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Analysis of Post-Independence Architecture of Lucknow Emerging Trends for Contemporary Design

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Abstract: ***Critical regionalism is an architectural approach that looking towards correct sterile and abstract modernism by using contextual forces that focus on local needs, native desires and potential. As Economic process disrupts and displaces local building traditions in India's metropolitan cities, critical regionalism offers resistance to the homogenizing forces of global modernism. This paper analyses of key architectural projects realised in Lucknow since 1857 to 1947 that incorporate the ideas of critical regionalism in their designs. The different approaches adopted by regionalist architects in dealing with native climate, topography, materials and socialism complexes are given. By limiting itself to regionalist works in city, the paper tries to spotlight that important regionalism isn't a set of aesthetic preferences however a philosophical framework capable of manufacturing various kinds of architecture despite analogous external influences arising from similar site conditions.***
Keywords: Critical Regionalism, Global modernism, Climate responsive architecture, Socialism Complexes

I. INTRODUCTION

Lucknow is situated on the southern bank of river Gomti. Lucknow has been a city where the rays of different cultures, languages, creeds and communities merged from the Avadh syndrome and where the Indians and foreigners, charmed by its peculiar attractiveness, made their homes. They left their mark on the city. Vestiges of the past stand everywhere, whispering about the centuries that have seen Lucknow evolve from its humble origin to the bustling, living city of today. It is best known as the abode of Nawabs; for its open spaces, its picturesque setting, its gardens and beautiful medieval buildings. The city has often been described, due to its innumerable parks and open spaces, as a garden city. The post-Independence developments have, however, made it almost impossible to live up to its glorious past. The city is practically under siege and perpetually tormented by excessive pressure of population, poverty and mismanagement. Yet, it continues to be the best city of Ganga valley. (Administration, 2021)

II. HISTORICAL EVOLUTION OF ERA

Different ruling powers left their own impressions in different parts of the city through a different urban ingredient. Whereas the Nawabs gave the Bagh's, Ganj's, mosques and Imambara to the southern and western parts of the city, the Britishers gave the Cantonment and the Railway Station to the east and south which resulted in a layering process whereby the new power overlaid another fabric over the preceding one.

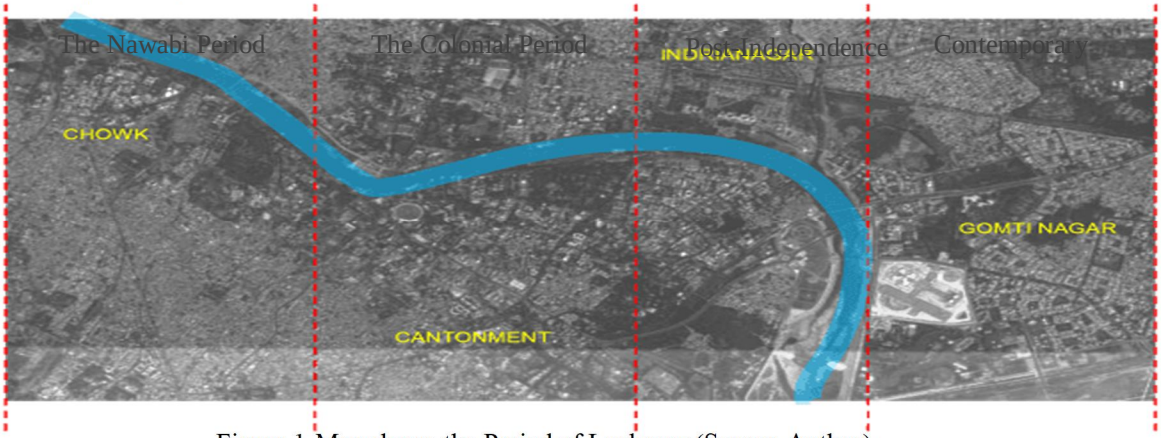

Figure 1-Map shows the Period of Lucknow (Source-Author)

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III. CRITICAL REGIONALISM DEFINITION

A. The term critical regionalism was first used by Alexander Tzonis and Liane Lefaivre and later more famously by Kenneth Frampton. (Raheja, 2019)

B. In the 1980's a few architects and theorists were disappointed with the direction that architecture was taking under the influence of postmodernism.

C. Rather than unveiling the historicity of style in their designs, postmodern architects became another Avant Garde (New and experimental ideas) that produced designs that mimicked classical style.

D. "The task of critical regionalism is to rethink architecture through the concept of region" (Lefaivre, 2003) Critical regionalism is an architectural concept the seeks to balance local needs and capabilities with the progressive lesson of modernization, critical regionalism has been an influential architecture approach in post-independence Indian architecture even before the post-colonial many architects pursuing their ideas of critical regionalism if we take study of buildings of Lucknow after post-independence, It is also very important because if study about the Awadh architecture of Lucknow & before

IV. CRITICAL REGIONALISM DETERMINANTS

A. In order to understand the development of critical regionalism in India, it is important to firstly identify the architectural projects that adhere to the ideas of critical regionalism.

B. Based on review of scholarship on critical regionalism, the study has identified the following assessment criteria to identify regionalist architectural projects in post-independence era: -

1. Context- specific Architecture	The design should relate to its urban context by stressing upon certain site-specific factors [12].
2. Historical Knowledge	The design should interpret lessons from traditional architecture of the region and blend them with contemporary architectural language [11] (p. 568).
3. Climate responsiveness	The form and organisation of the building should respond to the local climate minimising the need for mechanical controls like air-conditioning and artificial lighting [13] (p. 57).
4. Materiality	The design should make use of local materials and construction techniques that allow local workforce to participate in the construction process [14].
5. Ecological & Landscape	The design should minimise its impact on the natural environment of the place [13] (p. 29).
6. Social & Cultural Appropriateness	The architecture should take care of the way of life of the people who will be inhabiting the building [16].
7. Technology	The design should adapt modern technology to meet the needs of the local community [15].

Figure 2-Sanyam Bahga, Gaurav Raheja (2018). An Account of critical regionalism building type in postcolonial Indian architecture.

Based on the determinants of critical regionalism, the study identified architectural works realised in the Lucknow region in the past two decades that integrate the ideas of critical regionalism in their designs:

1857 to 1947

1) Bhatkhande Music Institute (1926) by Vishnu Narayan Bhatkhande
2) Lucknow Railway Station (1914) by J.H. Hornimen
3) Vidhan Sabha, Lucknow (1922) by Messrs. Martin Co.

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1947 to till date

a) Awadh Shilpgram (2016) by Saurabh Gupta
b) IIM, Lucknow (1984) by C.P. Kukreja
c) Literacy House (1956) by Laurie Baker

The above-named architectural works are analysed to assess however they integrate the determinants of essential regionalism in their styles. By analysing every determinant in every of the identified regionalist works, the study makes an attempt to highlight that essential regionalism isn't a formula or a fashion, however a method that genuinely seeks to answer specific issues of an area. Moreover, by limiting itself to the Lucknow region, the study tries to indicate that despite similar site conditions thanks to close proximity, essential regionalisms ready to turn out varied architectural responses thanks to the discretion it affords architects in choice of external influences and also the final consolidation between them.

V. CRITICAL REGIONALISM IN LUCKNOW

A. Bhatkhande Music Institute (1926)

Bhatkhande Music Institute is music institute in Lucknow. It was founded by Vishnu Narayan Bhatkhande in 1926. It was declared deemed institute in 2000 by UGC (commission). It offers a music education, instrumental, vocal, Rhythms, dance Meniology and research applied music. (Academy, 2020) The building is situated in South- East orientation. In South- West the Butler park is situated, North-West the residential situated, North-East the Sadat Ali khan Tomb

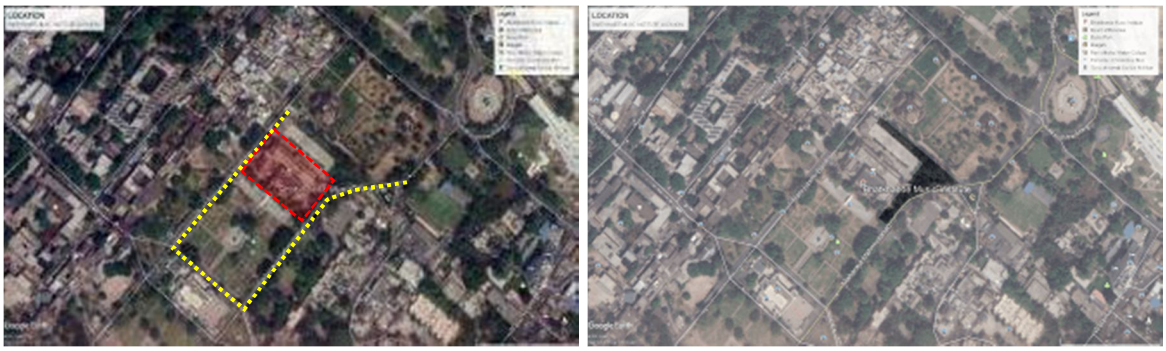

Figure 3-Location Map of Bhatkhande Music Institute, (Source-Google Earth)

1) *Contextual response & Historical Knowledge:* In ancient period the education is imparted in Gurukulas s & ashram by great saints and Rishi-Munis. In mid-nineteenth century, the system of modern education institutionalization with structure in time-bound was started by the British rulers. In India music education brought and structure in Beginning Twentieth century. The great two Indian musician in this century Pandit Vishnu DigambarPaluskar and Pandit Vishnu Narayan Bhatkhande started the strongly traditional music and established in 1926. (Academy, 2020)
2) *Climate Responsivessness:* The Buildings is lie in the Composite Climate building prioritized cross- ventilation in whole building design to thermal comforts Well distributed openings on four sides have been supplemented by internal ventilation. In measure to response to the local climate include Arches on windows for protecting the external walls from incident sunrays.
3) *Ecological Sensitiveness:* The Site is located in the Old Lucknow near Parivartan Chowk. The area is great with ecological sensitiveness near the building south west the butler park is there and in north east the Sadat ali khan tomb are there and in campus provide the sufficient vegetation and plantation are done to maintain ecological balance near building.

(A) (B) (C)

Figure 4- (A) Map shows about the Green area around Institute (Source: Google Earth) (B) Side View shows green area (Source: Google Earth & Google Images) (C) Image Shows green area around the building

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4) *Local Materials & Construction:* The material which used Mix lime mortar to the lime water which is to be applied with natural additives like jaggery, soapnut, bhel fruit, etc depends upon the region. Lime Plaster 1:2 (1 lime: 2 surkhi) 20mm thick in two courses. First coat will be in 12mm and second coat will be in 8 mm. Stucco work in lime, surkhi and sand (1:1:1) as per traditional practices and design, the mortar should be prepared by grinding mill only. The thickness varies from 10mm to 100mm as per design.
5) *Technological Sustainability:* In Bhatkhande there are used of traditional material and technique the building is design double height which help in Cross ventilation and the used of local materials Lakhori brick, lime etc. In technological the big arch is used for diffused day light which are faced in south side, use of minaret in Top level the levels are divided into double height in which the bay windows are there which are used for daylight and saw the vision of ground level. The window is large in Sizes which help the whole building ventilate.
6) *Cultural Appropriateness:* The Institute hosts many people which are used to perform and Learn the building has great entrance with parking facility and foyer area also there which feels grand the building is very large scale which seems like palace in which proper circulation and movement are there in addition of library, Admin and cafeteria are there for users, in this choice of materials lends a sense of solidity to the building while adding.

B. Lucknow Charbagh Railway Station (1914)

Lucknow Railway Station is also known as Charbagh. It was design by J. H. Hornimen. The foundation stone is laid in March 1914 and building was Completed in 1923. The Railway Station was an orchard before it was converted into railway station in 1867. Charbagh refers to four gardens which one exist in that area. The building is oriented in North- South to East- West longer axis. In North the park is situated, North-West the Lucknow Junction, North-East the public building is situated.

Figure 5--Location Map of Charbagh Railway Station, (Source-Google Earth)

1) *Contextual Response & Historical Knowledge:* In comparison to the other building in Charbagh, the building is much larger in scale and has a very different architectural styles of that area it is design Indo British style of architecture. The structure is painted as red and white looks like Rajput palace from outside, the structure turrets and domes from the sky the building is seems like the chess board. In north the beautiful garden is planned which attracts the visitor which created a green shaded Infront of building. It is the same place where Gandhiji meet Jawahar lal Nehru first time on 26 December 1916 to 30 December 1916. (Lucknow Me, 2013)
2) *Climate Responsiveness:* The Charbagh is design to responds diligently to the climate of Lucknow. To ensure better thermal performance the building is design as according to the traditional planning the walls are thick in size and the structure is double height which help in comfortable illuminated daylighting Fenestration on each façade are design according to Sun path large arches are also there in south side the building have large window which also help temperature maintain as comfort in any whether.
3) *Ecological Sensitiveness:* The Charbagh is famous for his Bagh in early age the Charbagh have four gardens. In front entrance of station, the glorious garden is there with proper green cover vegetation on it the garden shows the Mughal architecture through its glory the park is very situatable to cater the passengers which are travel from Charbagh.

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(A) (B) (C)

Figure 6-A) Map shows about the Green area (B)- Image Shows green area around the building (C) - View shows green area Source: Google Earth & Google Images (Source-Author)

4) Local Material & Construction

(A) (B) (C) (D)

Figure 7-(A) Quick Lime (B) River Coarse Sand (C) Surkhi (Brick Powder) (D) Lakhori brick building material used in building (Source- Author)

In Charbagh the materials which is used is Mix lime mortar to the lime water which is to be applied with natural additives like jaggery, soapnut, bhel fruit, etc depends upon the region. Lime Plaster 1:2 (1 lime: 2 surkhi) 20mm thick in two courses. First coat will be in 12mm and second coat will be in 8 mm. Stucco work in lime, surkhi and sand (1:1:1) as per traditional practices and design, the mortar should be prepared by grinding mill only.

5) Technological Sustainability: In redevelopment all the Technology elements are added according to time The escalator are been placed and lift are also provided whereas it required the planning of building is linear and from outside it seems like palace with lots of openings and cuts and the large span of arches which are used as a entrance of station The turrets on top looks like chess board, the dome shows about the Indo British style of architecture which have proper parking facility around the station and proper handicapped facility with implement according to the universal design.

6) Cultural Appropriateness: In building form entrance the waiting hall have been provided to gather public and waiting lounge are also provided in various area, the proper seating facility are added in platform Basic amenities are also provided It is large structure proper interaction facilitate people in roof the mild structure is used. The built form consisting of shops, food court, hall etc. are organized around a variety of open spaces around the structure. This has resulted in warm intimate built to human scale.

C. Vidhan Sabha (1922)

Located in Lucknow, the Vidhan Bhavan is that the seat of the bicameral legislative assembly of the Indian state of Uttar Pradesh. The lower home is the Vidhan Sabha (Legislative Assembly) and therefore the higher home is referred to as the Vidhan Parishad or the (Legislative Council). The Vidhan Sabha had 431 members till 1967, however currently contains 403 directly no appointive members and one appointed member from the Anglo-Indian community. The Vidhan Parishad has one hundred members. Built in 1928, the building was originally referred to as the "Council House". it's been home to the legislative assembly since 1937, alongside housing alternative necessary offices of presidency.

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Figure 8-Location Map of Vidhan Sabha Lucknow (Source: Google Earth)

1) Contextual Response & Historical Knowledge: In Comparison to other building at that place It has unique characteristics Architectural elements It is gothic dome in centre with attractive chhatri and domes or skylight. It is situated in the centre of city main hazratganj area. In front there are green buffer zone is provided and in dome shaped chamber is Octagonal and its circular roof is decorated in attractive inlay work. Its unique features are the dancing peacock in interval on this roof. "The stone of the grand building of the Council House (Vidhan Bhawan) in Lucknow was set by the then Governor Sir Herbert Spencer Harcourt butler on Dec fifteen, 1922 and also the building was inaugurated on Feb twenty one, 1928."The construction of the building was done by Messrs Martin and Co. The Chief Architects were Sir Swinon Jacob and Sri Heera Singh. At that point a add of Rs twenty-one hundred thousand was sanctioned for the building. It is one amongst the best samples of Indo-European bailiwick workmanship of the 20th century. The front a part of this crescent formed 2 high-rise structure is made with Carved light brown sandstone blocks from Mirzapur (Chunar) (UpTourism, 2020)

Figure 9-Vintage 1900s old photo of Vidhan Sabha Bhawan (Source: - Alamy Library)

2) Climate Responsiveness: The Building has lie in composite climate, facing North-West and in front the main road Vidhan Sabha Marg which is very busy route for hazratganj (CBD). The building is in circular shape which helps in natural light & ventilation are there in building, in front green buffer zone are provided which creates well cross ventilation. In building the outer wall are have large opening of doors and window which help in natural light in day.

3) Ecological Sensitiveness

Figure 10-View of Vidhan Sabha Shows the Dome & Green area (Source- Google Maps)

In Vidhan Sabha the main entry has beautiful garden to welcome the guests and proper tree planting in offset and Courtyard is provided in centre of buildings which help in ventilation. The internal roads have sufficient green vegetation planters are also placed in every area of buildings. The Site around have main public buildings and very crowded area a time peak.

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4) *Local Materials & Construction:* Construction of Vidhan Bhavan started fifteen Gregorian calendar month 1922 and took very little over 5 years to finish. The building is created of engraved brown arenaceous rock from Mirzapur. several of the within halls, galleries and verandas square measure engineered of marble from urban centre and Jaipur. Circular marble staircases run on either side of the doorway hall and also the walls of the staircases square measure embellished with paintings. the most chamber of the building is octangular in shape with a rounded roof. A separate chamber for the higher house was created between 1935 and 1937. The buildings of each homes square measure connected by porch with offices on either side
5) *Technological Sustainability:* In Vidhan Sabha building main chamber is octagonal in shape with domed roof for the upper house in Planning both the housed are connected by veranda with office on both side the building the composition of building has in half curved and the divided into two parts the building has well technology efficiency building has well circulated planning proper veranda and corridor are used in front of the building.
6) *Cultural Appropriateness:* The Campus of Vidhan Sabha has very planned design in which proper green area provide and proper courtyards are there and the building has civic space encourage interaction between professionals It is a building with the building have proper interactions spaces in campus.

D. Awadh Shilpgram (2016)

Awadh Shilpgram project is designed form inspiration of Cultural, political, Commercial and entertainment activities of people. This is built with motive to keep the warmth of lakhnavi markets and culture alive and to keep the memories of streets of the city alive

Figure 11-Satellite images of the Avadh Shilpgram Located in Lucknow (Image Courtesy of Google Earth)

1) *Contextual Response & Historical Knowledge:* The Challenges faced by the architect at that time in responding to the urban context of site came from Avadh Shilpgram It were the first cultural building in Lucknow and it is built near the shaheed path of New Lucknow. There was nothing around the site at that time there were some sites are allocation for housing for future Housing scheme which was the government aided project which are Awas Vikas Yojana, the design of Avadh Shilpgram responds to the contemporary architectural Style in urban time of India, in following years this building is come up with the great Scale & landmark through this area is been developed and security of neighboured has increases with this project. (Avadhshilpgram, 2017) Avadh Shilpgram project is a very prestigious project for Lucknow, it is designed for inspiration of cultural, Political, commercial & entertainment of people, It is constructed in 20 Acre of land. The design of elliptical shape which are well designed as a haat form outside and inner smooth running of primes are there, it is designed as a traditional market of lakhnavi which are disappear day by day, these projects alive the Lucknow culture & markets these consist of 200 handicraft shops, auditorium & banquet hall.
2) *Climate Responsiveness:* During design process the layout of 20 Acre Shilpgram the planning of commercial, cultural, Social and leisurely interaction of people. Elliptical shape forms a smooth shape corner free circulation it is good or narrows down spiralling inwards and to the density of bazars. It is built environment like interpretation college a gesture of unique traditional architecture of Roomi gate & Imambara, if we consider about the daylighting, proper air circulation through cross ventilation furthers adds the dimension of comfort to the design,

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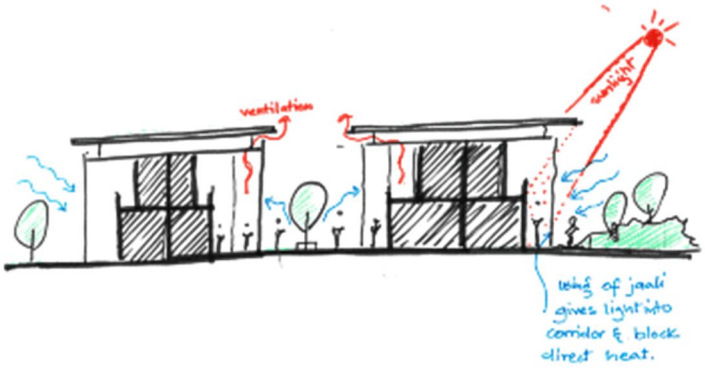
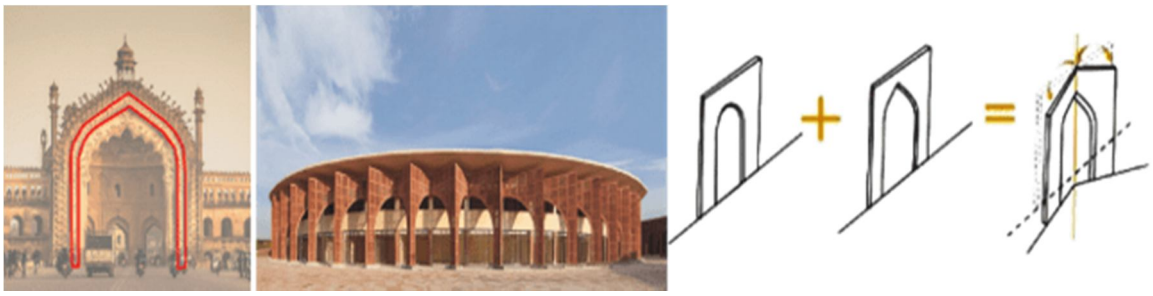


Figure 12-Image shows the inner primes of Shilpgram Source: Avadhshilpgram.in/2019

In inner circulation it is been through contemporary interpretation of traditional elements which are arches and Jallis which are also good for climate responsive.



(A) (B) (C)

Figure 13-(a): View of Roomi Gate showing Arches (b) Image shows the Arches of Shilpgram (c) Image Show the arches implementation in Shilpgram (Source: Avadhshilpgram.in/2019)

The arch, being an important architectural element of the architecture of the city of Lucknow, is introduced as a skin to the inner face of the buildings, but given ‘make over’ in a contemporary style with continuous access beneath it. Each arch allows entry into the corridor at the ground floor.

(A) (B) (C)

Figure 14-(a): View of Jaali pattern (b) Image shows the Chikan Kai design (c) Image Show the Jaali Pattren in Shilpgram (Source: Avadhshilpgram.in/2019)

The Zigzag form of Jaali is derived by modifying the basic lines of traditional Mughal arches from which one can pass through in the corridors. The steel structure is clad with red Agra sand stone in a Jaali pattern with motifs inspired by the renowned Lucknowi embroidery craft called ‘Chikan kari’.

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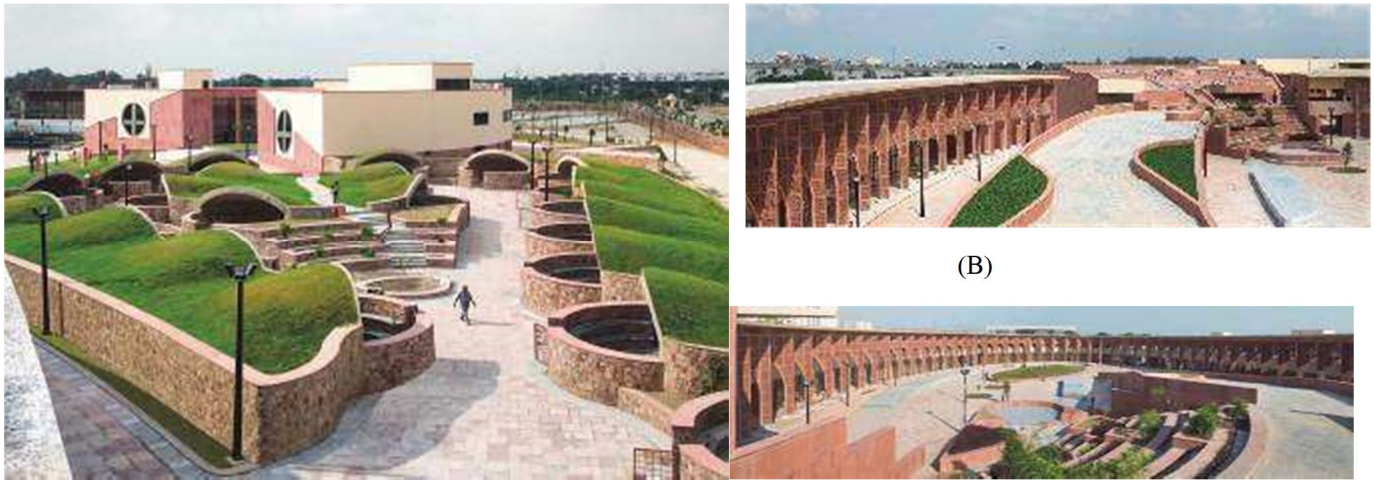
3) Ecological Sensitiveness: The Site is located in the Lucknow and it is developed according to the Lucknow Development authority Bylaws in which architect had to leave an area of 5-acre land for green space and 5-acre land for open spaces at the site. It does not pose any Significant ecological concern



(A) (B) (C)

Figure 15-(a): View of Green area above the open spaces. (b) Image shows the Ramp Green cover area (c) Image Show Green area (Source: Avadhshilpgram.in/2019)

4) Local Materials & Construction: The Prime construction material used is Shear wall and finish with Agra red sand stone in outer façade and some structure has been built with steel and coated with Agra stone Jallis. In many spaces glass has been used as a secondary material. Stones aggregate & rubble masonry are used for the construction of kiosks and shops. In paving the Stone is used as various surfaces and rest were interlocking tiles are used.

5) Technological Sustainability: I section is used for connecting two different spaces and Jaali in the outer surface is supported by the steel angles and plates. It is blend of modern construction techniques and materials. Open spaces are connected with the water harvesting chambers.

Figure 16-View Shows the Beam of M.S.

6) Cultural Appropriateness: The intention of the project was to provide platforms for the artist & small Vendors of different district of the state. It is also showing the culture of Lucknow market which disappears day by day. The building has proper social spaces for public when any function and shows organize, proper gathering spaces during shows, Proper seating provided in all around the building.

E. IIM, Lucknow (1984)

Indian Institute of management, Lucknow It is a one of the leading business school of India. The campus is design as a traditional Indian architecture in every bits and pieces of IIM, Lucknow. The campus is planned away from the city. IIM is a self-sustaining village which fulfils all the needs of every souls there, be it the resources and materials. It is a 200 Acre campus. (Lucknow, 2020)

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1) *Contextual Response & Historical Knowledge:* The building is design by the architect Stein, Doshi & Bhalla. It is structured on the outskirts of main Lucknow city, on geographical basis, IIM campus is 18km away from the main city station, Charbagh Situated in a city known for its cultural heritage, the campus is spread over more than 190 acres of beautifully landscaped area. With its foundation in the city of "Tehzeeb", IIM Lucknow as well inculcates human values and professional ethics in the students to help them make a positive impact not just on the nation but on a global platform. IIM Lucknow is an ideal setup conducive to learning, accessibility and excellence.

Figure 17--Location Map of Indian Institute of Management

The Site is elongated towards North-South direction. The main portions of the site surroundings are agricultural land. The Site is restricted to the city highway and is half km away from it. It is 2km distance between the Gomti River.
The Build character is basically the characteristics property of the buildings form. The IIM Lucknow has a cubical built mass character i.e., main functional units are cubical and the articulations are done to it. The articulation in the form of projections and depressions are the enhancing, property for sustainable and also adheres to the climate factors.

2) *Climate Responsiveness:* The Buildings is lie in the Composite Climate The buildings has a depth are provided and I, U shaped planning is preferred where possible to ensure access to natural light and ventilation so as to reduce massing up to human vision, the proper corridors and atriums are provided around it to reduce built mass of buildings and variation in horizontal and vertical plane of buildings.
3) *Ecological Sensitiveness:* The Site is located in the Outskirts of Lucknow. The trees are planted on the western front so as to abort the direct sunlight penetration on the buildings. The size of tress should be considered carefully with respect to the proportional relationships to campus buildings and housing. The architects have managed proper sufficient vegetation cover along the internal streets.

Figure 18- Image Shows green area around the building

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4) *Local Material & Construction:* The materials used in structure is Brick & mortar the whole complex is embellished with exposed brick works in which A grade bricks are used. The concrete column is also used at some places in which most of the column are cladded with exposed brick work generally granite stones is used as a flooring material with repetitive patterns the structural components are fabricated in reinforced cement concrete.
5) *Technological Sustainability:* In this Zone the organization of buildings blocks is clustered. Clustered organization is that in which spaces are grouped by proximity or the sharing of a common visual traits or relationship. In this zone, blocks are dissimilar in sizes, form and function but they are related to one another by proximity or a visually ordering device such as axis and symmetry. In this block the approach from the blocks to the main road is basically of two types classroom to road is extroverted and all other block is introverted.
6) *Cultural Appropriateness:* The buildings have double height entrance Climatologically, double height entrances are preferred in traditional Indian architecture to maintain temperature and air movement. Also, they give a feel of grandness to the entrances. Elevating a portion of the base plane creates a specific domain within a larger context. The change in level that occurs along the edges of the elevated plan defines the boundaries of its field and interrupts the flow of spaces across the surface.

F. Literacy House (1956)

Literacy House could be a pioneer establishment of international repute within the field of adult and non-formal education and was registered below the Societies Registration Act,1860 within the name of India skill Board in 1956. The Board contains eminent educationists, social staff, representatives of Central and State Governments. in a very short time of its beginning, skill House became the nerve centre of skill movement within the country. The methodology of teaching illiterates and basic teaching materials were developed here. It became the mother centre for impartation coaching to master trainers from all corners of the country. Mrs. Fisher additionally attracted professionals from totally different a part of the country moreover as from abroad WHO came to serve during this noble experiment. skill House became the destination of educationists, social reformers, activists, governance moreover as necessary state functionaries. WHO joined this noble movement.

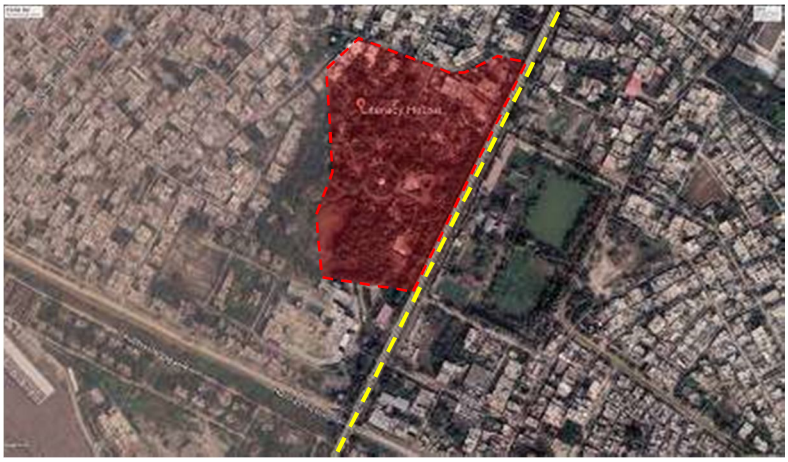

Figure 19-Location Map of Literacy House, Lucknow (Source: Google Earth)

The Geographical Location of Lucknow is between 26.50 degrees North and 80.50 degrees East. The Site is located at an elevation of 123 meters above Main sea level. Located in the plains of the northern India, the Site's location is responsible for the diverse weather patterns and climate it does not have a uniform weather throughout the year and experiences extreme summers and extreme winters

G. Contextual Response & Historical Knowledge

The Building and field layout of acquirement House was designed by the eminent designer Mr. Laurie Baker. it absolutely was designed like associate degree Indian village. it's a cluster of easy brick buildings. later 2 Agriculture Farms were established at villages Bijnor and Neewan having nearly 125 acres of land. each the farms demonstrate and teach young farmers the techniques of improved agriculture and husbandry practices and link acquirement with food production and individual desires of the farmers and also the community. (Literacyboard, 2017)

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It was a significant rendezvous with nationalist leader, some weeks before his tragic assassination, that modified the lifetime of Dr. (Mrs.) Welthy H. Fisher, AN yank woman WHO had lived in Bharat for many years. nationalist leader exhorted her to serve Bharat through its villages. This exhortation had its exciting impact on Mrs. Fisher. although she came back to America shortly once Gandhiji's death, she came back to Bharat once few years to meet her promise given to Gandhiji. She launched a crusade against illiteracy in rural Bharat by making ready employees for class during a little area at Agriculture Institute, Naini, Allahabad from Feb, 1953. H.E. Shri K.M. Munshi, the then Governor of province, invited Dr. (Mrs.) Fisher to return and establish her establishment at Lucknow. With the assistance of the Hon'ble Governor, she shifted to Lucknow in 1956 and established acquirement House that still continues to unfold acquirement programme in numerous forms and forums. (Literacyboard.org, 2017)

H. Climate Responsiveness

A solar chart is a graph of the ecliptic of the sun through the sky throughout the year at particular latitude. The Site has NE-SW arrangement and also the inner building blocks are arranged in the same orientation to avoid the West Sun. West façade covers the trees in bulk to avoid the afternoon sun, e.g., the classroom block. The Screens are provided in the building itself to cover and to avoid solar radiations, which thus cannot reach the main inner blocks. The courtyards are provided for better movement of air, cross ventilation and allows sun light where ever required. A wind component chart provides crosswind and head/tail wind components. The major wind movement is from SE-NW and the fenestrations are provided to enhance the intake of natural wind. The facade orientation is at 45 degrees to wind movement, so that the wind directly falls in cuts out are provided to enhance the movement e.g., Classroom block, housing complex.

I. Ecological Sensitiveness

The Site is located in the Alambagh of Lucknow. The trees are planted on every side of the buildings so as to abort the direct sunlight penetration on the buildings. The site belongs to village in early age the Bijnor village the architect lauri baker try to manage the ecological context as well the designing the baker try to interlocking spaces in plan, the elevated plane is provided in centre of site to balance the visual supports to mass and form, proper courtyards are planned to creating a world and a scheme of structure and infill, which brings out subtle variations within unified expressions, creates an introverted response.

Figure 20-Image Shows green area around the building

J. Local Materials & Construction

The material is used in structure is exposed brick is used to give better aesthetical appearance and reduce the building cost no need to plastering, in lintels the reinforced concrete, Steel & Cement are used, PVC Sheet are used in roof portion to ambience filtered sunlight in interiors. In structure asbestos sheet are used for sun shade and M.S. sections, Wood, Wire mesh, and Glass are also provided as per requirement of design.

K. Technological Sustainability

The buildings have a great technology used in many ways the brick jali are provided, the Asbestos sheet are used for roofing & Sunshade which heavy the structure have almost no temperature variance between day and night. light roofs become slightly warmer in the daytime but much cooler at night. The Mild steel Sections are also used Like RSJ Sections which is used to carry the load of roofs where asbestos sheets are used. Wire mesh, Ply wood & glass is used.

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L. Cultural Appropriateness

The Traditional Architecture cum vernacular architecture are followed in design the proper used of modulating localization with smart use of materials and craftsmanship of the same place, the blending elements Nature & Design are followed the traditional courtyard are provided in prayer halls and multiple courtyards are used in various places. The geometry is also followed. The use of design elements such as trees as vertical elements of varying heights to define movement.

Despite a common identification criterion, we can observe that the buildings differ substantially in their methods of fulfilling the fundamentals of critical regionalism (Table 1). Regionalist architects have adopted different approaches to respond to the urban context of their respective sites.

Table 1-Comparative Study of all building on aspect of Critical regionalism ((Source: Author)

	Bhatkhande Music Institute	Lucknow Railway Station	Vidhan Sabha	Awadh Shilpgram	IIM Lucknow	Literacy House
Contextual response	Heritage Buildings which used as Institute	It is Orchard and well Hall in center of building	It is a legislative building of U.P.	Stone structure respond that place	The building is design as Indian traditional architecture	Large scale of village design in that area.
Historical Knowledge	Traditional Planning arrangements of halls	It is Like Rajput palace from outside with turrets and domes	It is having gothic dome in center which shows the historical past.	Organize building in Oval shape planned like a village	Scatter Planning like traditional.	In center courtyard and roundabout
Climate responsiveness	Window are in large size shaded with arch according to the sun orientation	Large opening form two side with large window and Double height ceiling for ventilation.	courtyard in center with large hall with double height.	Wide Corridors with Agra Stone Jaali	Atrium and Corridors are provided in building	Building has wide roads in site and proper orientation of blocks.
Ecological Sensitiveness	Vegetation cover provided with the building and Internal roads	In front of Building the heritage garden are there	Proper green area is provided in front and center of the building	Proper Large courtyards planned	Proper green area is provided in site campus with open areas	Trees is planted along the building with open courtyards.
Local Materials	Lakhori Brick & Mortar	Lakhori Brick & Mortar	Sandstone	Agra Red Sandstone	Bick and Mortar	Exposed brick & PVC in roof.
Technological Sustainability	Use of Canopy and Vault roof	Use of Mechanical elements like Lift & Escalators.	In main camber the octagonal shape with dome roof.	M.S. Oval truss and Beam of M. S	Building has past inspiration like large arches and large dome.	Brick Jaali provided asbestos sheet are used for sun shade
Cultural Appropriateness	Public space is there around the building	In center large hall are there with proper spacious space for interaction.	Interaction between professionals with civic spaces.	Proper Civic Spaces are provided and Gathering spaces	Proper communal interaction between people with open spaces	Traditional architecture used with open spaces.

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VI. CONCLUSIONS

A wide type of sources has influenced architects in their interpretation of lessons from the past. From organization of building blocks supported layouts of typical Indian villages or bazaars to complex of courtyards supported sixteenth-century Nawabs imperial palaces, concepts from ancient design have helped architects in managing up to date conditions. every designer has chosen the past on that he desires to draw upon as per the exigencies of every style drawback. although advance mechanized devices for climate-control are offered, regionalist architects have for the most part relied upon passive suggests that of climate-control. Thick walls, deep balconies, sunscreens, pergolas and carefully-designed fenestrations are oft employed in regionalist styles in Lucknow for environmental condition mediation. As most of the building sites placed within the Lucknow region are flat and even, the topography of websites has not posed a major challenge to regionalist architects. where doable, regionalist architects have tried to conserve the prevailing trees on web site. because the building codes haven't worshipped enough space for protective the prevailing vegetation on web site, the architects have rescued the inexperienced cowl by providing options like garden courtyards, inexperienced roofs and vertical gardens. As a spread of autochthonic materials are pronto offered within the Lucknow region, regionalist architects are ready to select from associate degree array of building materials to fulfil the economic, aesthetic and ecological issues specific to a building programme. labour-intensive construction strategies victimization native materials have additionally improved employment opportunities at the regional level.

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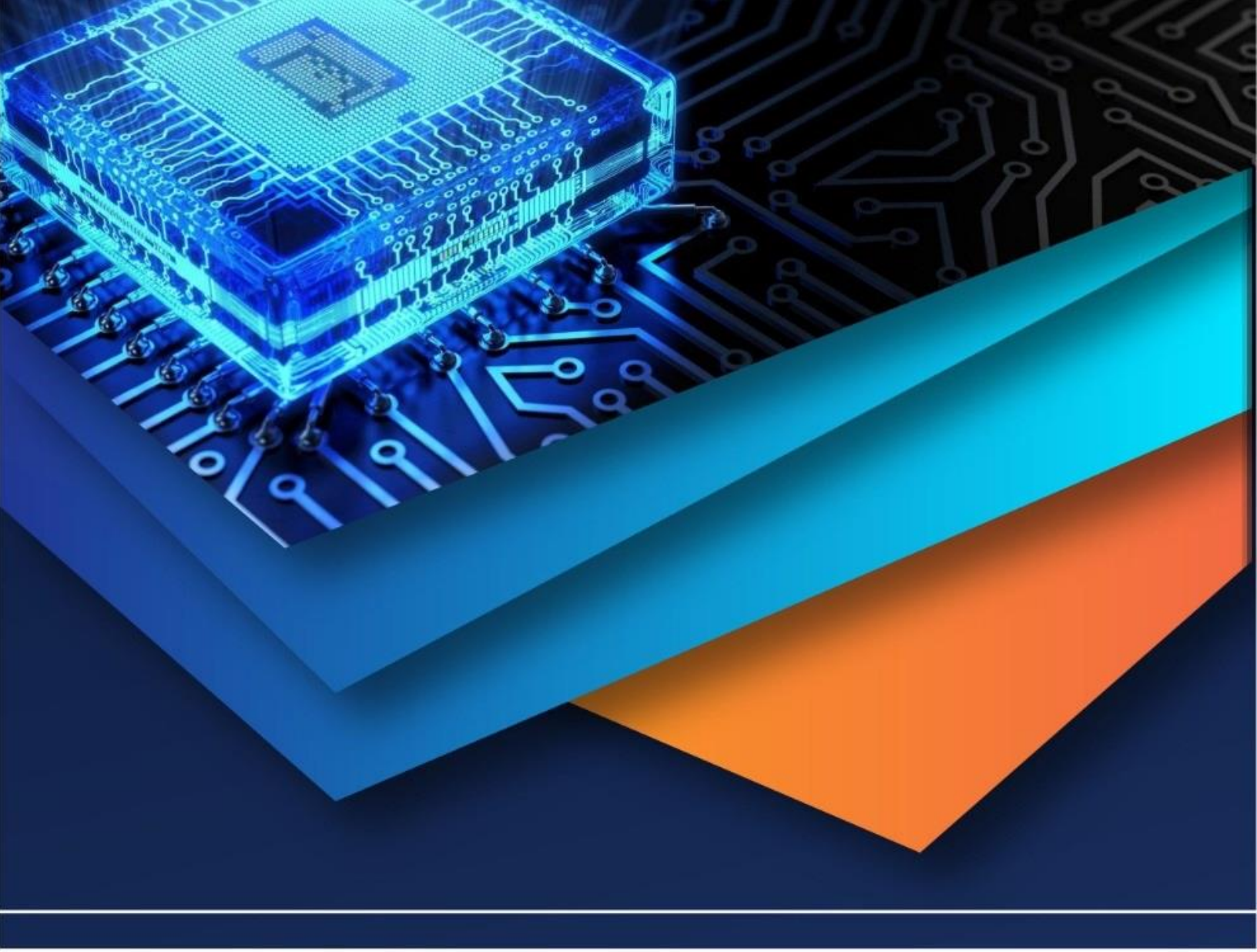

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