical energy, The university needs to adopt the following measures as a part of their policies:

- Annual Power / Energy audit needs to be conducted every year to know the power quality of the prevailing network and to identify the energy consumption pattern.
- Solar PV On-grid system checks and maintenance on regular basis.
- To maintain suitable inventory for LED light fixtures and occupancy sensors.

2. Regular checks and maintenance of complete power and extra low voltage network.

3. For all residential units LT meters shall be allotted to residents for each quarter / flat / residence / Hostel, wherein individuals shall be responsible and payee for their own electrical energy consumption.

4. Although system components will be automatic upto minimum required level in terms of its operation and functioning however to attend a fault and proper monitoring of system, it is proposed that all the substation shall be manned substation.

STRATEGY:

a. Energy conservation measure:

Based on the below mentioned points, energy conservation measure can be achieved :

1. On Grid Solar PV System

A grid-connected photovoltaic power system is an electricity generating solar PV system that is connected to the utility grid. A grid-connected PV system consists of solar panels, one or several inverters, a power conditioning unit and grid connection equipment. Considering On grid solar system, we can utilize maximum power at day time and when excess happen, it will be returned to grid power at 11 kV.

2. Sub Metering

Sub metering is the installation of metering devices with the ability to measure energy usage after the primary utility meter. Sub metering offers the ability to monitor energy usage for individual tenants, departments, pieces of equipment or other loads individually to account for their actual energy usage.

3. Automatic Power factor correction

The Automatic Power factor Correction is a very useful for improving efficient transmission of active power. If the load is inductive, then the power factor lags, when the power factor goes below 0.97(lag) then the Electric supply company charge penalty to the consumer. So it is essential to maintain the Power factor below with in a limit. Automatic Power factor correction device reads the power factor from line voltage and line current, calculating the compensation requirement switch on different capacitor banks.

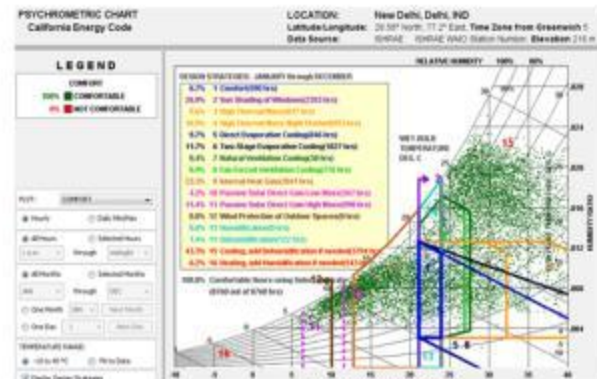
4. LED Lighting

Based on the LED lights technology, energy conservation can be achieved. As LED lights consume less power and provide maximum lumen output.

5. Occupancy Sensors

An occupancy sensor is a lighting or heating control device that detects occupancy of a space by people and turns the lights on or off automatically, using infrared, ultrasonic, microwave, or other technology. Occupancy sensors are typically used to save energy, provide automatic control, and comply with building codes.

PSYCHROMETRIC CHART



6. Stand alone Solar Lights

Solar street lights are raised light sources which are powered by photovoltaic panels generally mounted on the lighting structure or integrated in the pole itself. The photovoltaic panels charge a rechargeable battery, which powers a fluorescent or LED lamp during the night. solar panels turn on and turn off automatically by sensing outdoor light using a lux sensor.

B. METERING :

Based on the type of building and tariff scheme, metering is done through

1. 33 KV METER

33 kV connection is proposed for academic/Hospital/amenities building since the tariff plan for residential and commercial uses are different. 33 kV connection feeds all non residential loads and metering shall be done on a single point at 33 kV level.

2. 11 KV CONNECTION FOR LT METERING

11 kV connection is proposed for all residential building. Power supply shall be received at 11 kV through underground cables. After each 11 kV substation power shall be distributed to each building through feeder pillars and through feeder pillars, LT cable shall connect to LT meters to each individuals located at ground level

C. TO USE THE EXISTING SYSTEM/NETWORK :

1. To use the existing system/Network wherever possible and utilize the healthy components of existing system for proposed buildings.

D. MODIFICATIONS/NEWLY PROPOSED NETWORK :

1. To Replace the old aged electrical component of the system network with new once as per latest technology available in the market.

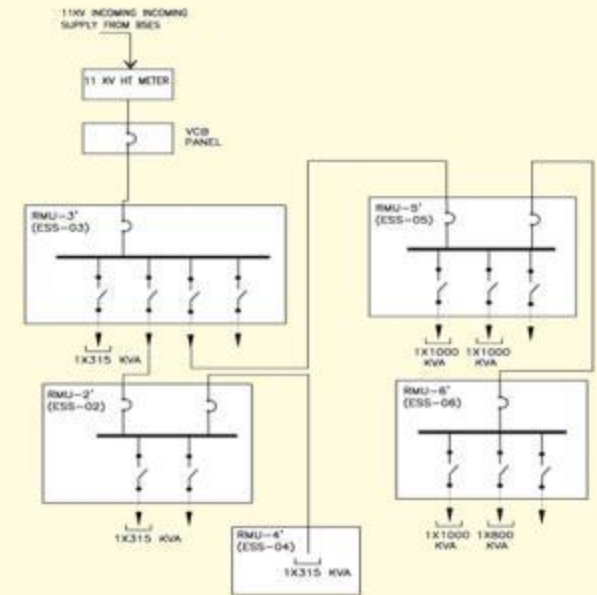
2. To make necessary provisions for extra voltage routing at infra level excluding the s y s t e m component but including piping excavation and other civil works.

UPS SYSTEM

We propose to have UPS backup for certain critical loads inside Main Receiving Station those required uninterrupted power supply. It is proposed to have a 1x7.5 kVA UPS for the critical load. The UPS shall feed emergency lighting, fire alarm panel, maintenance plug point, and auxiliary for substation equipments those required uninterrupted power supply. The UPS shall be IGBT based 3 Phase input 3 phase output type with isolation transformer (preferably inbuilt). The minimum permissible THD (Total harmonic distortion) level shall not exceed 3%. The UPS must also have a feature of audible alarm in case of battery mode, Low battery, Overload and faults. The UPS must also have LED indicators for Load level / Battery level, Battery, Utility Power, Inverter, Bypass, Overload, and Faults.

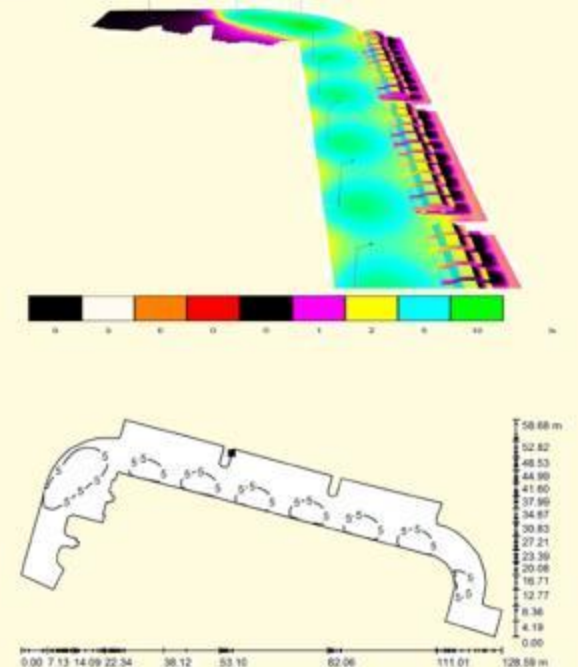
SYSTEM PROPOSED FOR 11KV SYSTEM(RESIDENTIAL LOADS)

THE SKETCH BELOW SHOWS THE POWER DISTRIBUTION SCHEME FOR REDEVELOPMENT OF ELECTRICAL INFRA LEVEL WORK



EXTERNAL LIGHTING DESIGN

THE DIALUX SIMULATION REPORT HAVE BEEN GENERATED FOR A TYPICAL 10.2 METER WIDE ROAD. THE AVERAGE ACHIEVED LUX IS 5-10 LUX CONSIDERING 40 WATT LED FIXTURE MOUNTED ON THE 7 METER LONG POLE. THE FIXTURE SHALL HAVE IP 67 PROTECTION, POWDER COATED DICAST ALUMINIUM MOUNTED ON THE 7 METER HIGH POLE.





D

QUAD 01 ACADEMICS PRECINCT

The exterior space of the campus landscape is beautiful, few places are designed and furnished to be conducive to social interaction and even fewer have any sort of visual link to the activity within the buildings around them. This is a special dilemma for the growing numbers of students, faculty and staff who use the campus at night, after dark, exterior space unlit and unobserved by active interior spaces are perceived as unsafe. Because research and interaction today are increasingly team based and multidisciplinary, the campus must be re-envisioned to foster the interaction and information-sharing this new community demands. Leading edge companies in biotechnology, information technology and creative service understand the value of places of interaction and design for them as a matter of course: they are just as crucial to the work of the university.

Policy: To provide new block this can provide space to meet for future demand for increasing number of faculty. To tie the existing immediate building and create interesting space around it.

Strategy: Basement facility be accommodated to meet the parking need. To tie this building with immediate contextual building to create public space in this campus as series of network.

Opportunity: The location of building comes next to the existing administrative building which makes this linear building to come in harmony next to existing building. The shape of this building creates public space to come in between two building which is interesting component.

Design Intent: The linear shape to this building which allows natural light and ventilation in all parts of this building. The building are designed in two separate block but still being tied through bridge to make the space looks more interesting at the same time it establish connectivity in the building level. The underpass below it connects the two different spaces and adds porosity in the movement structure of campus. The building is supported with basement facility to meet the demand of parking in future keeping it separate for entry and exit point. The orientation of building is taken reference from the existing building and yet with material selection for this building, makes it modern in expression.



- Make spaces conducive to creative interaction a priority in new capital investment.

- Create 'places of interaction' at key nodes of campus activity.

- Enhance the role of the library as an intellectual commons.

- Site and design interior and exterior common spaces to create a true 24-hour campus.



Storage capacity of one day requirement planned for underground reservoir and half day planned for overhead reservoir. Planning done considering existing tanks as resource and same area proposed for expansion as per detailed layout,

Domestic water supply: Water sourced from the tube well shall be passed through basic water treatment plant comprising of multi grade filters and activated carbon filters. Further specialized treatment, may be provided based on the source water analysis report. Water shall be used for domestic usage in toilets (wash basin), Kitchen, water body, filter back wash and other areas where direct human contact/ use are envisaged.

Irrigation water Supply: Irrigation requirement for the project shall be sourced from in house sewage treatment Plant and shall have acceptable parameters as per the governing authority. The Planning of Underground tanks and Sewage Treatment Plant shall be built in phases in such a way that the part for next stage shall be built in continuation to the existing service.

Water metering at Municipal/Borewell supply, treated water supply, irrigation water supply. Sewage / Effluent Treatment Plant comprising of preliminary, biological and tertiary treatment for recycling of the effluent. The treated effluent shall be used for gardening / irrigation purpose.

WATER SUPPLY COLLECTION AND DISTRIBUTION SYSTEM

The water supply system is designed to provide reliable service, easy maintenance of system and most hygienic conditions:

Source of fresh water supply is from the Bore well. Overflow from fire water tank to raw water tank. Filter feed pump supply to filtration system and then to treated water storage tank. Transfer system to overhead tank. Overhead tank supply via gravity.

Sl.No.	Description	Area Considered in SQM.	Runoff Coefficient	Average Annual Rainfall (mm)	Total Volume of water available for RWH (cum/year)	Design hourly Intensity of Rainfall (mm/hr.)	VOLUME OF RWH PIT DETENTION TANK REQUIRED FOR 15 MIN CAPACITY
1	ROOF TOP WATER	68381.01	0.9	700	43080.04	30	461.57
2	PAVED SURFACES, ROADS AND OTHER BUILT UP AREAS	106145.7	0.7	700	52011.38	30	557.26
3	LAWNS, GARDEN AND OTHER GREEN SPACES	191850.5	0.25	700	33573.84	30	359.72
	TOTAL	366377.2			128665.26		1378.56

IRRIGATION WATER DEMAND

Green Area (sqm.)		191850
Month	Water Demand per Its./Sqm.	Water Demand LPD
January	6	1151100
February	6	1151100
March	6	1151100
April	6	1151100
May	6	1151100
June	6	1151100
July	6	1151100
August	6	1151100
September	6	1151100
October	6	1151100
November	6	1151100
December	6	1151100

RAIN WATER HARVESTING

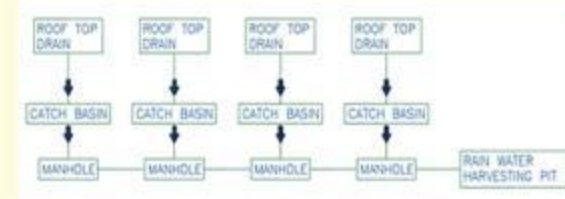
SCHEME:

Taking in to consideration the intensity of rainfall in the last 10 years, which is considered as 30 mm /hr., an effective scheme for rainwater disposal has been designed. The run-off rainwater from roof of each building will be drained out effectively by providing sufficient no. of rainwater outlets / khurras and heavy duty / gauge PVC down take pipes designed to handle the intensity / flow of rainwater.

These rain water pipes are located along the periphery of the building. These pipes are routed with necessary slope and dropped vertically down to GL. The rain water pipes finally will be conveyed to the storm water drain at ground level through pipes of suitable diameter with network of storm water catch basin of suitable size located at appropriate place with RCC Hume pipe of NP2 class.

TYPES AND METHODS OF HARVESTING:

Recharging of the ground water by percolation pits, running alongside the drain and the storm water collected from the terraces of the buildings shall be diverted to the external storm water drain.



LAND SCAPE IRRIGATION

The source of water distribution for irrigation is from STP recycled water collection tank.

The water from STP will be used for Irrigation and HVAC purposes.

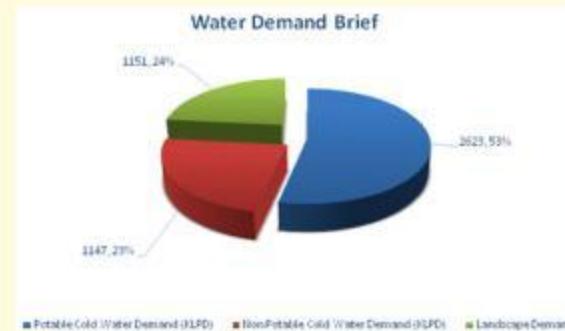
A separate ring main for the network of pipes shall be provided connecting all green scape trees, shrubs and all kinds of foliage planned by the landscape architect.

A comprehensive system will be worked out based on the landscaping consultant requirement.

IRRIGATION WATER SYSTEM

Water Requirement Zone wise:

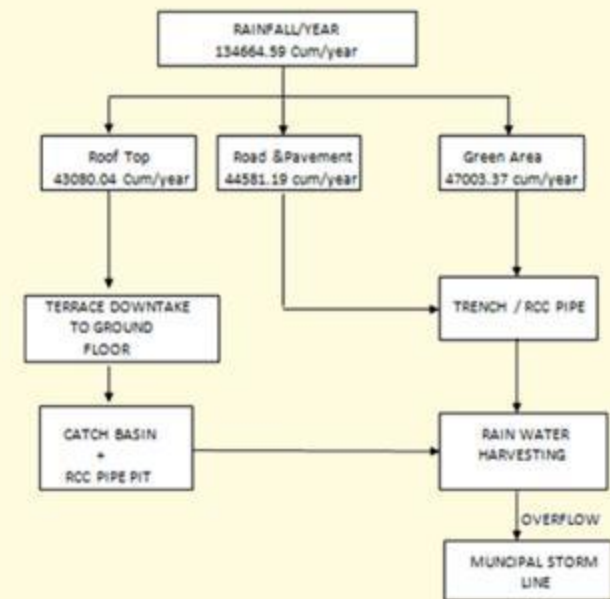
Description	Green area	Water Requirement LPD per Sq. Mtr.	Water Requirement KLPD
Zone-A	= 140322	6	841952
Zone-B	= 32234	6	193406
Zone-C	= 19295	6	115769
TOTAL	191851.2		1151107



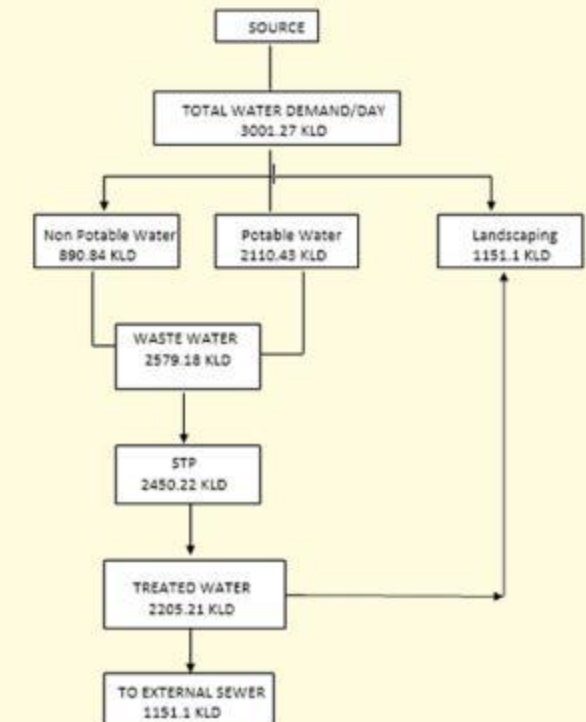
RAINWATER MANAGEMENT

The average rainfall is approx 700 mm per year and the available data from IMD site is enclosed on next page. The design hourly rainfall is 30 mm/hour and the rainwater harvesting tanks shall be planned accordingly. Adequate provisions in landscape design to provide rain gardens, swales shall be done to retain precipitation to the maximum extent. The rainwater harvesting calculations are tabulated below:

STORM DRAINAGE AND DISPOSAL SYSTEM



WATER MANAGEMENT PLAN



5.6 C) FIRE FIGHTING

Policy

To ensure essential fire safety procedures following shall be taken into consideration:

Fire drills should be planned in every quarter to aware people living in campus about fire safety.

All exit routes should be indicated by signage.

Fire triangle should be demonstrated to all residents, students to make people aware about all components of fire

Fire Extinguisher signage and use should be indicated in all hazardous area

Precautions from hazardous and highly inflammable substances should be indicated and properly demonstrated in all the areas.

Safety data sheet should be located in all hazardous storage area

Fire Fighting extinguishers should be replaced/refill as per operations and maintenance schedule

STRATEGY

As per the classification of buildings as per the NBC 2005, IS 3844, IS 15105 and IS 9668 the buildings are classified into Four classes namely Residential, Educational, Institutional and assembly.

Residential building without Basement is classified as Low Hazard and with basement of area more than 200 sq. mtr. and used for car parking is classified as Moderate Hazard, which need to be sprinklered in basement as per NBC.

Requirement for internal hydrant, sprinkler system and external hydrant for Educational, Institutional and assembly building shall be as per NBC 2005.

The storage tank for buildings requiring sprinkler shall be provided with under ground storage tank of 200 KL as per IS 15105 which states that for moderate hazard storage capacity equivalent to 2 hour pumping capacity or 200KL whichever is greater.

The overall storage capacity shall be in compliance with IS 9668 which states that water for fighting shall be provided at the scale of 1800-l/min for every 50 000 population or part thereof for towns up to 3 lacs population and an additional 1800 l/min for every 1 lac population of more than 3 lacs. The requirement should be on the basis of 2 hours duration.

In-addition to the population criteria, it should be ensured that sufficient water at the above scale is made available within every 1 km" area of the city/town and it should be ensured that it is equitably distributed. In the case of smaller towns with population of 1 lac and below the total requirements should be doubled.

DESIGN CONCEPT

The firefighting arrangement shall be designed as per the requirement of local guidelines, NFPA & engineering design standard.

The entire fire safety installation shall be compliant with the most stringent codes/standard for the

entire block to ensure the highest safety standard and uniformity of system. Further, before property is opened to public, the fire protection shall be fully operated and tested under simulated conditions to demonstrate compliance with the most stringent standards, codes and guidelines.

- Piping System : Piping system confirming to IS:1239 – MS Heavy Class
- Fire water static Storage : Fire water static storage has been provided in Accordance to NBC requirement.
- Fire Pumping system : Pumping system comprising of independent pumps for hydrant, stand by diesel & jockey application has been provided.
- Hydrant system : External & internal hydrant complete with hose reel.
- Hand held fire extinguishers ; Strategically placed at designated areas.

SYSTEM DESCRIPTION:

1. FIRE WATER STORAGE -

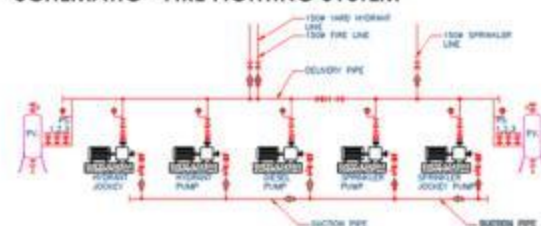
Static fire water storage tank for Fire Protection System has been provided at underground level of 200 cum capacity each at multiple location. The requirement has been achieved as per requirement of IS 3844, IS 15105, IS 9668 and NBC-2005.

Moreover the existing overhead tank shall be utilized as standalone fire water reserve.

Fire department connection, tanker inlet connection and draw-out shall also be Provided at each tank along for fire tender requirement. These shall comprise of 4 Nos. 63mmdia male outlets capable of directly feeding the ring mains through

Non return valves or directly filling the static fire storage tanks. These shall be Mounted in specially identified boxes.

SCHEMATIC - FIRE FIGHTING SYSTEM



2. FIRE PUMPING SYSTEM

The fire pumping system shall comprise of independent electrical pumps for hydrant, diesel engine driven pump & jockey pump for hydrant system at each UGT level.

Electrical pump shall provide adequate flow for catering requirement of hydrant system. Diesel engine driven fire pumps shall be provided for ensuring operation & performance of the system in case of total

electrical power failure. Jockey pumps shall compensate for pressure drop and line leakage in the hydrant installation.

Individual suction lines shall be drawn from the fire reserve tanks at the basement level and connected to independent fire suction header. The electric fire pumps, this suction header.

Delivery lines from various pumps shall also be connected to a common header in order to ensure that maximum standby capacity is available. The sprinkler pump(to be installed in the future) shall be isolated from the main discharge header by a non-return valve so that the hydrant pump can also act as standby for the sprinkler system, for this application dead plug in the header shall be kept to meet future requirement. The ring main shall remain pressurized at all times and Jockey pumps shall make up minor line losses. Automation required to make the system fully functional shall be provided.

3. FIRE HYDRANT SYSTEM

Internal and external stand pipe fire hydrant system shall be provided with landing valve, hose reel, first aid hose reels, complete with instantaneous pattern short gunmetal pipe in the block.

The internal diameter of inlet connection shall be atleast 80/100mm. The outlet shall be of instant spring lock type gunmetal ferrule coupling of 63 mm dia for connecting to hose pipe. Recessed cupboard/fire hydrant cabinet shall be strategically located for firefighting requirement. Location of cabinets shall be accessed as per comport mentioned plan in consultation with the Architect. Provision of fireman's axe shall be made for internal hydrant.

External hydrant shall be located within 2m to 15m from the building to be protected such that they are accessible and may not be damaged by vehicle movement. A spacing of about 30 m between hydrants for the building shall be adopted.

5.6 d) TECHNOLOGY INTEGRATION

The campus master plan proposes high end technical integration at the campus level, through a integrated security system solution including the management of campus services through a resource management suite integrated on a high platform which are integrated with the building management system in all the buildings. Every building would have its own building management system which would be connected to the main IT hub supported by a central control and monitoring system.

The IT infrastructure of the campus has been created with one main data center (ERP) in the Admin block connected to the secondary data center in the library building through a 10 GB fiber optics network. The various building are provided with routers to make the entire campus WIFI enabled. The main data center will facilitate the internet solution for the university which will also support the university information and management system. This system would enable students and staff to access all the information online including a payment gateway for the staff and students.

IT CABLE ROUTE

— outside OFC route
— inside Building OFC Route



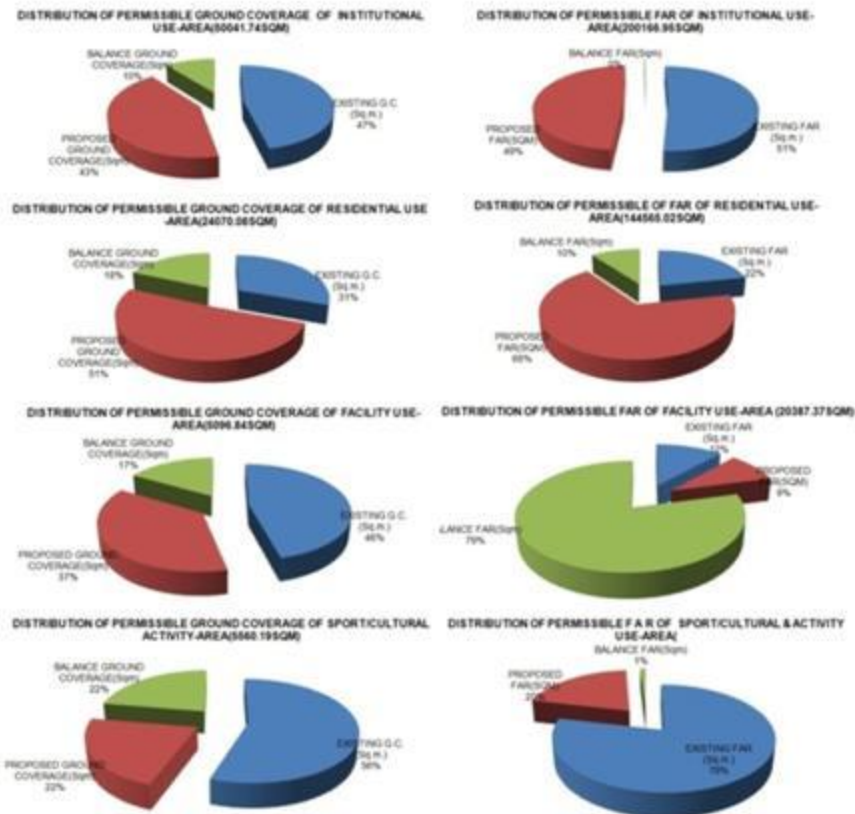
Each building would have its own set of switches and data run which would be connected to the main data center. It is further proposed to create a separate cloud space for the university.

INTEGRATED SECURITY SYSTEM:

The entry to the campus will be provided with boom barriers / flag barriers and central central system duly supported by RFID readers integrated with the entire academic community which will provide access into the campus and also the buildings. The entire network would be supported by the IT infrastructure of the campus. The periphery of the campus will be provided by PTZ cameras while every building shall have IR cameras along with the integrated system in all high end facilities of the university. The fire alarm system shall also be integrated on the common integrating software which would bring the entire security system on a common platform duly monitored through the central monitoring station, which would also connect and disseminate information to all the key officials and the security in charge on the smart phones. The officials will also be able to monitor the information through their smart phone via an app.

SMART CLASS ROOMS:

The university has created a smart classroom cluster of various capacity duly supported by AV and IT network, similar facilities will be extended to each department along with video conferencing facilities. The content management from the smart classroom will be done through content management software and the lecture will be archived and also made available to the student through the intra net facility.



5.7 AREA PROGRAMMING & COST DRIVERS

The Campus Redevelopment Plan for the Jamia Hamdard University

PROJECT COST DRIVERS:

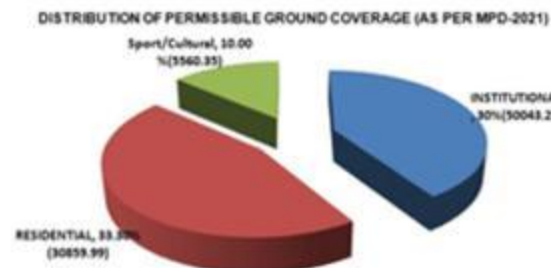
1. Benchmark Study

2. Key Cost Drivers

- Type of facility (Complexity - Role Delineation)
- Type of Department - Functional Unit
- Building Configuration - Footprint, No. of Floors
- Type of Work - New Building / Upgradation

3. Other Cost Drivers

- Locality of Site
- Timing of Project
- Architectural & Engineering Detailing
- Project Procedures
- Project Management
- Standards & Quality of Materials & Equipment
- Procurement Method
- Implementation Strategies



1. SCOPE CHANGE AND VARIATION ASSESSMENT
2. NEGOTIATIONS WITH CONTRACTORS
3. SAFEGUARDING INTERESTS OF THE UNIVERSITY
4. PROGRESS PAYMENT ASSESSMENT
5. REGULAR PROJECT FINANCIAL STATUS REPORTING
6. HIGHER LEVELS OF FINANCIAL CONTROL
7. REPORTING EARLY WARNING OF ADVERSE TRENDS

TOTAL AREA SUMMARY FOR CAMPUS

	Area sqm	FAR (Sq.m)	Area(%)
Total Existing Ground Coverage Area	43595.57		51.43%
Total Area Under Demolition	5249.11		6.19%
Balance Ground Coverage After Demolition	38346.46		45.24%
Total Proposed Area as per CMP	36058.72		42.54%
Total Ground Coverage	74405.18		87.77%
Balance Ground Coverage for future expansion	10363.67		12.23%
Existing FAR		146517.54	39.23%
Proposed FAR		199625.85	53.45%
Total FAR OF Campus as per CMP		346143.39	92.69%
Balance F.A.R For Future Expansion		27916.24	7.31%
Net Development Potential @65% Efficiency		224993.204	50.58%

CAMPUS LAND USE	PERM. LAND DISTRIBUTION (%) as per MPD-2021	SITE AREA DISTRIBUTION			PERM. GROUND COVERAGE (%)	PERM. F.A.R.	PERM. FAR (SQM)	EXISTING AREA (AFTER DEMOLITION) (SQM)				PROPOSED AREA (SQM)			
		ACRE	HECTARE	SQM				EXISTING G.C (Sq.M.)	EXISTING G.C (%)	EXISTING FAR (Sq.m.)	EXISTING FAR (%)	PROPOSED GROUND COVERAGE (Sq.m.)	PROPOSED GROUND COVERAGE (%)	PROPOSED FAR(SQM)	PROPOSED FAR (%)
1-INSTITUTIONAL	45	43.25	16.66	166810.74	50%	1.2	200366.95	28152.78	15.08%	104566.65	52.14%	20992.94	12.15%	10754.96	47.84%
2-RESIDENTIAL	25	22.98	9.25	92683.88	33%	2	184952.34	11101.18	21.70%	15990.36	31.19%	14011.55	29.14%	10300.63	88.30%
3-RESIDENTIAL SUB-FACILITY	19.8	17.89	7.23	72362.508	33.30%	2	144565.82	7561.88	18.18%	55001.10	22.61%	12478.34	17.40%	10009.05	49.63%
4-SPORT/CULTURAL ACTIVITY	15	5.04	2.04	20387.374	14.00%	1	20387.37	7287.7	13.88%	7697.7	18.21%	1437.61	7.09%	1437.61	7.09%
5-OPEN AREA	15	13.74	5.56	55603.95	10.00%	0.15	8340.29	3084.88	6.89%	6500.05	78.65%	1454.54	8.61%	1780.26	31.18%
GRAND TOTAL AREA(%)	100	95.00	37.07	370679.93			373499.63	66566.88	45.24%	146517.54	92.27%	50058.72	42.54%	199625.85	93.48%

DEVELOPMENT POTENTIAL - JAMIA HAMDARD UNIVERSITY , NEW DELHI					
TOTAL SITE AREA (Sq.M.)			370679.93		91.6 Acres
GROUND COVERAGE (Sq.M.)	30%		111203.96		37.08 HACT
PERMISSIBLE F.A.R.	1.2				
TOTAL BUILT UP AREA			44815.44		

SUMMARY OF PARKING							
FOR MAXIMUM PERMISSIBLE FLOOR SPACE	Area(Sqm)	REQUIRED TOTAL NO. OF PARKING	PARKING AREA PROVIDED (EXISTING+PROPOSED)	CAR PARKING PROVIDED			
				ALL BASEMENT (200000 CAR)	ONLY 200000 CAR	AUTOMATED MULTILEVEL (200000 CAR)	SURFACE PARKING(200000 CAR)
Total Institutional Area (21.3300% OF Site)	79612.64	240	3702.45	2344			858
Total Residential Area (22.9800% OF Site)	112191.08	240	9872.34	2400	415	204	1113
Total Cultural & Sports Area (21.3300% OF Site)	6140.74	110	744.08		26		47
	30000.00	240	40179.88	4475	445	204	864

TOTAL AREA (EXISTING+PROPOSED) SQM									
TOTAL GROUND COVERAGE (sqm)	TOTAL GROUND COVERAGE (%)	TOTAL FAR (sqm)	TOTAL FAR (%)	BALANCE GROUND COVERAGE CONTRA (sqm)	BALANCE GROUND COVERAGE CONTRA (%)	BALANCE FAR CONTRA (sqm)	BALANCE FAR CONTRA (%)	BALANCE GROUND COVERAGE CONTRA (sqm)	BALANCE FAR CONTRA (%)
43742.36	27.45%	340021.61	99.99%	6296.56	8.50%	41.24	0.00%		
38346.46	50.80%	175801.5	113.40%	5946.6	16.14%	27916.24	86.42%		
10000.45	27.89%	111111.11	92.20%	4139.05	17.16%	11111.11	9.50%		
4336.10	23.90%	8700.51	21.30%	999.15	17.98%	10007.05	26.70%		
4719.06	8.20%	8340.29	100.00%	3002.15	11.11%	4	0.00%		
14409.18	87.77%	146517.54	77.82%	30053.07	13.29%	17810.14	7.11%		

OPEN AREA DISTRIBUTION		AREA(Sqm)	AREA (%)
TOTAL SITE AREA		370679.93	
TOTAL ROAD AREA		17810.14	4.81%
TOTAL PARKED AREA - PARKWAY		34075.4	9.20%



5.6B) SUSTAINABILITY & INFRASTRUCTURE

Adopting the five 'R' philosophy of sustainable development
Refuse – materials, technologies, products, etc. Specially in areas where local substitutes/equivalents are available

Reduce – the dependence on high energy products, systems, processes, etc.

Reuse – materials, products, traditional technologies, so as to reduce the costs incurred in designing buildings as well as in operating them.

Materials generated from campus during construction can be stored and reuse for various purpose which will make the campus zero-discharge campus

Recycle – all possible wastes generated from the building site, during construction, operation and demolition

Reinvent – engineering systems, designs, and practices such that India creates global examples that the world can follow rather than us following international examples

ENERGY EFFICIENCY

01. Energy Efficient Lighting

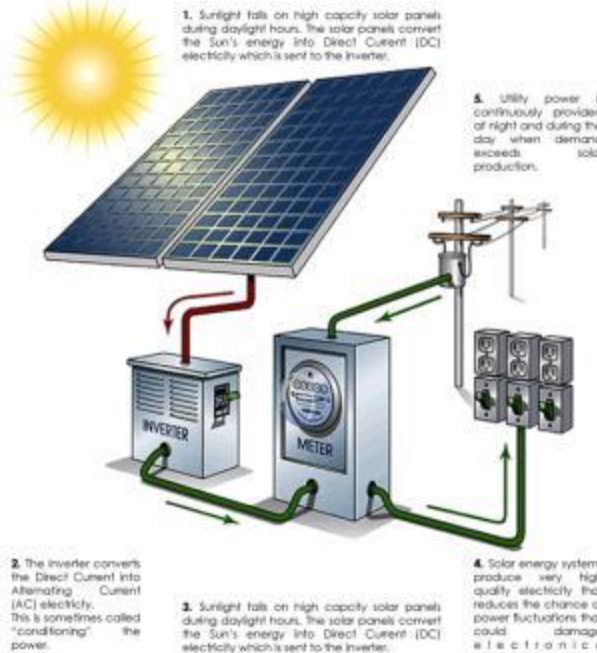
Enhance energy efficiency in landscape areas to reduce environmental impacts from excessive energy use.

02. Lighting Power Density

Design exterior lighting, interior lighting (as applicable), common and parking area lighting such that Lighting Power Densities (LPD) are at least 10% efficient than LPD requirements prescribed in ECBC, Section 7, ECBC for LPD requirements in interior & exterior areas.

03. Lighting Controls

At least 50% of the exterior & common area non-emergency lighting such as pathways, landscaping, surface and covered



parking, street lighting, staircases should have one of the following:
 Timer controls for applications such as street lights, fountains, focus lights etc., occupancy/ motion sensors.

04. On-site Renewable Energy: Encourage use of renewable technologies to reduce dependence on fossil fuels.

Install renewable energy systems to generate power through solar, wind, bio-mass/ bio-gas or any other forms of renewable energy for at least 1.5% of the annual energy consumption of landscape applications.

WATER REDUCTION

There is need to properly manage and reduce water use. Campus needs to be equipped with the use of high efficiency water fixtures, stormwater, and graywater collection systems. The goal in Campus is to reduce fresh water use in every building. Stormwater will be stored in large tanks and provided for the project's site irrigation needs, and will eliminate the use of potable water for landscape purposes.

Water

01. Reduce landscape water requirement.

02. Reduce building water use.

03. Efficient water use during construction.

Recycle, recharge, and reuse of water

01. Waste- water treatment

02. Water recycle and reuse (including rainwater).

WATER MANAGEMENT

To reduce the water demand, buildings in the campus have been provided with low flow fixtures such as dual flush toilets, low flow taps and sensor taps that would result in 25% savings in water use. Further, the wastewater generated from the hostel building equivalent to 8 KL/day will be treated through efficient biological process using a combination of microorganisms and bio-media filter. The treatment system requires low area and energy. The treated water meets the prescribed standards for landscape irrigation. Rainwater run-off from roof and the site would be used for recharge of aquifer. This would enhance the sustainable yield in areas where over-development has depleted the aquifer.

- Rainwater Harvesting, Non-roof

- Rain Water Filtration

- Use of Efficient Irrigation Systems

- Reuse of Treated Waste Water, Onsite & Offsite

ENERGY-EFFICIENT TRANSPORT SYSTEM

Provision of e-rikshaw inside the campus will increase easy mobility with controlled speed which is for the safety of the pedestrian. Introduction of e-rikshaw will also control the air pollution helping the campus pollution free and at the same time it can major mode of transportation within the campus.

GREEN STRATEGIES

Site Level strategies :-

The campus will recycle and reuse existing resources conserve natural resources.
 Respect the topography and natural drainage system.
 Water management at Campus level.
 Waste management at Campus level.
 Use of non conventional energy.
 Energy optimization and utilization.
 Scalability and maintainability.
 Campus services and system design for flexibility and future expansion.
 Transport demand management with focus on pedestrianization and peripheral parking.
 Imageability and permeability on campus reinforced through public space design, scale continuity and coherence complemented by landscape.

Building Level :-

All building level as per TERI GRIHA, IGBC Smart campus through use of IT.





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Principal Architect & Urban Designer **Amit Hajela**

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Architect & Urban Designer	Trilok Kubde
Architect & Urban Designer	Priyanka Gayen
Architect & Urban Designer	Rupesh Kumar
Architect	Virat Singh
Architect	Satyendra Kr. Raghuvanshi
Architect	Anand Chaubey
Architect	Akshay Gupta
Architect	Megha Tyagi
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Architect	Bhawna Jaipaty
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Dean, Faculty of Science
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Proctor
Director DODL
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Provost
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Public Relation Officer
Assistant Registrar (Admissions)
Assistant Registrar (Exam)
Assistant Registrar (Academic)
Assistant Registrar (Establishment)
Assistant Registrar (Finance)
Assistant Registrar (Purchase)
Librarian
Estate Officer
Assistant Engineer (Civil)

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