

Campus Architecture: *The Case of Pakistan*

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Abstract

Knowledge exchange between campuses has always been essential to innovation and education. Set within a historical context, these organizations promoted the growth of novel concepts and significantly advanced technology. Campuses are typically thought of as green areas with libraries that are stocked with books and have a calm, focused vibe. This picture is a reflection of decades of scholarly practice. Nonetheless, the contemporary campus also serves as a thriving hub for research and study, capturing the zeal and vitality of both youth and modern science. This paradox creates a dynamic, inventive, and ever-changing school climate that calls for ongoing adjustment. Campuses must balance outside political and financial constraints while advancing their technological and pedagogical strategies. This study tracks the development of Pakistani campus architecture across time and conducts a critical examination of it. By employing a mixed-methods approach that encompasses case studies, historical analysis, and architectural evaluation, the study investigates the ways in which these spaces have changed in reaction to external challenges and shifting educational paradigms. Case studies of the institution of Tehran in Iran and a well-known institution in Pakistan with several campuses are used to perform a comparative analysis. The findings demonstrate the adaptability and endurance of Pakistani campus design while illuminating the intricate interaction between Islamic tradition and modernity. This study advances our knowledge of how educational settings foster both creative growth and historical continuity in a world that is changing quickly.

Keywords: Campus Layout, Technologies and Pedagogies, Islamic Tradition, Planning Framework.

1. Introduction:

Higher education institutions have created some of the most evocative, revered, and formative physical settings in the world since the first colleges of the modern era dating back almost a millennium. An education at a university is inextricably linked to a particular location. The library steps, the faculty building's arcades, and the lawns where students spend their free time provide the setting for the experience of academic life in all its complexity. Although a university's physical environment must accommodate the operational requirements put upon it, its mission goes much beyond function. The campus community is centered and defined by its buildings and surroundings.¹ However, this is insufficient on its own. Innovative design and thoughtful campus planning result in vivid declarations of an institution's identity that reinforce scholarly ideas and values. This may both enhance the institution's reputation and serve as a focal point for a sense of community. Additionally, all but the most elite colleges are competing fiercely for

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¹ Doxiades, C. A. (2022). Doxiades, Punjab University. Doxiades Firm Website.

https://www.doxiadis.org/Downloads/Punjab_proj.pdf

students and employees, and the aesthetics of a campus may make all the difference even if it's a little basic. Higher education institutions (HEIs) are becoming more aware of the significance of their surroundings as a result of the expansion of the higher education sector and its tough rivalry for the finest students. Although not unique to the twenty-first century, this mentality has escalated since the turn of the century. Without a doubt, any higher education institution's main goal is to maintain its academic reputation.²

2. Literature Review:

The boundaries of the traditionally built environment are being blurred as new innovative technology enhances and evolves campus life. This marks a shift in the position of higher education, as the methodology of teaching and the transfer of knowledge have undergone rapid and significant changes due to the fast-paced evolution of technology. According to studies, the campuses of the 18th and 19th centuries, which are common today, underwent transformations because they could not keep up with the concepts introduced by modern campus planning.³ In the 21st century, lecture halls are considered outdated, and there is an encouragement for informal learning environments both on and off campus to explore new concepts. This may be considered ironic since the sharing of ideas within informal spaces was the original concept on which the idea of a campus was founded almost a millennium ago. An example of this technological advancement can be seen in libraries, which have expanded from their original state of numerous shelves filled with books to now include computer-based research zones and spaces to facilitate group studies and interactions.⁴

2.1- Design Approaches to Campus Design:

Campus Design is an integral approach to develop any educational institute, be it primary, secondary or for higher education. The teaching, research, and community engagement activities of colleges and universities are intricate and ever evolving. Campus systems are under pressure to balance meeting current needs with maintaining flexibility to accommodate unanticipated future needs.⁵ Not having a proper plan may be detrimental as it may lead to random developments occurring on the campus which in turn may lead to various problems as time goes by, the campus plan should:

- Correspond to the academic and strategic objectives of the institution
- Effective use Physical assets.
- Sustainable growth in planning
- Safety and wellbeing of end users

² University, P. (2024). PU Website. PU Journal. <http://pu.edu.pk/page/show/Campuses.html>

³ Coulson, Jonathan, I. (2016). University Planning and Architecture. Taylor and Francis, 2, 8–12. <https://doi.org/https://doi.org/10.4324/9781315750774>

⁴ Landrum, L. (2018). Campus Architecture: The Radical Medium of Learning. Princeton Architectural Press, 2, 5–10.

⁵ SCUP. (2020). Planning and Design. Web Article. <https://thefield.asla.org/category/campus-planning-and-design>

Campus planning covers:

- Open space
- Built Spaces, overall buildings.
- Pedestrian walkways.
- Vehicular traffic.

In order to accomplish the institution's objectives and draw in new faculty, staff, and students, the built environment is a vital resource⁶. As a result, the campus master plan must be in alignment with the college or university's strategic strategy and academic plan. Since maintaining the physical environment necessitates a significant amount of resources in and of itself, integrated planning aids in avoiding expensive efforts that don't meet enrollment, learning, or research objectives.

An integrated procedure is used to achieve consensus among the numerous stakeholders in each institution. This makes it possible for an institution to create a physical setting that is suitable for its setting, culture, and mission.

Lack of integration in campus planning will prevent it from appreciating the beauty of variation, from strengthening supportive schemes rather than competing with them, and from providing institutional support.

2.2-Master Planning:

The development of a successful comprehensive planning system is encouraged through the use of a campus planning process. The master plan should analyze the campus's facilities needs and provide placement-guiding principles. The foundation of integrated design is the realization that a structure, like a living thing, is more than the sum of its parts.

a) Primary Design Directives

- Effective Master Planning.
- Interrelation of different built typologies in a campus.
- Coherent Landscaping.

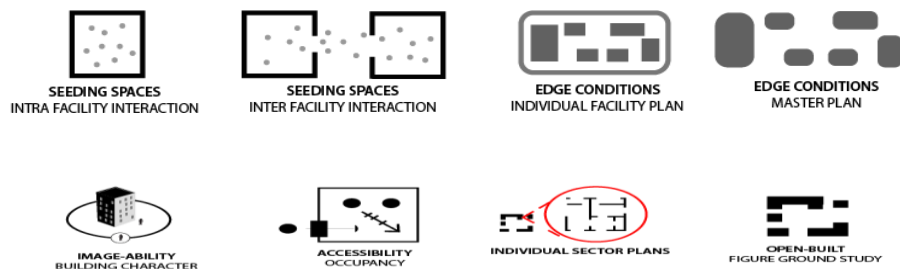
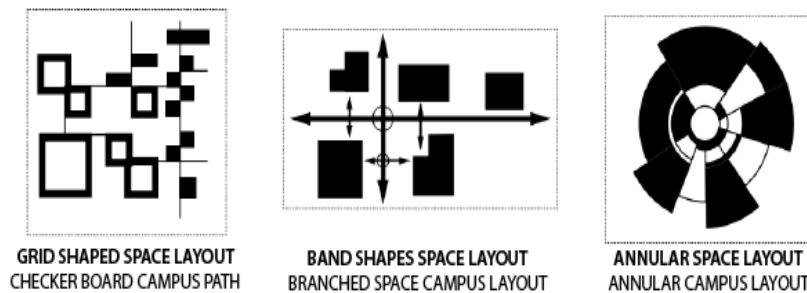


Figure2

⁶ Levin, A. (2022). Designing the University of Ife. *Architecture and Development*, 125–164. <https://doi.org/10.1215/9781478022503-005>

b) Secondary Design Directives:

- Open-Built connectivity
- Energy and Sustainability.
- Image-ability or overall Building Character.
- Individual Sector (based on Architectural typology) Plans
- Accessibility and Occupancy
- Materials used.⁷

**2.3 Role of HET's:**

Regulations established by the Ministry of Education are used to closely monitor higher education institutions in order to maintain quality control. The Higher Education Commission (HEC) is the main governing body overseeing higher education in Pakistan. They play a vital role in ensuring that teaching and research quality meet satisfactory standards, upon which they accredit institutions. Moreover, they oversee the financial aspects and the allocation of funding to all institutions. All institutions, whether private, public, or military, fall under the umbrella of the HEC.

Post-independence, the University Grants Commission played a vital role in supporting the expansion of new universities throughout the country and had autonomy over institution recognition until 2002, when it was succeeded by the HEC. Through these mechanisms, Pakistan is able to produce approximately 450,000 to 500,000 graduates annually across all fields of study.

Updating education standards and implementing infrastructural upgrades is an extremely cumbersome task. This paper highlights the evolution of campus design

⁷ ROHINI, D. B. R. A. U. (2012). Guide to University Architecture. In *Human Molecular Genetics* (Vol. 21, Issue 10). <https://doi.org/10.1093/hmg/dds147>

in Pakistan over time, using a comparative case study with another university campus in the region.⁸

3. Research Methodology:

This study adopts a qualitative research approach to critically analyze the evolution and current state of campus architecture in Pakistan, through secondary data. The research methodology consists of the following components:

3.1-Case Studies:

The researchers selected a prominent university with multiple campuses in Pakistan as well as a comparative university in Tehran, Iran, as case studies, representing different regions, historical periods, and architectural styles. These case studies were analyzed in-depth to gain insights into the unique challenges and opportunities faced by campus designers in the Pakistani context with comparison to the Iranian counterpart.

3.2-Site Visits:

Initial data was collected by conducting site visits to the selected university campuses in Pakistan, to observe and document the physical environment, including buildings, landscapes, and infrastructure. During these visits, the researchers took photographs, made sketches, and collected relevant documents and materials related to the campus history and development.

3.3-Secondary data text analysis:

The scholars performed an extensive examination of pertinent literature, including scholarly journals, books, papers, and web-based materials, in order to formulate a theoretical framework for the research and to discern pivotal themes and patterns in campus architecture both worldwide and in the context of Pakistan.

3.4-Data Analysis:

The collected data from case studies, site visits, interviews, and literature review were analyzed using thematic analysis techniques. The researchers identified recurring themes, patterns, and relationships within the data to develop a nuanced understanding of the challenges and opportunities facing campus architecture in Pakistan with comparison to Iranian counterpart.

3.5-Ethical Considerations:

It was ensured that all participants in the study were informed about the purpose and scope of the research and provided their voluntary consent. Confidentiality and anonymity were maintained throughout the research process, and all data collected was securely stored and used solely for the purposes of this study. By employing this multi-faceted research methodology, the study aims to provide a comprehensive and critical analysis of campus architecture in Pakistan, contributing to the ongoing discourse on the

⁸ UNESCO. (2023). University of Tehran. Unesco Website.
<https://whc.unesco.org/en/tentativelists/6201/>

role of architecture in shaping educational environments and promoting academic excellence.

4. Comparative analysis:

To address the issues currently faced by the country in terms of campus design, the researcher has used a case study of the largest public university in Punjab, comparing it with the University of Tehran, another educational giant in the region.

4-Punjab University:

The University of the Punjab, also known as Punjab University, is an institution situated in Lahore, Pakistan, accredited by the HEC for its research in multiple departments. The old campus, located at Shahrah-e-Quaid-e-Azam, was built in 1911 and designed by the famous architect Bhai Ram Singh. This campus was originally referred to as the Senate House and is now locally called the Punjab University old campus. Punjab University is proud to be the oldest public university in Pakistan.⁹

4.2- Figures and Tables:

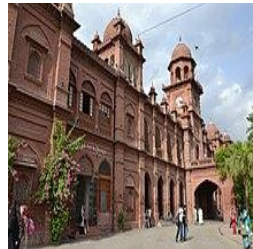


Figure4 Punjab University old Campus Masterplan (Left) & Main Entrance View (Right) (University, P. (2024). PU Website. PU Journal. <http://pu.edu.pk/page/show/Campuses.html>)



Figure5 South Elevation Punjab University Old Campus (University, P. (2024). PU Website. PU Journal. <http://pu.edu.pk/page/show/Campuses.html>)

⁹ Singh, A. (2020). Bhai Ram Singh. Tribune Website. <https://www.tribuneindia.com/2006/20061112/spectrum/book1.htm>

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There are multiple campuses of the university throughout Punjab and it owns a major chunk of land for research as well with one campus allocated as the summer



Figure6 West Elevation, Punjab University Old Campus (University, P. (2024). PU Website. PU Journal. <http://pu.edu.pk/page/show/Campuses.html>)

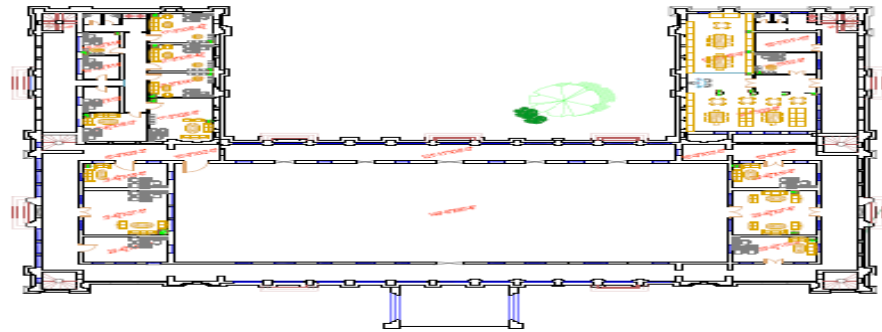


Figure7 Plan of Punjab University Old Campus(University, P. (2024). PU Website. PU Journal. <http://pu.edu.pk/page/show/Campuses.html>)

The Punjab University Quaid-e-Azam Campus commonly referred to as the Punjab University new campus is named in honor of the founding father of Pakistan and is located approximately 12 km south of the Punjab University old campus. Spanning 1,800 acres in size (7 km²). The campus serves as the hub of the university's academic and administrative operations. The academic buildings and the student housing are separated by a canal.

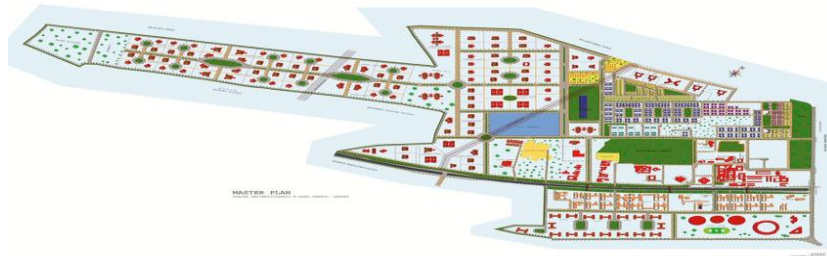


Figure8 The Punjab University new campus Lahore, Grid Iron planning Style of Doxiades
(University, P. (2024). PU Website. PU Journal. <http://pu.edu.pk/page/show/Campuses.html>)

Doxiadis Associates was hired by the university to handle the project's design work in April 1959. Colleges and universities in the region are designed to resemble the grand architecture of the Mughal era, incorporating a series of enclosed, semi-open, and fully open spaces into the design language. The method used in planning various departments of the university, which allowed them to integrate into a cohesive and continuous pattern, was inspired by the plan of ancient Taxila. Similar to how a residence is incorporated into the overall layout of a town, a specific built space forgoes its identity to become a component of a larger and constantly expanding complex.

- Gujranwala Campus: This campus houses the faculties of business, economics, and management sciences in addition to the faculties of banking and finance, law, English, and information technology. Thanks to the Punjab Information Technology Board's e-Rozgar program, the campus provides short courses in addition to degree programs.
- Khanspur Campus: Located near Ayubia in the Himalayan range, the summer campus is around 7,000 feet (2,100 meters) high. It also has research facilities and acts as a central location for faculty and student leisure.
- Established in 2012, the Jhelum Campus offers coursework for the colleges of law, computer science, and business, economics, and management sciences.²

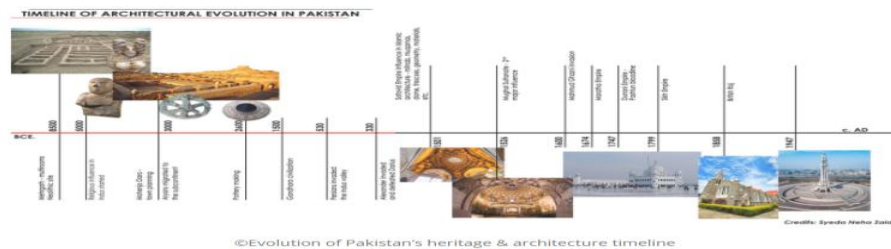


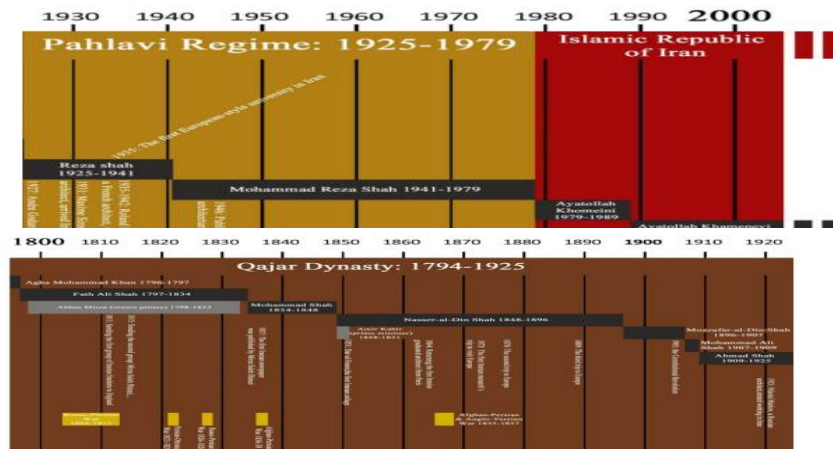
Figure9 Design Timeline of Architectural Evolution in Pakistan.[TDCP. (2018). Colonial Architecture. Punjab Tourism Website. <https://tdcp.gov.pk/colonial-architecture/>)

4.3-University of Tehran:

The University of Tehran was established in 1934 and is regarded as one of the oldest universities in the entire world. It is the first higher education facility in Iran. It currently encompasses 25 academic institutions, 9 campuses, and 11 research facilities. The university comprised of multiple schools, educational and higher educational centers that served as the crux of the university. They included The Dr al-Fonun, School of Political Sciences, School of Medicine, the very first agricultural school within Iran; the Mozzafar Agricultural School, School of Industries and Art (founded by Kamal-ol-Molk), higher school of Architecture, and higher school of Law. Iranian, French, Russian, and Armenian architects used French universities as models for Tehran University. The current School of Fine Arts' curriculum and courses were designed based on the École des Beaux Institute's curricula. The university's main library, whose structure was designed by Abdol-aziz Farman-farmayan, opened its doors in 1971. Currently, the library includes a collection of 700,000 volumes and 1800 international publications. Additionally, each department and the majority of its groups benefit from having their own professional library. This university greatly contributed to the development, growth and literacy of Tehran all while serving as an example for other Iranian universities.¹⁰

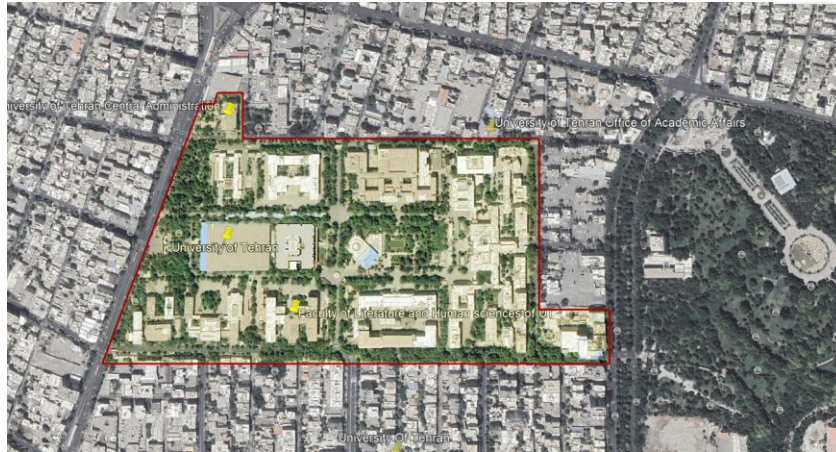
The Soleymanieh Palace in Karaj, which was constructed in the early Qajar dynasty and features exceptional painting flourishes, is the oldest structure in Tehran University. Tehran University is the product of multiple generations of Iranian and foreign architects, making it exceptional in this regard when compared to other comparable examples around the world. Its structures depict three key phases: Persian architecture:

- Cultural;
- Transformational
- Modern.



¹⁰ Ak y in the Interwar Era : The Architecture of André Godard. University of Queensland, Journal Article, 2, 4-7.

These stages of Persian architecture showcase a stunning selection of contemporary structures that combine Persian and European design elements in their façade, layouts, and construction details.¹¹



The site plan of the University of Tehran designed by Godard (Central Library of Tehran University, Section of Digital Archive)

Beginning with Reza Shah's accession to power, a new age of nationalist aspirations that appropriated ideas from Europe began in interwar Iran. However, because to the rapid pace of change and the ambiguity of Iranian nationalism, no consistent architectural style or modernization movement could be established. Besides École des Beaux did not provide an a building style or expression of character in its design that was based on personal preferences determined by the purpose and setting of a design project. The first significant Beaux-Arts graduate to visit Iran during a time when a new architectural language was needed was Godard.

Godard was able to portray an Iranian identity in his projects while hopping from one style to another and taking into account the purpose and importance of each one thanks to his Beaux-Arts training and understanding of Iranian architecture. Godard's efforts did pave the way for a brand-new direction in the development of Iranian modern

¹¹ Crawford, R. H., Stephan, A., Pour, F. H., Lewis, M., & Guo, Q. (2015). Educational architecture and architectural education: through Dar al-Fonun to Iranianised modern universities. 49th International Conference of the Architectural Science Association 2015, Pp.768–777. ©2015, 768–777.

architecture. A course that received more attention in the following decades and has persisted until today.¹²

Sr. No	University of Tehran	Punjab University	
		PU Allama Iqbal, Campus	PU Quad-e-Azam campus
Background	Andre Godard, graduate of the Beaux Arts movement, was commissioned in 1934 to design the University of Tehran under the regime of military leader Reza Shah, based on Modern French Principals, the goal is to start to modernize and upgrade the nation's look.	One of the iconic and historical buildings in Lahore is the Allama Iqbal Campus of Punjab University, also known as the Old Campus which was designed in 1911 by Bhai Ram Singh.	The old Campus of Punjab University with the passage of time and rising student enrollment short of space. As a new era dawned a new space and environment which allowed liberty of movement that became eminent and in the 1950's Doxiadis Associates was hired by the University to handle the project's design work in April 1959.
Planning	Godard designed the University to have a European character: colossal, but undecorated classicism, with cement facades. But the planning reflected the Iranian culture as the campus was planned as a garden, courtyards and	The Old Campus of Punjab University building can be translated to be a fusion of colonial and Mughal architecture, combining the most modern western construction methods with the aesthetic vigor of the existing Mughal architecture.	A complex spine forms a central axis that allows interdepartmental connectivity catering to student circulation within the complex. Both pedestrians and

¹² Shahamat, H. (2014). Formal Sustainability in Traditional Architecture of Iran According To Five Principles of Traditional Architecture of Iran. *Journal of Applied Environmental and Biological Sciences*, 4(1), 100–110.

	partially enclosed yards were used whenever feasible, and there were a few water pools		cars have their own circulation hence maintaining equilibrium with Doxiadis Grid iron planning.
Expansion	After the 1940s, the university's curriculum and structure were modeled after American universities and various institutes were assisted or led by these American Universities. Thus overtime many joint venture branches in collaboration developed. with the assistance of	The college has seen many periodic interventions throughout the century. However, no concept of conservation was involved whilst conjuring these interventions. neglecting behavior is evident throughout the history of the building.	The planning would involve a multi - phased development called "Direction of addition" which would develop along the longitudinal axis parallel to the canal". New department blocks are formed through this axis so they are in synchronization with the concept of 'Direction of Addition'.
Architectural Elements	The character of buildings matches the fundamental function and values that may be core considerations for that particular project.	The building in discussion follows an Anglo-Indian style of architecture.	The individual buildings have lost their characteristics that were intrinsic identity of the old campus

5. Discussion and Analysis:

After the first meeting for initiating higher education institutions in October 1882 at Simla Punjab university was established formally by the British Government along with three other universities built in other areas of British India Back in those days, Architecture was a very new area, in terms of academic studies in the region. The British

administration, was not sure about what kind of Architectural Design, they would like to establish in a region dominated by Hindu and Muslim majority.

The architects in Iran who took on the challenge of integrating the architectural manifestations of heritage and modernity throughout the past two centuries projected possibilities and opened up vistas in designing while taking into account local heritage while being contemporary. The model and architectural language of modern Iran will serve as a guideline and prove to be informative for architects of the developing world where they may be able to identify the balance and the integrated relation between modernity and local identity applicable to architectural design. Here are the findings about the study so far, to evaluate the progress of Campus Architecture, so far:

5.1 -Adaptive Reuse:

In order to prevent the abandonment, decay, and demolition of historically or architecturally significant structures, repurposing buildings for uses other than their intended purpose is frequently used. It is not at all a recent occurrence.¹³ English monasteries were converted into country estates, while pagan temples were converted into Christian churches. It is a question of common sense economics and has been done historically, notably at colleges, to convert old buildings.¹⁴ University of Tehran went through a different phases of Political transition, in different periods of time, as the nature of education changed¹⁵. In case of Punjab university, the field of Facilities Management is still in a state of infancy, for a get a complete price to proceed for a successful adaptive reuse. (PUB website)

5.2- Multidisciplinary Research Center Buildings:

Projects have directly resulted from the crossing of disciplinary lines. Interdisciplinary practices are opening doors to new fields of study and research for research-intensive universities, and the development of specialized interdisciplinary scientific buildings is having a noticeable effect on campus environments around the world.¹⁶ Iran has taken the lead in creating quality research, having 40 research centers in total in comparison with PU, which has only 17 in number. The research has always been an interdisciplinary area in Campus Architecture, an amalgamation of different spatial areas in context.

¹³ Alaa, A. (2019). Design integration in campus planning.

¹⁴ Gilson, S., & DePoy, E. (2011). The student body: The intersection of spatial design, architecture, and cultural policy in university communities. *Research in Social Science and Disability*, 6, 27–47. [https://doi.org/10.1108/S1479-3547\(2011\)0000006005](https://doi.org/10.1108/S1479-3547(2011)0000006005)

¹⁵ Iran, U. of S. (2018). University of Shiraz Iran. University of Shiraz Website. <https://shirazu.ac.ir/en/-/دانشکده هنر و معماری>

¹⁶ Gallaudet University Website. (2023). Campus Design and Planning. University Website. <https://www2.gallaudet.edu/campus-design-and-planning>

5.3 Future Trends:

Three overarching leitmotifs, place, accessibility, and productivity run broadly among future development of Campus Architecture.

- Location: Online technology is transforming every part of our life, including banking, retail, newspapers, and socializing. The digital revolution is engulfing higher education as well. In research on the architecture and master planning of universities, which are the visible or physical aspects of those institutions.⁴
- Accessibility: Future longevity of the latter is difficult to forecast. They offer the advantages of a well-established institutional reputation and experience, but they may not be as durable.
- Productivity: They may maximize campus value and make sure it supports institutional objectives through physical quality and identity by reviewing the current building stock, finding potential for infill development, landscape upgrades, and facilities management of outmoded structures.³

6. Conclusion:

An institute's planning should be synchronized on different magnification levels ranging from macro i.e. master planning housing different departments as its components to a micro one i.e. the individual department with its facilities as its components. The play of open, covered and semicovered spaces for developing formal and informal learning space is one of the major concerns.¹⁷ The study also has also shown work of starchitects such as Dioxides Andre Goddard to extended Architecture to another limited by experimenting their craft with the regional Islamic style. The building volumes should be made porous by introduction of open green spaces in each sub-facility/department which would not only help in developing interactive learning spaces but also for getting uniform diffuse light.¹⁸ Resource location and access of shared facilities by users must have its place in the design process. The concern for future extension at departmental level should constantly be kept in mind during the process. The campus of the future lies in combination of tradition, network and virtual technology. The local Architects while designing a campus should aim at reaching different kinds of stakeholders, policy makers, users, controllers, project managers, engineers, collectively shaping the future of humanity to another level.¹⁹ There is dire need in Pakistan to write quality research on Campus Architecture, so far very limited material is available on Mughal, Colonial and Islamic Architecture, pre independence and post-independence Architectural development, in context of campus design evolution process.

¹⁷ Farmingdale University Website. (2021). Farmingdale Campus Construction. Web Article. <https://www.farmingdale.edu/physical-plant/campus-construction.shtml>

¹⁸ Alberts, R. C. (2017). The Campus of the Future. Pitt, December, 439–444. <https://doi.org/10.2307/j.ctt5hjnqh.40>

¹⁹ Heijer, D., Version, D., Heijer, D., & Breems, B. (2021). Delft University of Technology De campus als living lab Elke universiteit worstelt met het vinden van het juiste evenwicht tussen het traditionele, netwerk- en virtuele model. TU Delft University Publication.