

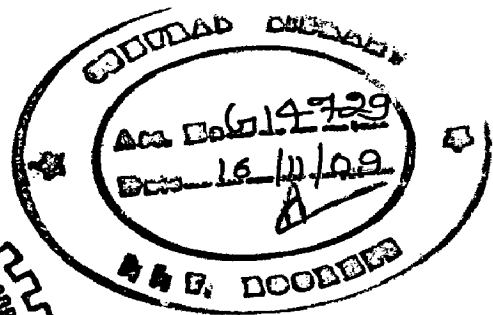
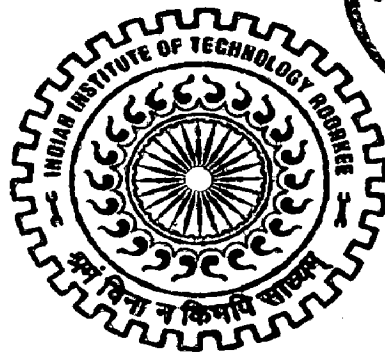
**IMAGEABILITY ANALYSIS OF BUILT ENVIRONMENT:
A CASE STUDY OF ALIGARH MUSLIM UNIVERSITY
CAMPUS, ALIGARH**

A DISSERTATION

*Submitted in partial fulfillment of the
requirements for the award of the degree
of*
MASTER OF ARCHITECTURE

By

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JUNE, 2009

CANDIDATES'S DECLARATION

I hereby certify that the work which is being presented in the dissertation entitled "IMAGEABILITY ANALYSIS OF BUILT ENVIRONMENT: A CASE STUDY OF ALIGARH MUSLIM UNIVERSITY CAMPUS, ALIGARH" in partial fulfillment of requirement for the award of degree of **MASTER OF ARCHITECTURE** submitted in the Department of Architecture and Planning of the Institute is an authentic record of my own work carried out during the period from July 2008 to June 2009 under the supervision of Prof. P.K.Patel.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree.

Place: Roorkee

Dated: 18th June


(Mohd. Khalid Hassan)

This is to certify that the above statement made by the candidate Mohd. Khalid Hassan is correct to best of my knowledge.


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Mohd.Khalid Hasan

ABSTRACT

The urban realm is the setting for civic life. It comprises our streets, parks monuments and buildings as well as the events which happen in them. Civic life is enriched by developments which welcome a broad range of people and is impoverished by those which exclude or discourage all but a narrow range of users. Everybody supports the idea of having a high quality environment but usually feels someone else is responsible for creating or maintaining it. The purpose of this dissertation is to inform and encourage all those who collectively shape the appearance of Aligarh Muslim University Campus, to share a vision for future developments which will explore and enrich the 'grain of the campus' and progress its unique character.

The Aligarh Muslim University Campus is developed as and when required and sites were designated more often than not without foresight, or logic resulting in giving a haphazard look to the campus. Moreover, at present there is a lack of any definite architectural style associated to the Aligarh Muslim University Campus and the buildings of myriad architectural style are coming up deteriorating the imageability and identity of the campus.

This thesis aims to draw an attempt to understand critical issue towards the imageability by analyzing the campus existing buildings, streets, spaces and sets out specific urban design and public realm guidance that aims to create a step change in the quality of future development and design of public spaces. This research will culminate to recommendations/ proposals / guidelines on the imageability and provide a common point of reference for those involved with land use planning and development, traffic movement strategies and with the design and maintenance of public places.

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Introduction

1.1. Introduction

Sir Syed Ahmad Khan, the Founder of Aligarh Muslim University was one of those early pioneers who recognized the critical role of education for the empowerment of the poor and the backward Muslim community along with his countrymen. In more than one ways, Sir Syed was one of the greatest social reformers India has ever seen. He laid the foundation for modern education with focus on the education of Muslims. He prepared a road map for the formation of a Muslim University by starting schools.

He established a Scientific Society in 1863 to cultivate scientific temperament among the Muslims and to make the Western knowledge available to Indians in their own language. In 1866, he started the Journal “The Aligarh Institute Gazette”, as an organ of the Scientific Society and created a stir in the minds of Muslims of India. In 1877, **Sir Syed founded the Mohammadan Anglo-Oriental College modelled on the Oxford and Cambridge universities. His objective was to build a college in tune with the British education system but without compromising the Islamic values.**

It is not merely an institution of higher learning; it is a **movement** which was started by **Sir Syed Ahmed Khan** for the intellectual and cultural regeneration of Indian Muslims in the most heart rending circumstances after the mutiny of 1857, which has struck a deadly blow to the society.

Besides, being one of the oldest universities of the country, AMU has the rare distinction of finding a mention in the seventh schedule of the Constitution of

India. It is one of the very few universities of the country that offer education from the nursery level to that at Ph.D.

Currently AMU has 89 Departments, spread over 12 Faculties and an impressive enrolment of nearly 21, 000 students representing 21 States.

There are over 300 foreign students from 19 countries. The current faculty strength is nearly 1400. Since AMU was conceived as a residential University, accommodation is provided to majority of boys and girls in various Halls of residence on the campus. There are 15 Halls of residence providing accommodation to 11,000 students. It is a highly inclusive environment nurturing the diversity of India. In addition, over 10,000 students live in private accommodations and are members of the Non-Resident Student Center (NRSC).

It is said that the land initially acquired in 1877, for the erstwhile MAO College, with its hostels and allied Institutions was just about 74 acres. Since then, of course, the AMU has been able to consolidate its land holdings through acquisitions, purchases or donations to roughly 1,334 acres or 540 hectares.

Initially the Aligarh Muslim University was started with a fairly well conceived, in effect a planned layout with remarkable architectural style that evoked a sense of distinction and pride, for it had an identity and aesthetic sense. There was a sense of unity and coherence that can still be observed in the original buildings that came up during the initial stages of the university's development. But there was a drastic change in the architectural character of buildings which came after independence.

1.2. Need for study

The spatial evolution of the Campus is marked by many inadequacies and with the passage of time these shortcomings have become rather apparent. There are too many high quality historical and modern buildings in the campus but instead of that the campus lacks the sense of identity and legibility. My dissertation would deal with in this respect that how to improve the overall image of the campus.

1.3 The Vision

My intention is to improve campus squares /junctions and the streets between them, improve pedestrian and vehicular routes, parking and create more pedestrian focused places having proper safety and security.

1.4 Identification of the problem

- Diverse building types, scales, characters and land uses of variable quality that lack a sense of coherency;
- Streets lack a sense of enclosure and definition. Low quality, weak frontages to the Street detract from the significance of buildings
- Poor legibility of gateway, entrances and boundary wall of the campus.
- Potential landmark buildings lack prominence and are devalued by poor public realm;
- Unattractive street environment, untreated street junctions often creates congestion during peak hours.
- The area around the SS Hall has a strong heritage value but the feeling of seclusion prevails as it became at one corner of the campus.

1.5 Aim

The aim of this project is to make the guide line/proposal to improve the imageability of Aligarh Muslim University Campus.

It examines the campus existing buildings, streets and spaces and sets out specific urban design and public realm guidance that aims to create a step change in the quality of future development and the design of public spaces.

1.6 Objectives

- To improve the visual and aesthetic quality of the built environment in order to enhance the image ability of the campus.
- To create the campus legible, accessible and easy to navigate.
- To protect/established the architectural character and classic palette of materials in the conservation zone and its reflection to the new development of the campus.
- Expansion/extension of the streets and roundabouts.
- To formulate guidelines/proposals for the above design objectives.

1.7 Scope and limitations

This project will help to determine the opportunities and constraints which will govern new developments in the campus, as well as highlighting areas for conservation and improvement.

The area of study is restricted only to the built environment of Aligarh Muslim University main campus.

1.8 Methodology

The following steps were envisaged:

- 1) Understanding of urban design principles:-This part was based on literature survey.
- 2) To lay down design objectives an extensive primary survey of the existing campus was carried out and campus maps were prepared.
- 3) Imageability analysis of the campus.
- 4) The guidelines/proposals would be formulated on the basis of analysis.

The Aligarh Muslim University

2.1. Historical Background ⁽⁶⁾

The second half of the 19th century was the most critical period in the history of Indian Muslims. Steeped in ignorance, conservatism, traditionalism and superstition, the Muslim community presented the sad spectacle of inertia and degeneration. It had lost all the vitality, vigor and the creative force of a living nation. The debacle of the first struggle for India's freedom turned out to be a total catastrophe for the community. The whole community was in a state of severe trauma and did not know what to do. It was at this crucial turn of history that Sir Syed Ahmad Khan rose with courage and fortitude to extricate his co-religionists from the throes of degeneration, diffidence and humiliation. He studied very carefully their pathetic conditions, diagnosed the malaise from which they had been suffering and suggested modern education as the panacea for all their ills. He was convinced that without learning the Western sciences and the post-European Renaissance thought the Muslims could have no future. He, therefore, set before himself the task of the intellectual and cultural regeneration of Indian Muslims. The movement that he started for the purpose is commonly known as the Aligarh Movement. The movement envisaged inter alia the establishment of a residential institution of higher learning on the model of Oxford and Cambridge universities.

When Sir Syed was posted at Ghazipur he founded on 9 January, 1863 a translation society for the purpose of translating and publishing important European works into Urdu. In 1864 when Sir Syed transferred to Aligarh the society was shifted to Aligarh and renamed as

Scientific Society. From 1866 he also started his famous weekly, the Aligarh Institute Gazette, as the official organ of the society. It was made a bilingual paper and every article was published side by side in English and Urdu.

A great crusader against conservatism, orthodoxy, traditionalism and superstition, Sir Syed started the famous journal '*Tahzibul Akhlaq*' (Mohammadan Social Reformer) on his return from England in 1870. As the name itself indicates the aim of the journal was to ameliorate the social conditions of Muslims.

In 1875, Sir Syed founded the Muhammadan Anglo Oriental College in Aligarh and patterned the college after Oxford and Cambridge universities that he had visited on a trip to England. His objective was to build a college in tune with the British education system but without compromising Islamic values. It was one of the first purely residential, educational and institutional setup either by the Government or the public in India. The college was originally affiliated with the University of Calcutta, and was transferred to the Allahabad University in 1885. Near the turn of the century it began publishing its own magazine, and established a Law school. It was also around this time that a movement began to have it develop into a University to stand its own. To achieve this goal, many expansions were made with more and more programs added to the curriculum. A school for girls was established in 1907. By 1921 (exact year 1920), the College was transformed into a university, and it was named Muslim University and since then its growth continued.

2.2. Sir Syed's Vision of the College

In an Urdu article written by Sir Syed sometime in 1872 and reproduced in the Institute Gazette of April 5, 1911 he described his vision of the College in these words :

'There will be a big hall amidst the buildings of the College where, after the receipt of the Charter of the University, distinguished visitors, like the Viceroy or the Lt. Governors, would be received and meetings will be held.'

'Like the churches of Oxford and Cambridge, there will be mosques attached to each College.'

'There will be boarding houses, in which students will be provided with a suite complete with a bath, a study and a retiring room. The boarding house will have a Common Hall and a common dining room. There will be a playground and a swimming pool attached to it. There will be four bungalows constructed for the residence of the Principal, the Head Master and two other European professors. The College will have a dispensary with a Doctor and a compounder, besides a Unani Hakim.'



2.3. Architectural character

The buildings which came up in the earlier period of the establishment of Aligarh Muslim University are having a very high architectural significance and having a very definite architectural character. Some of the characteristic elements of these buildings are exposed brick external walls with arcaded openings. These arches are either of bricks or made of sandstone with square or circular pillars which are beautifully carved. Some of these buildings are described to give a picture of the architecture of the university.

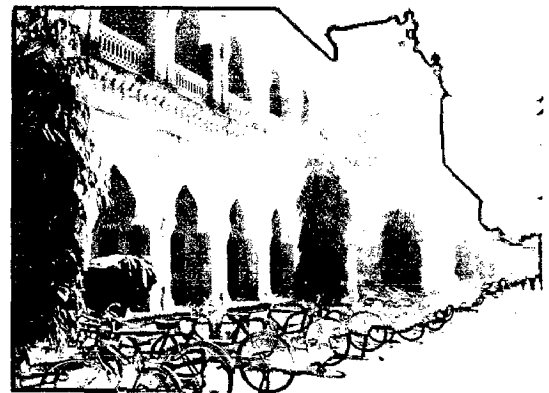
2.3.1 Sir Syed Hall:

The building complex which is presently known as Sir Syed hall (a hostel complex) was originally the M.A.O. College. The main entrance of the college was from the Victoria gate. The S.S. North was used as the hostel and S.S. South was used as the college. The



buildings on the central wing were a part of the college which were used as lecture theatre, museum, library, staffroom and for other academic purposes.

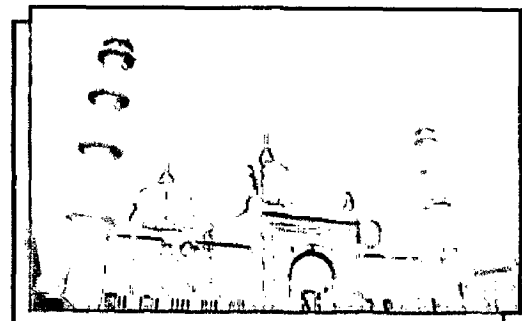
Although the complex was built in the British period, we find the mixture of Mughal and colonial architecture in the buildings. The buildings were built in exposed bricks with lime plaster and the buildings of the central wing and also Victoria gate are constructed with the



combination of brick and sand stone laid in lime mortar. The difference in the style of arches in the veranda openings clearly explains the phase wise development of the complex. The architectural elements like jali work, spouts, cornice details, beautifully carved pillars, chajja projections with brackets and a lot more, this all explains the character of this beautiful heritage complex.

2.3.2 Jama Masjid

At present it is known as Jama Masjid of the University. It has entrance from both the Sir Syed hall north and South. This mosque is



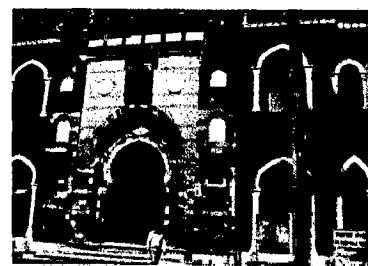
built in the style having all the elements and features of the Mughal architecture. The high rise central arch is having the Calligraphic inscription of Quran on marble stone strips. The mosque in its style and character resembles to the Jama Masjid of Delhi, the only difference is in the scale, it is smaller in size. The multi foliated domes are resting on the drum. The minarets are broad at the base and diameter reduces at the top. The arches are multi foliated having the Mughal style. After the death of Sir Syed he was buried in the mosque compound on the northern side.

2.3.3 Victoria Gate:

Victoria gate when constructed was the main gate of M.A.O. College having a beautiful garden with palm trees in front of it. The clock tower was later added in 1920's above it. Up to 1970's its first floor was used as Vice Chancellor's office. It is constructed with stone & bricks with lime mortar. The roof are jack arch with iron girders having the horse shoe arches on its opening. On its outer side the logo of Aligarh Muslim University is beautifully carved on marble.



Small burji's are on the either side at the roof. Quranic inscription in Calligraph is there on the inner side Of the gate. Two niches on the either side of the archway and one on top of it is giving it a Mughal look in the Colonial style. The door is of wood fitted through iron clamps to the wall.



2.3.4 Strachey hall:

Strachey hall was one of the most important buildings of M.A.O. College. It is a huge hall which when constructed was used as the examination hall and for cultural events. Since it is having a broad span without any pillar inside,



therefore the slant roof was constructed. Earlier a cloth was used on its roof, but it was damaging very quickly & was very costly to replace it, therefore wooden roof was constructed later.

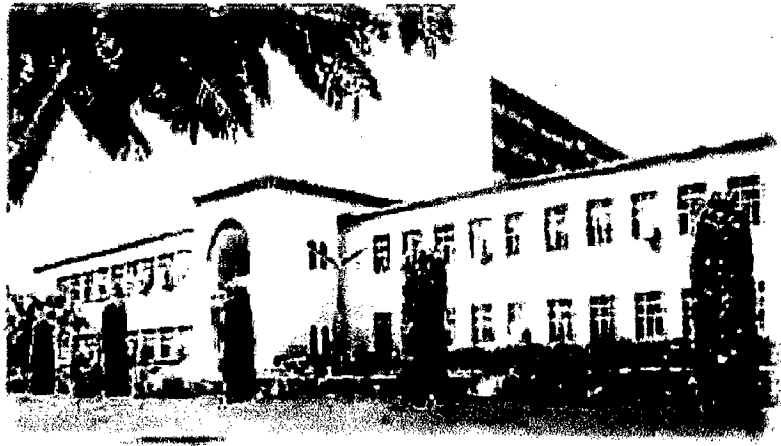
Presently it is having the terracotta tiled roof on it. It is having pointed arches in the gothic style with long rectangular pillars. Internally it is having mezzanine floor having iron railing and multi foliated arches and on the ground floor the arches are semicircular. This gives a clear picture of the mixture of Mughal and colonial architecture. Calligraphic inscription on the marble stone is there on the internal walls of the hall.

On the outer wall we found floral motifs on the marble stone which is a very of the Mughal architecture. Beautifully carved jali in the sand stone is there on the front wall of the hall. The door and window openings are having pointed arches above them. Colored glasses are used with wooden frame in these openings.

2.3.5 Maulana Azad Library

Maulana Azad Library, the library complex of the university consists of a central library and over 80 college/departmental libraries. Library of the

colleges, institutes and departments, cater to the needs of postgraduates and students of professional courses. Lord Lytton, the viceroy of India, laid the foundation



stone of M.A.O. College and the library was named after him as Litton Library.

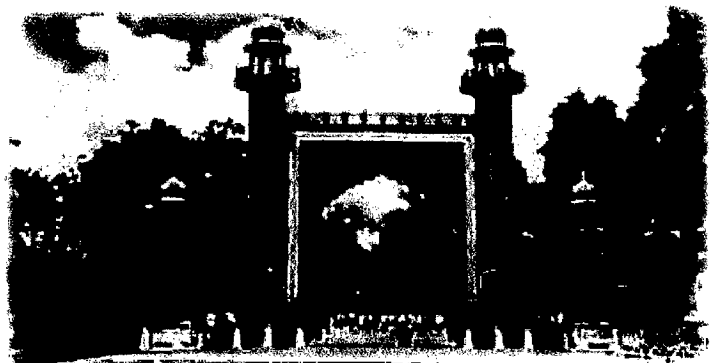
In 1960, it was named as Maulana Azad Library when the first Prime Minister,

Pt. Jawaharlal Nehru, inaugurated its present building. The seven storied building is Surrounded by 4.75 acres of land in the form of beautiful lawns and gardens. The Library has about 9,00,000books.

2.3.6. Bab-e-syed

This is the main gate to enter into the Aligarh Muslim University Campus.

The road going through it is known as university road and majority of faculty buildings are abutting to it.



2.3.7. Other buildings of the campus

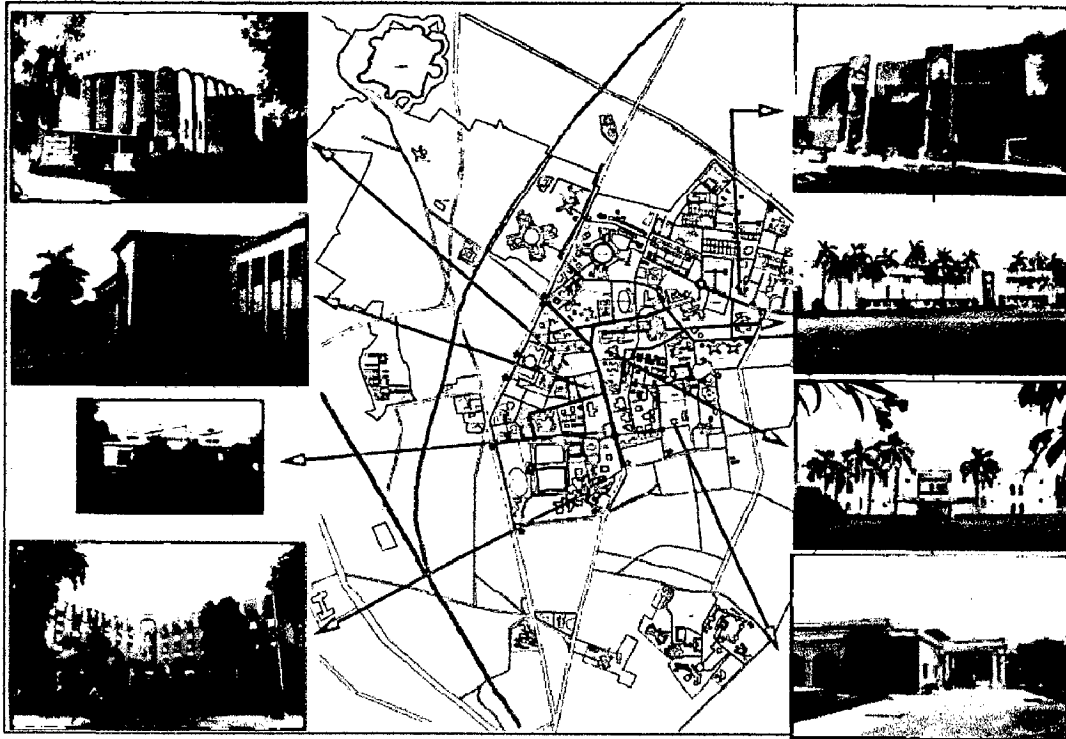


Fig. 1: Buildings of the campus

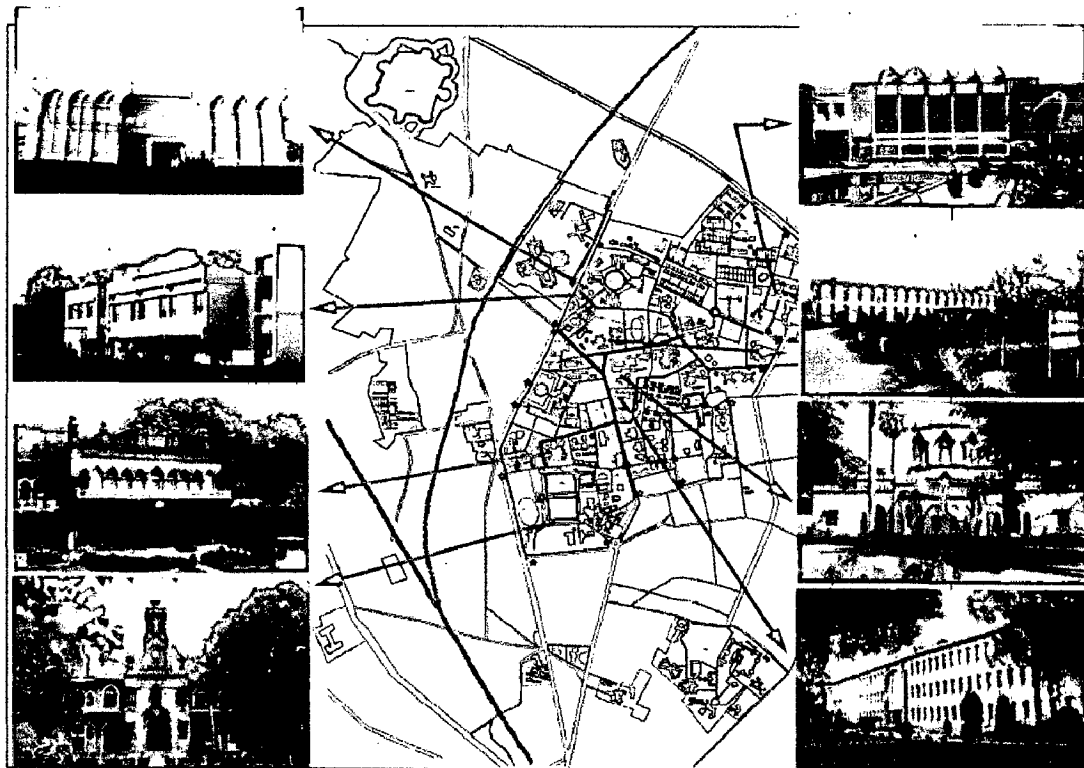


Fig. 2: Buildings of the campus

2.4. Existing Land Use

University Campus is covering an area of 540.00 hectares, which also includes the land in different pockets outside the campus such as the City School, the Women's College and land near the point where Aligarh Drain meets with the G.T. Road. The land use can be grouped in ten main categories and has been named as academic and administrative blocks, hostels, staff housing, facilities including social and cultural centre, recreation, roads, undeveloped AMU land, fort and water bodies. Land use of 540.00 hectare of the AMU Campus area is detailed out with the help of, map prepared by the Engineering Faculty of the University, Aligarh Guide Map (prepared by Survey of India), by the Master Plan develop by Prof. Jamal Ansari and Syed Shafi in 2002 and through spot survey of the campus

Table 1 Aligarh Muslim University Campus - Land Use – 2004 ⁽¹²⁾

Sl. No.	Category of Land	Area (in hectares)	Percentage
1	Academic Blocks	129.00	23.90
2	Administrative Blocks	06.00	01.11
3	Hostels	85.00	15.74
4	Staff Housing	93.00	17.22
5	Recreation	24.00	04.44
6	Facilities including Social and Cultural Centre	18.00	03.33
7	Roads	24.00	04.44
8	Undeveloped AMU Land	128.00	23.71
9.	Fort	17.00	03.15
10	Water Bodies	16.00	02.96
Total		540.00	100.00

Within the built-up area of the campus, the Academic Blocks cover the maximum area (23.90 percent of the total area of the campus), followed by Hostels, which cover 15.74 percent. The recreational land use refers to the cricket and football grounds and other sport complexes, parks and maintained green spaces. The land under Facilities includes social and cultural centre, library, staff club, students' union building, canteen, mosques, post office, graveyard, guesthouses and other such facilities. The areas within the right of ways of roads of different levels of hierarchy constitute the land classified as Roads. The area under undeveloped AMU land includes the land being presently not developed by the university authorities

2.5 Existing Master plan of Aligarh Muslim University

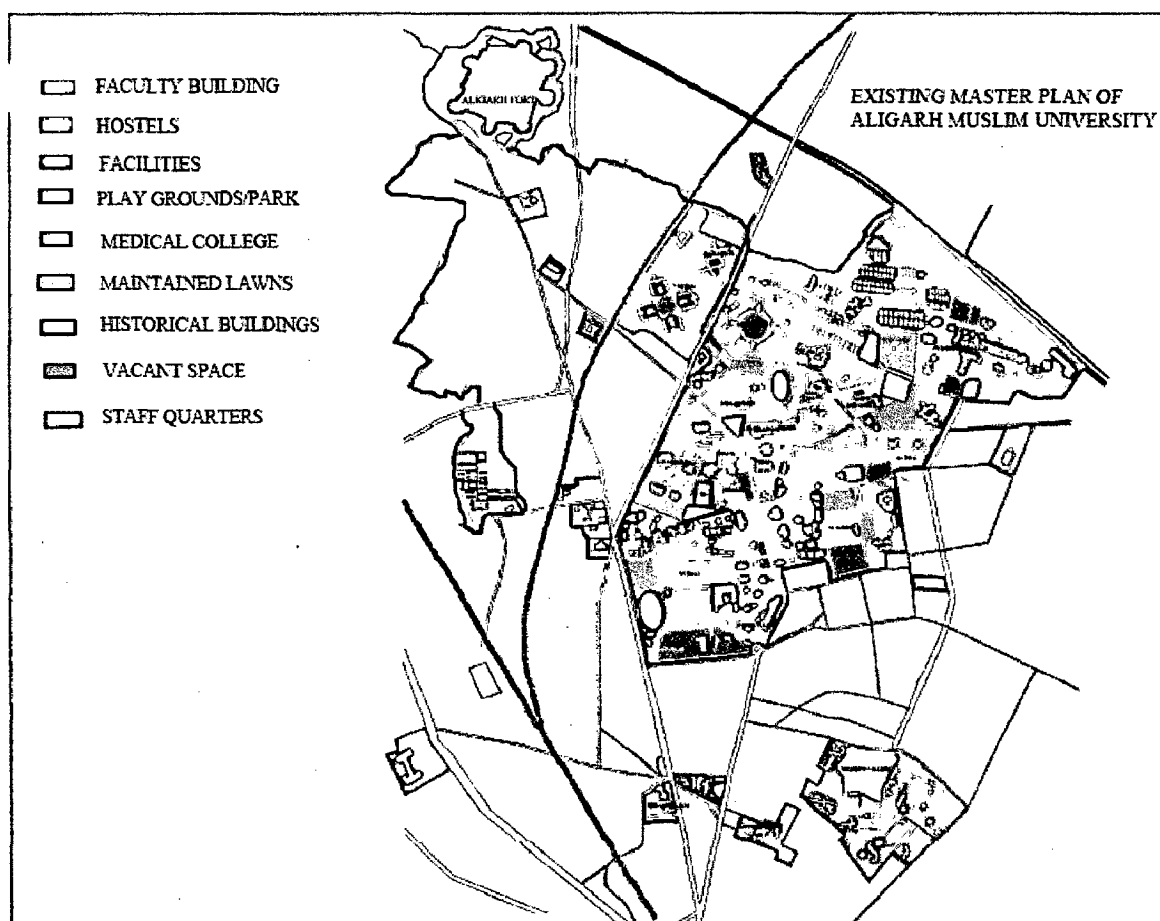
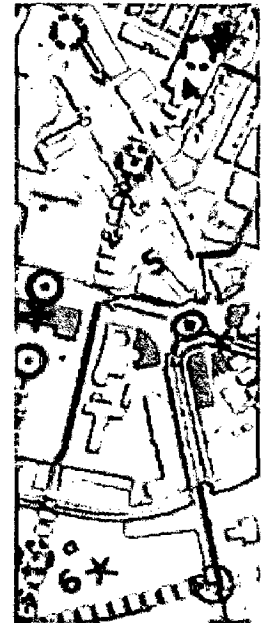


Fig.3: Source: Google Earth Digitization by Author

Literature study

3.1 Urban Design ⁽²⁰⁾

'Urban Design' involves the design of buildings, groups of buildings, spaces and landscapes and brings together issues of planning, transport, architectural design, landscape and engineering to create a vision for an area and then ensure it is delivered. It is not just about the design of buildings. It is also the complex inter-relationship between different buildings and the relationship between buildings and streets, squares, parks and other spaces that make up the public realm. It is also concerned with the nature and quality of the public realm itself.



Recent studies show that good urban design has measurable, economic benefits. It can improve the image of a place, stimulating inward investment and the wider regeneration of an area. In addition, it can bring significant social and environmental benefits, which include: a sense of civic pride greater social inclusion and interaction, improved safety and access to goods and services for the community, enhanced heritage and ecological value, increased energy efficiency and reduced waste and pollution. Good urban design brings people together and will encourage a vibrant mix of self-supporting uses and activities within the City Centre. It will help create a place which is greater than the sum of the individual parts and allow an urban life and culture to evolve out of a collection of buildings and spaces.

3.2 Principles of Urban Design ⁽²⁰⁾

Following are principles of good urban design:

- 3.2.1. Character
- 3.2.2. Continuity and Enclosure
- 3.2.3. A Quality Public Realm
- 3.2.4. Ease of Movement
- 3.2.5. Legibility
- 3.2.6. Adaptability
- 3.2.7. Diversity
- 3.2.8. Sustainability

3.2.1. Character

Protect and enhance the buildings, street materials, landmarks and views that are unique and give the campus its identity.



The appearance of the built environment defines an area's identity and character and creates a sense of place. Many areas of the campus have a well-established character that needs to be protected and enhanced. No site is a blank slate. It will have shape and there will be adjacent development and a history which make it a distinctive place. This context should be established for each site and responded to in order to build something that is recognizable and special to the Aligarh Muslim University. High quality contemporary design that has evolved from its context is encouraged. Places that are distinctive are memorable and popular. A common element within an area will distinguish it from adjoining areas and create a sense of place. The use of exposed bricks and blending of British Mughal Architecture is one such example in campus.

Character Areas

Prevailing character of the areas to be identified must be recognized and enhanced through any new development or improvement. Local positive characteristics such as a building line should be reinforced with all new

development. However, innovative design that responds to its context in layout and detail is encouraged as long as it reinforces the overall character of the area.

Anchors to the Past

It is fundamental to express the character of the campus that any building or structure contributes rather than detracts from either the continuity of the built fabric, local distinctiveness; historic interest or townscape merit is retained. Distinctive buildings should not be demolished unless there is a compelling case to do so and definite proposals to replace with them with development that will substantially improve the area.

Style, Scale and Context

‘Anywhere’ type development and standard designs duplicated and brought in from elsewhere erode a sense of place. The design of buildings and spaces should respond to both their context and the character of the campus. Pastiche should be avoided however, as poor imitations can weaken the character of a place more than anything. Responding to scale, massing, proportion and the use of local materials and colors are the primary means of reinforcing an area’s character. An area should be visually interesting if people are to enjoy being there. Variety in architectural style can contribute to an area’s identity and responding to local context should not restrict innovative contemporary design. *“Respecting the best of the past provides a powerful justification for gracing our surroundings with the very best of the new”* (English Heritage, Power of Place, 2000).

Visual Character

Landmarks and vistas create the kind of interest that helps enliven and define the character areas. New development should be designed and planned to make the most of vistas along streets and the campus as a whole. Existing important and valuable landmarks and views should be protected and enhanced.

3.2.2. Continuity and Enclosure

Create streets and public spaces that are well connected and enclosed by attractive building frontages.

Every building is just one part of the fabric of the campus which is held together by the network of streets and spaces. Well enclosed and connected spaces allow using and enjoying the campus conveniently and in comfort. The street forms the interface between the public and private realm. Developing and protecting the urban fabric or structure with strong spatial continuity and a good sense of enclosure will benefit the campus over time. It will help remove gap sites and inappropriate developments and severance caused by overly wide roads.



Continuous Frontages and Boundaries

Continuous street frontages and well defined open areas stimulate activity and bring a greater sense of security to the public realm. The effective treatment of the boundary between the public and private realm is essential to good urban design. Public spaces are safer and easier to understand when defined by buildings which face onto them with active frontages, especially at ground floor level. Streets must never be defined by blank walls and dead frontages. Service areas and car parks should generally be located behind off street to avoid breaking up and deadening the street frontage.

Permeability

A key element of good urban design is the recognition that pedestrian 'through movement'. It is an essential characteristic of a successful place. Where people pass through an area they provide activity, security through natural surveillance. The continuity of existing pedestrian routes will therefore be preserved and enhanced and cul-de-sacs discouraged. New development should respond to and connect well with established street form. Where the traditional street structure has been interrupted, the opportunity to re-establish a permeable network should be considered. Similarly, new routes where none have existed before are encouraged to 'knit' new development.

Fronts and Backs

A clear separation of public and private space should be created by having buildings front onto the street. Buildings with a clearly defined front and back provide better security and privacy, animate the public realm and help people orientate themselves. Entrances to buildings should therefore be from the street and easily defined as such by visitors. Private enclosed areas to the back should be secure.

Defining the Street

Building lines within the campus should be clearly defined to create a largely unbroken urban edge to the street. Projections and setbacks from this line, such as bays, foyers and entrances can be used to aid legibility and add variety to the townscape. Existing historic building lines must be respected with infill development. A strong degree of enclosure should be provided for all streets in the campus. Building heights should generally be scaled to the proportion of the street. This results in wider primary routes requiring taller buildings. A good street height to width ratio (as measured from building line to building line) will range between 1:1.5 and 1:2.5. Below 1:1, spaces begin to feel claustrophobic and above 1:4, the sense of enclosure progressively diminishes. Street trees are an effective means of creating secondary enclosure where it is difficult to create it primarily with built form. Where buildings are set back a significant distance from the street, they should still have a significant presence to that street. Although such development is to be discouraged, it should be scaled to relate to the street and incorporate suitable boundary treatment such as railings and trees, which contribute to the enclosure of the street and relate to the building line. This would only be appropriate for edge of centre development.

Street Planting

Thoughtful landscaping and planting can enormously enhance the continuity of street form and the comfortable enclosure of public spaces, as well as delivering important environmental benefits. Street tree and other planting

will be encouraged where it will enhance the character of an area, particularly where there is an historic precedent for it.

3.2.3. A Quality Public Realm

Create high quality public spaces that are attractive, safe, comfortable, well maintained, welcoming and accessible to everyone.



The term ‘public realm’ means any part of the campus that can be experienced by everyone, from buildings to bollards. Everything in the Public realm has an effect on the campus image and character. A key principle is that ‘people attract people’. Places which feel good will encourage people to use them and places which are well used stand a better chance of being well cared for. The aim is to produce friendly, vibrant public places where people feel welcome to visit, socialize and go about their business and leisure in comfort and safety. Buildings define spaces and good architecture is obviously important. However, concentrating on the quality of those buildings alone ignores the fact that it is the public realm above all that most people will experience up close. Quality in the public realm is an investment in the whole campus and its future.

Street life

Public spaces should have a clear function and must be pedestrian friendly. They should act as comfortable focal or meeting points as well as places to pass through. Where new public spaces are planned, it is essential to give full consideration to its use, relationship to adjacent buildings and longer term maintenance. A street is more than just a road. A road is simply a channel for traffic, whereas a street may still carry traffic, but is first and foremost a social space at the interface of the private and public domains. Spaces that function as lively streets are therefore preferable in the campus and even those that carry large volumes of traffic should be redesigned as great streets.

Space to Breathe

The quality of public open space in the campus is more important than the quantity. Too often open space is ill defined and poorly maintained because it

is simply leftover space. The creation of a clear network or sequence of quality open spaces throughout the campus will provide a focus for many of the character areas and consequently a sense of ownership.

Activity, Natural Surveillance and Safety

Keeping the public realm animated by the presence of people throughout the day and night helps reduce crime and the fear of crime. Buildings should always offer active frontage to overlook and animate the public realm and provide 'natural surveillance'. A welcoming public realm is comfortable to be in at any time for people of all ages, gender and background. Street lighting is fundamental to perceptions of public safety and is therefore more than just a highway requirement to be met. The more animated that spaces are by people and activity, the safer they will feel and the less need for intrusive and expensive security systems such as steel shutters and CCTV there will be. Such systems can have a detrimental impact on the townscape and can increase fear even when the actual risk of crime is low.

Visual Richness

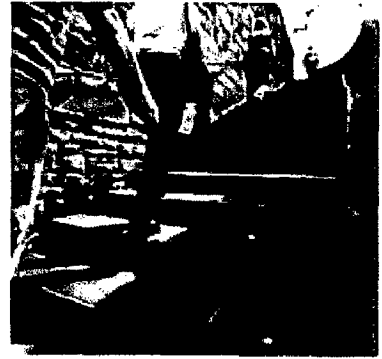
Vibrant spaces with a variety of uses and richness of detailing will welcome and attract the widest range of people. Imaginative means of enlivening the public realm encompassing public art, lighting, water features, street cafes and entertainment will be encouraged in the Campus.

Streetscape & Street Furniture

The integrated management of the quality and maintenance of the public realm is encouraged. At present, the public realm is not treated as a single unified entity, but as a set of unrelated components that are managed separately leading to clutter and overlap of responsibility. As a general rule, quality comes from simplicity – 'less is more'. Nothing should be placed in the street unless it is unavoidable or highly desirable. The streets that retain their original finishes and detailing to be conserved. All materials that appear in the public realm should be selected with reference to their context to ensure they are appropriate for both place and function. Surfaces should complement surrounding buildings and streetscape, thus defining and unifying spaces.

3.2.4. Ease of Movement

Make the campus easy and safe to get to and move around in, particularly for pedestrians and cyclists.



Movement of all kinds is the lifeblood of any campus. The movement network must operate in a way which brings the campus to life, yet high levels of traffic can impact negatively on quality of life and perception of place. Transport planning should acknowledge that streets have vital social, economic and amenity roles in addition to that of being channels for vehicles. A well designed urban structure will have a network of streets and spaces that can accommodate these roles as well as the traffic.

Through Movement

Access to the campus for all to be restricted, as the excessive through traffic can have a detrimental effect without any benefit. Through traffic should therefore be restricted to specific transport and the infrastructure to accommodate this provided. Traffic should not be allowed to dominate over the public realm, but at the same time should not necessarily be excluded all together. Traffic essential for access and servicing should be ‘tamed’ in order that the street can be shared successfully with pedestrians, cyclists and cars.

Walking and Cycling

Walking is the main means of movement in the campus. The quality of the streets must encourage walking and a pedestrian friendly environment is an essential ingredient of attractive, inclusive places. It is vital that streets in the campus are safe and comfortable for pedestrians to cross. Crossings are more convenient and comfortable for pedestrian when at ground level rather than on footbridges or subways. Cycling provides a healthy and environmentally friendly alternative to the car and should be encouraged in the campus. Dedicated cycle infrastructure should be provided on more heavily trafficked

routes and new development should provide good facilities for cyclists, including secure parking.

Parking

Parking fulfils a valid need for accessing the campus but requires careful consideration to support good urban design. Limited on-street parking can assist in reducing traffic speeds, stimulates activity and attracts passing trade. Surface parking areas should be provided in ways that do not affect established building lines such as courtyards within the block. The use of underground parking should be considered on key sites and multistorey car parks are acceptable in appropriate locations, but should always provide an active ground floor use onto the street.

Accessibility

Environments that facilitate greater equality of access promote prosperity and fairness. The campus will not perform to its full potential if some areas or facilities are perceived to be too difficult to access, particularly for those whose movement and/or sensory perception is impaired in some way. New development and public realm improvements must be designed to allow access for all.

3.2.5. Legibility

Create a place that both residents and visitors can understand and easily navigate.

Good urban design can help to create a campus that is easy to understand and find one's way about. Streets, buildings, vistas, visual details and activities should be used to give a strong sense of place and to provide an understanding of destinations and routes. A legible urban environment is the sum of many of the urban design principles.



Routes

The routes people take are a key element in the way the campus is perceived. Careful consideration must be given to the sequence of experiences the campus offers to residents and visitors when moving through. A clear hierarchy of streets should be established to enable people to orientate themselves in the campus. For example, primary routes should generally be wider with the prominent buildings which enables people to 'read' the campus without the need for signage and maps. Gateway features on key routes can create a memorable sense of arrival to the campus and to places within it.

Landmarks

Gateway and other landmark elements in the urban environment should not only be thought of as physical objects, although these often the most common. They are any kind of reference point that people single out as being memorable that helps orientate themselves. Aspects of the campus a visitor might encounter as landmarks include public art or a unique lighting scheme, traffic signals, a strong element of urban character such as a distinctive building or a striking vista. Some landmarks are distant ones, often visible from many angles and places. New development should reinforce the legibility of its local area and the campus by including local features that relate to local circumstances. Some of these will include fine grained details that provide interest to pedestrians, others more striking elements to provide interest to those passing in vehicles. These should always remain appropriate to their context.

Focal Points

Public spaces are key to the legibility of any place. The best are active areas where people gather and meet and such focal points should be emphasized, given clear definition and purpose. The vitality of street life and the relationship of buildings to the proportion and nature of the street is fundamental to the creation of a sense of place which welcomes residents and visitors. Junctions are 'nodal points' where people decide their route and come to meet. Street junctions should be designed as active spaces and places, not characterless traffic interchanges. Landmarks at nodes reinforce

their function by giving good reference points to aid orientation and navigation. Corner buildings higher than surrounding buildings can serve to emphasize junctions and add to the character of the local area. Strong corners give definition to streets and become easily identifiable minor landmarks. Wherever possible corner buildings should have an active ground floor use.

Views

Protect key views and create new Vistas and landmarks to help people locate themselves in the campus and create links within and beyond the immediate area. New development should protect important existing views, whilst taking opportunities to create new memorable ones.

Signage

Character areas are the larger areas of the campus recognizable as having a particular identity which assist people as they pass through and by them. The provision of good signage and guidance at key points is important in aiding orientation. Direction signs will always have a role in helping those unfamiliar with the campus find their way about, although good urban design should help reduce the need for signage in the first place.

3.2.6. Adaptability

Create a campus that can adapt to change so that buildings may come and go, but the streets last a lifetime.



Successful campus's accept change and continually adapt to remain vibrant over time. Thoughtful and good urban design is required to achieve this flexibility. New developments and public realm improvements should be designed both to respect the existing context and to accommodate future change.

Public Realm

Streets and spaces that connect well to the campus's movement network and are relatively simple in design can accommodate and adapt to the widest

range of uses and building types. This is why most of the City Centre's oldest streets remain vibrant. Streets should be more than just access roads to buildings. They should be designed to link with the surrounding public realm. Individual buildings may come and go, but streets last a lifetime and longer. Even key public spaces should be made easily adaptable for a range of functions such as markets, events and concerts.

Built Form

New development should be designed and developed to allow for changes in the future. This is supported by buildings having a clear relationship with the street and flexible internal layouts that are capable of being adapted to different patterns of use. A fine grain urban structure is more adaptable to a coarse grain structure over time.

Individual Buildings

Within a smaller block, individual buildings should be made as adaptable as possible to ensure they can change over time. The Stretchy hall is a good example of an adaptable building which can easily switch uses as circumstances change. Many have gone from residential to office and back to residential over time. In terms of residential development, the provision of 'lifetime' homes is encouraged. These homes are designed to be capable of straightforward adaptation as residents' needs change.

3.2.7. Diversity

Create a campus with variety and choice. Encourage a mix of uses (institutional, residential, leisure) and architectural styles to create vibrant campus.



Housing, leisure, places to work and meet should interrelate to form an identifiable and walk able campus that meets the needs of residents. The campus's which benefit from a mixture of good amenities

has the means to support their own requirements and reinforce a sense of community.

Physical Diversity

A robust and diverse street and block form allows for a wide range of building types to be accommodated in the campus. A mix of building types and forms are encouraged within a block both to support a mix of uses and visual richness.

Mix of Uses

Providing a mix of uses, whether vertically in a building, in a block or simply along a street, creates vibrancy in an area. The leisure period also needs to be better integrated into the campus.

3.2.8. Sustainability

Create a social, economic and environmentally sustainable campus for the future.

Sustainable development is concerned with the overlapping working of the economy, environment and society. The vision for the campus encourages a sustainable and innovative approach to development that makes use of current best practice to make it more energy and resource efficient whilst encouraging economic development and social equity. Efficiency begins with the overall layout of the campus which should be efficient in the use of land by ensuring that the urban form is compact and of a density that maximizes the potential of each site or area whilst protecting distinctive character. A variety of building types, uses, sizes and tenure will encourage the creation of a mixed and balanced sustainable campus.



Reuse and Recycle

The reuse and recycling of existing buildings, particularly historic ones, is encouraged throughout the campus. Most existing buildings worthy of retention represent a significant amount of embodied energy and finding new

uses where appropriate and renovation to modern standards is encouraged as opposed to demolition and reconstruction. In addition, all new development should have a waste management strategy to ensure adequately sized storage areas, particularly for recycling, and access for collection is considered at an early stage.

Efficiency

Individual buildings should be efficient in their use of energy and water by incorporating energy and water saving devices, together with renewable energy technologies where appropriate and practical. Wherever possible, sustainable building materials and techniques should be employed during the construction phase, including waste reduction and recycling.

Reduce the Risk of Flooding

Reducing the risk of flooding in the campus through sustainable drainage systems (SUDS) is to be encouraged in both new development and improvements to the public realm where possible to reduce the speed and quantity of surface storm water run-off. The incorporation of SUDS can also support increased biodiversity where water is kept at the surface.

Biodiversity

New landscape features and green spaces should ensure they have wildlife value wherever possible to support increased biodiversity across the campus.

Environmental Standards

The policies covering a range of environmental standards which will subsequently be applied to the campus to be developed. This will include the Code for Sustainable Homes Level 3 or above, the aspiration to achieve BREEAM 'Excellent' for non-residential development and renewable energy production targets. In addition, the application of a 'green space factor' for new development is to be considered to maximize the amount of green space in the campus and minimize sealed areas. This is to create an attractive and healthy environment for residents, workers and visitors, promote biodiversity and minimize storm water run-off.

3.3 Public Realm⁽²⁰⁾

The Public Realm is the streets, squares, parks, green spaces, and other outdoor places that we pass through in our everyday lives.

High quality, inspirational public places are not just a desirable element of regeneration, they are essential to creating successful, vibrant, live able campus. Creating quality public realm in AMU will improve the image of the campus and enhance quality of life. It is also becoming increasingly acknowledged that investing in quality public space brings measurable economic benefits;



The aim of this Public Realm Strategy is to inform and guide public realm improvements within the campus over the next 10 years. It aims to set out an inspirational framework and a set of public realm standards that will:

- Improve the AMU image to create a memorable and distinctive campus;
- Create a vibrant, dynamic and inclusive public realm that encourages greater use of the campus and its assets;
- Enhance the AMU's unique character areas and built heritage through a coherent design approach;
- Create a legible, accessible and easy to navigate the campus;
- Establish a restrained, classic palette of materials and street furniture that is robust, sustainable, low maintenance and realistically affordable;
- Enhance the sense of place and community through public

3.3.1. Material selection criteria for Public Realm Elements

The material selection for all public realm elements should be influenced by four criteria which will need to be evaluated with equal weighting when specified:

- Sustainability
- Cost
- Aesthetics
- Function

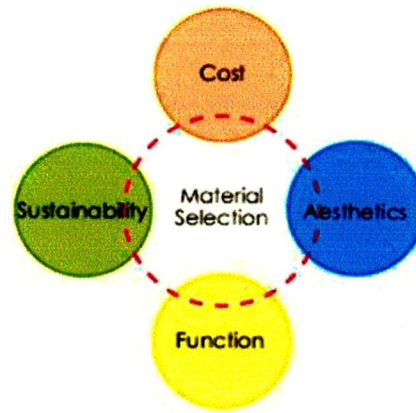


Fig. 4: material selection criteria

Sustainability

As part of a holistic and sustainable approach to site design, all materials used within campus public realm should be subjected to a sustainability review. This will enable to lower the environmental impact of projects, improve upon existing benchmarks at the same time as monitoring build cost. The sustainability credentials used in selecting materials should be broken into five performance indicators which take into account the total life span of a product.

- Embodied energy (including raw material processing, manufacturing and transportation to site);
- Energy consumption during a products lifetime and choice of responsible materials;
- Choice of environmentally responsible materials;
- Sourcing 'locally';
- Durability/Reusability/Recycle-ability.

Cost

It is not realistic to suggest that all areas of campus public realm should be of the same quality. Investment in the public realm should be focused on areas

of the campus which are the most significant, attract the highest public usage and are most visually prominent. This investment hierarchy proposes the highest quality of materials in the primary streets of the campus.

Investment should be focused in these areas and gradually reduced as you move away from the Core.

Aesthetics

The aesthetics of the materials, furniture and lighting elements of the public realm are to be selected thoughtfully. The components and materials that have been selected aim to create a revitalised, contemporary campus whilst respecting and enhancing the existing historic character and identity. The aesthetics and character of materials for individual streets and spaces will be informed by proposed Levels of Intervention. The materials palette aims to:

- Enrich existing assets, building upon strong character in areas of Conservation;
- Redefine and revitalise the identity of dated and tired areas in zones of Repair and Recovery;
- Create new identities for areas of Reinvention and Reconfiguration. By implementing this graded approach through a co-ordinated materials 'family', the materials palette aims to create a coherent unified image for the campus, revitalized and refreshed for the 21st century.

Function

The function of materials, furniture and lighting is inextricably linked to the sustainability of the campus public realm. The 'Street Hierarchy' will ultimately inform the type, size and implementation of materials. In general materials should be:

- Simple, robust and fit for purpose;
- Maintainable;
- Carefully detailed and implemented;
- Multi-functional, and thoughtfully designed

3.4 Case study

3.4.1 King Faisal University, Saudi Arabia, Dammam campus⁽³⁾

3.4.2 IIT Roorkee, Campus⁽¹⁴⁾

3.4.1. King Faisal University, Saudi Arabia, Dammam campus

- Architect : Andrault and Parat with Beech Architects
- Established : 1977
- Area : 500 hectare, along the coast road between Dammam and Al Khobar

- **Special Features:**
 - Sea side campus with ocean views.
 - Mosque as dominating feature
 - Islamic Urban tradition blended with International design.
 - Pedestrian only campus with cars kept at periphery
 - Use of self contained courtyard building to provide phased construction.
 - Use of palm tree as sacred symbol of Muslims.

The layout and design of individual buildings brings the best of Western rational architecture and Islamic tradition together. Here each school shares an excessive use of palm planted either courtyard or at the entrance which is a sacred symbol of the Muslim community. A further perimeter road system handles parking (there is 100 per cent staff and student provision at the university) and joins the Dammam campus to the public highway. A perimeter circuit of dual carriageways allows the campus centre to be retained for pedestrians who walk the 300 metres from the nearest parking area.

The architectural character of the campus is the most Islamic of any recent university in the Middle East. The banning of cars from all but the perimeter, the clear sense of hierarchy in the provision of buildings and configuration of routes, the employment throughout of interconnected courtyards, and the dominating presence of the central mosque give this large new campus relevance to cultures which wish to maintain their identity in the face of globalizing education.

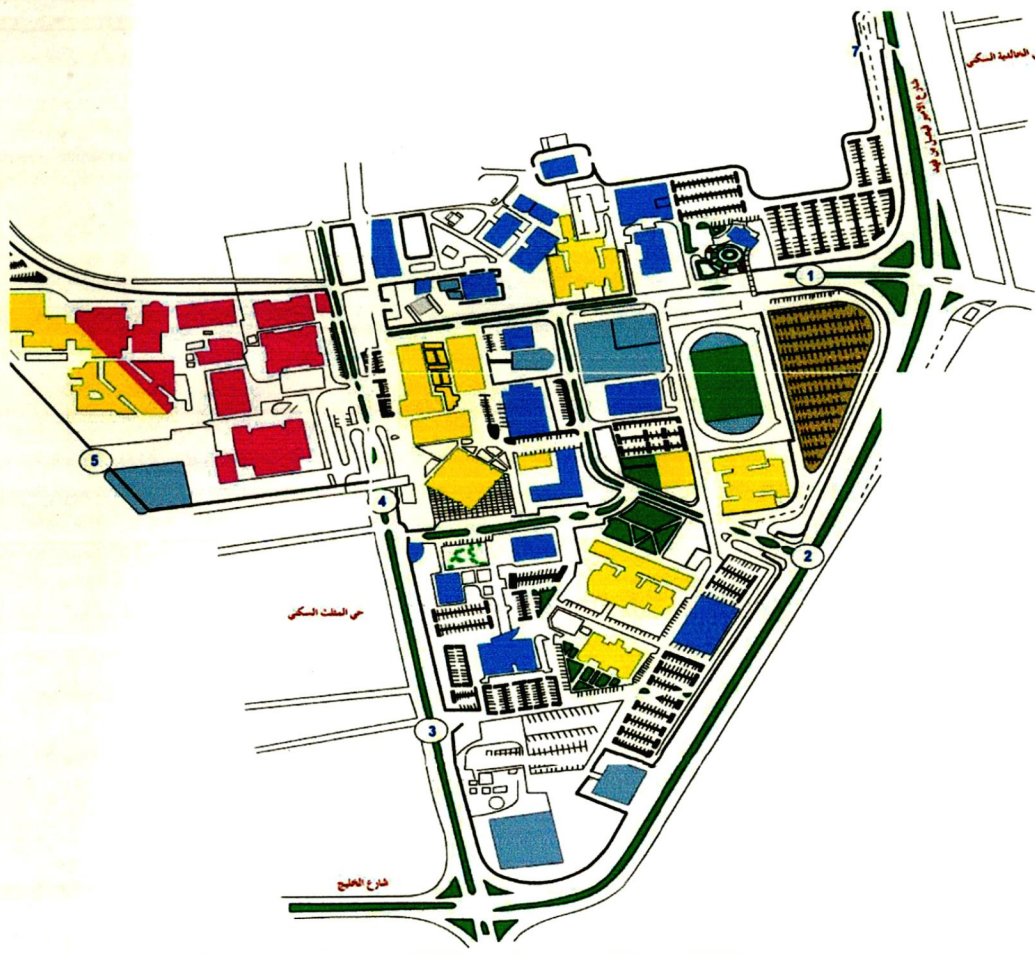


Fig.5: Master plan of King Faisal University, Saudi Arabia, Dammam campus

Analysis

- Entrance street that provides legible and pleasurable access to the campus. Palm tree shows the sacred symbol of Muslim community.



- A variety of scales, massing and architectural style applied in a thoughtful manner enhances the visual quality of the building.



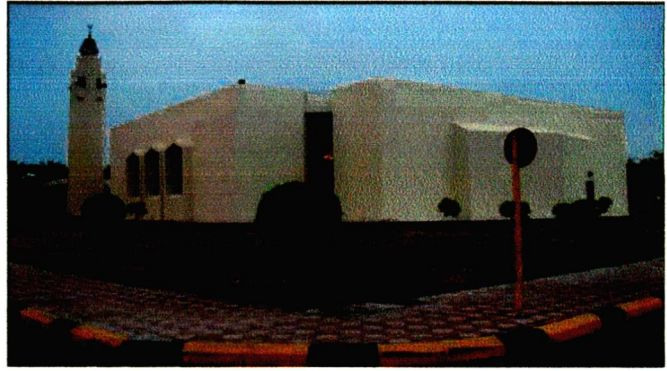
- Streets are well conceived, safe, attractive and people friendly.



- Parking is provided to the rare of the properties to reduce the impact on the street environment.



- Mosque is provided at prime location to act as focal point to the campus



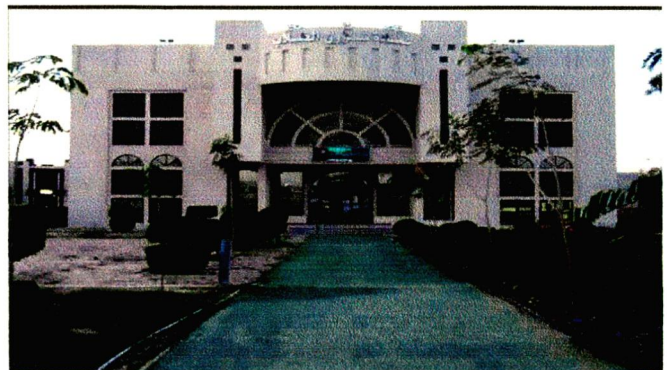
- Innovative parking has been sensitively integrated to aid the legibility .



- The use of modern materials such as steel, aluminium and glass has been explored to achieve bold contemporary architecture.



The quality of street and setting of building creates a strong identity and sense of arrival.



3.4.2 IIT Roorkee, Campus⁽¹⁴⁾

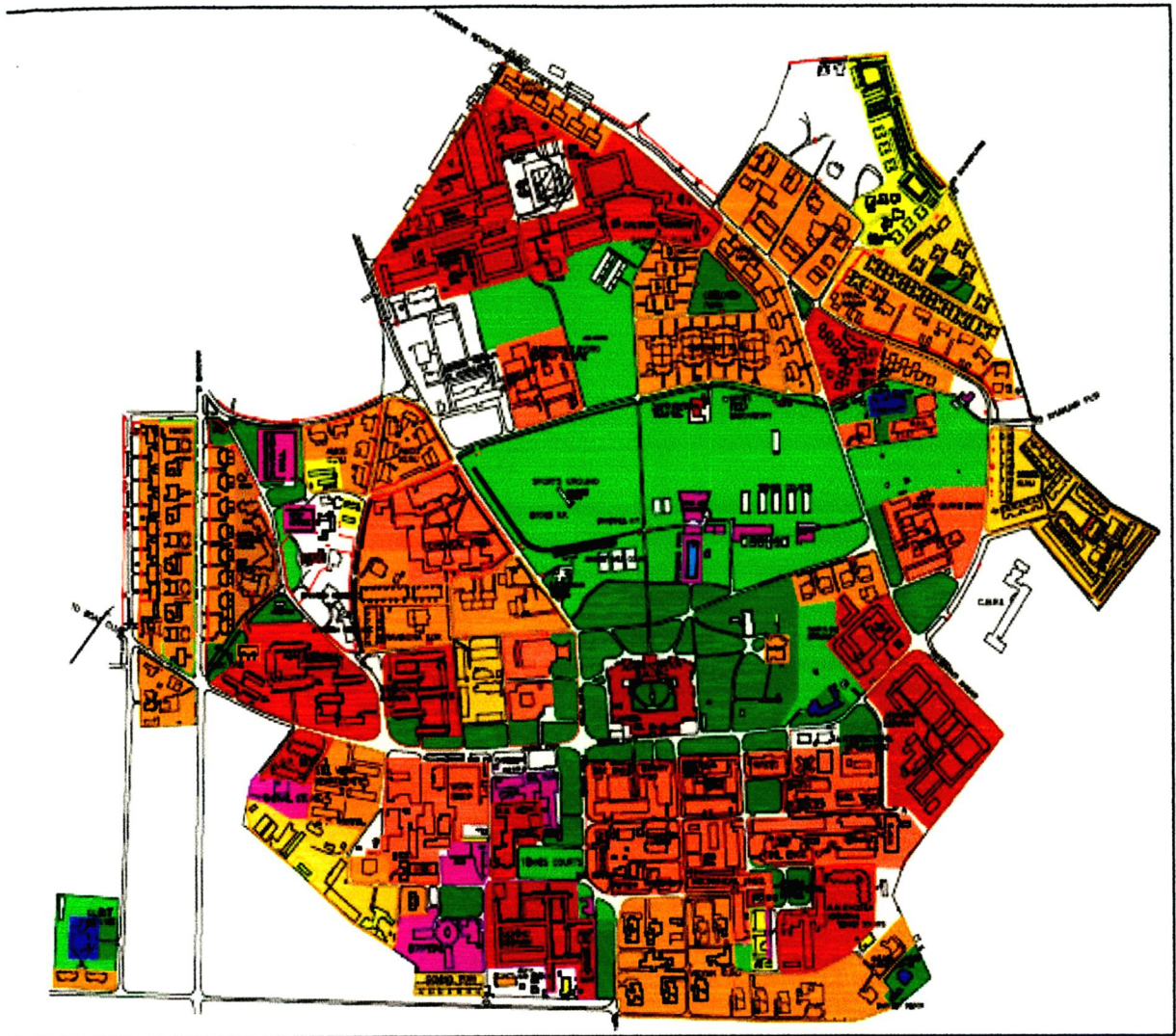


Fig.6: Master plan of IIT Roorkee Campus

Legend

Residential

Hostels

Academics

Green Grounds

Green Lawns



Heritage Building

Central Facilities

Guest house

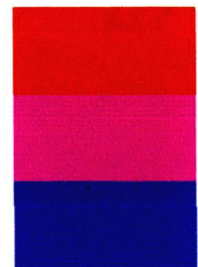


Table2: Area distribution⁽¹⁴⁾

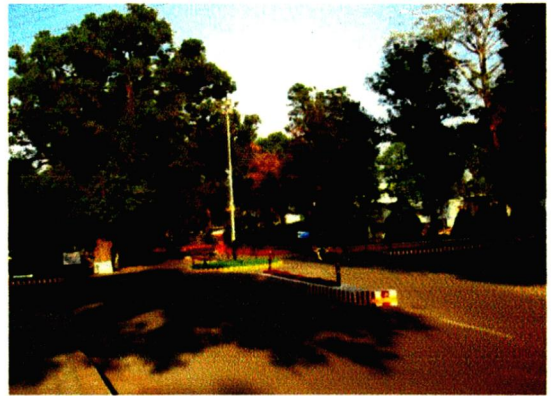
Present campus Area	358.5 Acres	100%
Housing	100 Acres	30%
Hostels	50 Acres	15%
Academics	50 Acres	15%
Central Facilities	20 Acres	5%
Roads	50 Acres	15%
Open Spaces	78.5 Acres	20%

Special Feature :

- Spatial order, connectivity and hierarchy in layout of buildings and landscape.
- Plantation, low height boundaries creating the edges of the campus.
- Well landscaped Heritage building is dominating feature of the Campus.
- Articulation of land mark and background buildings.
- Pedestrian and vehicular segregation on roads.
- Well developed junction and paths
- Well defined boundaries.
- Colour has been used to create unity of the campus.

Analysis

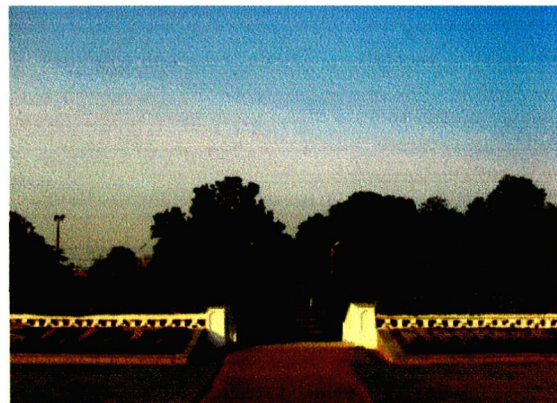
- Well treated junctions aid legibility and make easy to navigate into the campus.



- Pedestrian and vehicular segregation of the street avoids conflicts.



- Planting of different types ,using many species for their seasonal colour or texture complement the orchestration of built form.



- Streets shows definition, active frontages and permeability.



- Streets have strong sense of enclosure and continuity.



- U G Club encourages leisure use and temporary events.



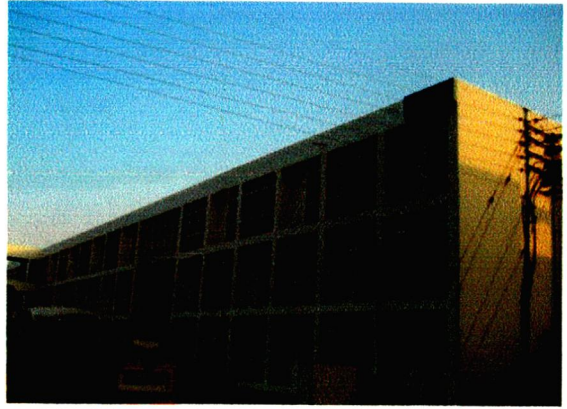
- Students centred activity area enhances natural surveillance to the campus.



- The main building shows the architecture of highest heritage and amenity value with a quality public realm.



- Contemporary architectural style material and colour create a sense of coherency.



- The tower structure of electronics department acting as landmark.



- Good quality public realm of central library create a new identity for the area.



- Good landscaping integrate the building and their external spaces into an imageable whole.



Chapter IV

Analysis, Recommendations and Proposals

4.1 Imageability Analysis of AMU Campus

Key issues:

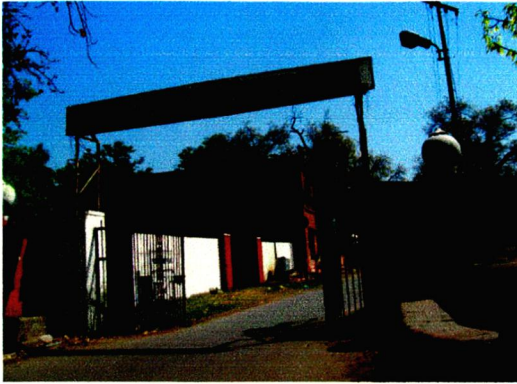
- Diverse building types, scales, characters and land uses of variable quality that lack a sense of coherency;



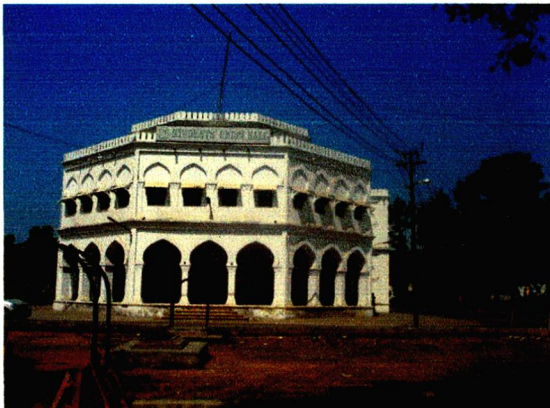
- Streets lack a sense of enclosure and definition. Low quality, weak frontages to the Street detract from the significance of buildings



- Poor legibility of gateway, entrances and boundary wall of the campus.



- Potential landmark buildings lack prominence and are devalued by poor public realm;



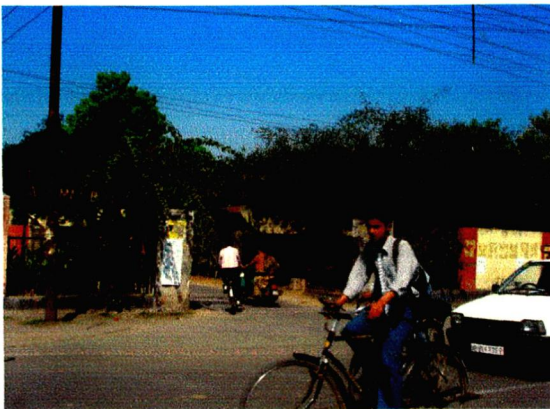
- Unattractive street environment, untreated street junctions often creates congestion during peak hours.



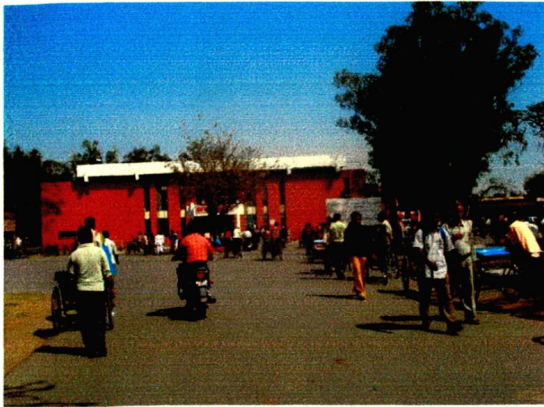
- The area around the SS Hall has a strong heritage value but the feeling of seclusion prevails as it became at one corner of the campus.



- Medical Road provides the key approach to the campus from Allama Iqbal Hall side, but heavy traffic, poor public realm and ill defined gateway decreases the sense of arrival.



- Traffic, street clutter and low quality footways create a poor pedestrian environment, particularly at medical college OPD.



- Architecture of the highest heritage and amenity value is detracted from by poor quality of public realm, lack of proper parking and maintenance.



- Blending of new construction with heritage buildings detracts the Architecture of the highest significance.



- Poor legibility in conjunction with lack of animation and identity, results in footfall levels and a 'no-go' area after dark.



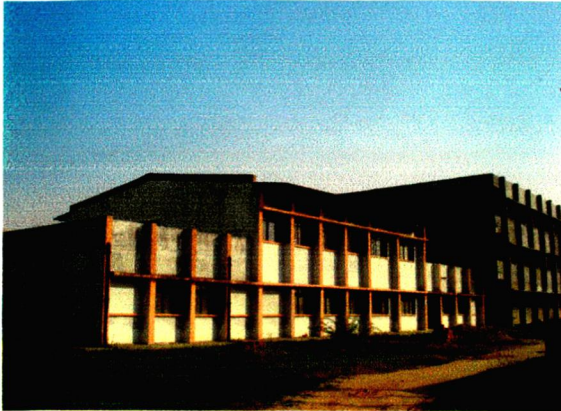
- Key buildings and nodes lack definition.



- The current street layout does not accommodate leisure uses or encourage animation of the street. As a result pedestrian safety and enjoyment is reduced.



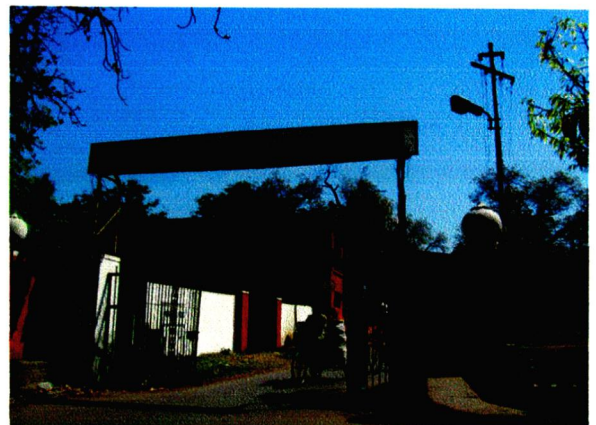
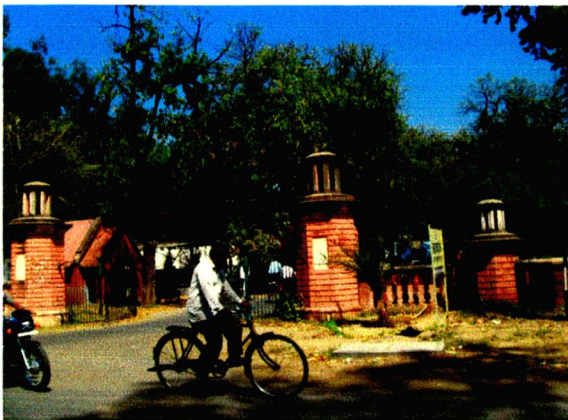
- Ad hoc constructions, gaps in building frontages and insensitive infill development compound the negative image.



- Some places have a good sense of identity and civic pride. However, the outdated public realm lets the space down and does little to enhance the sense of place.



- Lack of security arrangements on entrance gate gives the feeling of insecurity into the campus.



- Poor pedestrian crossing, ill defined primary streets and a lack of signage makes navigating to the campus difficult.



- Left out spaces require attention to create a good quality public realm.



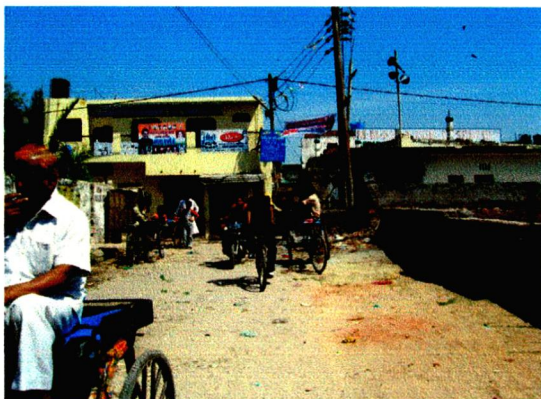
- There is lack of proper landscaping in the campus.



- There is no colour and material regulation on the exterior facade of the campus buildings.



- The University Authority is helpless to control over encroachment into the campus



4.2. Evaluation

A check list of preferred qualities and characteristics could be framed with ratings. The campus could be evaluated against this checklist. A simple rating scale can be used. A scale of 1 to 5 is sufficient to accurately cover the range of performance: 5 = excellent; 4 = good; 3 = average; 2 = poor; 1 = very poor;

Character

- Anchors to the past
- Style, Scale and Context
- Visual character
- Transformation of character

Continuity and enclosure

- Continuous frontage and boundaries
- Permeability
- Fronts and back
- Defining the street
- Street planting

A quality of public realm

- Street life
- Space to breathe
- Activity, natural surveillance and safety
- Visual richness
- Landscaping

Ease of movement

- Restricted movement
- Walking and cycling
- Parking facilities
- Accessibility

Legibility

- Routes/nodes
- Land marks
- Visual quality
- Views
- Signage

Table 3: Evaluation/quantification of image ability

S.No.	Quality Attribute	rating
1	Character	3
	Anchors to the past	4
	Style, Scale and Context	3
	Visual character	4
	Transformation of character	2
2	Continuity and enclosure	3
	Continuous frontage and boundaries	2
	Permeability	3
	Fronts and back	3
	Defining the street	3
	Street planting	3
3	A quality of public realm	3
	Street life	3
	Space to breathe	2
	Activity, natural surveillance and safety	2
	Visual richness	3
	Landscaping	3
4	Ease of movement	3
	Restricted movement	1
	Walking and cycling	4
	Parking facilities	2
	Accessibility	3
5	Legibility	2
	Routes/nodes	3
	Land marks	1
	Visual quality/aesthetics	3
	Views	2
	Signage	2

4.3. Recommendations / Proposals

To ensure the Urban Design Principles are implemented appropriately, a simple three tier graded approach has been developed to guide the successful regeneration of campus. These degrees of intervention determine the extent of development or conservation required.

4.3.1 **Reinvention and Reconfiguration zone** (Areas of big change)

4.3.2 **Repair and Recovery zone** (Areas to improve)

4.3.3 **Conservation zone** (Areas to conserve)

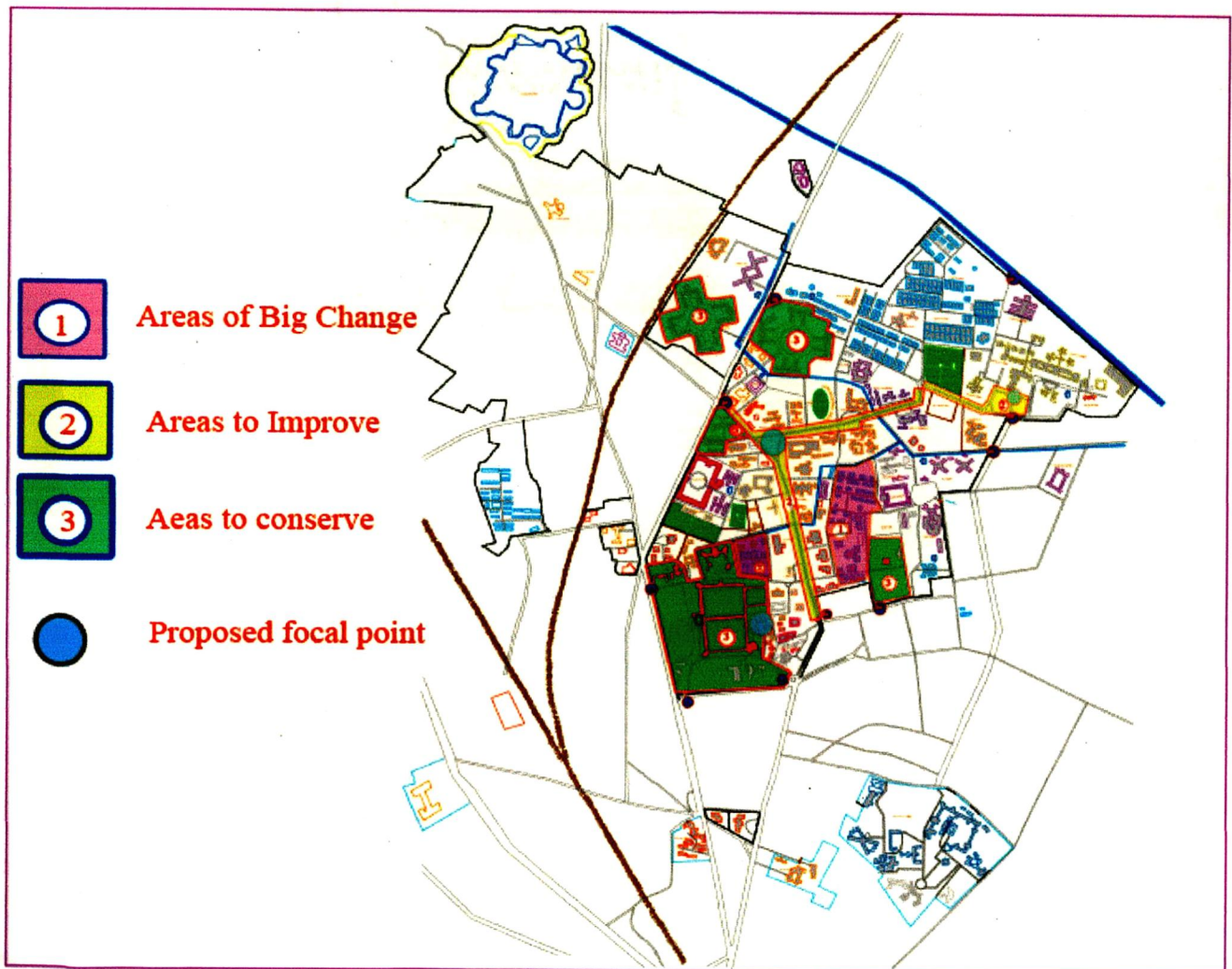


Fig.7: Division of zones



Fig.8: Buildings and activity in different zones

4.3.1. Reinvention and Reconfiguration zone (Areas of big change)

- These are areas of the campus that have the most potential for change with many of the existing buildings and land uses being of a lower quality or old age. Larger scale development is most appropriate in these areas.
- They can accommodate a high degree of change in terms of land use and urban form.
- Create a new identity within overall urban design principles.
- Create focal points /land marks/vistas to enhance the legibility of the campus.

Proposals

- New development should embrace contemporary styles and materials and promote design excellence and innovation.
- In the vicinity of retained buildings, the scale and materials finishes of new development should reflect that of the surrounding context if appropriate.
- The quality of street and the setting of the buildings should be improved through an iconic contemporary public realm that creates a strong identity and sense of arrival.
- New development should not hinder views or encroach upon the setting of significant character buildings. New additions should be sensitive to retained building heights and scale.
- New development should respond to the surrounding routes and create a strong edge to the campus.
- Active frontages at street level should be created to increase pedestrian activity and provide natural surveillance to enhance safety on streets.
- Buildings should be organized to encourage street activity in key locations.
- There is scope to introduce an iconic/landmark building at the campus to improve legibility.
- Create a strong street frontage into the area. Servicing and parking should be hidden at the back of buildings to ensure active frontages to the street.
- The streets should be given a sense of enclosure and continuity with solid and strong built form.
- Boundary treatments should be developed to give uniformity and quality to the streets.

- High quality public realm should create a new identity for the area.
- Redesign the campus streets. Reduce the impact and dominance of vehicles through street greening, widened footways, lighting and active ground floor elevations.
- Network of streets and small public spaces should be pedestrian focused, of a high quality and promote a sense of place and identity.
- Parking should be sensitively integrated. Surface level parking should be encouraged and integrated into the landscape by quality public realm.
- Parking should not affect the quality of the public realm. New developments should provide sensitively integrated parking solutions that do not negatively impact upon street character.
- A clear hierarchy of streets should be established that places University road at the top.
- New buildings should present an active frontage to the street and respect the existing building line.
- Disabled access /exit and parking to be considered thoughtfully.
- Provide clear and safe routes that are well signposted to aid legibility.
- All new or refurbishment development should be flexible and adaptable to ensure they can accommodate changing circumstances over time.
- Court Square should be designed as a flexible space that can accommodate a range of activities.
- New development should have visual diversity. A variety of scales, massing and architectural style applied in a thoughtful manner will enrich the streets and create a distinct campus quarter.
- Use sustainable materials, locally sourced if possible.
- Incorporate Sustainable Urban drainage systems.

4.3.2. **Repair and Recovery zone** (Areas to improve)

- These zones are currently working well, but there may be areas where they could realize their full potential. A moderate level of change may be appropriate including development on key sites and improvement of the public realm.
- These are the areas with elements of distinct character and quality, but require 'repair' to enhance aesthetics and integrity of the campus.
- The innovative and creative interventions possible to reinforce the area's character.

Proposals

- Conserve and enhance historic buildings, improve the quality of building fronts and enhance the setting of the buildings and key landmarks through a distinctive, contemporary public realm.
- Rejuvenate the streets through new active ground floor uses and public realm improvements.
- New interventions will be small and likely to involve upgrading of building fronts and elevations. For properties adjacent to historic buildings, these should be done using building materials that are sensitive to the area's character.
- New buildings should be sensitive to the Conservation Area, employing contemporary influences in a palette of exiting materials.
- Along the university road, within the vicinity of high quality buildings, new infill development should respect the scale, character and material finishes of the area.
- New infill architecture would be promoted where the integrity of the built form has been lost. High quality contemporary designs should be sought.
- Encourage the innovative reuse and refurbishment of existing character buildings to preserve architectural heritage whilst establishing a new identity for the area.

- General improvement /construction of buildings should be in keeping with the character and style of the buildings.
- High quality public realm should be focused along primary streets. This should be of a contemporary character that complements the building frontage.
- The boundary treatments to the main Street and others should be such that to provide a high quality and consistent street frontage.
- Building frontage should be strengthened to provide a solid face to the street at the back of pavement.
- New buildings should present an active frontage to the street and respect the existing building line.
- Edges to the urban green space should be fronted by mixed use buildings that provide active edges and natural surveillance.
- Improve the lighting and public realm to the lanes and connecting streets that enhance their unique character.
- Streets should be safe, attractive and people friendly.
- High quality public realm and a boulevard character will help and promote leisure uses.
- Disabled access /exit and parking will be considered thoughtfully.
- Opportunity to integrate an iconic viewing point within the campus.
- Widened footways reduced street clutter and traffic dominance will ease pedestrian movement and strengthen connections into the campus.
- Parking should be at the rear of properties to reduce the impact on the street environment.
- Create a public realm which establishes a clear hierarchy of streets.
- Encourage exploration of key buildings through signage, and lighting.

- Protect and enhance significant views to the campus.
- New infill blocks should be made as adaptable as possible to ensure they can change over time.
- Create a public realm that encourages leisure, seasonal and temporary events.
- Use sustainable materials, locally sourced if possible.

4.3.3. **Conservation zone** (Areas to conserve)

- These areas contain heritage buildings, however there are still opportunities for improvement. Smaller changes such as high quality developments on carefully selected sites will continue to maximize the historic character of these areas.
- Innovative and creative interventions possible, but must respect context.
- Areas to be protected from insensitive constructions.
- Neglected green areas to be developed with high quality public realm.

Proposals

- The existing historic buildings must be conserved and enhanced.
- New infill architecture would be promoted where the integrity of the built form has been lost. This infill should however be carefully controlled to ensure buildings are sensitive to their historic context. Only well considered designs which are of a form, scale, proportion and style appropriate to the urban fabric will be acceptable.

- High quality contemporary designs should be sought rather than pastiche reproductions.
- Materials should predominantly make reference to the existing buildings.
- Historic street character should be reinstated using traditional materials and techniques. Simple, contemporary, high quality interventions are preferable to the pastiche heritage style.
- New buildings should show sensitivity to their context and be in scale with the surrounding building heights.
- Existing old boundary walls to be explored and enhanced to maintain the historic street character and sense of enclosure;
- New buildings should present an active frontage to the street and respect the existing building line.
- High quality pedestrian focused character streets that encourage street activity.
- New buildings should be sensitive to the Conservation Area, employing contemporary influences in a palette of existing materials.
- 'Green' streets characteristic of the area should be protected and enhanced. Streets should be upgraded using a traditional palette of materials and techniques.
- Improved public realm and soft landscaping to improve visual and physical links to the campus.
- Walking and cycling should be encouraged through traffic reduction, slowed vehicular speeds and public realm improvements.

- On street parking should not detract from the quality or character of the Conservation Area.
- Enhance routes and gateways and provide better signage and interpretation to encourage exploration of the historic quarter;
- Gateways/ Street junction should be enhanced through built form, public realm and lighting.
- Infill buildings should be of small footprint to respect historic urban character.
- High quality contemporary interventions will enrich the character of the streets and complement the historic architecture.
- New buildings should respect the scale, massing and character of existing buildings, however sensitive contemporary architecture can greatly enrich the identity of the area and assist legibility.
- Sustainable local building materials and techniques should be used for new interventions.
- Reuse and refurbishment of existing historic buildings should be encouraged.

In addition, gateway and movement have been identified on key approach routes to the campus to be rejuvenated;

4.4. Gateway

4.4.1. Recommendations/ Proposals

- Development on the gateway site should be of a significance and quality that enables it to perform its role as an entrance to the campus.
- Several are currently inadequate or leave a poor impression need modifications/ alterations
- Opportunity to improve in line with urban design principles.



Fig.9: Existing condition of University gates



Fig.10: Existing condition of University Gates and roundabouts

Proposals

- Campus fortification is first and for most requirements to avoid trespass into the campus.
- Entrance gates are required to be made legible by modifications / alterations over the existing one.
- Architectural character of the campus to be maintained at the time of modification/alteration of the gate.
- An ambience of the security to be created at the entrance gates.
- Direct entry into the departments/halls/hostels to be strictly closed from the local road.

- Opening and closing time of certain gates to be stipulated.
- Records of entry and exit of outsiders to be maintained.
- Security personnel to be well equipped with latest facilities.
- Security check post to be made to the main entrance/ exit gates which are open for long hours.
- Trespassing into the campus from Zia Bad side to be stopped immediately.

4.5. Movement:

Easing Movement is a key urban design principle which must be achieved to unlock the campus and readdress the balance between vehicles and pedestrians to allow the implementation of the Public Realm Framework. In order to allow a reduction in vehicular traffic and an improved pedestrian environment, the vehicular traffic which currently uses the streets within the campus will need to be redistributed across the network so that free and safe movement would be possible within the campus.



Fig. 11: Existing condition of street

4.5.1. Recommendations/ Proposals

- Provide a legible network of connected streets where the most vulnerable user has priority. Campus streets should be designed such that pedestrian movements take priority, followed by cyclists and private vehicles.
- Level access should be possible along all key pedestrian routes, with raised tables at junctions contributing to reduced speeds, whilst ensuring that there is no need for pedestrians to step down into carriageways.
- The key principle in ensuring a pedestrian friendly, safe streetscape is the reduction of vehicular speeds. The design of the street should be such that vehicle users travel at reduced speeds intuitively.
- Where possible streets should be self enforcing, with layouts that encourage the desired uses, whilst discouraging those uses which will detract from the pedestrian experience.
- Street design should respond to the buildings, and street frontage.
- Provide only necessary on street parking, where parked cars will offer a benefit to the streetscape and will not detract from the public realm.

Proposals

- Improvements to junction that allow access and helps to reduce conflicts.
- There is no need to provide traffic man at street junctions.
- Potential new connection within the campus for convenience.
- Widening of existing roads which gives the feeling of safety and security.
- Secure long term parking should be located at proper place to avoid on street parking.

- Short term cycle parking should be located on the periphery of the pedestrianised zone to enable close, easy access on foot to the destination.

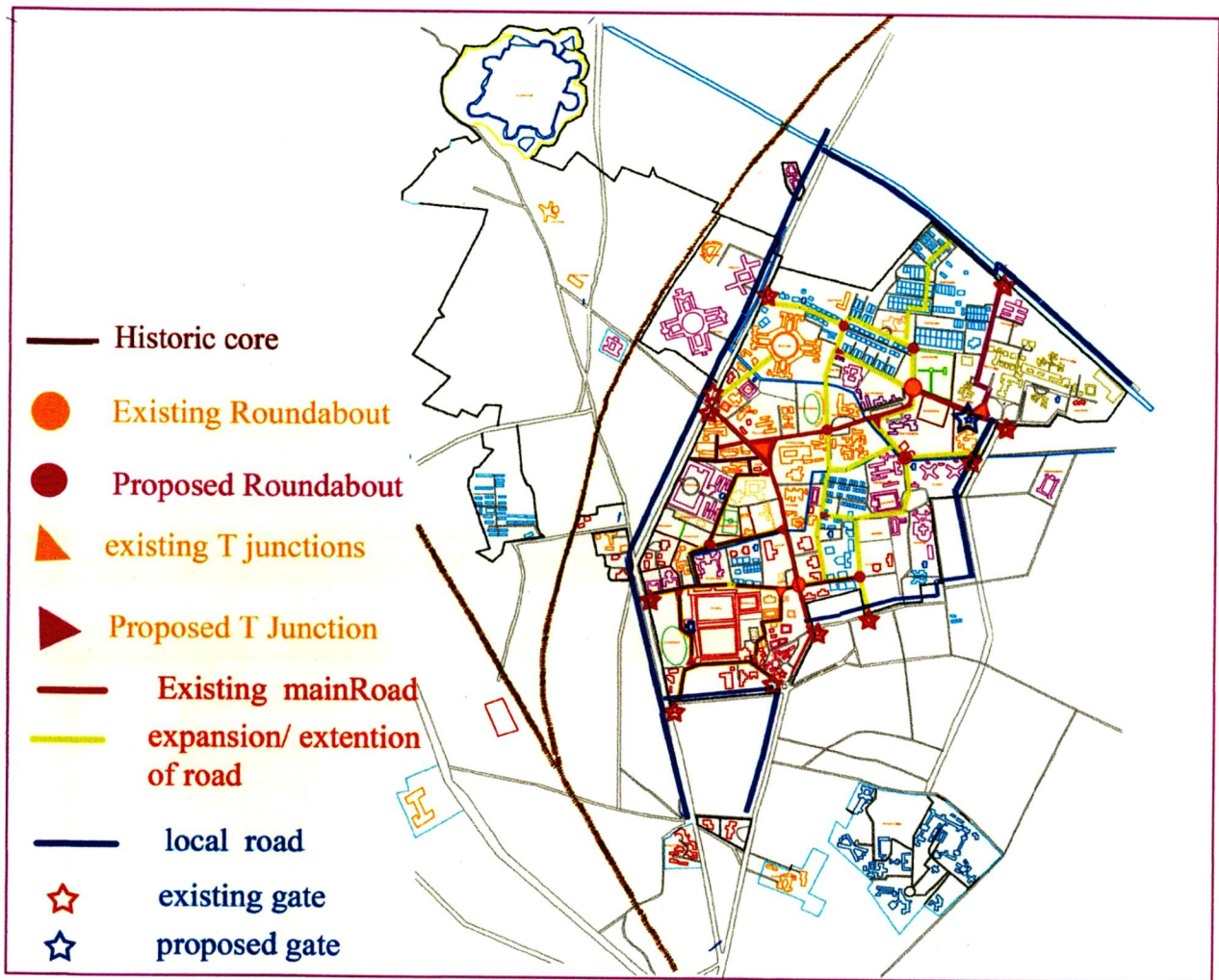
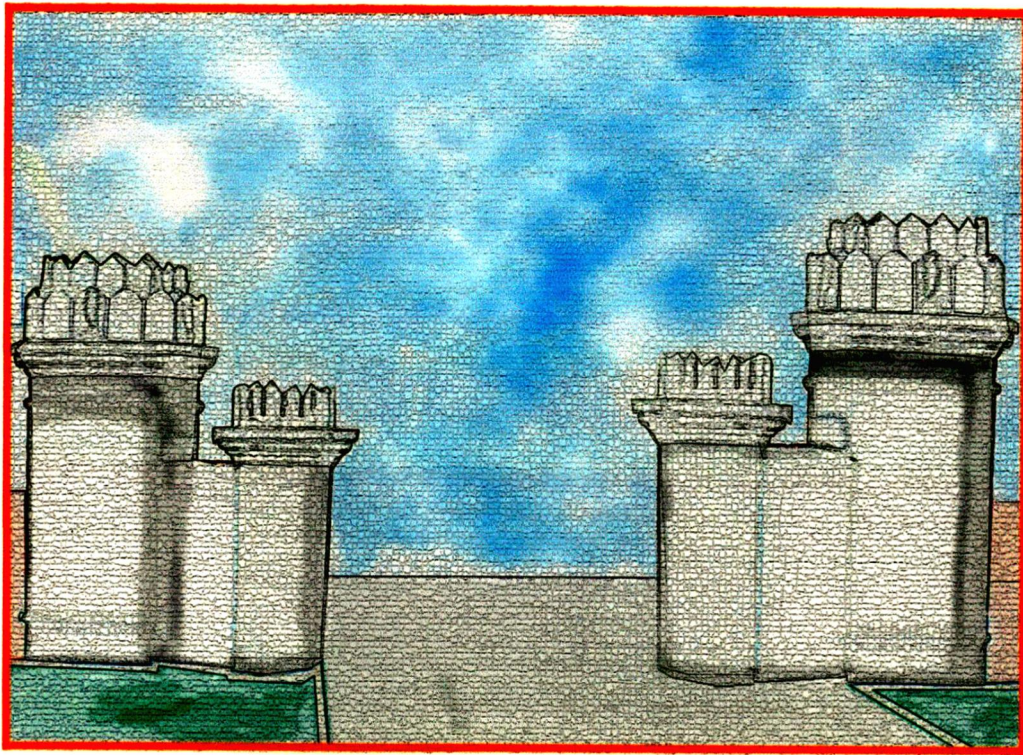
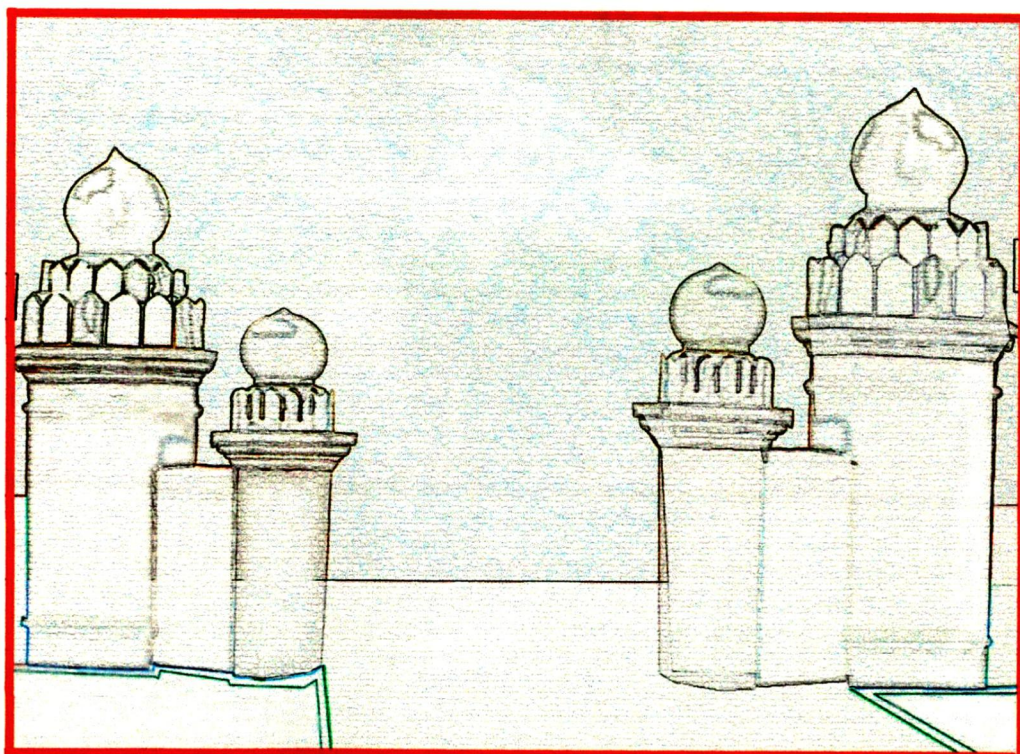


Fig.12: Proposed streets and roundabouts

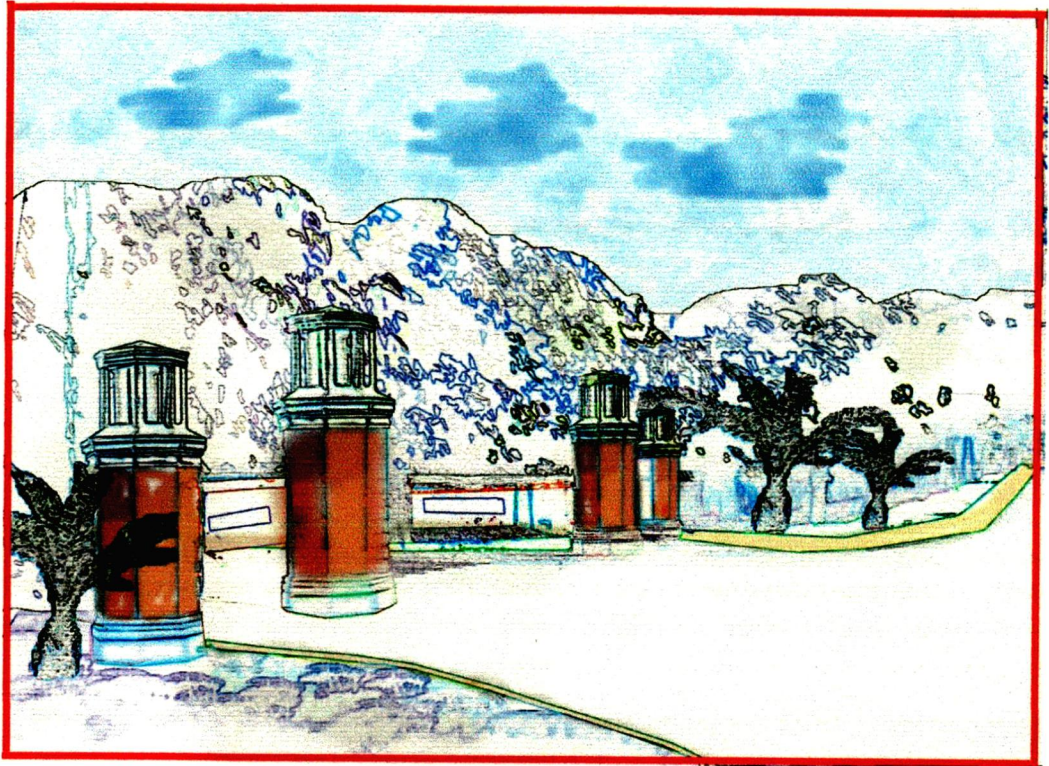
4.6. Illustrated Images of the campus



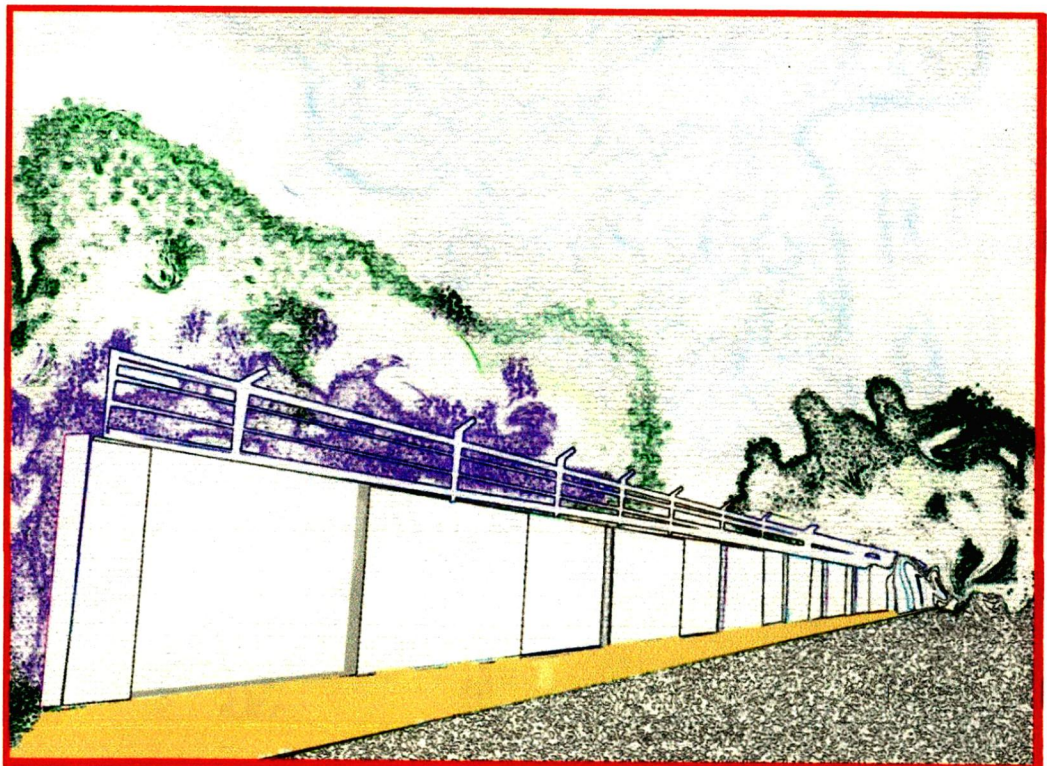
Entrance gate for Department



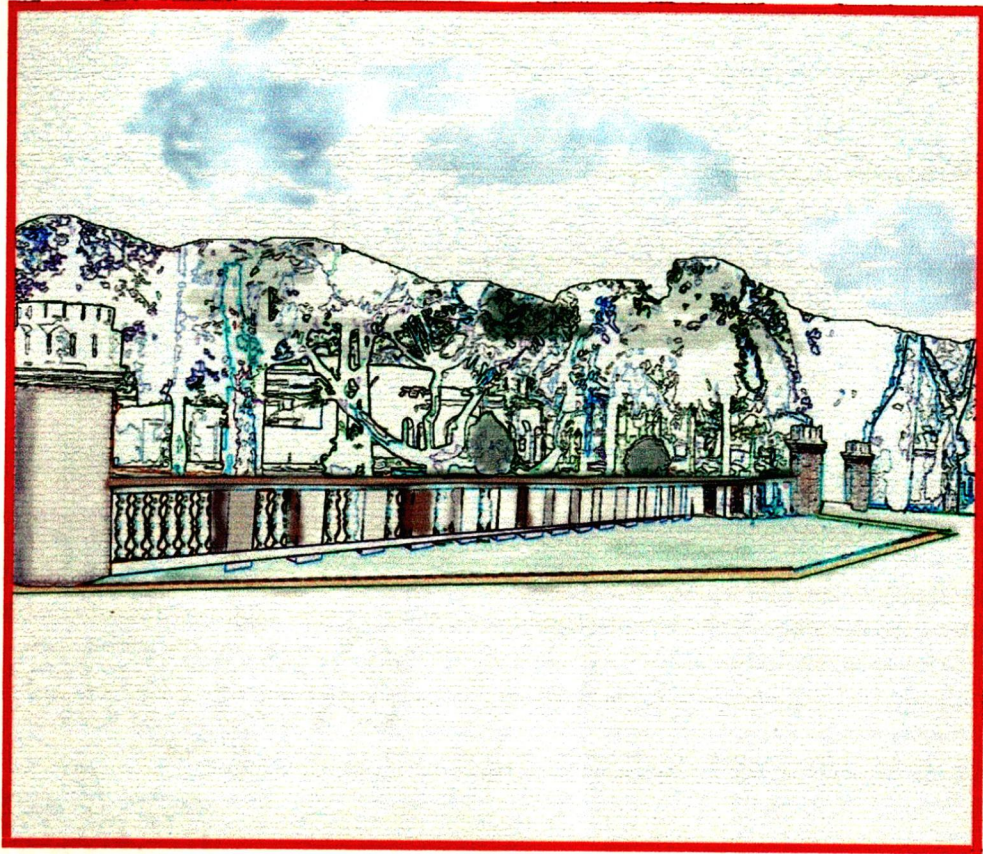
Entrance gate for hostel



Entrance gate for campus



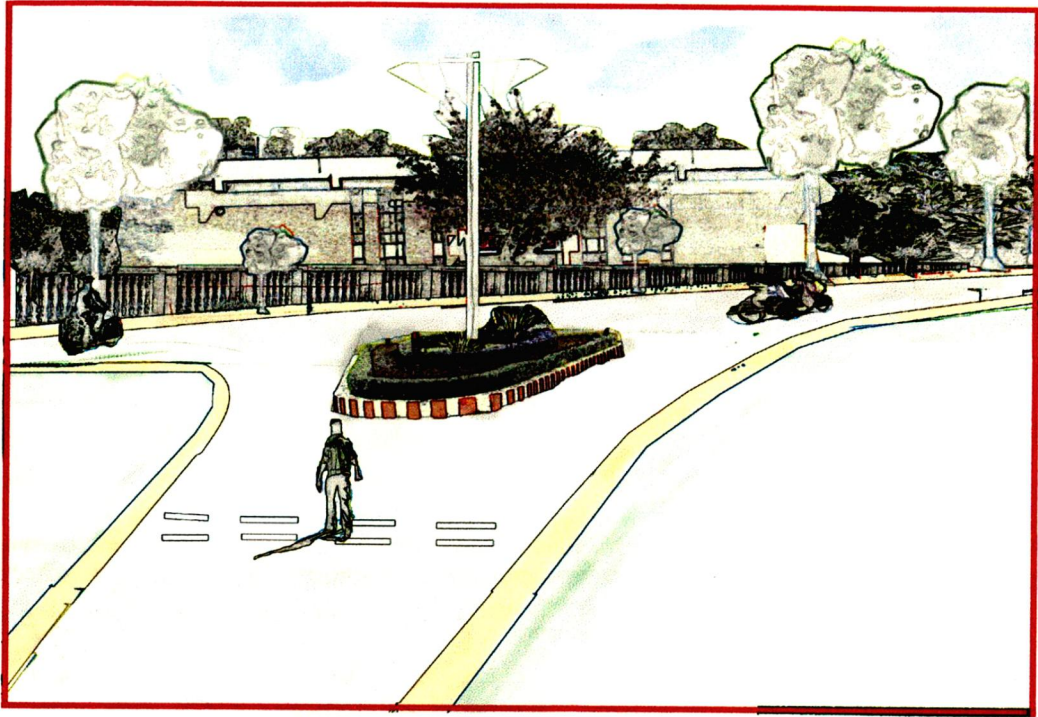
Campus boundary wall



Department boundary wall



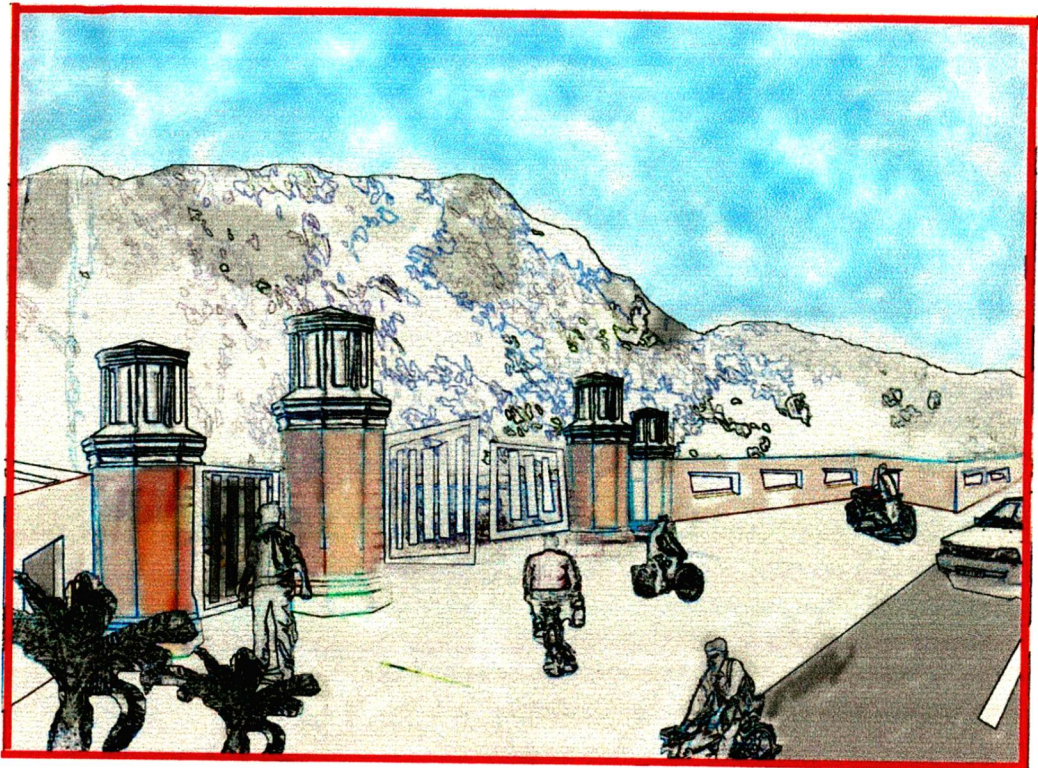
Hostel boundary wall



T-junction of campus



Roundabout of campus



Entrance gate from Allama Iqbal Hall, Medical Road



View of University Road Aligarh Muslim University

Conclusions

The University campus has great demand for expansion, and to meet the need scattered and patchy developments on the out skirts of the main campus are being observed. This development is unable to secure its boundaries as well as integrity of the campus. Moreover in the development process there is a gap of urban design which causes deterioration in image ability and identity. So a stage has reached which requires that all the development within and in the immediate vicinity of the university area should be critically appraised and the existing lacunae and short comings in the development of the campus should be identified.

The existing condition and ground realities is by no means an end in itself, rather it is a first step aiming to initiate the much needed urban design project at Aligarh Muslim University Campus to improve the overall image which are predominantly present in the early phases of campus development. It is to ensure that from now on, through careful and sensitive planning and design, all future development would be undertaken in accordance with urban design guide; that building and myriad activities would meaningfully relate to each other and the era of plan less regime would come to an end. And, more than that, the architectural expression and urban design form expressed in its original buildings would hopefully, with care and sensitivity inspire future design style of Aligarh Muslim University Campus, of course, taking into consideration the bold contemporary architecture and urban design to satisfy the functional requirements. Ideally the University campus should have an intellectual ambience and a pleasant environment conducive in promoting healthy interaction of ideas and mind of the new generation, to foster them a creative and purposeful direction while imbuing them with qualities of independent thinking and judgement in their future endeavours.

So, a comprehensive plan of existing and new development for future expansion of the campus should be prepared keeping in mind the urban design guide and public realm framework which will help to have strong planning regulations to ensure well designed high quality buildings and public places, and help to guide how we want the campus to look in the future.

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Maps and Photographs

Maps; digitized by Author, Source Google Earth

Photographs; Courtesy the Author