

# architecture institutions and change

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## **Negotiating the International and the Local: A Reading of Achyut Kanvinde's Indian Institute of Technology Campus, Kanpur (1960-1967) and *Campus Design in India* (1969)**

*In 1969, two years after the completion of his seminal campus project – the Indian Institute of Technology in Kanpur, India (IITK: 1960-67), architect Achyut Kanvinde wrote a book titled Campus Design in India: Experience of a Developing Nation, co-authored by American architect H. James Miller. The book claimed to serve as an instructive guide for designing good campus environments in postcolonial India and was framed in response to the unprecedented impetus provided to tertiary education in the 1960s by the Indian government as a part of its post-independence nation-building agenda. Interestingly, the book showcased Kanvinde's IITK campus as an exemplar within local campuses of past and present and further contextualised it in the emerging international discourse on campus planning that reflected the post-war tertiary education boom. Through this alignment between national goals and international themes, Kanvinde and Miller presented the book as a manifesto of institutional campus for a modernising India.*

*This paper focuses on a synthesised reading of Campus Design in India and the IITK design in order to understand the way in which international architectural and urban principles were received, adapted and selectively translated for the Indian context. In particular, it draws attention to the factors that complicated the translation such as the consideration of pre-colonial models, the idea of university as a secular temple, and India's partnership with the West for technological and economic development. The paper argues that Kanvinde's book presented progressive concepts of campus planning but filtered them through the lens of nation-building ideology and history. The book also provides insights into Kanvinde's IITK design revealing the struggle of localisation which the paper argues is manifested in the form of competing concepts of systems and symbols, and technology and elemental forms which were negotiated through a unique conception of nature.*

This paper is concerned with the development of university campuses in post-independence India that received unprecedented political impetus during the 1960s. Closely tied to post-colonial nation-building agenda and the Cold-War politics of foreign aid, the growth of higher education in India significantly coincided with the tertiary education boom in the post-war international context. The emergence of an accompanying discourse on campus planning which drew on post-war revisionary modernism became a reference point for Indian campus design. But how was the importation of international disciplinary themes justified and translated for the Indian cultural and material conditions where it was ultimately realised and acquired meanings?

The paper seeks to answer this question through a parallel focus. First, it examines a seminal campus project of the 1960s – the Indian Institute of Technology, Kanpur (IITK, 1960-67) designed by the leading modernist architect, Achyut Kanvinde. As one of the first comprehensively planned institutional schemes after independence (1947), the campus is also critically well-received in the history of Indian modernism and is seen as an explicit manifestation of post-war Euro-American disciplinary ideas in India.<sup>1</sup> Second, the paper undertakes a close reading of the locally well-known but previously unstudied book titled *Campus Design in India: Experience of a Developing Nation* (1969) co-authored by Kanvinde.<sup>2</sup> Published merely two years after the completion of initial phase of IITK, the book was the first systematic and substantial contribution to the theme of Indian campus planning. Interestingly, Kanvinde's IITK campus was featured throughout the book as an exemplar of successful campus environment and further contextualised through a discussion of local and international case-studies. This paper argues that a dual reading of the campus and the book not only provides new insights into Kanvinde's IITK design but it illuminates reception of international ideas and their translation that had to be filtered through the consideration of historic models, national ideals surrounding mass education and internationalism of aid politics.

### Indian Institute of Technology, Kanpur

Founded in 1960, the IITK was one of the five state-sponsored technical universities established under the leadership of Prime Minister Jawaharlal Nehru whose vision for a modern India was based on techno-scientific and industrial development. With India's non-aligned status, Nehru strategically sought technical and financial assistance from patrons across the ideological divide for building these institutions and the IITK was realised with a close collaboration with the United States.<sup>3</sup> The Delhi-based architectural firm of Kanvinde and Rai was commissioned for the master planning of the campus spread over an 800 acre site and for the architectural design of academic buildings.<sup>4</sup> For Kanvinde, a Gropius student from Harvard who disseminated the values and aesthetic associated with Bauhaus modernism in the 1950s, the IITK became a milestone project of his career where he shifted from cubic forms, smooth surfaces and machine aesthetic of the 'International Style' towards a more regional approach.<sup>5</sup>

The site for IIT was located on the outskirts of the industrial city of Kanpur. Envisioned as a self-contained residential campus capable of growth, it had to be planned as an integrated urban environment which would fulfil the needs of living and studying. In his master plan, Kanvinde superimposed a layer of major and minor roads along cardinal directions which subdivided the site into interlocking quadrangular segments. A separation of vehicular and pedestrian traffic which was commonly accepted as a fundamental principle of urban design internationally underpinned the scheme with each quadrangle planned as a pedestrian precinct surrounded by a vehicular road. A 50 acre precinct for academic buildings was planned centrally surrounded by residential and recreational zones. Critical to the size and relation between precincts was the 20 minute walking radius that ensured a pedestrian scale – an idea based on the concept of a “neighbourhood unit”.<sup>6</sup> Such a designated land use assured long-range reservation for need-based growth while retaining relationships to other parts of the campus – a principle which has continued to determine the character of campus today even after 50 years.



**Fig. 1** Frontispiece of *Campus Design in India* showing IITK entry plaza and campus buildings. Kanvinde and Miller, *Campus Design in India*, 2.

The range of academic buildings required by the program included laboratories, workshops, lecture halls, library administrative offices and an auditorium. Similar to ongoing educational experiments in the international context that emphasised an interdisciplinary approach, particularly initiated in the new British universities, the IITK management too envisaged an integrated and flexible academic setting. In response, Kanvinde grouped the activities as per functions rather than department. Clustered around informal open spaces, the buildings were modular (based on laboratory and non-laboratory requirements) which ensured flexibility and expansion and were constructed using reinforced concrete frame and exposed brick-skin walls. A dominant feature of the scheme was a series of double level-walkways that threaded through all the buildings. These linear pedestrian and bicycle-friendly linkages that functioned in climatic extremes of Kanpur (lower level shaded for summer and top level open for winter) were envisioned as vital street like settings where social interactions would occur in lush landscaped gardens. Additionally, service tunnels were planned underneath walkways. Kanvinde called the walkways “arteries and veins” thus reflecting their critical role in the effective functioning and vitality of campus life.<sup>7</sup> This

‘system’ of expandable modular buildings interlaced with human movement and services using the regional-brutalist vocabulary of exposed concrete and brick showed Kanvinde’s engagement with the key ideas of international discourse on campus design and post-war modernism. However their particular manifestation in the Indian context can be understood further by looking at Kanvinde’s book on campus design.



**Fig. 2** IITK double level corridors through library building.  
Photograph by Prajakta Sane, 2011.

### International and Local in *Campus Design in India*

Kanvinde’s *Campus Design in India: Experience of a Developing Nation* published in 1969 ambitiously claimed to serve as an instructive guide for creating well-designed campuses in India.<sup>8</sup> The book was co-authored by H. James Miller, American architect-academic and a member of the United States Agency for International Development Program (USAID) who acted as a campus design consultant for many ongoing agricultural universities in India from 1964 to 1969.<sup>9</sup> Though the exact nature of Kanvinde and Miller’s individual contribution to the book is not clear, their partnership reflected the larger ethos of the Cold War context of the 1960s in which US-dominated international exchange and collaboration was seen crucial to India’s institutional and socio-economic development.<sup>10</sup>

*Campus Design in India* was structured in three sections: “Purpose and Prospect,” “Campus Design Process” and “Campus Design Product”. The first section outlined architectural pointers of campus design which were further articulated through local and international case-studies in the third section. The second section concentrated on explaining policies and procedures pertaining to various stages of campus planning specific to the Indian university sector. Fairly dominant in this discussion was the emphasis on the architect’s role as a team leader who in the authors’ view was “uniquely prepared” to handle functional, structural and aesthetic requirements of a truly fine university campus.<sup>11</sup> This view was sharply defined by an elaborate critique of the engineer dominated Public Works Department’s (PWD) methods that continued colonial practices resulting in “mediocre and

poor quality buildings.”<sup>12</sup> Mapping a larger role for architects in designing campuses was, in fact, a timely and astute argument by Kanvinde and Miller for procuring larger commissions for themselves as campus consultants and also for the architectural profession at large to capitalise on the growing market of institution building.

In order to frame their architectural position as a critical necessity of the time, Kanvinde and Miller referred to the key national document – the *Report of the Education Commission of 1966*.<sup>13</sup> In fact, a significant component of the first section was devoted to the discussion of unprecedented political investment in the expansion of tertiary education and its stated significance to the Nehruvian nation-building rhetoric. Stressing the role of education as a prime-mover of economic development and social change, three aspects of the report were highlighted – first, a rapid expansion of tertiary educational infrastructure; second, mass-education and equal opportunities to all; and third, a qualitative transformation in the education system to foster a secular outlook while also retaining awareness of India's cultural and spiritual heritage in which education held a sacred place. Ultimately, the new educational institutions of post-independence India were not only invested with socio-economic ambitions but were also elevated to the status of modern day secular ‘temples’.

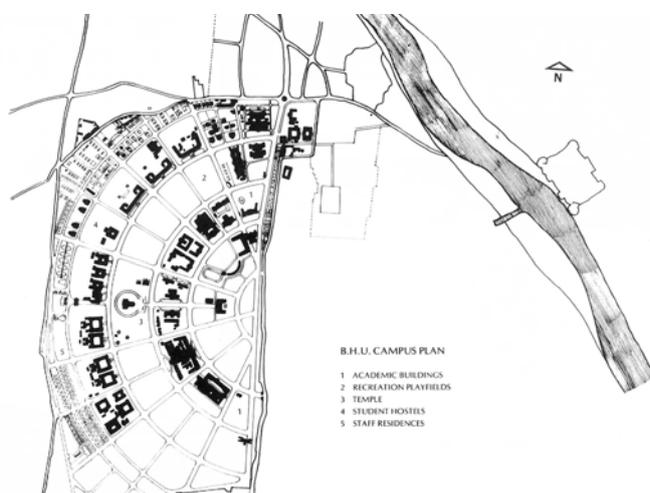
But importantly Kanvinde and Miller pointed out that despite the extensive funding and government support to build new universities, there remained a considerable lack of knowledge about the design quality of campuses. Most of the Indian campuses in their view spoke of “wasted opportunities” and were “poorly planned, unsightly, poorly utilised, poorly equipped and costly to maintain” thus failing to provide “positive experiences” or “physical comfort” resulting in a tragic wastage for a nation with scarce resources.<sup>14</sup> This apparent gap provided them an opportunity to present the book as a manifesto for “ideal” campus design for which they referred to the “latest trends and thinking” in the international context.<sup>15</sup>

India's rapid university expansion of the 1960s had direct parallels in the phenomenal tertiary education boom in post-war Europe and America which led Joseph Rykwert to hail “university campuses as institutional archetypes of our age.”<sup>16</sup> One of the most comprehensive contributions to the theme was Richard P. Dober's *Campus Planning* (1963).<sup>17</sup> Instead of emphasising architectural form, Dober foregrounded a rational planning process based on zonal site divisions, buildings designed according to functional requirements, hierarchy of roads, pedestrian scale, central plaza, and connection to landscape. With the proliferation of universities, campuses often became sites where ideals of architecture and urban planning could be tested engendering several publications on the theme.<sup>18</sup>

Kanvinde and Miller drew substantially from this emerging discourse further supporting their argument with international and local case-studies. They selected 25 campuses, out of which six were acclaimed post-war international examples and 19 were local. In contrast to international case-studies, their selection of Indian examples reflected a longer time span that stretched chronologically across three fairly discrete periods – pre-colonial (ancient and medieval), colonial, and post-colonial. Implicit in their overview of Indian campuses was a well-rehearsed nationalist narrative of a glorified past, a predictable rejection of colonial models (although the choice of pre-colonial historic examples reflected a colonial evaluation

of Indian heritage) and a familiar rhetoric of post-independence development initiatives, thus participating in the larger act of decolonisation.<sup>19</sup>

One of the key themes foregrounded by Kanvinde and Miller was the need to plan for growth and unpredictable change which was also a major preoccupation of post-war campus planning.<sup>20</sup> Critical of the unplanned and haphazard development common to many colonial and postcolonial Indian campuses such as Delhi University (1922), IIT in Kharagpur and Orissa University of Agriculture and Technology (1962), that resulted in “lack of unity and consistency”<sup>21</sup>, they argued for establishing a “campus framework”<sup>22</sup> or a formal logic of expansion that permitted incremental growth without sacrificing campus coherence at any stage. However, the authors cautioned against rigid “plan formalism” such as semicircular organisation in the case of Benares Hindu University (1917) and the Uttar Pradesh Agricultural University (1960) that created “undefined, uninteresting exterior spaces and monotonous rows of buildings.”<sup>23</sup> To clarify their viewpoint about controlled expansion without formal imposition, Kanvinde and Miller drew on international examples such as the University of Bath (est. 1966) in England – a design based on a linear pedestrian spine which enabled growth along both axes and the Scarborough College in Canada (est. 1964) that comprised of a nucleus of common facilities linked to radiating growth lines. Going beyond the extendable courtyard pattern common to Oxbridge models, a linear or radial organisation was promoted by the authors for horizontal expansion.<sup>24</sup> For flexibility and growth within buildings, the authors advocated a “predesigned matrix or systems fabric” that relied on modular units such as in IITK.<sup>25</sup> Defined as “proportional spatial elements complete in themselves,” the modules were capable of “allowing other similar units to be added horizontally” and could be designed to “plug-in” to “predetermined circulation, structure and service systems.”<sup>26</sup> This approach was presented as more systematic in contrast to the Indian practice of “overdesigned” structure (both footings and frame) in single or double storeyed buildings for constructing an additional storey which they criticised for its additional costs, lack of flexibility and often incompatible formal appearance. While such incremental growth through self-build options subsequently came to be highly recommended as a solution for low-cost urban housing<sup>27</sup> for institutional buildings it was downplayed by Kanvinde and Miller.



**Fig. 3** Benares Hindu University Campus, site plan.  
Kanvinde and Miller, *Campus Design in India*, 92.

The second theme emphasised was that of communication networks in response to the new interdisciplinary educational trend. Architecturally it signalled a departure from the earlier American influenced campus pattern of departmental buildings in parkland towards a closer functional grouping or what Dober called "continuous teaching environment."<sup>28</sup> Illustrated in this regard amongst other examples was one of the most talked about post-war campuses, the University of East Anglia (est. 1962) in England comprising of a continuous belt-like angular walkway along which the academic and residential areas were organised. More significantly, the trend brought forth an emphasis on shared areas which would foster interaction between disciplines in which linkages such as pedestrian walkways became a prominent feature.

The third theme highlighted by Kanvinde and Miller was the need for a civic and symbolic presence as the new institutional campuses in India were representations of national aspirations. Metaphorically alluding to the campus as an "organism," they argued that it needed to have a "hierarchy of elements that gave it a comprehensible form." In their view this could be achieved by planning a "heart or a core" – a "plaza" for collective student activity marked by a library or some symbolic landmark.<sup>29</sup>

Thus on the one hand, Kanvinde and Miller's emphasis on a centralised core recalled the "New Monumentality" and "Heart of the City" debates of the late 1940s and early 1950s of the CIAM which advocated a return to monumental civic institutions and pedestrianised city centres symbolising community life in democratic society.<sup>30</sup> On the other hand, their interest in designing for flexibility and growth, communication networks, modules and systems reflected a direct alignment with the radical post-war strand represented by the European avant-garde group of Team 10. Rejecting the technocratic and formal-functional approach of the CIAM's pre-war urban and architectural theories as being overly rigid and banal, Team 10's emerging critiques put forth an emphasis on a more humane and socially responsive approach in which concepts like "association", "identity" and "communication" gained prominence and concerns shifted to "un-programmed" and "spontaneous" spaces which could grow and change freely.<sup>31</sup> The subsequent offshoots of these latter ideas in mat-building, Dutch structuralism and the futuristic mega-structures of Archigram and Japanese Metabolists based on the idea of plug-in essentially dealt with smaller units or parts of buildings that could be added to a fixed system.<sup>32</sup> The belief that such systems could generate large complex buildings overturned the notion of building as a fixed, autonomous object based on formal compositions; to building as a pattern that implied flexibility, open-ended growth and a possibility to interact with other systems.

While these prevalent ideas were clearly of interest to Kanvinde and Miller who were engaged in international exchange and aid programs, the book also indicated a clear desire to adapt them to local conditions. The adaptation was not restricted to the predictable categories of climate or local materials which was of course discussed, but complicated by the presence of pre-colonial models of universities as much as the post-independence imperatives of institutions as secular temples. While tensions of incorporating the past was a common phenomenon internationally, in India it was amplified by the persistence of ancient

educational systems as well as an enduring heritage of university ruins.<sup>33</sup>

The search for a viable integration of the past and the future in campus design for India was reflected in the authors' reading of Louis Kahn's closely observed design of the Indian Institute of Management (IIM), Ahmedabad (1962-74). Noting Kahn's integration of academic and living areas, expression of indigenous brick and proposal of a water pond for evaporative cooling, they also drew attention to his creative fusion of Indian history with progressive campus design, "The special qualities and singular strength of character [of IIM] are reminiscent of the monastery unit of the old Nalanda University, yet incorporating the very latest ideas in university campus development. It is an exceptionally fine concept and could serve to renew an appreciation of the values of the historical institutions."<sup>34</sup> Presenting Kahn's design as a compelling model for designing a 'modern-Indian' campus, the book thus addressed the issue of national identity.

More specifically, Kanvinde and Miller's analysis of medieval and ancient Indian campuses in order to distil lessons for the present reflected both an effort to localise the international concepts through nature, materiality and climate but also an attempt to negotiate history. In their analysis of Haus Khas Madarsa (1352-88AD), a medieval Islamic centre of learning outside Delhi, Kanvinde and Miller highlighted the campus organisation in which nature played a functional as well as an aesthetic role. Comprised of learning cells, a palace and a tomb interwoven with landscaped terraces and gardens, the L-shaped building was built around an existing lake-reservoir that was originally constructed to combat the hot and dry climate of the Delhi region. In their appraisal of the ancient Ajanta Cave Monastery, Maharashtra (200BC-700AD) – a series of rock-hewn cave units carved into a crescent shaped cliff sporadically over a period of centuries, the integration with topography was argued as being critical to the cohesive character of the campus despite the absence of a master plan. These examples also enabled Kanvinde and Miller to make an argument for achieving contextual specificity through usage of natural materials, mainly local stone or brick which they praised for climatic benefits and permanence as much as for their assimilation of cultural expression of art, craft and sculpture. This preference for natural and local materials was not limited to the economic standpoint of a developing country



**Fig. 4** Ajanta Rock-cut Cave Monastery along a crescent shaped cliff. Photograph courtesy of Meghana Kulkarni.

struggling with resources, but also echoed the ethical and aesthetic formulations of post-war architectural discourse, most notably the “New Brutalism.”<sup>35</sup>

An exemplar that brought together most of their discussion of post-war themes and located them within the appropriate national and typological context of India was that of the ancient Nalanda University (300BC-1200AD) in Bihar. Based on archaeological findings and surviving writings, it is deduced that the Buddhist University of Nalanda was a systematically planned campus.<sup>36</sup> The campus constructed in local red brick and adorned with sculptures in its heyday, comprised of an integrated framework of linearly arranged monastery units comprising of cellular rooms (modules) interspersed with translucent water ponds and parks, communal and symbolic spaces such as the *stupa* (temples), had a large library and multi-storeyed lecture halls with towers that acted as visual landmarks.

The photographs of Nalanda illustrated by Kanvinde and Miller were even more evocative. Not only did they depict monumental brick ruins having stark geometrical quality, but they also showed a network of pathways between structures reflecting the configuration of movement. According to historians of Nalanda, the row of rectangular monastery units were not attached but were connected by well devised footpaths amidst parks.<sup>37</sup> The pathways seen in the photograph were probably constructed to aid archaeological excavation, but they also revealed the underlying order of the campus. Rising above excavated ground in certain parts, the elevated pathways linking the row of monastic buildings projected an image of a modern day campus with abstract building fragments interconnected by distinct pedestrian pathways in a landscape. The Nalanda complex is presented by Kanvinde and Miller as an apt precedent for a modern campus rooted in India's ancient past stating, “[T]he development of this campus as a cluster of monasteries and collective spaces around a stupa gave it a quality, scale and identity not unlike the successful campuses of today.”<sup>38</sup>



**Fig. 5** Ruins of the ancient Nalanda University, Bihar. Kanvinde and Miller, *Campus Design in India*, 79.

Thus as opposed to colonial or postcolonial campuses which were shown to have many problems, the pre-colonial university ruins, irrespective of their religious background, seemed to offer compelling lessons for a modern secular campus. Stripped of their embellishments and characterised by exposed natural materials, the formal geometric

expression of ruins interwoven with landscape seemed appealing in modernist terms of truth of materials and elemental abstraction enabling a selective if somewhat romantic interpretation. Moreover, they also allowed Kanvinde and Miller to make an argument for not merely 'bringing' international ideas to India but in showing that the basic principles were 'already' present within India's history.

In summary, architectural and urban ideals coming from different international impulses were recommended by Kanvinde and Miller in *Campus Design in India* and presented as particularly relevant to the post-independence ambitions of India. On the one hand, post-war concepts such as growth and flexibility, systems planning and modular organisation were framed as a response to the phenomenal expansion of the university sector in India which crucially needed a planned approach; while ideas of connectivity and associationism resonated with India's goals of mass education and secularism. Emphasis on centralised spaces like plazas with symbolic markers ran parallel to Indian aspirations of national identity and seemed appropriate to address the elevated status of educational institution in Indian society. On the other hand, Kanvinde and Miller argued for a particularisation with respect to nature, site, climate and materials, echoing a regionalist and brutalist turn in mainstream architecture. But more significantly, they selectively filtered these international principles through pre-colonial campus models or the 'sacred groves' of India, and showed them to be present already, either in form or essence thereby grounding their book within the overarching framework of 'modern-Indian' identity.



**Fig. 6** IITK Library building as the symbolic centre of the campus.  
Photograph by Prajakta Sane, 2011.

## Conclusion

In concluding this paper, I would like to return to Kanvinde's IITK design which the authors claimed as a "model for ideal campus" epitomising their argument in *Campus Design in India*.<sup>39</sup> This paper argues that Kanvinde's position on the campus type as formulated in the book serves to provide fresh insights into his design of the IITK campus.

The IITK clearly reflected the tension of adapting international themes as Kanvinde grappled with India's political and cultural aspirations surrounding mass education and democratic nation-building. In academic campus buildings, he successfully employed the logic of matrix planning having fixed circulation and service systems to which clustered modular buildings could be added thereby creating a non-hierarchical, flexible and open-ended campus that fostered secular ideals. At the same time, Kanvinde also explored the possibility of expressing the civic role of the institution by introducing a centralised form for the library building placed next to a pool, and a plaza for collective gathering. In the formal expression of buildings, the extreme delineation of thin, ambitiously engineered structural frame reflected the futuristic techno-scientific goals of the institution while their strikingly exploded and elemental modular components in local red brick appeared like elemental fragments evoking ancient ruins. More significantly, Kanvinde's design of the long, elevated walkways clearly drew on international ideas, but through their specific architectonic condition of interweaving built form and open spaces, they infused the building interiors with trees, light, air, water and changing vistas into the surrounding lush landscape. Ultimately, if there was an interesting moment in Kanvinde's IITK campus, it was this unique connection with the immediate environment in which nature shaped architecture and human experience.

Through a dual focus on Kanvinde's design of the paradigmatic IITK campus and his polemical tract-cum-reference book, *Campus Design in India*, mapped against post-war expansion of tertiary education that historically overlapped with India's nation-building agenda, this paper has provided distinctive perspectives on the familiar narrative of international and local, romantic and technocratic, individual and collective in the context of Indian modernism. By highlighting the close alignment between political and architectural imperatives centred on the campus type during the 1960s, the paper showed how synthesis of different priorities gained contextual meaning in the process of translation which was essentially different from revivalist notions of identity.

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- 1 Vikram Bhatt and Peter Scriver, *After the Masters: Contemporary Indian Architecture* (Ahmedabad: Mapin Pub., 1990), 18-19.
  - 2 A. P. Kanvinde and James H. Miller, *Campus Design in India: Experience of a Developing Nation*, sponsored by United States Agency for International Development (Manhattan, Kansas: Kansas State University, 1969).
  - 3 For an early history of IITK and American assistance, see Kim Patrick Sebaly, "The Assistance of Four Nations in the Establishment of the Indian Institutes of Technology" (PhD Dissertation, University of Michigan, 1972).
  - 4 The design of housing was subsequently awarded to a Delhi-based firm, Kothari and Associates.
  - 5 Peter Serenyi, "Ethics and Aesthetics: An Architect and his Values," *Architecture and Design* 1, no. 4 (May-June 1985): 18.
  - 6 Kanvinde and Miller, *Campus Design in India*, 107. For the concept of the neighbourhood unit, see Lewis Mumford, "The Neighborhood and the Neighborhood Unit," *Town Planning Review* 24, no. 4 (1954). For a critical study of neighbourhood planning in India, see Sanjeev Vidyarthi, "Inappropriately Appropriated or Innovatively Indigenized?: Neighborhood Unit Concept in Post-independence India," *Journal of Planning History* 9, no. 4 (2010).

- 7 Ram Paradkar, interview by the author, December 7, 2011. For a discussion of scientific metaphors in modern architecture, see Adrian Forty, *Words and Buildings: A Vocabulary Of Modern Architecture* (London: Thames & Hudson, 2000), 87-101.
- 8 Kanvinde and Miller, *Campus Design in India*, 5-6.
- 9 Miller was a campus development consultant for the G. B. Pant Agricultural University (est. 1960) in Pantnagar, Uttarakhand, and the Andhra Pradesh Agricultural University (est. 1962), Hyderabad. Kanvinde and Miller jointly worked on the University of Agricultural Sciences campus in Bangalore (1965 onwards).
- 10 For an overview see Andrew Jon Rotter, *Comrades at Odds: The United States and India, 1947-1964* (Ithaca: Cornell University Press, 2000).
- 11 Kanvinde and Miller, *Campus Design in India*, 6.
- 12 Kanvinde and Miller, *Campus Design in India*, 70.
- 13 The Ministry of Education of the Government of India, ed., *Report of the Education Commission, 1964-1966* (New Delhi: Government of India Press, 1966).
- 14 Kanvinde and Miller, *Campus Design in India*, 20.
- 15 Kanvinde and Miller, *Campus Design in India*, 38.
- 16 Joseph Rykwert, "Universities as Institutional Archetypes of our Age," *Zodiac* 18 (1968): 63.
- 17 Richard P. Dober, *Campus Planning* (New York: Reinhold, 1963). It was followed by Richard P. Dober, *The New Campus in Britain: Ideas of Consequence for the United States*, ed. Laboratories Educational Facilities (New York: Educational Facilities Laboratories, 1965).
- 18 Some notable publications covering British universities include Michael Brawne, *University Planning and Design* (London: Lund Humphries, 1967); Michael Beloff, *The Plate Glass Universities* (London: Secker and Warburg, 1968); Tony Birks, *Building the New Universities* (Newton Abbot: David and Charles, 1972). Two later publications are noteworthy for their extensive historic analysis of campus design: Paul Venable Turner, *Campus: An American Planning Tradition* (Cambridge, Mass.: MIT Press, 1984); Stefan Muthesius, *The Postwar University: Utopianist Campus and College* (New Haven, London: Yale University Press, 2000).
- 19 For an extensive critique of Western reading of Indian art, sculpture and architecture, see Partha Mitter, *Much Maligned Monsters: A History of European Reactions to Indian Art* (Chicago: University of Chicago Press, 1992).
- 20 Brawne, *University Planning and Design*, 10.
- 21 Kanvinde and Miller, *Campus Design in India*, 101.
- 22 Kanvinde and Miller, *Campus Design in India*, 32.
- 23 Kanvinde and Miller, *Campus Design in India*, 93.
- 24 Kanvinde and Miller, *Campus Design in India*, 138-41.
- 25 Kanvinde and Miller, *Campus Design in India*, 30.
- 26 Kanvinde and Miller, *Campus Design in India*, 34.
- 27 See, for instance, Charles Correa, *The New Landscape: Urbanisation in the Third World* (Singapore: Butterworth Architecture and Concept Media Ltd., 1989), 55-62.
- 28 Dober, *The New Campus in Britain*, 35.
- 29 Kanvinde and Miller, *Campus Design in India*, 38.
- 30 See J. L. Sert, F. Leger and S. Giedion, "Nine Points on Monumentality (1943)," in *Architecture Culture, 1943-1968: A Documentary Anthology*, ed. Joan Ockman (New York: Rizzoli, 1993), 29-30; Sigfried Giedion, "The Heart of the City: A Summing Up," in *The Heart of the City: Towards the Humanisation of Urban Life*, ed. J. Tyrwhitt, J. L. Sert and E. N. Rogers (Nendeln: Kraus Reprint, 1952).
- 31 Alison Smithson, ed., *Team 10 Primer* (London: Studio Vista Limited, 1968), 51. For a recent critical study on Team 10's ideas see, Annie Pedret, *Team 10: An Archival History* (Abingdon, New York: Routledge, 2013).
- 32 For a concise overview of post-war modernist development, see Alan Colquhoun, *Modern Architecture* (Oxford: Oxford University Press, 2002), 220-23.
- 33 For an overview see N. Jayapalan, *History of Education India* (New Delhi: Atlantic, 2000), 5-6.
- 34 Kanvinde and Miller, *Campus Design in India*, 127.
- 35 See Reyner Banham, "The New Brutalism," *Architectural Review* 118 (1955): 357; Reyner Banham, *The New Brutalism: Ethic or Aesthetic?* (London: The Architectural Press, 1966).
- 36 C. Mani, ed., *The Heritage of Nalanda* (Delhi: Aryan Book International, 2008), preface.
- 37 G. C. Chauley, *Art and Architecture of Nalanda* (New Delhi: Sundeep Prakashan, 2002), 15-22.
- 38 Kanvinde and Miller, *Campus Design in India*, 80.
- 39 Kanvinde and Miller, *Campus Design in India*, 107.