Defining a Critically Regional Campus Identity for UH Mānoa

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May 2013

Submitted towards the fulfillment of the requirements for the Doctor of Architecture Degree

School of Architecture
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We certify that we have read this Doctorate Project and that, in our opinion, it is satisfactory in scope and quality in partial fulfillment for the degree of Doctor of Architecture in the School of Architecture, University of Hawai‘i at Mānoa.

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Acknowledgements

This doctorate project is the culmination of my academic journey. In the last decade, I have gained significant knowledge on aspects that shape the human experience and the impact the physical setting has on our perceptions of place and identity. Along the journey, key people in my life have contributed to this quest for knowledge and career pursuit. I give special thanks to all the teaching professionals that have influenced me over the years. They have given me the skills and knowledge to take on this comprehensive assessment of UH Mānoa. Special thanks to my doctorate committee chair, Magi S. Sarvimaki for her guidance and wisdom. She introduced me to Critical Regionalism; which is a key aspect of this research project. Thanks also to the members of my research committee, Dr. Karl Kim and George Atta, for their valuable insights in working with me throughout the research and design process. Mark Gilbert’s contribution to the research is also appreciated. He provided historical data of the University of Hawai’i at Mānoa campus’ physical development from 1983 to 2005; and helped in the development and distribution of the online survey for the qualitative research phase of the project. Dr. Stephen Meder also contributed to the research indirectly. Sustainable design is integrally part of this Critically Regional Campus Design framework. His courses on aspects concerning environmentally responsive design and planning practice enhanced my understanding of how designers can greatly contribute to the health and efficiency of the physical settings that we create and the ecosystems that impact our way of life. Last, but not least, thanks to my family and friends for believing in me and supporting me throughout the process.
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ABSTRACT

The University of Hawai`i at Mānoa campus is a place of undefined institutional identity in its built environment. Its physical context, which has developed for over a century, has experienced significant transformation in its architectural content, landscape features, and experiential quality. Changes in its social, political, economic, and cultural context influenced expansion of the University’s programs and campus setting. Also influential were trends in university design and planning practice, architectural trends in Hawai`i and significant historical events. The experiential nature of the campus environment transformed, as rapid development altered the campus’ spatial qualities, functionality, comfort, aesthetic attributes, and cultural content. The university’s upkeep and maintenance practices of campus facilities and landscape, to the present day, especially impacted people’s perception of the place and the institution’s values towards cultivating its academic community. This investigation involved an analysis of these aspects to understand the contextual framework of the University of Hawai`i at Mānoa campus. A qualitative study of user perceptions of the place further clarified the nature of people’s experience of the institutional setting and defined key aspects significant to positively shaping its community. Based on these research findings, an assessment of the 2007 UH Mānoa Long Range Development Plan (LRDP) was conducted to determine whether the defined key principles from the study apply to current physical development plans or can be used to improve upon the plan’s vision. The result of the study is a definition of key principles to enhance a sense of place at the University of Hawai`i at Mānoa campus. A design exercise elaborates upon the applicability of the defined key principles to the campus setting.
INTRODUCTION

The University of Hawai‘i at Mānoa campus is a place of undefined institutional identity in its built environment. Its physical context, which has developed for over a century, has experienced significant transformation in its architectural content, landscape features and experiential quality. Changes in its social, political, economic and cultural context influenced expansion of the University’s programs and campus setting. Also influential were trends in university design and planning practice, architectural trends in Hawai‘i and significant historical events. The experiential nature of the campus environment transformed, as rapid development altered the campus’ spatial qualities, functionality, comfort, aesthetic attributes, and cultural content. The university’s upkeep and maintenance practices of campus facilities and landscape, to the present day, especially impacted people’s perceptions of the place and the institution’s values towards cultivating its academic community.

This research project involved an in-depth investigation into factors that led to the University of Hawai‘i at Manoa’s existing physical state; concepts and survey data that explains how the existing conditions of the campus physical environment impacts it users perceptions of and identity with the institutional setting and its surrounding region; and the definition and design exploration of campus design and planning principles that could potentially improve the experiential nature of the campus setting and enhance its regional identity. There are three main parts to this research project: (1) University Context; (2) UH Mānoa Context; and (3) Design Project. The first section discusses concepts in university design and planning practice, environmental psychology, Critical Regionalism and sense of place; that forms the basis of which the Critically Regional Campus Design framework is formed. Key design principles are defined that could potentially enhance a university’s regional identity. The second section delves into the context of the University of Hawai‘i at Mānoa campus. Key components of the research include (1) an interpretive historical analysis of the campus physical development; (2) a qualitative research study that reveals how people arrive to the campus, circulate throughout, interact and identify with the setting, and also identifies both positive and negatively perceived environments on-campus and specific attributes associated with these perceptions; (3) a review and evaluation of how key findings in the qualitative research section can contribute to UH Mānoa’s 2007 Long Range Development Plan; and (4) the identification of key principles to enhance the University of Hawai‘i at Manoa’s sense of place. Applicability of the defined key principles is shown in the third section, Design Project. A site on the campus property was chosen for design exploration, to demonstrate how the Critically Regional Campus Design framework could be implemented. The site analysis and a site design phases are clearly described to emphasize how existing conditions can be improved with the proposed design framework.

The goal of this research project was to define a design strategy that would enhance UH Mānoa’s regional identity. Concepts of Critical Regionalism and sense of place formed the basis of which this design and research approach was conceived. Critical Regionalist design practice involves a critical response to distinct attributes of a regional context including its topography, climate conditions and character of its physical setting. The intent is to enhance human connection to an environment’s distinct regional qualities; which contributes to place identity. Sense of place is a concept that is integrally
part of the Critically Regionalist framework. It involves a situation of deep, unselfconscious immersion in a place. Critical Regionalism heightens this connection by incorporating a sense of understanding of the context, both spatially and temporally. Considering these aspects of Critical Regionalism and sense of place, a research strategy arose that included an investigation of UH Mānoa’s physical development; distinct qualities of its climate, topography and regional setting; and how the physical environment of the university impacts its users perceptions of and identity with the place.

In exploring these aspects, a broader perspective on the campus environment and the impact its physical setting has on campus members developed. The physical form of the campus setting is a result of a vast array of contextual influences including changes to the social, political, economic and cultural context of the region. Trends in university design and planning practice; architectural trends in Hawai’i and abroad; and significant historical events affected the pace of development and diverse nature of architectural content on-campus. The hodge podge condition of UH Mānoa contributes to negative perceptions of the campus. However, it was found that the perceived quality of the physical setting, in its accommodation for comfort, functionality, activities and aesthetic attributes, is principle to campus member’s perceptions of and identity with the place.

The lack of proper maintenance and upkeep of existing facilities and landscape was a topic of contention amongst campus members. Improvements to the physical condition of campus grounds and facilities, in consideration of these aspects, would greatly contribute to positive campus experiences. The Critically Regional Campus Design framework, defined and explored in the research, provides a conceptual basis of which a Critically Regional Campus Identity for UH Mānoa can be established.

The content of this research project is intended for university designers, planners and administrators. It provides a framework for understanding how the physical setting of universities has been conceived of historically and the impact of their physical condition on campus constituents. The Critically Regional Campus Design framework can be especially useful for design professionals whom have a regional focus in mind for campus design and planning. There is also significant potential for the body of research concerning UH Mānoa to be used for the improvement of the campus’ physical setting and regional identity.
PART I: UNIVERSITY CONTEXT

CHAPTER 1
Evolution of University Design

There have been significant eras of unique interpretations of collegiate environments since the conception of the first western universities in Bologna, Paris, and Oxford. As stated by Jonathan Coulson, in his book *University Planning and Architecture: The Search for Perfection*, “from medieval universities, whose proliferation and physical form was much shaped by the burgeoning of the city, to the colonial colleges of the fledging United States, envisaged as expressions of the utopian social ideals of the American imagination, to the modernist visions of post-war institutions, products of the push to democratize higher education, university architecture is an architecture of ideology.”  

Accordingly, a review of the chronological development of western university planning and architecture practice from its inception in 1088 to this present day reveals methodological trends significant in campus design.

1.1 Early Beginnings

Western universities originated from early European development of scholastic guilds in the 1100s. During this time period, growing interest in intellectual development flourished due to the rediscovery of classical learning. The earliest universities in Europe are the University of Bologna (1088), University of Paris (1150), and the University of Oxford, England (1167). These institutions are the predecessors from which all universities descend. In the first two centuries of development, universities had no tangible presence in cities. Renowned masters drew increasing numbers of students as they operated in houses, churches, and convents. Due to the lack of physical permanence in city centers, migration of students and masters became frequent. Several universities developed throughout Europe as a result, acquiring many of the earliest university buildings.

As the Middle Ages progressed, universities continued to acquire property. Student migrations began to cease requiring permanent facilities to accommodate student populations and academic activities. Early university campuses developed as courtyards or enclosed quadrangles. Academic facilities included lecture halls, colleges, lodgings, churches, libraries, and assembly rooms. The physical arrangement of such facilities served a strategic defensive role. It kept townsfolk out while keeping students in. In

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addition, it allowed for masters to gain heightened control over students. These early facilities are reminiscent of monastic cloisters. In fact, several colleges were founded in former monasteries.²

The increased physical development of universities further established their place in society. University towns became embedded with personalities of their own. College buildings were modest in appearance at first. As competitiveness grew between institutions, universities became increasingly lavish. The universities of Oxford and Cambridge for example, procured some of the finest examples of Gothic architecture in England.³

In the 1660s, a young architect named Christopher Wren transformed the architectural language of campus design. At Oxford and Cambridge, he introduced pure classical architecture in a number of buildings. His popularity grew amongst Oxbridge colleges to the level of fame and prestige as modern-day star architects. Wren established a new philosophy in collegiate architecture. New spatial arrangements of university environments favored openness, vistas with focal points, and hierarchical arrangements.⁴ Significant to his approach are directionality, central emphasis, and focal points positioned on strong axes. This method of environmental design influenced the thinking behind America’s first colleges.

Figure 2: Gothic Architecture at University of Oxford
Photo by Austen Saunders

Figure 3: Wren Library, Trinity College, University of Cambridge
Photo: Architectural Press Archive/RIBA Library Photographs Collection

² Coulson, 5.
³ Coulson, 7.
⁴ Coulson, 8.
Figure 4: University of Oxford - Quadrangle (1675)
Photo: Mary Evans Picture Library

Figure 5: Plan of Merton College
1.2 America’s First Colleges

As Oxford and Cambridge were being developed into new Romes, English settlers were creating their own idealized world on the opposite side of the Atlantic. The colonies were conceived of as a blank canvas to project their ideologies and cultural values. Education throughout the seventeenth century was widely promoted. In 1636, the General Court of Massachusetts Bay decided to found a college. A year later, Newtowne was decided to be its location. Due to the high number of Cantabrigian inhabitants, the village was later renamed Cambridge. Thus Harvard College became the first university institution in North America. Several colonial colleges soon followed.

Early American colleges were developed distinctly different from the monastic-like planning traditions of medieval universities. Instead of enclosed quadrangles, American institutions favored separate buildings in an open landscape, approachable and accessible to the community. Colonialists appealed to the “principle of a scholarly community molded, even nourished, by the character of its surroundings.” It has been speculated that the separations of buildings was conceived in order to minimize fire risk, engender a “sense of boundless space”, and integrate the college environment with the surrounding community. American institutions were developed into distinctive spatial patterns. The College of William and Mary built in the 1720s, for example, executed a symmetrical layout of one main central building with two smaller structures on either side. Yale College alternatively developed a linear layout of which buildings were placed side by side. Princeton on the other hand started with a single academic building, set a significant distance apart from the road, creating an expansive lawn in front. One of the most celebrated campus layouts is the

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5 Coulson, 8.
6 Ibid.
7 Coulson, 9.
University of Virginia, designed by the country’s third president Thomas Jefferson. Its arrangement consists of “a central space flanked by a series of ten pavilions, each house an individual subject, opening at one end to a stunning prospect over the Virginian plantations, and terminating at the other with the functional and symbolic axis of the campus, the Rotunda Library.” Each layout embodies a physical manifestation of social and pedagogical idealism.

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Figure 8: Old Brick Row, Yale University  
Photo: Yale University

Figure 9: The Lawn, University of Virginia  
Photo: Jane Haley/UVA Public Affairs

Figure 10: University of Virginia, based on Jefferson’s 1822 plan

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8 Coulson, 11.
1.3 Nineteenth-Century America

As the nineteenth century progressed, the design of college campuses and buildings became increasingly complex with greater conceptual unity than preceding ages. The Land Grant College Act of 1862 enabled the wide spread of college campus environments as it provided grants of land to states for the development of higher education institutions. It especially encouraged the development of schools of agriculture and mechanic arts. American campus planning went through a series of transformative periods, namely those of picturesque nature, the Beaux-Arts movement and Gothic Revival. The first of these themes is based on the conviction that institutions “should be located in the countryside away from the pernicious influences of the city.” Pristine locations with beautiful natural surroundings were sought after for college environments. This integral connection with the landscape distinguished American universities from their European peers. Frederick Law Olmsted, a key pioneer in this movement, conceived of a university campus as a “model rural neighborhood.” Accordingly, he envisioned the campus grounds for Massachusetts Agricultural College as an irregular layout of buildings and walkways in a park-like setting. Although the college trustees rejected Olmsted’s design, his subsequent article ‘How Not to Establish an Agricultural College’ caught the attention of other institutions and educators. His concept of uniting community and nature influenced the design of several universities throughout America and established the importance of landscape in campus design.

In direct opposition of the Picturesque Nature movement, the Beaux-Arts model in university design developed shortly after. Beaux-Arts planning rejected nature and instead evolved as an urban pattern. Based on the “City Beautiful” Movement, originating in the 1893 World’s Columbian Exposition in Chicago, this new approach to campus design favored formal axes on a grand scale lined with monumental buildings. Jefferson’s designs for the University of Virginia influenced this new conception of campus design. Accordingly, “the pattern of a longitudinal axis dominated at one end by a strong focal point and flanked by subsidiary buildings found expression time and again at the hands of Beaux-Arts practitioners, who applied secondary axes and auxiliary buildings to the plan.” The planned development of Columbia University by Charles

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10 Coulson, 13.
11 Ibid.
12 Coulson, 14.
13 Ibid.
McKim in 1894 is a notable example of the Beaux-Arts ideology. An axial network of streets and public spaces, lined with grand structures, led to the central library. The new university required a greater number and size of academic facilities, and their integration into a cohesive campus environment was of primary concern for university planners. Although the axial arrangement of Beaux-Arts planning was heavily emphasized, individual topographies, structure, and ideology of schools were integral in newly developed campus environments. As a result, a plethora of unique campus settings throughout America developed with bold plans of organizational clarity.

Figure 12: Columbia University, McKim Mead and White's bird eye view of projected campus
Photo: Collection of the New York Historical Society

Figure 13: John Hopkins University
Photo: J. Brough Schamp

Figure 14: University of Maryland
Photo: John T. Consoli/University of Maryland
1.4 Nineteenth-Century Europe

In Europe, university design had not changed much since the Renaissance. However, the second half of the nineteenth century saw tremendous expansion in education due to gained momentum in new social, economic and intellectual forces. The middle-class grew larger in numbers and influence due to the development of new industries and trade. Higher education, as a result, was heavily encouraged. University premises throughout the continent were restored and constructed at a rapid pace. Notably different from nineteenth-century American campuses of diverse patterns of building arrangements, universities in Europe developed as monumental singular structures that housed all university functions. Historical styles were heavily used in collegiate architecture. Gothic Revival and Neo-classical Renaissance became the architectural vernacular of university settings. Immense structures of symmetrical form and symbolic meaning developed throughout Europe.

Figure 15: University College London, elevation and plan
Photo: UCL Special Collections

Figure 16: University of Liverpool
Photo: University of Liverpool
1.5 Gothic Revival

The Gothic Revival originated in Great Britain but its characteristics were widely adopted elsewhere. In Japan, New Zealand, Canada, and Australia came the appearance of Gothic architecture vocabulary in collegiate institutions. America however, championed the integration of this historical style. Keeping its distance from medieval European models of Gothic universities, the relationship of buildings in American campuses maintained its traditional open quality through its spatial arrangements. Gothic Revival became of increasing fashion in university architecture due to its historic connotations and suggestive power of evoking a sense of memory and permanence.

At the turn of the twentieth century, the growing complexity of America’s large universities called for a “resurgence of traditional collegiate values.”14 A sense of community and fellowship between students and teachers was highly desired. The collegiate system of English universities served as the model for the ‘house’ system at Harvard and the ‘college’ system at Yale. Undergraduates were divided into colleges or houses, where they lived, dined and received lessons. As American colleges entered a new mood of introspection and exclusivity, enclosed courtyards, quadrangles, and loggias reminiscent of medieval colleges of Oxford and Cambridge, appeared in college campuses throughout the country.15

Figure 17: University of Chicago campus plan, 1893
Photo: Special Collections Research Center, University of Chicago Library

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14 Coulson, 23.
15 Coulson, 24.
1.6 Post-War Revolution

University design and planning practice in America gradually followed suit with the growing popularity of Modernism in architectural practice. As the International Style, and other modern movements, established their foundations in worldwide architecture in the 1930s, only a few modern collegiate designs emerged. Traditionalism in higher education institutions until that time, heavily suppressed the advent of contemporary design. However, in the late 1930s Ludwig Mies van der Rohe’s design for the Illinois Institute of Technology marked a new direction in university architecture in the United States. The momentum built from this project led to innumerable iconic forms in collegiate environments from modernist architects such as Walter Gropius, Mies van der Rohe, Josep Luis Sert, I.M. Pei, Minoru Yamasaki, Paul Rudolph, and Louis Kahn.

In the years following World War II, higher education went through a period of change. Student enrollment soared into the millions in the U.S. as the G.I. Bill of 1944 opened educational opportunities to soldiers and non-traditional applicants; and again in the 1960s as the ‘baby boom’ generation came of age. Inevitably, a vast surge of university building took place. There arose a consciousness to improve and broaden education to meet modern needs. The built environment of collegiate institutions also transformed in response to trends of the time.

A new approach to campus planning arose accordingly that encouraged the construction of unique structures on existing campuses. As opposed to the traditional practice of shaping a campus through the direction of a clearly defined master plan, modernism favored a more flexible and informal approach to campus planning. New structures assumed individual forms, designed in response to emerging needs and the cultural moment. As a result, college campuses became increasingly diverse in its architectural content. The Massachusetts Institute of Technology (MIT) expansion from the 1940s to

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16 Coulson, 24.
1950s, for example, transformed into an “experimental ground of distinctive individual edifices.”\footnote{Coulson, 27.} According to William Mitchell, Professor of Architecture and Media Arts and Sciences at MIT, “MIT building has too frequently degenerated into ‘narrowly framed, opportunistic projects that don’t contribute to the formation of a larger social and architectural whole.’”\footnote{Ibid.} A clear issue identified is that lack of consideration of visual coherence and spatial composition that unifies university campus environments.

Campus design continued to evolve with new approaches in planning. Key design approaches involved fostering a sense of community, organizing circulation and movement accordingly, and achieving unity and totality in design. The Chicago Circle campus of the University of Illinois by architect Walter Netsch, for example, connected outer-lying car parks to the campus core with elevated pedestrian walkways forming an additional layer of traffic. His main innovation however was in the functional organization of buildings. Each structure served a specific functional purpose. Students and professors were forced to walk between buildings for classrooms, laboratories, or libraries, with the intention of allowing for social interaction. Mitigation of feelings of isolation experienced on a commuter campus was the main premise of the design strategy.

‘Whole-cloth’ campus planning is another phenomenon developed to foster a sense of community and totality in design. Due to the rapid increase in demand for higher education, campuses needed to be developed in large proportions. Suddenly, entire new campuses appeared in the United States, United Kingdom and Germany. This type of development presented architects with the opportunity to experiment with advanced theories in design and planning. Particular emphasis in design was the creation of communal spaces for socializing, cultivating the desired sense of intimacy, and providing the necessary facilities for living, dining, and learning. Significant developments of ‘whole-cloth’

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\caption{Kresge College, University of California, Santa Cruz by William Turnbull and Charles W. Moore}
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\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure21.png}
\caption{University of Sussex by Basil Spence}
\end{figure}
Interest in traditions in university planning began to arise again in the 1960s by a handful of architects. Eero Saarinen’s design for Morse and Stiles Colleges at Yale (1960-1962) is the forerunner of these. Utilizing spatial qualities and materials of the existing Gothic buildings of the campus, Saarinen achieved a harmonious unity of his contemporary building configuration with the historic architectural vocabulary. Although the design was heavily criticized initially, its conceptual unity of past and contemporary building styles awakened the desire for such harmonious integration. A period of university development arose accordingly, conditioned by concern for the revival of the American campus tradition and aesthetics. For the rest of the century, worldwide development of university design was defined by fashions in architecture instead of innovations in planning.

Figure 22: Morse and Stiles Colleges, Yale University by Eero Saarinen
Photo: Michael Marsland/Yale University

1.7 Post-Modernism and the Star Architects

By the 1980s, Post-Modernism had become a fashionable trend in architecture. Historical motifs and references from the past were integrated into contemporary structures. Campus architects and planners also embraced Post-Modernism and once again became concerned with the restoration of open space, human scale, and order. This architectural movement rose in direct opposition to the starkness of modern architecture in the 1970s. Amongst the innovators of Post-Modernism in university settings are

19 Coulson, 32.
Robert Venturi and Charles Moore. Moore’s design for the 1983 extension to Williams College Museum of Art building is well known for its “Ironic columns, Ionic columns.” A foot of empty space separates the capital from the cylinder and thus does not provide any structural support for the offices above.20

The past two decades saw the rise of the star architect and the iconic building. Frank Gehry’s Guggenheim Museum in Bilbao brought much media attention and economic fortunes to the city soon after its opening in 1997. Iconic architecture, since then, has become a means of successful branding. Steven Holl’s Simmons Hall (2002), Frank Gehry’s laboratory complex, the Strada Center (2004), and Norman Foster’s landmark buildings at the Free University Berlin, University of Cambridge, Imperial College London, Stanford University, University of Toronto and University of Technology Petronas are all key examples of iconic collegiate architecture. In efforts to maintain a competitive edge, Star Architects are sought after to brand universities and city centers with cutting-edge buildings. Recently however, iconic architecture has come under scrutiny for its synthetic value, while the buildings themselves are often thought of as wildly impractical and ridiculously expensive. It will be interesting to see what trend comes next.

1.8 Transformation of Campus Environments

University environments had transformed significantly through the many eras of experimental development. Planning and architecture are two fields of practice that evidently go hand in hand. Through the numerous distinctive arrangements of early American campuses, colonialists were able to express their ideology of a “scholarly community shaped by its surrounding environment.” The Picturesque Nature movement further clarified this relationship in its recognition of the role that the natural environment plays in engaging human sensibilities. The Beaux Arts movement, with its emphasis on axial arrangements at a monumental scale, sought to bring order and prestige to increasingly complex spatial arrangements in university environments. Meanwhile, in Europe, large institutional structures engaged in the associative influence of historic styles of architecture. A sense of history and symbolic permanence is a key aspect in this style of collegiate architecture, also explored with the onset of the Gothic Revival movement.

20 Coulson, 33.
Following the Second World War, the Modern movement in architecture gradually appeared in university settings. Mies Van der Rohe’s Illinois Institute of Technology influenced a plethora of designers whom introduced individual forms on existing campuses, irrespective of visual cohesion and spatial composition in relation to its surrounding context. This change in university settings forever altered the nature of collegiate design and planning. University campuses transformed into “experimental grounds of distinctive individual edifices.”

The following chapters in university planning involved a search for identity through historical references in Post Modernism; a sense of community and unity in the Whole Cloth campus approach; the integration of historic spatial and tactile qualities in new building arrangements in a regional approach conceived of by Eero Saarinen; and the rise of the Star Architect as a means of creating a distinct identifiable brand or image.

The physical environment of universities experienced transformation in conception as new methods of establishing an institution’s identity arose. Buildings, pathways, landscape features and open spaces were organized and defined to embody the ideals of the institutional setting. Human behavior and perceptions in response to different spatial patterns; physical attributes of buildings, paths and landscapes; and environmental qualities became a topic of investigation for environmental psychologists. The next section of this research paper delves into the impact of the physical environment on the human experience.

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21 Coulson, 27.
CHAPTER 2
Experiential Nature of Campus Environments

2.1. Physical Environment Influence

The university environment’s impact on human behavior can be understood when one considers the nature of its influence. A frequently used quote on the subject is Winston Churchill’s observation that “we shape our buildings and then they shape us.” While this quote is a simplistic one, its relevance to our everyday lives still fits. Once the shape of a campus is set, human behavior in the campus setting is presumably determined. However, despite efforts to direct pedestrian flow and activity in campus settings, there is still the common experience of people getting lost or utilizing spaces for purposes not intended for it. The literature on the influence of the physical environment identifies three distinct positions: (1) Architectural determinism; (2) environmental or architectural possibilism; and (3) environmental probabilism.22

First is the position of “architectural determinism.” This view suggests that, “behavior to a large extent is determined by a direct, causal, and mechanistic manner by the physical environment.”23 Accordingly, people are expected to move in a pattern that is determined by the limited availability of options in the physical setting. The simplistic nature of this perspective is however challenged by the tendency of people to modify their surroundings and orient themselves according to nonverbal messages in the built environment.

A second perspective on environmental influence is architectural possibilism. The physical environment accordingly is viewed as “a source of opportunities that may set limits on, but not restrict, behavior.”24 In a college campus setting, there are numerous common sense examples that support this position. “If a campus does not have a football stadium available, the development of a traditional intercollegiate football program will be difficult. Or, if the stadium is several miles away from the campus, its location may limit the extent of student support.”25 The passive nature of possibilism however is also put into question, as the mere presence of a facility does not explain the frequency of its use or probability that people will indeed use it. Design strategies of organizing walkways toward a specific location, improving upon the aesthetic qualities of place to attract visitors, and the placement of specific programmatic facilities does more than just allow for the possibility of desired behavior. This observation leads to the third perspective on environmental influence, that is, environmental probabilism.

Architectural or environmental probabilism is a view that assumes that “behaviors have probabilistic links to the built environment.”26 Accordingly, “an attractive, warm,
and welcoming entrance to a campus building will increase the probability of it being entered more so than if it were cold and unwelcoming. The welcoming entrance does not cause entry, but the probability of entry can be increased with proper design." In this example, the aesthetic quality of a particular environment is designed in a particular manner with the intent of increasing the probability of a desired behavior. The layout, location, and arrangement of space and facilities also impact the probability or likelihood of certain behaviors.

2.2. Nonverbal Communication of the Physical Environment

The complexity of college campus settings and the influence of its designs become clearer when one considers the nature of that influence and how environmental features impact behavioral patterns. Functional and symbolic aspects of a campus’ environmental features are perceived in the nature of its physical condition and integration in the setting. The way in which these enhance or detract the probability of certain behaviors affects perception of the institution’s values. The example given by Banning clearly explains this:

If the campus decides to make a curb wheelchair accessible by molding some asphalt to the curb, instead of installing proper curb cuts, such an adaptation might be technically functional, but it may also encode messages of “not caring enough to do it correctly,” “not valuing the user,” or just “responding minimally to needs of the physically challenged.” When the student in a wheelchair rolls up to the makeshift curb, the decoded message may reveal that “the institution doesn’t care about me; I am not valued.” On the other hand, if the curb is correctly designed and constructed, the encoded and decoded messages may strike a different tone, conveying a sense that “the institution cared enough to do it correctly.” Consequently the person concludes: “I feel valued” and “You care about me.”

In the scenario, both adaptations serve the same functional purpose. However, the way in which the physical feature was integrated into the setting communicates different symbolic messages.

Another factor to consider is the perceptive relationship in meaning between verbal messages and nonverbal messages. Accordingly, “nonverbal messages are often seen as more truthful than verbal or written messages.” For example, if a campus decides to put a large “Welcome” sign at a location at the periphery of its property and yet does not provide a clear indication of where the entrance is, this inconsistency may be perceived of as “not welcome.” Whereas, if the same campus were to place the sign at a

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27 Bell, P.A., Fisher, J.D., Baum, A., & Greene, T.G., 15.
28 C. Carney Strange and James H. Banning, 16-17.
location that is clearly designed as an entrance to the campus or provides features that allow for more efficient wayfinding capabilities, this communicates that the institution is inviting and considerate of its visitors. Accordingly, “double messages have strong impact, and when a person on campus perceives an inconsistency between the verbal and nonverbal, or between the language and the nonlanguage message, the nonverbal often becomes most believable.”

Amos Rapoport’s *The Meaning of the Built Environment* is a book that elaborates upon this method of interpreting and articulating environmental characteristics and arrangements to convey particular meaning through nonverbal cues. He identifies three types of elements that affect how people perceive and identify places. Namely, these are fixed-feature elements, semifixed-feature elements, and nonfixed-feature elements. Each element category is described in terms of the fundamental qualities that define it and the ways the elements in each category are organized and manipulated in various environments to communicate particular meaning.

Fixed-feature elements are physical constructs that are “fixed or change rarely and slowly.” At the building scale these are the walls, ceiling, and floors. Though at the urban scale, these are streets, buildings, and other structures. According to Rapoport, how these are spatially organized, situated, physically manipulated, and sequentially ordered affects behavioral patterns and cultural perception. Also, various cultures organize fixed-feature elements differently, according to their own cultural values and preferences.

Semifixed-feature elements are features in the built environment that change quickly and easily. These include furniture, plants, decorations, advertising signs, window displays, etc. The selection of specific features, arrangement, and articulation in particular settings allows the users to personalize environments to convey specific meaning. For example, a building may be articulated to serve specific functions or activities; identify building types; indicate social behavior and spatial orientation; or imply status or economic well-being. The same associative meanings could apply at the urban scale as well.

Nonfixed-feature elements are those that “relate to the human occupants or inhabitants of settings.” These are physical elements that indicate social characteristics and guides behavior. Accordingly, physical settings are modified to facilitate specific types of social interaction, create desired ambience, or provide cues for particular clientele or user types. Also, the level of cleanliness and orderliness in an environment may indicate social status, age, economic well-being, or passage of life. Meaning is communicated in the nature of the objects (material, shape, color, etc.) and their arrangement.

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32 Rapoport, 89.
33 Rapoport, 96.
The nonverbal communication approach is the main premise in the discussion of these three feature-element categories. Each element type affects public perception of a place through the implied meaning embodied in the way it is designed. People of different ethnic and socioeconomic backgrounds arrange and articulate their environment based on their own cultural values and understanding. In order to discern meaning in such environments, one must be observant of how these features collectively define the character of a region. Emphasis in scale, color, height, hierarchical arrangement, and texture in a college campus can reveal importance or significant meaning. Understanding of how to categorize perceptive elements in the built and natural environment is a useful tool in this comprehensive study.

2.3. Campus Physical Environments as Behavior Settings

“Behavior settings” are the social and physical situations in which human behavior occurs.” The concept of a behavior setting is based on the transactional relationship between human and nonhuman elements. In college campus environments, the physical environment consists of buildings, pathways, landscape elements, artwork, parking structures, and open spaces. How these features are organized and designed in relation to each other varies amongst higher education institutions. Human interaction and behavior is shaped and influenced by these characteristics and features. Accordingly, the “behavior setting can function like a nonverbal mnemonic device (Rapaport, 1982) where encoded messages in the physical component of the behavioral setting serve to remind participants what behaviors are expected.” For example, a campus library is a behavioral setting. The placement, arrangement and presentation of books, computers, seating, tables, lighting, and signs are all cues that calm and quiet behavior is not only appropriate but also expected in such a place. If behavior in the setting is incongruent with the intended purpose of the space, it may prompt a redesign through changes in materiality, lighting, spatial components, and color.

Another important aspect of the behavior setting is the sometimes supportive or unsupportive relationship between human and nonhuman components. A concept labeled “inter-systems congruence” by W. Michelson in his book *Man and his Urban Environment: A Sociology Approach*, as discussed by Banning, indicates that, “physical features can set broad limits on the phenomena that can occur in a setting, making some

behaviors more or less likely than others.”

For example, in a classroom setting it would be difficult for students to form small group discussions if the seating provided were fixed in straight rows facing the front of the class. Alternatively, if the seating were moveable, then the physical aspects of the space would support the desired behavior in the setting. Allan Wicker labels this congruent relationship of the physical structure of the space and behavior “synomorphic relationship” in his book *An Introduction of Ecological Psychology*. In a college campus environment, it would make sense to encourage this supportive relationship of the physical setting of buildings, pathways, and open spaces to enable the desired behavior of human inhabitants.

Proxemics is another concept, developed by Edward Hall in his book *The Hidden Dimension* that deals with nonverbal communication in a setting. How people use space and interact with each other in an environment is influenced by the arrangement of spatial components and the perceptive distance created between occupants. The concept of spatial zones, which refers to “the distances people tend to establish between themselves and others when they engage in social interaction,”

is important to understanding Proxemics. Accordingly, four distinct zones are identified: “intimate (0 to 1.5 feet), used for relationships like comforting; personal (1.5 to 4 feet), used for everyday conversations with friends; social (4 to 12 feet), used for impersonal and business-type conversations; and public (more that 12 feet), used for formal presentations to a group.”

Campus environments communicate such social and psychological aspects in the spatial arrangement and configuration of its constructed settings. For example, the formal nature of a classroom is communicated clearly when one perceives of the 20 foot distance of the teaching podium to the first row of seating. On the other hand, in a lounge type of setting the introduction of couches allow for more intimate interactions.

2.4. Campus Physical Artifacts as Nonverbal Communication

Physical artifacts on campus include synthetic objects constructed or placed on a campus for the intended purposes of giving inspiration, warning, accommodation, or direction. These artifacts often communicate nonverbal messages about campus culture and are found in the form of (1) signs and symbols; (2) artwork; (3) graffiti; and (4)

39 Ibid.
specific physical structures. Accordingly, the “nature and pattern of campus physical artifacts structure the content of messages reflecting campus culture.”

The physical artifact of signage for example can give nonverbal messages. On work sites a sign may read “Men at Work” even though women are involved in the project. Verbally, university officials would not support this message of the invisibility of women in the workplace, however it is supported nonverbally as a campus artifact. Placement of signs also affects perception. For example, an “Admissions Office” sign next to a “Graduate School” sign at the same entrance confuses visitors. The reader may be uncertain of whether it is an entrance to the admissions office function of a graduate school or if there are two offices in the same building.

Campus art also gives nonverbal messages. On many college campuses, murals by artist who rose to fame now have significant historic and monetary value. However, the campus may no longer support the messages conveyed in these paintings. Depictions of slavery; of men in dominant postures and women in passive positions; of ethnic minorities as laborers; and other controversial content are found on many college campuses. It is important to consider the messages being conveyed in campus art pieces.

Graffiti is a common issue. Campus culture may be interpreted when one considers the total of all graffiti on a campus. How the institution responds to graffiti sends important nonverbal messages about the values of campus administration. Considerable delay in the removal of offensive graphic imagery can bring about a negative perception of the campus and those that are in charge of maintaining it. Accordingly, “racist messages that have been visible for months on the side of an academic building may communicate a lack of concern for creating a safe and comfortable environment of all inhabitants.”

Physical structures can also be seen as artifacts that communicate nonverbally. Seating in classrooms, outdoor seating, and dining spaces that are left in disrepair, sends a message of the lack of concern for the comfort of people using them. Poor lighting in interior hallways may also raise concerns for safety. The previous example of the curb cut also applies. These examples emphasize the point that the campus environments do much more than serve functional and aesthetic needs, they also communicate important nonverbal messages of campus values and expectations.

2.5. Behavioral Traces as Communication

The campus environment is used in many ways by faculty, staff, and students. It is impossible to account for all campus behaviors as they are occurring. However,

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41 Ibid.
42 Bell, P.A., Fisher, J.D., Baum, A., & Greene, T.G., 23.
43 Ibid.
behaviors can be analyzed in the “traces” left behind in the physical environment.\textsuperscript{44} Such reconstruction allows for an increased awareness of the relationship between people and environment. Concepts of erosion, leftovers, and missing traces by Bechtel & Zeisel in their book \textit{Methods in Environmental and Behavioral Research} clarify the significance of traces in analyzing campuses.

Erosion refers to the informal campus pathways that result from students taking the shortest possible route to campus buildings. Evidence of these is seen in worn paths in landscaped areas. An understanding of the movement of pedestrian traffic can allow for more efficient placement of sidewalks. As Banning describes “on some campuses, sidewalks to new buildings are not constructed until student paths emerge, suggesting patterns of movement that are likely to persist.”\textsuperscript{45}

Leftovers are objects that are not consumed during behavior and left on campus grounds. These objects come in the form of litter and trash. Leftovers can form a negative image of particular campus groups. For example, if members of a fraternity frequently leave empty soda cans and food in a favorite lunch spot, a negative image of the group can develop.

Another important concept is the idea of missing traces. Areas where erosion and leftovers are expected but do not appear may indicate lack of use. Some spaces see very little use due to the way in which it was designed. Analysis of these missing traces can serve as a basis for redesigning a particular space. Missing traces can also show up as evidence of vandalism or theft. For example, missing letters in a prominent sign may raise concerns for safety and theft amongst campus members.

Zeisel also employed the concepts of adaptation of use, displays of self, and public messages in his analysis of environmental behavior. “Adaptation for use” refers to situations where an environment is changed due to the failure of its original design intent. Traces of adaptation include “movement of objects in ways that separate elements once connected and connect elements of the environment once separated.”\textsuperscript{46} For example, the use of an intended classroom space for storage suggests the lack of adequate storage facilities on campus. Large-scale adaptations include renovations, expansions, and other changes or improvements. For example, the addition of a new parking structure in a former open space suggests growth in campus commuters. Any attempts by occupants to adapt a space for an unintended use is the first signal of the possible need to redesign a space.\textsuperscript{47}

The concept of “display of self” is used to illustrate how the physical environment can be used to convey group or individual identity. Large Greek letters


\textsuperscript{45} Ibid.

\textsuperscript{46} Ibid.

displayed on campus fraternities is a classic example. Such displays are an important part of personalizing a setting. Also, the use of an organization's t-shirt to identify members is a useful tool. It reflects part of the campus culture. Symbolic props on buildings also serve this specific purpose.

The last category of behavioral traces for Ziesel involves the use of public signs. Common issues include their design, location and degree of clarity. The redundant use of signs on a campus signal that the intended message is unsuccessfully communicated. Issues with wayfinding are commonly dealt with this method.

The concepts of behavior settings, Proxemics, physical artifacts, and behavioral traces offer a useful tool for campus designers. Understanding of these aspects as communication mechanism can aid in improving campus environments.

3.2.6. Improving the Campus Image

The impact of college campus environments can be understood through the careful examination of the pedestrian experience in university settings. Buildings, pathways, signs, and symbols all send nonverbal messages to pedestrians as they walk throughout a campus. By decoding these messages, students, faculty, and staff learn “cultural meanings conveyed by planners, designers, builders, and users of the pedestrian space.”

Key aspects to consider in this experience are concerns for safety, functionality, pleasure, and cultural learning.

Pedestrian safety is a major concern for campus planners. Hazards associated with air pollution, vehicle emissions, noise, robberies, and personal assaults are growing concerns on college campuses. Public access to campus environments allow for significant vulnerability for such incidents. Careful planning of vehicular and bicycle traffic is also very important.

Another important aspect of pedestrian experience is functionality. Accessibility and convenience are key concerns in making pathways functional. According to Untermann, convenience depends on the “directness, continuity, and availability of the walk.” Pedestrians tend to take the shortest route possible to get to their desired destination. If pathways are inefficient, informal routes are sometimes taken through landscaped areas. Improving the efficiency and convenience of walkways is a main concern in campus planning efforts.

Pleasure is the third factor of the pedestrian experience. Enhancement of the aesthetic qualities of the campus environment is important. Sitting walls, benches, and open spaces offer places for people to relax and interact with each other. Landscape features and vegetation enhance the ambiance of outdoor environments; and allow for human interaction with nature. Protection from weather also allows for a pleasurable experience on a college campus setting.

50 Ibid.
The fourth category of pedestrian experience is cultural learning. In a college campus environment, the physical setting informs pedestrians through nonverbal cues and messages about campus culture and values. A curriculum emerges, through non-intentional, nonverbal communication. The communication of campus values has a direct relationship with efforts to make the campus a place for all people. An understanding of nonverbal communication in campus environments can be an informative tool for campus designers.

2.7. Improving Positive Physical Features on Campus

The designing of campuses allows for the opportunity to stimulate positive responses to the physical setting. As discussed in previous sections, the physical components of an environment communicate nonverbal messages that pedestrians interpret. In order to increase positive responses to college campus environments, the need for community, territory, landscape, and wayfinding must be addressed.

In any environment, a sense of community is an important aspect for inhabitants to perceive of. Communal interaction in a campus can be stimulated through the integration of gathering places, sitting walls and green spaces. The need for territory is also important. Examples of this include “selection of favorite niches on campus, private places in the library, or a favorite chair in the classroom.”\(^{51}\) Having places to identify with as a place of your own is an important part of the campus experience.

Also important are campus landscapes. Stephen and Rachael Kaplan discuss issues of safety and opportunity as two counterbalancing components in their book *Humanscape: Environments for People*. They identify two types of landscapes: Legible environments and mysterious landscapes. Legible environments are those with “open and distinctive landmarks, a landscape through which one could wander and feel safe but not become lost.”\(^{52}\) On the other hand, mysterious landscapes allow for added intrigue by shaping an environment to encourage exploration. Achieving a balance of mystery and legibility is a key challenge in campus planning. In addition, the integration of water features on college campuses is a desired amenity of campus landscapes. According to a book entitled *College: The Undergraduate Experience in America* by Ernest Boyer, photographs of water features on college campuses actually attracts prospective students.\(^{53}\)

Wayfinding\(^{54}\) or spatial orientation is especially crucial in a university setting. As pedestrians orient themselves throughout a campus, nonverbal messages communicated

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\(^{51}\) Bell, P.A., Fisher, J.D., Baum, A., & Greene, T.G., 28.

\(^{52}\) Ibid.


through its physical setting ideally would allow for sufficient navigation. Signs, symbols, walkways, paths, and special features are physical components of a campus that can be designed to create a user-friendly atmosphere. The work of Arthur and Passini especially suggest that wayfinding design affects users emotionally and functionally. A sense of “feeling lost” or “feeling stupid” can lead to feelings of stress and anxiety. This added pressure for students can make it more difficult to deal with the strain of college study. In addition, users can develop ambiguous feelings about the university. For example, one might say “if they want me to find the admissions office why do they make it so difficult?” Poor wayfinding can also have a functional impact that, according to Arthur and Passini, is “measureable in terms of efficiency and monetary value.” In order to make campuses more inviting and hospitable, campus planners and designer must take wayfinding into careful consideration.

The work of Richard Dober in his book Campus Design is especially crucial in the discussion on creating positive campus environments. He developed the concepts of “placemaking” and “placemarking.” In his text he provides a comprehensive analysis of campus design, of which the principle components are “buildings, landscapes, and circulation systems.” Placemaking is Dober’s concept for the overall structure of the campus environment. This includes the “positioning and arrangement of campus land uses and pedestrian and vehicular routes, the location of buildings and functional open spaces…the definition of edges, and the interface between campus and environs” (p.5). Through the integration of campus elements, placemaking allows for the creation of an “institutional metaphor” that guides the development of the campus. This “institutional metaphor” serves as a collective picture that characterizes the total campus design. On the other hand, Placemarking is focused on “certain physical attributes which give a campus a visual uniqueness appropriately its own” (p.5). These include landmarks, style, materials, and landscapes. The combination of these elements leads to a “distinct sense of place” on campus. According to Dober, “placemaking resembles town

57 Bell, P.A., Fisher, J.D., Baum, A., & Greene, T.G.
60 Ibid.
61 Ibid.
62 Ibid.
planning, producing the larger picture of the future, while placemarking involves the specifics of campus architecture, landscape architecture, and site engineering."

In summary, the literature on the physical environment’s impact on human behavior and perception provides a fundamental framework for discerning methods of enhancing the experiential nature of a college campus environment. Campus identity is grounded in this relationship of human perception and the physical attributes of a constructed setting. The evolution of collegiate environments shows evidence of the experimentation of ways to construct the physical setting to communicate nonverbally, the inherent values of institutions. Human behavior in response to these experimental methods has become the subject of analysis in the field of environmental psychology. The concepts of nonverbal communication, placemaking, placemarking and wayfinding are each the result of investigations into the psychology behind human interaction and relationship to physical settings. Exploration of these concepts in campus environments brings unique challenges in discerning methods of shaping large-scale physical settings in ways that strategically engage human interaction and identity with a place. Placemarking, a concept that explores ways to use physical attributes of a setting to define its visual uniqueness, begins to define the conceptual basis of a desired strategy for establishing a distinct regional identity. Sense of place and Critical Regionalism are concepts that extend the theoretical basis of campus design towards a region specific strategy. The following two chapters explore these concepts and their relevance to campus design and planning.

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CHAPTER 3
Regional Campus Identity

3.1. Critical Regionalism

Critical Regionalism is an approach to design that arose in response to the affects on traditional culture by the modern movement in architecture practice. According to a book entitled *History and Truth* by Paul Ricoeur, “there is a paradox: how to become modern and to return to sources; how to revive an old, dormant civilization and take part in universal civilization.”64 This quote, as discussed in the essay entitled *Prospects for a Critical Regionalism* by Kenneth Frampton, is the underlying basis of Critical Regionalist architecture. In order for developing nations to take part in modern culture, Frampton states that it will require” cross-fertilization between rooted culture on the one hand and universal civilization on the other.”65 In other words, “regional culture must also be a form of world culture.”66 This claim is based on the notion that development, out of necessity, will transform the basis of rooted culture.

In the search for architectural expression that is designed specifically for a particular locale, critical regionalists intend not to “denote the vernacular, as this was once spontaneously produced by the combined interaction of climate, culture, myth and craft, but rather to identify those recent regional ‘schools’ whose aim has been to represent and serve, in a critical sense, the limited constituencies in which they are grounded.”67 The regionalist approach in this regard, strives to establish the identity of a region by enhancing an awareness of unique characteristics of a place rather than symbolic representations of past building traditions. Any attempt to evoke a sense of nostalgia for the past in the physical setting is directly opposed in Critical regionalist practice. This has been expressed in Post Modernism, through stylistic interpretations of historic motifs in new buildings, and the introduction of historical styles, characteristic of the Gothic Revival, Neoclassical architecture, and Beaux Arts campus planning. Frampton describes historicism as “consumerist iconography masquerading as culture.”68 Instead, critical regionalist approach to design involves a careful consideration of the particularities of a place, especially its topography, climate, light and tectonic qualities, as the basis of a regional architectural response.

In his essay, “Towards a Critical Regionalism: Six Points for an Architecture of Resistance,” Kenneth Frampton discussed key aspects that define the basis of critical regionalism. The first is modernism’s impact on culture and civilization. Frampton asserts that urban form has become extremely limited due to restrictions imposed jointly by “automotive distribution and the volatile play of land speculation” which serves to “limit the scope of urban design to such a degree that any intervention tends to be reduced either to the manipulation of elements predetermined by the imperatives of

65 Ibid.
66 Ibid.
67 Ibid.
68 Ibid.
production, or to a kind of superficial masking which modern development requires for the facilitation of marketing and the maintenance of social control.” Frampton was critical of modernization in terms of the impact that technological progress had on local cultures. High-rise structures and freeway development were perceived of as a response to the rapid pace of urban growth. Optimized technology, according to Frampton, is a limiting factor to creating significant urban form. Frampton is referring to the development of buildings that are constructed either to its bare elements necessary for production or the erection of structures with superficial facades designed for the purpose of “marketing and maintenance of social control.” This production-based development of city centers brings upon an erosion of local culture and perceptive meaning in the physical context. Accordingly, “utility established as meaning generates meaningless.”

The second section of the essay discusses the different roles of avant-garde architecture. Avant-garde refers to “people or works that are experimental or innovative, particularly with respect to art, culture, and politics.” From the mid-18th century onwards, Neoclassicism served as a symbol of universal civilization and progress. Its use in government buildings and collegiate institutions allowed for an immediate perceptive image of prestige. In the mid-19th century, avant-garde architecture assumed an “adversary stance towards both industrial process and Neoclassical form.” Gothic Revival and the Arts-and-Crafts movements, in response, brought upon value in traditional craftsmanship as opposed to experimental expression. Modernism, as a symbol of avant-garde culture, continued regardless of attempts to renew a sense of historic resonance. With the advent of Futurism at the turn of the century, avant-garde culture progressed with great momentum. Purism, Neoplasticism, and Constructivism arose in the 1920s and served as the “last occasion on which radical avant-guardism is able to identify itself wholeheartedly with the process of modernization.”

The period that followed in the 1930s, of economic depression, war, revolution, and chronic insecurity, left many with a crucial need for “psycho-social stability in the face of global and political crisis.” For the first time in modern history, the liberative drives of cultural modernization were separate from the interests of capitalism. Arts and architecture eventually became more commercialized with the advent of the media-industry. Post-Modern Architecture, according to Frampton, gravitated “towards pure technique or pure scenography.” The popularity of stylistic trends of the past, as

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70 Frampton, 17.
71 Ibid.
73 Frampton, 18.
74 Ibid.
75 Ibid.
76 Ibid.
77 Ibid.
opposed to innovation in techniques, signaled the downfall of avant-garde culture. In addition, the domination of mass culture in the media further reduced the legitimacy of identifying modernization as a liberative movement.

The third point of Critical Regionalism is the assumption of an arriere-garde position. That is “one which distances itself equally from the Enlightenment myth of progress and from a reactionary, unrealistic impulse to return to the architectonic forms of the preindustrial past.” Accordingly, the tendency to evoke nostalgic sensibilities through the introduction of historic motifs or the use of advanced technological building systems as means of establishing an identity are particularly avoided. Frampton asserts that in order to cultivate a “resistant, identity-giving culture” such a position needs to be taken. Regionalism, from an arriere-garde position, depends on “maintaining a high level of critical self-consciousness.” Elements derived indirectly from a place such as the range and qualities of the local light, the topography of a given site, or a tectonic derived from a structural mode are sources governing its inspiration.

It is necessary though to distinguish Critical Regionalism from Populism. Based on the communicative or instrumental sign, the intent of Populism is to “evoke not a critical perspective of reality, but rather the sublimation of a desire for direct experience through the provision of information.” This type of regionalism strongly emphasizes portraying the experience of a place based on rhetorical techniques and advertising. Critical practice frays away from such strategies in image portrayal. Instead, its focus is toward enhancing self-awareness of the perceptive qualities of a place. Identity with an environment is cultivated through the shaping of the built environment in relation to its natural context to enhance perception of unique environmental qualities.

As a cultural strategy, Critical Regionalism acts as a “double mediator” between world culture and universal civilization. According to an article entitled “Critical Analysis of ‘Towards a Critical Regionalism’ by Kenneth Frampton” by Scott Patterson, world culture is a term that indicates a “hybrid of world civilization and traditional culture.” Patterson asserts that this integration is the goal of Critical Regionalism. Universal techniques in utilizing advanced industrial and postindustrial technology, as a means of conveying the perceptive image of progress, is a point of departure from critical regionalist practice. Critical practice involves a critique of universal civilization by imposing limits on the use of optimized technology as an identifying trait while also deconstructing world culture by refraining from introducing exotic, alien forms for the purpose of revitalizing the expressive nature of a society.

Frampton wrote that, “Critical Regionalism cannot be simply based on the autochthonous forms of a specific region alone.” In his address to the Northwest

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78 Frampton, 20.
79 Ibid.
80 Frampton, 21.
81 Frampton, 21.
Chapter of AIA in Eugene, Oregon in 1954, California architect Hamilton Harwell Harris elaborated on this point:

Opposed to the Regionalism of Restriction is another type of regionalism, the Regionalism of Liberation. This is the manifestation of a region that is especially in tune with the emerging thought of the time. We call such a manifestation “regional” only because it has not yet emerged elsewhere…. A region may develop ideas. A region may accept ideas. Imagination and intelligence are necessary for both. In California in the late Twenties and Thirties modern European ideas met a still-developing regionalism. In New England, on the other hand, European Modernism met a rigid and restrictive regionalism that at first resisted and then surrendered. New England accepted European Modernism whole because its own regionalism had been reduced to a collection of restrictions.”

In other words, regionalism need not be restricted to forms that are indigenous to the society. New ideas and techniques in design are tools of expression that can be utilized in a Regionalism of Liberation.

The fourth point in the essay concerns the concept of Place-Form. To make his point, Frampton discussed Martin Heidegger’s essay “Building, Dwelling, Thinking.” In this particular essay, Heidegger elaborates on his perspective on “being” and the means of its perception. He stated that “A boundary is not that at which something stops, but, as the Greeks recognized, the boundary is that from which something begins its presencing.” Frampton interprets this to mean that the essence of a place/space is defined by the nature of its physical boundary. He further elaborates that, “the condition of ‘dwelling’ and hence ultimately of ‘being’ can only take place in a domain that is clearly bounded.” Additionally, expression of a given density of inhabitants attributes to the nature of being. An excerpt from Hannah Arendt’s book entitled The Human Condition defines the significance of such density:

The only indispensible material factor in the generation of power is the living together of people. Only where men live so close together that the potentialities for action are always present will power remain with them and the foundation of cities, which as city states have remained paradigmatic for all Western political organization, is therefore the most important material prerequisite for power.

Accordingly, Frampton indicates the strategy of Critical Regionalism is the maintenance of an “expressive density and resonance in an architecture of resistance.” In other words, the nature of which a place or space is bounded and the density of people that it is designed for are perceptive aspects that affect our sense of being and relationship to a place.

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84 Frampton, 25.
85 Frampton, 24.
86 Frampton, 25.
87 Ibid.
The fifth point in Critical Regionalism involves the relationship of “culture versus nature.” In this section, Frampton identifies fundamental design strategies. Critical practice involves a more “directly dialectical relation with nature than the more abstract, formal traditions of modern avant-garde architecture allow.” The particularities of a place are aspects that come into focus in a critical design response. These include a given site topography, context, climate, light and tectonic form.

In the case of topography, Frampton compares the tendency in modern construction practice of flattening a site’s topography with earth-moving equipment, for the purpose of allowing for the most economic site condition to base the rationale of construction, to a more site-sensitive gesture of working with the existing topography through terracing or building into it. He stated that, “the bulldozing of an irregular topography into a flat site is clearly a technocratic gesture which aspires to a condition of absolute placelessness, whereas the terracing of the same site to receive the stepped form of a building is an engagement in the act of ‘cultivating’ the site.” Swiss architect Mario Botta’s method of “building a site” also engages in this relationship with the natural environment. Frampton describes the conceptual nature of this practice as the “last instance the specific culture of the region – that is to say, its history in both a geological and agricultural sense – becomes inscribed into the form and realization of the work. This inscription, which arises out of ‘in-laying’ the building into the site, has many levels of significance, for it has a capacity to embody, in built form, the prehistory of the place, its archaeological past and its subsequent cultivation and transformation across time. Through this layering into the site the idiosyncrasies of place find their expression without falling into sentimentality.”

A similar case can be made for design response to an existing urban fabric, climate conditions, and the unique qualities and range of local light. Climate control through the use of mechanical air conditioning systems, regardless of the local climate conditions, is the “main antagonist of rooted culture.” A critical approach to providing adequate comfort is designing in response to the specific climate conditions of a given site and region. This may include integrating natural ventilation or protection against the elements through the strategic placement, size, configuration, and orientation of openings and building components. A similar strategy can be made for the introduction of natural light and providing prospective views of the surrounding landscape. Enhancing an awareness of changing conditions of the seasons, humidity, and time of day through the use of such design methods brings about a critical self-consciousness of regional qualities. This regional strategy allows for the potential of architecture to inscribe the character of a region and express the unique qualities of a place.

Tectonic form is the “primary principle of architectural autonomy.” An expression of the way in which the structural elements of a building resists the forces of gravity is a means of expressing its tectonic qualities. In this case, the load bearing (column) and load borne (the beam) elements are of particular emphasis. This is not to

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88 Frampton, 26.
89 Ibid
90 Frampton, 26.
91 Frampton, 27.
92 Ibid.
be confused with the purely technical, or the simple expression of the skeletal framework of a building. The architectural historian Stanford Anderson summarized its essence when he wrote:

“Tektonik” referred not just to the activity of making the materially requisite construction…but rather to the activity that raises this construction to an art form…. The functionally adequate form must be adapted so as to give expression to its function. The sense of bearing provided by the entasis of Greek columns became the touchstone of this concept of Tektonik.

Tectonic expression can be in the form of exposed connection details. It is a means of describing the play between material, gravity, and craftwork. A “structural poetic rather than the re-presentation of a façade” is the quality expressed in this case.

The final point of Critical Regionalism is in regard to the “visual versus the tactile.” In perceiving of the built environment, it is important to note the role of sensory perceptions other than the visual. As Frampton described it, “one has in mind a whole range of complementary sensory perceptions which are registered by the labile body: the intensity of light, darkness, heat and cold; the feeling of humidity; the aroma of material; the almost palpable presence of masonry as the body senses its own confinement; the momentum of an induced gait and the relative inertia of the body as it traverses the floor; the echoing resonance of our own footsteps.” Critical Regionalism focuses on readdressing the tactile range of perceptions to complement our visual experience of the physical context. Material choices and tectonic expression are means of engaging tactile sensibilities. Accordingly, Frampton writes that “its capacity to arouse the impulse to touch returns the architect to the poetics of construction and to the erection of works in which the tectonic value of each component depends upon the density of its objecthood.”

A key example of these Critical Regionalist principles is Alvar Aalto’s Saynatsalo Town Hall of 1952. The finishing of the public circulation area shows a clear consideration of tactile sensibilities. Frampton emphasized its importance when he wrote:

The main route leading to the second-floor council chamber is ultimately orchestrated in terms, which are as much tactile as they are visual. Not only is the principal access stair lined in raked brickwork, but the treads and risers are also finished in brick. The kinetic impetus of the body in climbing the stair is thus checked by the friction of the steps, which are “read” soon after it contrasts to the timber floor of the council chamber itself. This chamber asserts its honorific status through sound, smell and texture, not to mention the springy deflection of

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93 Ibid.
94 Frampton, 28.
95 Ibid.
96 Ibid.
97 Frampton, 29.
the floor underfoot (and a noticeable tendency to lose one’s balance on its polished surface).98

This example clearly illustrates the importance of the tactile in that it can only be perceived in the experience itself. Any form of representation or imagery cannot synthesize the feel of the place.

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98 Frampton, 28.
Critical Regionalist theories, especially in regard to enhancing a regional consciousness by engaging sensory perception of environmental qualities through the careful manipulation of the built and natural environment, are key ideas that I am interested in exploring for the University of Hawaii at Manoa campus. Instead of evoking a sense of nostalgia for building traditions of Hawaii’s preindustrial past, a Critical Regionalist response would involve a critical analysis of the setting of UH Manoa. Specific areas of focus are its topography, climate conditions, spatial qualities, existing characteristics, and how its physical condition impacts users perception of the place. Based on the understanding of these conditions, a comprehensive strategy would arise that considers human perception of the place as a main concern in establishing a regional identity. The concept of sense of place is especially important to define in this discussion as it deals with how people relate to the physical environment around them.

3.2. Sense of Place

“Sense of place” is a crucial part of human existence. According to Martin Heidegger in his article “Building Dwelling Thinking”, “dwelling is the manner in which mortals are on earth.” Consequently, “being” depends upon “dwelling,” which depends on a sense of place. In Place and Placelessness, Edward Relph describes sense of place as comprising of a “full range of possible awareness, from simple recognition for orientation, through the capacity to respond empathetically to the identities of different places, to a profound association with places as cornerstones of human existence and individual identity”99. Relph delves into the phenomenological aspects of spatial experience. In his discussion on what he considers authentic and inauthentic sense of place he identifies home as being where the “strongest sense of place” is experienced. House Form and Culture by Amos Rapoport clarifies the origins of house forms. Both books relate in describing the temporal and spatial aspects that define sense of place. However, Rapoport’s book is concentrated on how peoples relationship to and understanding of the physical environment, based on their socio-cultural beliefs, results in building typology of house form. This section delves into the conceptual framework of the term “sense of place” and its significance to human identity.

In a book entitled Place and Placelessness, Edward Relph clarifies the ambiguous notion of place and its significance to human experience. He describes his methodology as being “a phenomenology of place”100. Phenomenology is the interpretive study of human experience. In order to define place, he discusses the concepts of space, identity, insideness, outsideness, authenticity, inauthenticity, and further broken down components of each one.

Relph begins the book with a review of space and its relationship to place. According to Relph, space is recognized in various forms that lie “within a continuum that has direct experience at one extreme and abstract thought at the other extreme”101. He distinguished certain types of spaces within this continuum. Experiential modes of space are those of pragmatic or primitive space, perceptual space, and existential space.

100 Relph, 4-7.
101 Relph, 8.
Pragmatic space is the “space of instinctive behavior and unselfconscious action in which we always act and move without reflection”¹⁰². Perceptual space is man’s awareness of being at the center of his own space, while acknowledging that all other individuals also have their perceptual spaces. Existential space is the inner structure of space as it appears to us concretely through experience from our own cultural perception. Intangible modes of space on the other hand, are planning space, cognitive space, and abstract space. All of these modes of space are described as being experienced through varying degrees of criticality or intensity. Accordingly however, these modes are not exclusive of one another but integral to human spatial experience as it is lived holistically.

Relph then delves into the subject of identity. He described three components of which people’s identity of and with place. First there is the physical setting. Second are the activities, situations, and events that take place in that particular setting. Third is the individual and group “meanings” created through people’s experiences and intentions in regard to that place. One’s perception of these components in relation to each other formulates a sense of place. Relph also emphasized that place identity defined in this threefold way is not sufficiently pivotal because places are “significant centres of our immediate experiences of the world”¹⁰³.

In order for places to be more thoroughly understood, Relph asserts that there needs to be a language of describing the intensity of meaning and intention that a person experiences with a place. He introduced the concept of insideness. Insideness is the feeling of being inside a place, or here rather than there. Relph suggests that the more profoundly inside a place one feels, the stronger will be his or her identity with that place.

Figure 30: Machu Picchu
Photo by Steve Underwood

¹⁰² Ibid.
¹⁰³ Relph, 141.
Adversely, there exists the concept of outsideness. That is the feeling of alienation from a place or of being an outsider. This is evident when people feel homesick when visiting an unfamiliar place. The crucial phenomenological point is that outsideness and insideness make up an essential discussion on human life and that, through varying combinations and intensities of outsideness and insideness, different places take on different identities for different individuals and groups, and human experience takes on different qualities of feeling, meaning, aura, and action.

The strongest sense of place experience is what Relph refers to as “existential insideness” – a situation of deep, unselfconscious immersion in a place and the experience most people know when they are at home in their own community and region. The opposite of existential insideness is what he names existential outsideness – a sense of strangeness and alienation, such as that often felt by newcomers to a place or by people who, having been away from their birth place, return to feel like strangers because the place is no longer what it was when they knew it earlier. In this sense, the temporal changes that occurred to the place of familiarity alters ones relationship to place.

In his book, Relph discussed seven modes of insideness and outsideness grounded in various levels of experiential involvement and meaning. The value of these modes, especially for self-awareness, is that they apply to specific place experiences yet provide a conceptual structure in which to understand those experiences in broader, more precise terms.

In the last half of the book, Relph examined ways in which places may be experienced authentically or inauthentically. An authentic sense of place is “a direct and genuine experience of the entire complex of the identity of places—not mediated and distorted through a series of quite arbitrary social and intellectual fashions about how that experience should be, nor following stereotyped conventions”\(^\text{104}\). (Figure 21)

Individuals and groups may create a sense of place either unselfconsciously or intentionally. Thus, because of constant use, an ordinary urban neighborhood can be as authentic a place as Hellenic Athens or the Gothic cathedrals—the latter of both examples, for Relph, of places generated consciously. Relph argues that, in our modern era, an authentic sense of place is being gradually surpassed by a less authentic attitude that he called placelessness: “the casual eradication of distinctive places and the making of standardized landscapes that results from an insensitivity to the significance of place”\(^\text{105}\).

Relph suggests that, in general, placelessness arises from kitsch—an uncritical acceptance of mass values, or technique—the overriding concern with efficiency as an end in itself. The overall impact of these two forces, which manifest through such processes as mass communication, mass culture, and central authority, is the “undermining of place for both individuals and cultures, and the casual replacement of the diverse and significant places of the world with anonymous spaces and exchangeable environments”\(^\text{106}\).

In short, as the built environment is further transformed by globalization and consumerist culture, human relationship to place becomes more distant and abstract. The

\(^{104}\) Relph, 64.
\(^{105}\) Relph, preface.
\(^{106}\) Relph, 143.
technological advancements of mass communication and media allow people a general understanding of the world beyond bodily experience. Spatial experience is continually being redefined in the digital arena. However, human identity is fundamentally grounded in the way in which people experience places through bodily interaction rather than through purely visual perception. The temporal changes that occur due to globalization may modify one's perception of the world but will not change how people identify with the spaces within it.

Urban sprawl is a clear example of placelessness. A typical suburban neighborhood consists of a limited number of model home types repeatedly constructed throughout the development. There are in some neighborhood rules to keep a specific aesthetic appeal of the street character. The photo depicted in figure 22 shows a neighborhood with the same roof color and type, similar entryways to households, etc. The homogeneous nature of this built environment suggests an endeavor to address the demand for private home ownership in a cheap and mechanical way.

In such environments, there exists a feeling of alienation from the neighborhood. There are no communal gathering places for social interactions. An emphasis on the mobile lifestyle exists. People come home for rest and travel elsewhere for all the other daily tasks. So how is a sense of place established in this type of living situation?

I would argue that suburb development is meant to be a neutrally identifiable domain. Due to the diversity that exists amongst individuals of varying experience and background, it would be quite challenging to create an environment sensitive to human sensibilities and the need to identify with a region in an economical way. Households are replicated to ease construction costs and be affordable to a variety of people. Those who occupy these homes, however, do not live in this environment without a sense of place.

Figure 31: Suburban sprawl in Florida
Photo by James Howard Kunstler
Although each house is constructed in a similar manner and must in some instances maintain a homogeneous appeal to the neighborhood, it is the interior spaces that are modified to accommodate for the owners place-making needs. As Edward Relph indicated, it is the home that the “strongest sense of place” is experienced. In order to acclimate to a neutrally designed environment, one must modify the aesthetics within it.

In *House Form and Culture*, Amos Rapoport delves into the deeper meaning of the house form. In this book, he critically analyzes factors influencing house form. In doing so, he uncovered symbolic meaning in physical constructs. Rapoport’s hypothesis was that “house form is not simply the result of physical forces or any single casual factor, but is the consequence of a whole range of socio-cultural factors seen in their broadest terms.”

The socio-cultural factors Rapoport described are diverse and encompass a broad range of characteristics that define cultural identity. Religious beliefs, for example, give meaning to how particular homes are organized, oriented, and constructed. There may be sacred corners of the house, ‘lucky’ arrangement of spaces, or a hierarchy of spaces according to solar movements. A house can be thought of as a microcosm or a manifestation of human figure symbolically. Some traditions derive form based on the family structure, kinship, and caste. Since the form is derived from these factors, an awareness of these by the people that inhabit them allows for a sense of place in identifying with the house.

Another important factor described is the relationship of house and settlement. Rapoport identified two systems. The first is of the perception of the house as the whole setting for life and the settlement as the connective tissue or waste space. This is evident in western lifestyle, where the majority of life’s tasks (sleeping, eating, raising a family, dining, and communal interaction) all take place at home. The town is where things are bought and brought back to the home. On the other hand, the settlement can be perceived as being the whole setting for life and the house as the more enclosed and private part of the settlement. In this case, a family would use the home minimally for sleep and shelter while spending the majority of time in town. One’s perception of the house or settlement as embodying the activities of life influences one’s relationship to that place.

Rapoport also described three types of relationships between man and nature. The first is “religious and cosmological.” In this regard, the environment is dominant, and man regards himself as less than nature. The second is symbiotic. “Here man and nature are in a state of balance, and man regards himself as responsible to God for nature and the earth and as a steward and custodian of nature.” The third is exploitative. This is where man is the completer and modifier of nature, then creator, and finally destroyer of the environment. Depending of which relationship to nature one has, the form created in its influence is expressed in such a manner.

Rapoport also introduces the idea of constancy and change. He states that, “form determinants of the house can divided into constant and changeable ones, and the whole

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108 Ibid.
109 Ibid.
problem of constancy and change can be related to built form in this way for a number of variables. " Accordingly, constant determinants are those of the need for sensory stimulation and satisfaction; psychological need for security (shelter); territorial instinct; identity; house as definition of one’s own territory; sanctity of threshold; privacy; and social interaction. How these constancies are accommodated in the physical environment is an aspect suspect to change. Also, the value of each of these differs according to one’s cultural values.

Rapoport wondered if house forms today still reflect those old concerns, which he had been exploring throughout the book. He concluded that they do, by providing examples based on both developing countries and the American house. The single family home of the United States is described in terms of its symbolic content. All of the socio-cultural aspects described as being characteristic of vernacular and primitive constructions are reinterpreted in the modern household. [Basic needs, privacy, symbolism (of the ideal of health), territoriality (in ownership), security (pitched roof symbolic of shelter), and the house as a symbol of an ideal life] Rapoport’s conclusion is that house form today is a result of excessive freedom of choice of ways to express oneself. Accordingly, “the fact that house form can now be the domain of fashion, suggests the general validity of the concept of criticality and the primacy of socio-cultural factors, and that this implies for the understanding of house form, as well as its choice” Rapoport criticized the superficial aspects of house form today and implied a decline of meaningful expression of house form.

In terms of the relationship in content to sense of place, this book provides a theory into the conceptual framework of both the house and the communal setting. Rapoport’s assertion that house form is the result of a whole range of socio-cultural factors seems to be a well-formulated argument. Throughout the development of his argument, Rapoport clarified the symbolic meaning embodied in the underlying structure, organization, and components of the home, the settlement of which the house is a part of, and the framework by which human beings cross-culturally perceive of the built environment. Human identity is defined through material expression in house form. As a concluding answer to the question of why the house form, excessive choice of ways to express individuality in ones domestic environment further demonstrates identity as integral with environment.

These texts allude to the assumption that human beings relate to the environment according to socio-cultural understanding of the environment derived from experience. The ability to identify with and of places is fundamental in orienting oneself and understanding the relationship of self to the spaces one experiences. As ‘sense of place’ depends on culture, human interaction, and identity to form a whole entity, this in turn supplies us with a meaningful experience in terms of our sensory perceptions and builds upon a historic understanding of what place is.

According to Edward Relph in his book Place and Placelessness, placelessness is a feeling of alienation resulting from the lack of identifiable features, which give it its local distinction. He argues that, in our modern era, an authentic sense of place is being

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110 Ibid.
111 Rapoport, 135.
gradually overshadowed by a less authentic attitude that he called *placelessness*: “the
causal eradication of distinctive places and the making of standardized landscapes that
results from an insensitivity to the significance of place”.\(^\text{112}\) In other words, the
globalization of the built environment through the acceptance of mass culture and values
diminishes human relationship to place. Furthermore, the concept of place is crucial in
understanding human situations, events, meanings, and experiences in everyday life.

Both the phenomenological and the historic dimensions of a place are destroyed
through thoughtless building and urban spread. Norberg-Shulz considers the 20\(^\text{th}\)
century modernist architecture as being monotonous and having a “loss of place”.\(^\text{113}\) He notes
however, that certain architects such as Frank Lloyd Wright, Louis Kahn and the Le
Corbusier of Rompchamp have “recovered” the sense of place in their architecture. For
Mumford, metropolitan life embodies the “radical contradiction” that comes out of “the
dual origin of the city, and the perpetual ambivalence of its goals. From the village, the
city derives its nature as a mothering and life-promoting environment, stable and secure,
rooted in man’s reciprocal relations with other organisms and communities. From the
village, too, it derives the ways and values of an ungraded democracy in which each
member plays a part.” At the same time, the city “owed its existence, and even more, its
enlargement, to concentrated attempts at mastering other men and dominating, with
collective force, the whole environment”.\(^\text{114}\) In this, we can see Mumford’s position as
anti-modernist conquest of environment, abhorring the separation of “man and nature”.

Epistemologically, culture and place creates knowledge and identity. In *Place
and Placelessness*, Edward Relph aimed to clarify the significance of ‘place’ in human
experience. Man’s relationship with the environment, natural or built, is called into
question. Relph defines this relationship through a phenomenological study. He defined
sense of place in terms of how people perceive of an environment based on the activities,
physical characteristics, and perceived meanings. One’s interpretation of meaning within
a place is perceived through cultural understanding of tangible and intangible qualities.
This is also evident in *House Form and Culture*. In this book by Rapoport, he critically
analyzes factors influencing house form. In doing so, he uncovered symbolic meaning in
physical constructs. The house, as a symbol of the ideal life, embodies cultural definition
in meaning.

Ontologically, according to Heidegger ”being” depends upon “dwelling”, which
depends on a sense of place. The phenomenological study of place as it is discussed in
*Place and Placelessness* and *House Form and Culture* encompassed two alternative ways
of defining or interpreting identity. The former novel by Edward Relph, uncovers the
relationship of man and environment based on experience. Whereas the later novel by
Amos Rapoport reveals identity by the most elemental of forms: the house.

The above-mentioned books related to “sense of place” enlighten us with the
epistemological and ontological understanding of the sense of place. Thus, “sense of
place” depends on culture, human interaction and identity to form a whole entity. This
entity in turn supplies us with meaningful experience in terms of all our sensory
perceptions and builds upon a historic understanding of what place is. This makes sense

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\(^{112}\) Relph, Preface.
\(^{113}\) Norberg-Schulz, 190.
\(^{114}\) Mumford, 558.
of place a very important dimension in relation to Critical Regionalism. On the other hand, without this sense of place, space is placeless and this is why the international style carried to the extreme of globalized universality is the object of criticism by those who are adherents of the Critical Regionalist Movement. At the same time, Critical Regionalism departs from the parochialism of the narrowly vernacular localization of a sense of place by extending the understanding of this sense in a more globalized and modern way, so that global architects can build locally if they incorporate a sense of understanding the context, both spatial and temporal, of the place to build upon.

3.3. Critically Regional Campus Design Framework

A critically regional campus design strategy extends the concepts of Critical Regionalism and sense of place into university design and planning practice. Lessons learned from chapters 1-3 contribute to this conception. Campus identity is grounded in the relationship of human perception and the physical attributes of its setting. The discussion on the evolution of collegiate environments in Chapter 1 showed evidence of experimentation in ways to shape the physical setting to communicate nonverbally, the inherent values of institutions. Each trend in campus design brought about a variety of forms that influenced how people identified with the institutions and interacted with its setting. The impact of campus physical environments on its human constituents became the subject of analysis in the field of environmental psychology. Chapter 2 discussed related concepts of nonverbal communication of the build environment, placemaking, placemarking and wayfinding. How these concepts are integrated in campus settings shapes the nature of its experience and identity.

The concepts of placemaking and placemarking are especially crucial in defining the campus environment and image. In Richard Dober’s text Campus Design, he provided a comprehensive analysis of campus design, of which the principle components were “buildings, landscapes, and circulation systems.” Placemaking is Dober’s concept for the overall structure of the campus environment. This includes the “positioning and arrangement of campus land uses and pedestrian and vehicular routes, the location of buildings and functional open spaces…the definition of edges, and the interface between campus and environs” (p.5). Through the integration of campus elements, placemaking allows for the creation of an “institutional metaphor” that guides the development of the campus. This “institutional metaphor” serves as a collective picture that characterizes the total campus design. On the other hand, Placemarking is focused on “certain physical attributes which give a campus a visual uniqueness appropriately its own” (p.5). These include landmarks, style, materials, and landscapes. The combination of these elements leads to a “distinct sense of place” on campus. According to Dober, “placemaking resembles town planning, producing the

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116 Ibid.
117 Ibid.
118 Ibid.
larger picture of the future, while placemarking involves the specifics of campus architecture, landscape architecture, and site engineering.\textsuperscript{119}

The integration of Critical Regionalist theories into the concepts of placemaking and placemarking establishes a basis of which an institutional metaphor for a Critically Regional campus identity can be made. Site-specific attributes of climate, topography, materiality and landscaping are characteristics of place that can be utilized to contribute to its identity. The following aspects are the key components in this Critically Regional Campus Design approach:

(1) Climate Responsive Design & Planning

- **Daylight Quality:** Appropriately illuminate interior and exterior spaces with natural daylight. Exposure to daylighting conditions gives people a sense of the local light quality as the day goes by. In outdoor spaces, the shadows created by the filtering of light through the trees can become a unique trait of a place. Likewise, for indoor settings light can be introduced into a space in ways that enhances its experiential qualities.

- **Comfortable Thermal Conditions:** Enhance human comfort in both natural and built environments on campus with appropriate design responses to the local heating or cooling needs.

- **Rain Water Protection, Experience and Conservation:** Provide shelter from the rain with architectural and landscape elements. Seek opportunities to enable a unique experience of it as appropriate. For example, a dry fountain sculpture on a campus, that is a quiet feature in dry weather, can have a dynamic effect with the unique sound of raindrops as it hits its surface in inclement weather. Such features can distinguish different places on a campus. As appropriate, shape the campus physical environment in a manner that conserves water and allow rain to nourish the landscape setting.

- **Air Quality and Wind Flow:** Shape the physical environment of the campus in a manner that directs appropriate wind pressure to interior and exterior spaces to improve comfort levels. Ensure proper air quality of habitable spaces.

(2) Topographic Character of Campus Environs

- Integrate buildings, pathways and pedestrian circulation networks with the site topography. Enhance human connection to the form of the land.

(3) Scenic Views of Surrounding Landscape Features and Urban Context

- Preserve view corridors to distinct features in the surrounding context. Nearby mountains, oceans, lakes, landmark structures and urban areas can be used as features of reference in wayfinding. Enhancing people’s awareness of places on campus’ in relation to features in the surrounding context can greatly improve the campus’ sense of place.

(4) Tactile Experience of Place

- Integrate regionally identifiable material into campus environs
- Use scalar material identifiable in its relationship to human proportions. It enables people to relate to the setting. The texture of surface material especially appeals to the tactile sense.
- Integrate natural and manmade surfaces in pathways and outdoor places. It encourages human interaction with a campus’ landscape settings.
- Use materials in prototypical elements throughout the campus. Campus signage, seating, landmarks and surfaces of pathways and buildings can be unified with the use of a defined material palette for the campus
- Use of materials that change over time in response to weather conditions. For example, the use of bronze in architectural elements attributes to the temporal identity of the place since it changes from a dark bronze color to turquoise over time.

(5) Regional Campus Landscape

- Incorporate indigenous and endemic species of plants and trees on campus grounds. The use of local plant life contributes to the character of the region’s landscape setting. Signage that identifies species of plants can be used as an educational tool for campus users.
- Use site trees to enhance view corridors; shade pathways and communal spaces; and contribute to the defining of unique spatial experiences on campus.
- Use the aroma of fragrant flowers as place identifiers. The pleasant smell of indoor and outdoor places enhances the experience of the place.
- Create signature campus landscape settings as identifiable places on campus
- Integrate landscape into buildings. It keeps buildings cool and creates opportunities for distinct expressions of a blend of natural and manmade environments.

(6) Activate Outdoor Spaces

- Introduce land use patterns that encourage use of outdoor places. Increasing the functionality of outdoor areas strengthens human interaction and identity with the campus landscape. When there are places to eat, study, relax and recreate in comfortable outdoor settings, the experience of these places contributes to positive perceptions of the campus.

(7) Enhance the Entry Experience into the Campus

- Define the experiential narrative in approaching the campus.
What components of the campus environment are visible from the periphery?
- Campus trees can be used to hide portions of the campus while revealing specific elements. This strategy encourages exploration of the setting.
- Land Use patterns at peripheral locations
  - Residential/ commercial/ retail/ athletic/academic/religious facilities can be strategically placed at peripheral locations to provide hints to the public of the campus culture
- Landscape Character
  - Campus lawns, trees, vegetation, water features and site topography are features that define the character of campus landscape. How these features relate to habitable spaces and pedestrian pathways impacts campus user’s experience and perception of the setting.

Where do people enter?
- Define main points of access to the campus
- Hierarchy of entry conditions
  - Establish a distinctive character for main entrances that differentiates it from other entry points
- Concentrate parking facilities, public transit stops and pedestrian access points to signature entry areas of the campus

Define the spatial sequence into the campus
- Organize pathways in a manner that reinforce a defined spatial sequence into the campus
- Land use patterns along pedestrian pathways
  - Places to dine, shop, recreate, study and socialize
  - Indication of campus culture
- Scenic spots
  - Areas with prospective views of distinct features in the surrounding landscape and urban context
  - Areas with a distinct landscape character
- Wayfinding features
  - Campus Map boards
  - Landmark buildings and site features
  - Signage
  - Distinctive landscape features
- Distinctive places for the cultivation of campus community
  - Provide distinctive communal spaces for people to engage in campus culture

The collective experience of these aspects attributes to the identity of the campus. This design approach is intended to engage campus users in a unique experience of a university setting with specific emphasis on enhancing a regional consciousness. The next section explores the University of Hawai`i at Mānoa’s sense of place and key principles to enhance its regional identity.
PART II: CAMPUS CONTEXT

CHAPTER 4
University of Hawai‘i at Mānoa’s Regional Setting

The University of Hawaii at Mānoa (UH Mānoa) is a public co-educational research university and is the flagship campus of the greater University of Hawai‘i system. It is located in the island of O‘ahu’s Mānoa valley, an affluent neighborhood of Honolulu, Hawai‘i, approximately 3 miles east and inland from downtown Honolulu. The campus occupies the eastern half of the mouth of Mānoa Valley. It covers approximately 320 acres of non-contiguous land. Portions of the campus are situated within the adjacent community and the university also owns and operates facilities in areas throughout the state. The Mānoa campus is the primary site for this investigation. This section discusses the university’s presence in the community; the experience of the surrounding region from campus grounds; and unique attributes of local climate and landscape.

4.1. UH Mānoa’s Presence in the Community

UH Mānoa is integrally part of its community. The university property extends into Mānoa Valley and is accessible from Moili‘ili as well. Students, faculty and staff reside in and utilize daily, areas surrounding the campus. These areas comprise of Mānoa Valley, Moili‘ili and Waikiki. Student and faculty housing facilities are located in these regions. Figure 33 shows the campus location in this context. Campus users however do commute from various regions throughout the island.

Figure 32: Map of Mānoa Valley, UH Mānoa, Moili‘ili & Waikiki
4.2. Experience of the Surrounding Region from UH Campus

The campus location at the mouth of Mānoa Valley provides unique opportunities of access to scenic views of distinct features in the surrounding region. Views toward the northwest to east side of the campus reveal unique features of Mānoa’s topography. Large mountains of lush green vegetation are characteristic of the place. Views toward the west to southeast sides of the campus show the urban context, nearby mountains and ocean setting. Diamond Head, shown in Figure 35, is a signature landform in the state. Campus members have access to these views from various places throughout the campus environment. Preservation of these view corridors is an integral part of campus development guidelines; which contributes to the character of the place. Access to these views is an important part of a regional consciousness in experiencing the campus setting.
4.3. Unique Attributes of Local Climate and Landscape

Hawaii is an archipelago situated in the middle of the Pacific Ocean. It is the only state that is not geographically located in North America, grows coffee, has a Royal Palace, is completely surrounded by water, and does not have a straight line in its boundary. Due to the islands distant location from other land, life before human activity is said to have arrived by Wind, Waves, and Wings (birds, insects, and whatever they brought with them). Hence, there exists a wide range of indigenous and endemic flora and fauna in the islands.

According to the Field Guide for Energy Performance, Comfort and Value in Hawaii Homes created by James Furuhashi, Nick Huddleson, Stephen Meder and Kathleen O’Brien & Company, Inc., Hawai`i’s climate “provides near ideal temperature and humidity conditions throughout the year.” Temperatures range from 70 to 85 degrees on average. Depending on how high in elevation one is in the islands, temperatures get colder as one goes higher.

Island breezes flow onshore during the afternoon and early evening hours can bring rain. Offshore breezes at night and in the early morning hours can bring cooler temperatures as well. Windward areas get substantially more clouds and moisture than the leeward side of the islands. Hawai`i is known for its beautiful scenery, tropical waterfalls, sandy beaches, clear blue ocean, lush green mountains, and warm climate. The natural environment of Hawai`i is its main economic driver, attracting tourist, filmmakers, and television show producers.

Figures 38 - 43: Selected images of beautiful scenic areas in Hawaii

4.4. Demographics

In terms of demographics, Honolulu has one of the most diverse populations in the United States. It is located in one of the two minority-majority states. According an article about the population of Hawai’i (in reference to 2010 U.S. Census data), there were 19.5% White Americans, 0.2% American Indians, 53.7% Asian Americans, 7.6% were Native Hawaiian and Pacific Islanders, 16.7% Multiracial Americans, 1.5% African Americans, and 0.8% of other races. Hawai’i’s indigenous population accounts for only 5.5% of the population at about 70,000 people. The total population was 1,288,198. Of this amount, 73.44% speak English, 2.6% Spanish, 1.6% speak other Indo-European languages, 21% speak an Asian language, and 0.2% speak a different language at home. Hawaiian language is spoken only by 0.1% of the population while an unrecorded amount of locals speak Hawaiian Pidgin. In terms of religion, the proportions are 28.9% Christianity, 9% Buddhism, 0.8% Judaism, 10% other, and 51.1% unaffiliated. This mixture of people of various backgrounds allow for a diverse cultural environment.

4.5. Regional Characteristics of UH Mānoa

The regional characteristics of UH Mānoa lie in its physical relationship to the surrounding areas; presence in the community; access to scenic views of its surrounding context; climate; landscape; and demographics. Campus users experience each of these aspects on a daily basis. The physical environment of the university affects how people interact with the regional and campus setting. Campus landscape, circulation pathways, buildings, signage and unique site features are the components of the campus physical environment that transcribe a distinct experience of the place. The condition of these aspects impacts user perceptions of the institution. Plus, the degree of which the physical environment of the institution was designed in consideration of the unique characteristics of the local climate and landscape attribute to its regional character or lack thereof. The next section delves into the historical development of the UH Mānoa campus and the significance of these regional attributes to the university’s sense of place.

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CHAPTER 5
University of Hawaii at Mānoa – Interpretive Historical Research

Figure 44: Aerial photo of UH Mānoa.
5.1. Physical Development of the Campus

The University of Hawaii at Manoa is the physical context for my doctoral study. The campus is divided into four parts: the Makai campus; upper central campus; central campus; and the non-contiguous Mauka Campus (Ref. Figure 45). From 1912 to the present day, the physical environment of the university gradually developed. As demand for higher education rose and funds became available, the campus expanded with new buildings to support its growing capacity. A critical review of its historical development reveals why the campus became a place of diverse architectural styles and mixture of introduced cultures. Its’ built and natural environment has been criticized for its unusual content and relationship to the surrounding context. In this section, I will discuss the development of the campus and the contextual influence on its development.

5.2. Early Beginnings

In the late 1900s, several years leading up to the establishment of the first higher education institution in Hawaii, there was rapid growth in the sugar industry and a major building boom. Honolulu at the time had grown immensely in population due to the establishment of Pearl Harbor Naval Base, a rise in visitors and new residences from Europe and the United States, and the mass importation of Asian immigrants. Accordingly, there was growing demand for more structures to be built in Hawai‘i. Architectural influence in Hawai‘i’s built environment until then had come from Europe, the United States, and Asia. There existed a need for a higher education institution to address the needs of a growing agricultural industry and building sector. According to a book entitled “Malamalama: A History of the University of Hawai‘i” by Robert M. Kamins and Robert E. Potter, the call to establish a college and later a university in the Hawaiian Islands came from three cultural groups – “first in the territorial legislature by native Hawaiian members, then by a bank employee of Chinese ancestry, with the strong support of many Northern Europeans…who believed in the importance of higher education for building a good society.”3 After several years of discussions in

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3 Robert M. Kamins and Robert E. Potter. Malamalama: A History of the University of Hawai‘i
legislative sessions of the appropriate site for a “territorial university” and apparent need for a higher education institution in Hawai‘i. Act 24 of the 1907 legislature session established the College of Agriculture and Mechanic Arts of the Territory of Hawai‘i.  

The newly established college started its operations on a temporary site, located on Young Street. An old Victorian style frame building was acquired to house all academic activities. In 1908, regular courses began with “5 freshmen, 5 preparatory students and 13 faculty.” Bachelor of Science degrees in programs of agriculture, civil engineering, general science, and household economics were offered at the time. Expansion of academic facilities took place later that year when a new “L” shaped building was built next to it.

In 1909, the permanent location for this land-grant institution began to be cleared. The plot of land selected for this development is in lower Mānoa Valley, in the former

6 Robert M. Kamins and Robert E. Potter, 12.
Highland Park Tract. At the time, it was filled with kiawe trees, wild lantana, and Panini cactus. In addition, Chinese and Hawaiian tenants who cultivated small one-tenth to one-fourth-acre fields occupied the land. The first few years of campus development involved the gradual eviction of all existing tenants on the land, removal of several acres of loose rock walls and vegetation, and the construction of the college’s first structures.

The Board of Regents had discussed planning for the college’s physical development as early as 1908. A “comprehensive plan” was needed to define how the campus would be developed. In 1909, Professor John Mason Young of the school’s engineering department completed a design for the campus (Ref. Figure 50). Resembling Cornell University at the time, an institution of which he last served as a professor, the design encompassed a geometrical array of individual buildings that together formed a large quadrangle. Although this vision was never realized entirely, it set a precedent of which the axial orientation of the buildings was followed in future development of structures on campus. Buildings in Young’s plan were aligned to the cardinal directions of the campus. According to Potter, the “orientation to the north, rather than to the axis of Mānoa Valley, which guides the trade winds, failed to maximize the natural cooling of the campus.”

This adopted pattern, in the campus’ buildings to come, would eventually “make way for heavy dependence on air-conditioning when that technology became available.”

In 1910, the campus’ first buildings appeared. A poultry shed and cow barn were constructed and put into operation. Students in agriculture heard their lectures in the Young Street campus and went to the Mānoa campus farm for their “lab work.” Two “temporary” structures were also moved from the former campus to the new location. A chemistry laboratory and a shop were housed in these facilities. The following year, the name of this growing institution changed to ‘the College of Hawai’i’.

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8 Ibid.
5.3. The Mānoa Campus: Before WWII

From 1912 to 1941, the Mānoa campus expanded at a gradual pace. Changes in the social, economic, and political context of Hawai‘i influenced campus development. The First World War stimulated the Territory’s major crop industry, sugar. The college thus decided to shift its emphasis from “the study and development of diversified agriculture to that of sugar.” From then on, the college received significantly higher legislative appropriations that allowed for much needed expansion of campus buildings. The College of Hawai‘i’s transition into a university in 1920 however, marked a significant change of pace in campus development. Degree programs and courses offered expanded as the student population and faculty rose in numbers. Campus facilities became quickly inadequate, which led to the construction of new buildings and modifications of existing facilities. The Great Depression, from 1929 to 1940, also affected the pace of development. However, campus expansion continued until a brief period after the Japanese attack on Pearl Harbor on December 7, 1941.

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9 Kobayashi, 25.
The initial campus buildings were arranged in distinctive axial arrangements. John Mason Young’s master plan for the campus in 1909 influenced the development of the old Hawai‘i Hall quadrangle. Accordingly, Hawai‘i Hall, Gartley Hall, George Hall, Dean Hall, and Crawford Hall formed the beginnings of a main central axis of the campus. Hawaii Hall, the first permanent structure on-site, was constructed in a north to south orientation. It formed a physical boundary between the developing quadrangle to the west of it and the farmlands that covered the future campus to the east. The other buildings included, followed in construction, as other developments on campus arose.

Young Engineering Quadrangle was constructed in a similar sequence nearby. Its central building, the Engineering Materials Laboratory, was built first in 1915. Then two buildings, on either side of the initial one, were built in 1925 and 1928 in pairs. The resulting pattern forms an H. All buildings in the old Hawai‘i Hall Quadrangle and the
Young Engineering Quadrangle are neoclassical in style. Their arrangement and architectural detail is consistent with Beaux Arts planning traditions that were popular in architectural schools in the U.S. mainland in the early 1900s.

Figure 55: Sketch of College of Hawai‘i campus plan by John Mason Young (1918)

Figure 56: Engineering Laboratory (1915)

Figure 57: Gartley Hall (1915)
As the campus developed from 1920-1940, Hawai‘i experienced an era of rapid growth. C.W. Dickey, Hart Wood, Julia Morgan, and Betram Grosvenor Goodhue were prominent architects at the time. According to a book entitled *Architecture in Hawaii: A Chronological Survey* by Rob Sandler and Julie Mehta, “their collective efforts provided a regional architectural vernacular for the islands that had not been clearly expressed since the first Western structures replaced the grass hale of ancient Hawaiians.”

Spanish Colonial, Mission Revival, C.W. Dickey’s “Hawaiian” vernacular style, and unique architectural styles that developed in plantation housing formed the basis of “appropriate” design for Hawai‘i’s climate. Common characteristics of these styles are pitched roofs, wide protecting eaves, covered exterior space and large openings to allow trade winds to cool interior spaces.

Meanwhile, on campus grounds, several structures arose that incorporated the new regional architectural style. The first men’s dormitory (1921), first women’s dormitory (1922), and first campus cafeteria (1921) were all wooden structures, designed at a residential scale. Pitched roofs, covered lanai areas, and numerous window openings on all sides made these buildings pleasant places to be in. In addition, the University’s School of Education’s merger with the Territorial Normal School across University Avenue marked a significant growth in student enrollment and campus property. Wist Hall, designed by C.W. Dickey, was the first of several permanent structures to arise on the new property that incorporated the distinctive pitched roof. Castle Memorial Hall, Preschool facility, and the Training Center for kindergarten and nursery school teachers were completed a decade later with this regional design feature.

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10 Sandler, 36.
Athletic facilities and spaces at the time were constructed and integrated on campus grounds as well. The original Cooke Field, built in 1915, was located parallel to the Hawai‘i Hall Quadrangle and aligned with the Young Engineering Quadrangle. This axial alignment with the central building of the Young Engineering Quadrangle was further emphasized later with the additions of the campus’ first swimming pool (1921) and Hemenway Hall (1938) to the left of it; and the original Fruit Fly Building (1931) to the right. Parallel to these developments (closer to Dole Street) arose the first Gymnasium (1928) and tennis courts. Afterwards, Wise Field (the future site for Bachman Hall) and Andrews Outdoor Theatre (1935) were constructed. In plan, these developments have distinct axial relationships to each other.
Although never fully adopted, a new master plan for the university was created in 1929. Los Angeles architects Cook, Hall, and Cornell, envisioned the campus in a radially organized manner. Varney circle, later built east of Hawai‘i Hall, was to be the center of campus. The construction of Farrington Hall (1930), the Varney circle fountain (1934), old Gilmore Hall (1935), and Miller Hall (1939), in the years following, clearly show the conceptual nature of the master plan developed. These structures were also neo-classical in design, which created a cohesive unity with the previously constructed permanent structures on campus. The Beaux Arts Movement, popular in university design practice at the time, clearly influenced initial campus development.

Figure 68: Farrington Hall (1930)

Figure 69: Old Gilmore Hall (1939)

Figure 70: Aerial photo. Campus developed with strong axial arrangements (1939)
Figure 71: Campus physical development from 1910-1941.
5.4. Post WWII – Regionalism and Campus Expansion

The nature of the university’s development drastically changed following the end of the Second World War. An unprecedented increase in student enrollment occurred due to the establishment of the G.I. Bill of Rights in 1944 and again in the 1960s when the baby boom generation came of age. This dramatic change in higher education demand led to rapid development of campus environments abroad and in Hawaii, especially during the later period. Practitioners involved in the Modern Movement in architecture especially embraced this period in university development. New individually designed buildings were constructed onto existing campuses without regard to visual cohesion and organizational clarity in relation to its surrounding context.

In the first few years after the war had ended, the University of Hawai’i went through a period of slow growth in permanent structures. This pace of development occurred because 66 former military barracks brought onto the campus provided the necessary facilities to accommodate the growing number of students and programs. The architects, who designed the new permanent structures at the time, adapted a modern regional approach to designing in Hawai’i’s climate. Bachman Hall (1949), designed by Vladimir Ossipoff, was the first permanent structure built on campus after the war. It’s formal qualities of clean lines and rectilinear geometry had not been seen on this

Figure 72: University of Hawai’i map in 1949. Sixty-six former military barracks were brought on campus to accommodate the growing demand for higher education. Agriculture facilities are highlighted in green.

Figure 73: Temporary structure (1949)
campus till that time. Window openings and shading devices were strategically designed to invite the natural breezes in and mitigate excess sunlight and heat. Views of the surrounding environment and interior courtyards were also integrated. Bilger Hall (1951), designed by Mark Potter, took on a different approach to regional design. The architect’s intention was to create a “lanai” type structure. Courtyards were the key organizing elements. Kobayashi stated that, “the original Bilger Hall takes full advantage of the Hawaiian climate by having no interior corridors. All of its laboratories and rooms open directly onto wide and ceilinged verandas that border upon two courtyards nestled between its wings.” This particular approach considers the relationship of indoor and outdoor spaces.

Figure 74: Bachman Hall, completed in 1949.

Figure 75: Bilger Hall (1951)  
Figure 76: University Bookstore (1953)

Figure 77: Johnson Hall A (1957), Johnson Hall B (1961), and Gateway House (1962) along Dole Street.

11 Kobayashi, 96.  
12 Ibid.
Sinclair Library, constructed in 1956, was developed in a collaborative design approach between designers Lemmon, Freeth, and Haines, Architects. They identified four basic principles:

1. The building should be adapted to the Hawaiian climate and be made as comfortable for readers as is possible without air conditioning.
2. The interior must be arranged for efficient operation.
3. The interior would be flexible as possible, so that the organization could be readily changed to meet new needs and conceptions of library services.
4. The books and other library materials would be readily accessible and convenient for use.\textsuperscript{13}

These principles were realized in the design through a bold composition of rectilinear volumes that allow for a flexible arrangement of spaces within. Lanai spaces and window openings are integrated in strategic positions to allow for maximum comfort while studying. Till this day, Sinclair library continues to embody the ideals of the principles it was designed by.

The university’s expansion during this time period also went beyond the Manoa campus. Acquisition of the quarry nearby enabled a massive expansion of athletic facilities, housing structures, and academic buildings. On the opposite side of the island, a Marine Laboratory (1950) began construction on Coconut Island. In 1953, Hawaii Sugar Planters’ Association presented 124 acres of land in upper Manoa Valley to the university. The site was to become an arboretum and botanical garden. A year later a new University of Hawaii campus in Hilo started construction. That same year, the H-1 overpass was constructed, altering the character of surrounding communities and changing the pace of development on the UH campus and throughout Oahu.

\textsuperscript{13} Kobayashi, 100.
Figure 79: Campus plan prior to major building boom. The buildings in black represent proposed construction. (1957)

Figure 80: The farmlands were rapidly disappearing as the University buildings encroached on the areas east of Hawai‘i Hall (1962)
Figure 81: Campus physical development from 1942-1959.
5.5. Building Boom – Rise of Modernism

From 1960 to 1980, after Hawai‘i had become the 50th state, a major building boom hit the Hawaiian Islands (Ref. Appendix A). Rapid economic growth due to major investment in Hawai‘i’s infrastructure, the introduction of jet travel, rise in tourism, and booming businesses caused the need for expansion of buildings in the state. University of Hawai‘i likewise grew rapidly as student enrollment went over the 10,000 mark. Over half of the University’s buildings were constructed during this period. Campus grounds changed rapidly as building after building was built.

Expansion of campus facilities started with the transformation of the old McCarthy Road that ran into the Farm, into a pedestrian mall lined with trees. Keller Hall (1959) and Spalding Hall (1960) were erected sequentially, next to the old Gilmore Hall. The next two years saw the rise of Webster, Spalding, Edmonson, and Snyder Halls. These buildings form the “Memorial Quadrangle.”¹⁴ It is a space that is dedicated to those that gave their lives in the various wars of the 20th century. The eastern edge of the Mall was also completed in 1962 with the completion of Kennedy Theatre.

¹⁴ Kobayashi, 111.
At the same time, the East-West Center buildings were being erected on its 21-acre campus, along East-West Center Road. I.M. Pei worked with a number of local architects to develop the designs for Lincoln Hall, Hale Kuahine, Jefferson Hall, and Hale Manoa. These were all built from 1962-1963. In 1963, the new Student Health Center and Hawai’i Institute for Geophysics also arose near the East-West Center properties. The College of Education also expanded with the addition of University School Multipurpose Building and Wist Addition 2 that same year.

Dole Street was also developing with new structures. Johnson Hall B, a near replica of its neighbor Johnson Hall A (1959), was constructed in 1961. The next year, the Gateway House also rose up. These residential facilities were much needed at the time as student enrollment soared. The Music complex, located at the corner of Dole Street and University Avenue, also grew in size from its four building complex built in 1959. Mae Zenke Orvis Auditorium was added in 1962, due to a generous donation of $180,000 for the construction of a Music Auditorium by Dr. Arthur Zenke.15

This remarkable expansion in the sixties however could not keep up with enrollment. In 1965, the university’s population reached over 17,000 students with 1,187 faculty (including the Hilo campus). Their operating budget climbed substantially

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15 Kobayashi, 107.
Figure 89: Campus physical development from 1960 - 1969.
in coming years. By 1966, the university had become a statewide system. Several community colleges were established to include Leeward, Honolulu, Kapiolani, Maui, and Kauai Community Colleges. Four of these institutions started as technical high schools that were transferred from the Department of Education. Heavy use of the facilities on Manoa began that same year with schedules “revised to start at 730am, and ran through the entire day, including lunch hour, until 530pm.”

Varsity Theatre in Moili‘ili also had to be used for large lectures in World Civilization and Art 101 courses. Wooden portable buildings started being constructed on campus in 1967. These housed the School of Law, the University of Hawai‘i Press, ROTC, the University Planning Offices, Population Genetics Laboratory, Campus Security, Special Education, and the School of Architecture.

During this period, “teach-ins” grew increasingly in universities throughout the country. Opposition against compulsory military conscription caused students to participate in anti-war protests. The United States involvement in the Vietnam War was widely condemned. In 1967, a dozen students set fire to their draft cards on the Manoa campus. The following year, the Associate Students of the University organized a “free university” discussion on the Vietnam issue. For a short period of time, a large crowd of students that camped in the courtyard, inside the building, and hung a banner renaming it “Liberation Hall” occupied Bachman Hall. War protests continued into the early 70s.

Meanwhile, the university continued to expand. In the late sixties, Hamilton Library Phase I was constructed, adding a new graduate library to the campus. The following year, Moore Hall was completed at the corner of Maile Way and East-West Road. At the same time, 5 acres of property formerly owned by the Pineapple Growers Association, next to Andrews Outdoor Theatre, was acquired. Kraus Hall, formerly part of the Pineapple Research Institute, also became university property.

In 1970, the Regents approved president Cleveland’s proposal on “Controlled Growth” for the University system due to an economic slow down. Despite this initiative to control expansion, programs continued to be added to the Mānoa Campus. New buildings were still constructed at a remarkable pace. On Maile Way, St. John’s Plant Science Laboratory, the Business Administration complex, and Porteus Hall arose in the early 1970s adding to the diverse building styles on-campus. In the Makai campus, Agricultural Engineering, Pope Laboratory, and the Biomedical Sciences building were also constructed around the same time. Closer to Dole Street, Holmes Hall and a much needed 5-story parking structure developed as well. Campus Center, constructed in 1973, added a new place for students to hang out in, since Hemenway Hall no longer could support the growing number of students. The Art Building construction in 1975 brought upon a questioning of the value of historic buildings, as it replaced the old Gilmore Hall that had symbolic meaning in its dedication to the first University president. “The Astronomy Institute (1975), Sakamaki, the new Gilmore, and Hale Noelani (1977); Hale Wainani (1978); Korean Studies (1979); Marine Sciences,“ Sherman Laboratory and the Law School Building (1985); and Murakami Stadium (1987) were the last additions during that era.

16 Kobayashi, 112.
17 Kobayashi, 113.
18 Kobayashi, 114.
Figure 90: Campus physical development from 1970-1979.
In the late 70s and early 80s, issues arose with rapid construction of new buildings. Leaks, structural cracks, asbestos, poor air-conditioning systems, and in some cases structural integrity of buildings caused the need for extensive repairs and renovations. In addition, the University’s energy bill also rose to profound heights with the extensive use of air conditioning systems. The educational experience of the campus became challenging to university students and teachers as noise and dust pollution made it difficult for them to focus. Crime and vandalism increased as well, in the sixties, seventies, and eighties due to the accessibility of the university’s premises. Theft and graffiti were key concerns that eventually led to the use of protective crates on building facades. Issues of safety also arose with increased cases of rape. The design of the campus environment became a major concern in light of all these issues.

Figure 91: Map of the University of Hawai‘i at Mānoa in 1983 (Courtesy of University Relations, University of Hawai‘i at Mānoa).

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19 Kobayashi, 116.
Figure 92: Campus physical development from 1980-1989.

Buildings Not Shown:
- Mauka Campus Buildings
- Off-Campus facilities

1. Mall area & outdoor basketball/volleyball courts (1980)
2. Physical Education / Athletic Complex Phase I (1981)
3. 5-Level Parking Structure (1981)
5. Law School Library (1982)
8. Law School Building (1985)
9. G. Donald Sherman Laboratory (1985)
11. Softball Field with restroom facilities (1988)
5.6. Long Range Development Plan and Post Modernism

In 1987, a Long Range Development Plan was commissioned for the University of Hawai‘i at Mānoa campus. This document was to provide an “organizing vision for the campus and to guide subsequent development in a manner so as to address and correct the deficiencies which were apparent after decades of unplanned growth.” It was approved by the Board of Regents that same year and has since served as a guiding document for campus development. The main concept defined in this plan was that of a “vital urban setting.” It proposed a transformation of the existing commuter-based campus into a pedestrian-oriented environment. Existing roads and parking facilities on-campus would be removed and placed at peripheral locations. This change would allow for the introduction of more landscaped areas and public spaces. Additionally, new facilities would be designed according to established criteria that add to the desired character, density, and programmatic needs.

Since the establishment of the 1987 Long Range Development Plan, the addition of new buildings for the university slowed down drastically. Growing concerns for energy efficiency and environmental responsibility in design that started in the 1970s with the Environmental Movement to the present moment in history led to technological innovations to enhance building performance. The 1980s and 1990s were also a time of renewed interest in regional architecture in Hawai‘i. Post Modernism became a fashionable trend during these times that influenced the design of several new structures. Also important to consider is the lack of available space for new structures due to campus

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expansion in previous years. An update to the Long Range Development Plans in 1994 allowed for refinement in the plans to ensure functional and aesthetic appropriateness.

After a few years of construction, Paradise Palms Café and Stan Sheriff Center were finally completed in 1994. These new permanent structures were the first to be completed in the 1990s. Paradise Palms Café, with its pitched roof structures that function as skylights for interior spaces, is reminiscent of the Hawaiian vernacular style developed by C.W. Dickey. Its use of new materials to express a regionally specific historic building typology is a technique common in Post-Modernism. Also of value at this time period is the development of advanced technologies and modernization of the built environment. The Pacific Ocean Science and Technology (POST) building and Agricultural Science Facility built in 1995 are both technologically evolved buildings. They embody purely modernist traits with clean lines and rectilinear simplicity in design that shares little to no relation to its surrounding context.

In 1996, the Queen Liliuokalani Center for Student Services, the Architecture Building, and Phase II of the parking structure was built. The first of these has a distinct presence on its site. Large concrete trellis lanai area surrounds the front and interior courtyard spaces. This building, dedicated to the late Queen Liliuokalani, embodies unique regional qualities expressed in abstract modernist detail. Its lack of historically referential content enables this building to be interpreted as a distinctive edifice. The Architecture Building on the other hand is clearly a Post Modernist structure. Its use of neoclassical architectural detail to blend with the architectural character of the historic Hawai‘i Hall Quadrangle implies a sense of permanence. However, the integration of a parking lot beneath and its lack of a clearly defined entrance facing University Avenue have made this building the subject of scrutiny by students and faculty that use it.

Figure 94: Queen Liliuokalani Center for Student Services (1996)

Figure 95: The Architecture Building (1996)
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<tr>
<th></th>
<th>Building Name</th>
<th>Year</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Army ROTC Building</td>
<td>1992</td>
</tr>
<tr>
<td>2</td>
<td>Trailers L, M, N &amp; P</td>
<td>1992</td>
</tr>
<tr>
<td>3</td>
<td>Paradise Palms Cafe</td>
<td>1994</td>
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<tr>
<td>4</td>
<td>Stan Sheriff Center</td>
<td>1994</td>
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<tr>
<td>5</td>
<td>Pacific Ocean Science &amp; Technology</td>
<td>1995</td>
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<tr>
<td>6</td>
<td>Globalization Research Center</td>
<td>1995</td>
</tr>
<tr>
<td>7</td>
<td>Environmental Protection Facility</td>
<td>1995</td>
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<tr>
<td>8</td>
<td>Dance Building</td>
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<td>Queen Liliuokalani Center for Student Services</td>
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</tr>
<tr>
<td>11</td>
<td>Architecture Building</td>
<td>1996</td>
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<tr>
<td>15</td>
<td>HECO Substation</td>
<td>1998</td>
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</tbody>
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Buildings Not Shown:
- Mauka Campus Buildings
- Off-Campus facilities

Figure 96: Campus physical development from 1990-1999.
The Center of Hawaiian Studies, built the following year, is also a Post Modernist construction. Its roof structures, building material, architectural detail, and integration of building envelope into the site have clear referential characteristics of ancient Hawaiian architecture and concepts. The taro patch and Hawaiian Hale that is maintained on the property, also add to this nostalgia for the past. Although the building materials are modern, the architectural detail gives a sense of Hawaiian culture.

![Figure 97: Kamakakuokalani Center for Hawaiian Studies built in 1996.](image)

5.7. Towards Sustainability

Recent developments such as the John A Burns School of Medicine in Kaka’ako, the New Frear Hall (LEED Certified), C-MORE Biomedical Building Expansion (LEED Platinum), the on-going Campus Center Recreation Expansion, the future New Information Technology Center, and the first Net-Zero Energy Renovation of Kuykendall Hall clearly express the ambition of technological progress. Energy efficiency, performance-oriented design, and environmental sustainability are key buzzwords that today embody the endeavor of being at the forefront of architecture. In an era of Star Architects, it is interesting to see how the architectural fabric of the University of Hawai’i continues to evolve. Still there exists a challenge amongst designers to continue to pay homage to the past while moving on into the future. The pitched roofs of John A. Burns School of Medicine give clear reference to the historic vernacular building typologies of Hawaii. Campus Center Recreation expansion uses a different approach, in its integration of the neo-classical buildings of the Young Engineering Quadrangle into its building envelope. Both developments preserve historical content that has symbolic importance to the University of Hawai’i and its context, while also pushing the boundaries of innovation into the next century.
The next step in campus planning is an ongoing effort by the University of Hawai‘i’s Environmental Laboratory. Research is continually evolving of the latest software that assesses building performance and energy efficiency. Spatial surveys and Building Information Management systems are being used to gain accurate data of existing conditions of campus facilities. Upcoming projects such as the future Net-Zero Energy Renovation of Kuykendall Hall are being developed though research and collaborative testing of ideas with other institutions. Through its ongoing research and development the University of Hawai‘i will be at the forefront of campus planning and architecture.
Figure 100: Campus physical development from 2000 to present.

7. University Elementary School Portables 17. I.T.S. Bilger Hall Addition Phase II (On-going)
   1-4 (2005) 18. Gartley Hall, Renovation (On-going)

Buildings Not Shown:
- Mauka Campus Buildings
- Off-Campus facilities
5.8. Summary of Historical Analysis

The University of Hawaii at Mānoa experienced several periods of development, separated by major historic events. Trends in campus design and planning, architectural eras in Hawaii, and the changing nature of Honolulu’s social/political/economic/environmental context influenced its physical development. At first, the Beaux Arts planning traditions popular in U.S. mainland schools were utilized in the axial arrangements of campus buildings and green spaces. The neoclassical architectural detail created a unity and historical resonance in the campus identity at the time. Vernacular architecture in Hawaii, which was developing in the 1920s and 1930s, were also introduced in permanent and temporary structures on-campus. After a period of architectural dormancy during the Second World War, the university went through a phase of gradual development of modern vernacular building typology. Prime examples include Bachman Hall and Sinclair Library.

The building boom in the 1960s to the early 1980s drastically changed the nature of the university’s built environment. Rapid expansion of campus property and the introduction of individually distinctive buildings, without clear organizing principles of visual cohesion in mind, made the university a hodge-podge of building styles. A plethora of issues with new building designs resulted in expensive repairs and renovations. Meanwhile, upkeep of existing facilities fell to the wayside. In addition, the educational experience during the building boom was challenging as noise pollution and dust affected focus. Long range planning efforts in the 80s, 90s, and 2000s strived to remedy the issues caused by decades of unplanned growth. Clear visions and goals for the campus were made, in hopes that it would allow for effective planning of future development. In efforts to define the University’s distinctive identity, Post Modernism and new regional approaches to design were utilized in new structures. Campus planning and improvement efforts continue to evolve, with sustainable endeavors in mind.

The condition of the campus today is the result of over a century of expansion. This chronological overview of its physical development identified key periods of construction, contextual influences, and issues with the condition and functionality of newly constructed buildings. How people perceive of its constructed setting, varies amongst the diverse occupants that utilize the campus. In order to enhance the identity and experiential nature of the university, it is important to understand the impact of its physical condition. An investigation into user perceptions of the place hence is key in identifying ways to enhance the University of Hawai‘i at Mānoa’s sense of place.
CHAPTER 6
Experiential Nature of UH Mānoa – Qualitative Research

6.1. Nature of the Research

This section analyzes the experiential nature of the University of Hawai‘i at Mānoa campus. In order to gain a clear understanding of how people perceive of its physical setting, interviews and an online survey were administered to students, faculty and staff that utilize the campus environment. Inquiries concerned the campus’ use, legibility, functionality, accessibility, and spatial and aesthetic qualities. The intent of this research approach was to gain qualitative and quantitative data that can be utilized to assess user perception and use of the campus physical setting. Demographic data, also accumulated in survey responses, determined the applicability of research outcomes to the overall campus environment. A thorough assessment of campus members’ perceptions of the physical setting of the University of Hawai‘i at Mānoa had not been conducted until this point. Since this research endeavor involved data collection and analysis of information from existing users of the campus setting, its outcomes brings new information to the field of university design that deals with user perceptions of this campus, the institution it represents, and its regional setting. This research adds to the conceptual framework of which defining principles to enhance the University of Hawai‘i’s “sense of place” is defined in Chapter 8.

6.2. Research Methods

Research methods utilized in this qualitative study include interviews and surveys. The use of human subjects for this investigation required the review and approval of proposed research methods from the Committee on Human Studies (CHS) at the University of Hawai‘i. Specific aspects of the research for their review included objectives, research methods, nature of involvement of human subjects, risks and benefits, safety, confidentiality, and methods of recruitment for participation and gaining participant consent. These factors determine whether the research needed to be carefully monitored, allowed, or eligible for exempt status from the Institutional Review Board (IRB).

6.3. Interviews

Interviews were conducted to establish the basis of inquiries to be included in the online survey. This method of data gathering involved one-on-one conversations with campus users, who were approached in main gathering areas at the University of Hawai‘i at Mānoa campus. Selected participants were asked questions about their perceptions and experience of the campus environment; its functionality, use, legibility, spatial quality, and relationship to the surrounding context; and suggestions for campus improvement. Human subjects were selected that were over the age of 18 years old, either male or female, and had preferably utilized the University of Hawai‘i campus for a period of at least 6 months. Interviews were conducted for a period of two weeks in October 2011. Individual interviews with subjects lasted between 15-20 minutes.
Over that two-week period, vital information regarding the content of further inquiries to be made, language of research questions to users, value of the research content, and future use of data were uncovered. It was found that campus users, not trained in architecture or planning, rarely reflect upon the environment of which they conduct their daily activities. The purpose of the research was to uncover the nature of the campus experience and the environmental qualities that people respond to. In order to get this type of information, questions would have to be carefully chosen and formatted so that people of various backgrounds could comprehend what is specifically being asked. This would then allow them to respond with answers that are pertinent to the research. In addition, the data gathering technique would require the participation of a sizable sample of campus users from a variety of backgrounds, that relate proportionately to the demographics of the university. Research findings could then be utilized to assess how the campus is generally experienced. An alternative research method, that inevitably became the primary source of qualitative and quantitative data, was an online survey.

6.4. Online Survey

In the weeks following the final interviews, the online survey was developed. It consisted of 23 questions that were either multiple choice or open ended (Ref. Appendix B). The sequence of questions, format, language, type and selection of inquiries, consent information, and method of distribution were all key issues resolved in the process. An online survey distribution network known as Survey Monkey was the research tool used to create the online survey. It provided a site of which survey questions could be viewed, answered, created, modified, and distributed to various recipients. Furthermore, the site also compiled and analyzed data, allowed access to user responses in real time, enabled modifications to the survey if needed, and provided options for data retrieval and creation of charts and diagrams to communicate research results. Inquires were formatted and selected to optimize the use of website resources, while providing pertinent information to the study. Open-ended questions however could not be entirely analyzed through the online survey tool. Those responses were reviewed and analyzed by the researcher.

The distribution of the online survey to the desired research participants was another challenge. In order to get a sizable sample of university campus users to participate, a method of sending information to them to encourage their participation, provide consenting information, and allow access to the online survey had to be conceived. Since the research involved a thorough analysis of the university in terms of how people experience, utilize and perceive of the campus environment and institution it represents, there was a lot of interest from the University of Hawai`i at Mānoa Office of Physical, Environmental, and Long Range Planning department in enabling the mass-distribution of the survey to the University of Hawaii community. After a three-week period of coordinating with the department regarding the contents of the survey, a final draft was conceived as well as a method of distributing it to all students, staff, and faculty of the University of Hawai`i at Mānoa campus. Prior to its distribution, all contents and procedures involved in the study were sent in an updated proposal to CHS and later approved to allow it to legally take place. As of 6am on Saturday, October 29, 2011, the survey was distributed in an email to all students, staff, and faculty of UH Mānoa.
After a two-week period, survey responses were collected from SurveyMonkey.com for analysis. The distribution of the survey proved a success as the responses until that point totaled to 655 participants. A plethora of qualitative and quantitative data resulted that allowed for an analysis of the campus experience based on user responses. Demographic data, campus use, functionality, perceptions of environmental conditions and their impact on human interaction, behavior, comfort, and identity; likes and dislikes of the campus environment and amenities offered; as well as desired improvements and physical changes to the campus were revealed in survey results.

6.5. Demographics

The demographics of the survey participants are important in the study as it determines the generalizability of data collected to represent the overall campus experience from the user’s perspective. Accordingly, a series of questions were asked to identify participants based on their own personal background. The information provided allows for an understanding of survey participants based on demographic proportions. Inquiries included the participant’s association with the university (Figure 101), gender (Figure 103), geographic origins (Figure 105), and age range (Figure 106). This data was then compared to the latest demographic figures of the University of Hawai’i population. The Fall Enrollment Report: University of Hawai’i of Fall 2010,\(^1\) last updated on July 2011, provided relevant information regarding student demographics. Employee data, included in the calculations of faculty and staff headcounts, are from the University of Hawai’i at Mānoa Employee Profile: Academic Year 2010-11.\(^2\) Since survey participants included undergraduate students, graduate students, faculty, and staff, demographic comparisons could only be done with available data that is common between these four groups. Available employee data was limited to type of employment, total headcounts (Figure 102), and headcounts by gender (Figure 104). Accordingly, figures 101-104 shows the relationship of participants in the study to the actual population of UH Mānoa in Fall 2010. Although the relative proportions are not exactly the same, there is a common pattern between the data provided.

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Figure 101: Survey Participants - Headcount

Figure 102: 2010 UH Mānoa Population – Headcount
Figure 103: Survey Participants - Headcount by Gender

Figure 104: 2010 UH Mānoa Population - Headcount by Gender
UH Mānoa participants come from a variety of backgrounds. Figure 104 shows their geographic origins. According to the “Fall Enrollment Report: University of Hawai‘i Fall 2010,” students from Oahu account for 60.4% of the student population of UH Mānoa (43.2% of the total university population). Neighbor island students take up 10.2% of the university’s student population (7.3% of the total university population). These figures relate to survey participant demographics. However, U.S. mainland students only account for 18.5% of the student population (13.2% of the total university population), while students from foreign countries take up 7.3% of the student population (5.2% of the total university population). There were proportionately more student participants from the U.S. Mainland than the actual population. However, the addition of staff and faculty geographic origin information would provide a much clearer understanding of demographic proportional relationships.

![Figure 105: Survey Participants - Geographic Origins](image)

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Information regarding the age of survey participants reveals an interesting relationship to the actual population of the university. According to the “University of Hawai‘i at Mānoa Headcount Enrollment by Educational Level Fall 2010” document, created by the Mānoa Institutional Research Office, the following figures are the average ages of UH students:

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Average Age</th>
<th>Percentage of Student Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classified Undergraduate</td>
<td>22.2</td>
<td>67%</td>
</tr>
<tr>
<td>Freshmen</td>
<td>18.2</td>
<td>23%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>22.2</td>
<td>44%</td>
</tr>
<tr>
<td>Senior</td>
<td>24.9</td>
<td></td>
</tr>
<tr>
<td>Classified Graduate</td>
<td>31.7</td>
<td>28%</td>
</tr>
<tr>
<td>Masters</td>
<td>31.0</td>
<td>16%</td>
</tr>
<tr>
<td>Doctoral</td>
<td>34.8</td>
<td>8%</td>
</tr>
<tr>
<td>First Professional</td>
<td>27.4</td>
<td>4%</td>
</tr>
<tr>
<td>Other Grad</td>
<td>34.2</td>
<td></td>
</tr>
<tr>
<td>Unclassified</td>
<td>30.8</td>
<td>5%</td>
</tr>
</tbody>
</table>

Table 1: Average Age of Students at UH Mānoa: Data compiled from the “University of Hawai‘i at Mānoa Headcount Enrollment by Educational Level Fall 2010” by the Mānoa Institutional Research Office
In considering the relatively high proportion of undergraduate student participants in the study and the average age of individuals in the undergraduate levels at UH Mānoa, there is a clear correlation in data shown in figures 101, 106 and 107. It may be assumed that the relatively high proportion of participants in the 36 years and over categories are a combination of graduate students, staff, and faculty. Figure 106, a diagram that shows the overall extent of the user’s experience with the university, further emphasizes this point.

![Bar Chart: How long have you been coming to the university campus grounds?](image)

**Figure 107: Survey Participants - Extent of UH Mānoa campus experience**

The wide range of experience with the campus of survey participants gives clue to the variety of responses in evaluating the experiential nature of the campus environment. Age, geographic origins, and occupational differences add to the diversity of user experiences. These population characteristics indicate a degree of generalizability of the survey results due to the collective diversity of the population sample.
6.6. Commuter Centric Campus

The University of Hawai‘i at Mānoa is primarily a commuter campus. Students, faculty and staff utilize the campus grounds mostly during the daytime hours. Figure 107 shows the hourly use of the campus from survey participants. On-site facilities have limited operational hours consistent with this trend. According to an article on the US News website about the University of Hawai‘i at Mānoa’s national ranking, a total of “23 percent of the students live in college-owned, -operated, or –affiliated housing and 75 percent of students live off campus.” As a result, the majority of campus users commute to the university. The campus facilities provided in response to transportation demands, circulation patterns and entry sequences impacts how people experience the campus setting.

![Bar chart showing daily use of the University of Hawai‘i at Mānoa campus.](image)

**Figure 108: Campus Daily Use**

People arrive to the university by various means of travel. Figure 108 shows the proportionate difference in the amount of people whom use each mode of transportation. Automobiles are used the most at 45.8 percent. That is nearly two thirds of the amount of

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people whom live off campus. Riders of TheBus account for 18% of the university’s population. The local bus system provides transportation service that brings people to the campus from various regions of the island. Rainbow Shuttle provides a supplementary transportation service that takes campus users to Moili’ili and Mānoa Valley. Mopeds and bicycles are used by 11.5 percent of campus users. These modes of travel are used for short distances. Additionally, 23.3 percent of pedestrians walk or skateboard to school. These figures imply that a large amount of campus users live on or near the university. However, there are significantly more commuters that drive or ride the bus system from farther regions.

![Figure 109: Survey Participants - Primary mode of transportation](image)

The existing layout of the campus attempts to reinforce the automobile use trend. There are vehicular parking and circulation routes throughout the campus grounds. Figure 109 shows the location of all visitor and permit parking on campus. Surface parking is primarily used throughout the campus. It is an inefficient use of space considering the high demand for parking. According to the Parking Supply and Demand Analysis of the 2007 UH Mānoa Long Range Development Plan (LRDP), there is a significant parking deficiency. Parking stalls in demand exceeded the supply by 1,418 in 2007. The current parking stall supply has not improved much since then.

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Campus users are forced to seek alternative locations to park their vehicles. Expansion and introduction of parking structures would address the current deficiencies by concentrating vehicle storage to strategic locations and enable redevelopment of open spaces and pedestrian pathways within campus grounds.

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Vehicle circulation routes on campus are inefficient in the current layout. Campus Road and Correa Road for example are two interior streets that lead to dead end areas (Figure 111). Campus Road terminates at the intersection of University Avenue and Metcalf Street. Concrete pillars block it. This configuration confuses visitors due to its relationship to the main intersection as being a key point of entry. The street is primarily used for parking and vehicular access to service areas south of Hemenway Hall. Correa Road has similar issues. Its termination point is at a closed off round-a-bout. Vehicles are not able to circulate throughout the constructed vehicular pathway. Instead, one has to turn back around. As a result, the round-a-bout area is not used for vehicular circulation. It obstructs the central pedestrian pathway from the parking structure. A more efficient use for both streets would be as pedestrian malls with bike lanes due to the high volume of pedestrian and bicycle traffic.

The university also provides areas and facilities for temporary storage of bikes, mopeds, scooters and motorcycles (Figure 112). Metal bicycle racks are situated throughout the campus, along pedestrian pathways and near campus roads. Bicyclists
ride on both vehicular and pedestrian routes. There are no separate pathways for bicyclists on campus. Additionally, the lack of a continuous bike lane along University Avenue makes it dangerous to travel on that street. Survey participants requested safe bicycle lanes and routes that allow for efficient circulation through the campus and along main streets. As for motorcycle, scooter and moped traffic, these motorists travel on campus roads and park in spaces along sidewalks and designated parking areas.

Figure 112: Moped/Scooter/Motorcycle Parking and Bike Network. Data gathered from the O‘ahu Bike Plan:
The university encourages use of public transportation as well. TheBus (Figure 113) provides service to the campus. There are bus stops along University Avenue, Dole Street, East West Road, Maile Way and Metcalf Street. All students of the university are issued a U-Pass after registration and payment of tuition and fees. It functions as a bus pass for use on a semester basis. Bicyclists also benefit from this amenity. There are bike racks integrated into the city buses. This allows bicyclists to take their bikes with them on far journeys. The Bus is hence a critical transportation system for campus users.

The university also has its own transportation system called the Rainbow Shuttle (Figure 114). Pickup spots at the campus include locations along University Avenue, Maile Way, Varney Circle, East West Road, Dole Street and near student dormitories and

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8 Department of Transportation Services, City & County of Honolulu. O'ahu Bike Plan: A Bicycle Master Plan (Honolulu, HI: Department of Transportation Services, 2012), 5-26.
apartments located south of Dole Street. Students, staff and faculty use this transportation option to quickly travel to other regions of the campus. There are also pickup stops in Mānoa Valley and near Mānoa Marketplace. There are faculty housing and research buildings owned by the university in these locations. Pickup stops in Moi‘ili also connect campus users to the retail stores and parking areas in the adjacent community.

Figure 115: UH connection to The Bus and Rainbow Shuttle. Data gathered from TheBus system map B\textsuperscript{13} and UH System Shuttle Map.\textsuperscript{14}

Once commuters arrive at the university, they take various paths to their intended destinations. There are entry points designed with landmark features to identify it as an entrance. While other entry paths are informal or unintended. Figure 116 shows the top 5 entry paths taken onto the campus grounds and the percentage of campus users that take these routes. The entrances to East West Road, Maile Way and Campus Road are situated at key intersections. Accordingly, these locations receive a heavy amount of vehicular, bicycle and pedestrian traffic. Although Campus Road entry from Dole Street blocks vehicular access, it is still significantly used as an entry point. Also, the central pathway from the parking structure toward Campus Center gets a lot of pedestrian traffic from motorist parking in the main parking structure to the south. “Sinclair Circle” bus stop is also heavily used. Bicyclists and pedestrians that use public transportation arrive at this location.

1. Dole Street into East West Road (16.7%)
2. Main Parking Structure into Central Campus (13.3%)
3. “Sinclair Circle” Bus Stop toward Campus Center (10.5%)
4. University Avenue into Maile Way (10.1%)
5. University Avenue into Campus Road (6.4%)

**Figure 116: Diagram. Most frequently used entry points and routes.**
Another pattern emerged when analyzing the collective amount of entry paths taken from 5 regions of the campus setting (Figure 121). University Avenue and Dole Street regions account for all entry paths that originate from those streets upon pedestrian arrival to the school. The Central entry region refers to all paths taken that originate from campus parking lots, interior roadways in that area, East West Center housing and the College of Education area. Makai campus region consists of paths taken into the property from the neighboring communities to the south; pedestrian traffic that originate from the student dormitories and apartments; and commuter traffic for the main parking structure and surface parking lots in the area. Upper Central refers to entry paths from the neighboring community and faculty housing to the north of the central campus.

University Avenue receives the most amount of pedestrian movement at 33.6%. This relatively high proportion is rather peculiar when considering that the primary mode of transportation to campus is the automobile. Major campus parking lots are situated in locations along Dole Street and in the interiors of the campus. This percentage implies that a significant amount of campus users either come to campus from the adjacent community, park their cars in the neighborhood nearby, or arrive by bus along University Avenue.
Also evident is that the majority of the university’s population comes to the university to utilize the central campus. Pedestrian sidewalks along vehicular routes and suggestive entryways onto campus are the primary paths taken. However, what is also revealed in the diagram is that the majority of pedestrian pathways intersect with vehicular circulation areas. As highly utilized access points, a large portion of campus users navigate through parking areas and interior roadways to get to their destination. This experience of the campus, especially if it is someone’s initial encounter with the place, can be perceived in a negative manner.

The existing commuter centric layout of the campus is inefficient in its ability to address demands on its transportation infrastructure and especially has a negative impact on the pedestrian experience. Campus roadways and parking lots not only impede on pedestrian circulation pathways, but also fail to supply enough space to meet parking demands. Hence, the introduction of parking structures at locations along the perimeter of the central campus and expansion of existing parking structures would provide much needed parking for the university population and provide opportunities to enhance
pedestrian pathways and open spaces.

The bicycle network into the campus also has its deficiencies. There is a lack of connectivity of existing bike lanes and routes around the campus and no dedicated bike routes within it. An improvement to bicycle circulation routes needs to be made. The location and design of bicycle and moped / scooter / motorcycle parking facilities on campus is also important. Current storage spaces and metal racks are located along main vehicular and pedestrian circulation paths. In consideration for pedestrian safety, security measures to prevent pedestrian collision from bicycles or motor vehicles should be taken. The layout of pedestrian pathways, potential bike pathways and vehicular pathways need to be organized to avoid such incidents. Increased signage and restricted use of bikes or other vehicles in pedestrian areas would also greatly improve safety.

The entry conditions into the campus environment are especially critical to the institution’s identity. As a commuter campus, the majority of the population uses the university setting during the day. Areas and pathways of arrival and departure from the campus hence are heavily used and significantly impacts user perceptions and interactions with the setting. Significant improvements to transportation modes accommodations, pedestrian pathways, campus buildings and wayfinding features would greatly enhance the experience of the campus.
6.7. Negative Entry Experience

The conditions of entry pathways and outdoor spaces affects how people perceive of the campus setting. As discussed in the Commuter Centric Campus section, the existing layout of the campus has negative implications on the pedestrian experience. The inefficient integration of vehicular routes and surface parking in the central region impedes on wayfinding, pedestrian movement and limits the amount of open space on campus (Ref. Figure 110). This section identifies other aspects that contribute to the negative experience of entry into the campus setting. Survey participants were asked to identify their least favorite entry pathways (Figure 122) and explain their choices. The result of the study revealed the least popular entry paths and specific aspects of entry experiences that negatively impact user perceptions of the place.

1. University Avenue into Campus Road (10.2%)
2. University Avenue into Maile Way (7.2%)
3. Dole Street into East West Road (5.3%)
4. Varsity Street into Makai Campus (5.1%)
5. “Sinclair Circle” Bus Stop toward Campus Center (4.4%)
The entry route into Campus Road is considered the worst pathway into the university (Ref. Figure 123). Its lack of functionality, aesthetic appeal and distinct odor are the key concerns. This entry route received a lot of criticism due to it being a closed street, used for parking, instead of a clearly designed main entrance into the campus. As the fifth most frequently used pathway, this area receives a significant amount of pedestrian and bicycle traffic. The sidewalks, roadways and landscaping are in disrepair. Though, the most common complaint about this area is the distinct odor from the Skunk trees nearby. One third of the survey responses for this path concerned this smell. The lack of adequate lighting also raised concern for pedestrian safety at night.

Vehicular entry points and routes into Maile Way and East West Road received a significant amount of criticism from campus users. The majority of responses concerned vehicular and pedestrian traffic patterns and roadway conditions. These entry points are the primary vehicular access points to the central campus. Accordingly, there is a significant amount of traffic into these areas from various modes of transportation. Buses, Rainbow Shuttles, automobiles, bicyclists and pedestrians gain access at these locations. The roadways accordingly get a significant amount of wear from the heavy usage. As a result, the condition of the roads greatly impacts the experience of the setting. Traffic control, pedestrian safety and roadway maintenance were key concerns in these locations.

The Varsity Street entrance into the Makai region has aesthetic and safety issues. It is located near an underpass below the H1 Freeway. There are low-income housing
and temporary portables in the area. Many campus users describe this place as “ghetto.” The lack of adequate lighting at night, in combination with its unwelcoming aesthetic character, causes concern for safety. Improvements to lighting, landscape character and buildings in that region are highly desired.

Figure 124: "Sinclair Circle" Bus Stop (2013)

Figure 125: Pathway east of "Sinclair Circle" bus stop. There exist buildings with no clear function; poorly landscaped areas; deteriorating site furniture; stray cats and no signage indicating where you are on campus or where to go.

(5) “Sinclair Circle” Bus Stop toward Campus Center

The entry pathway from “Sinclair circle” bus stop and the outdoor areas to the east of it, are also unpopular. There is a general feeling of disconnect to the campus when entering into this area. Parking lots, poorly maintained sidewalks, dirty sitting space, poor landscape, stray cats, and temporary or abandoned buildings gives this place its unwelcoming character. It is the third most frequently used entry point onto campus. Yet there are no distinctive features or signage in this area to direct the pedestrian flow of traffic into the campus. There is much concern for the lack of functionality, aesthetic appeal and wayfinding features. This area is in need of improvement.
At a larger scale, University Avenue and the central region of the campus received the most amount of negative feedback. Figure 126 identifies the priority of campus regions in need of improvement. As the most frequently utilized entry area to the campus, University Avenue is also the most hated region. Per the previous discussion on Maile Way, Campus Road and “Sinclair circle” bus stop pathways, there are significant demands on improvement of the beauty, functionality and comfort in these areas. Additional concerns for this area include pathway cohesion, multimodal transportation accommodation and wayfinding. The discussion of the inefficiencies of the campus layout, in the Commuter Centric Campus section, describes the key issues in the central region.

The least favorite entry routes (Figure 122) are also heavily utilized access points (Figure 116). East West Road, “Sinclair Circle” bus stop, Maile Way and Campus Road
were amongst the top 5 selected. The proportionate amounts of campus users that enter at these locations add up to 33.7%. With the addition of the Varsity Street entry into the Makai campus, a total of 45% of the university’s population dislike their entry experience. As main access points to the campus, improvement of the quality of these environmental settings is critical.
6.8. Wayfinding

Wayfinding is a critical aspect in campus design. Ideally, buildings, pathways, landscape, signage and campus art are strategically organized and defined to enable people to orient themselves throughout the university grounds. The University of Hawai‘i at Mānoa campus however has deficiencies in its accommodation for wayfinding. Vehicular and pedestrian circulation routes intersect causing confusion amongst campus users. Signage is also lacking for building identification and wayfinding. Plus, the lack of distinctive outdoor gathering places and circulation paths, due to the presence of surface parking lots, keeps people from interacting with each other and enjoying the campus’ landscape. However, there are places in the university that people use as points of reference in navigating their way through the campus.

Figure 127: UH Mānoa – Top Landmark Buildings
Landmark buildings are prominent structures used for place identity. There are typically a few key buildings within a campus that are signature features of an institution. The diverse architectural styles used throughout the UH campus however diminish the effect of landmark buildings in establishing a distinct institutional identity. Instead, there are buildings (Figure 127) and regions (Figure 128) within the campus that have distinct identities of their own.

Hawai’i Hall for example is the most well known building of the campus. Its location at the historic central axis of the campus; neoclassical style in relation to other buildings in the quadrangle and lush landscape facing Varney Circle, enhances its symbolic presence and identity. Survey participants described Hawai’i Hall and the quadrangle as a place that embodies “a sense of history” that is “representative of UH Mānoa” and Hawai’i. Campus users have also noticed the grounds and building upkeep of this area. Care for this region expresses its importance to the institution.

1. Hawai’i Hall Quadrangle (32.9 %)
2. McCarthy Mall (30.2 %)
3. East West Center (27.2 %)
4. Athletic Complex (5%)
5. Center for Hawaiian Studies (4.6 %)

Other facilities are known for their use, scale and cultural distinction. Sinclair Library and Hamilton Library are popular due to their academic functions. Both libraries
are different from each other, which causes much comparison. Campus Center is the hub of student activity. It is known for its many amenities and social spaces. The Center of Hawaiian Studies and Korean Studies Center are both distinctive as well and referential to specific cultures. These buildings are unique landmarks that enable people to identify where they are on campus according to their proximal location to these places.

There are also regions of the campus with distinct identities (Ref. Figure 128). Hawai‘i Hall quadrangle is known for its historic resonance. McCarthy Mall is also quite popular. It is one of the main pedestrian pathways through campus. Campus users describe this place as having a “college campus feel.” Large trees provide shade for pedestrians throughout the day. East West Center is also a signature region of the campus. It is recognized for its distinct collective architectural language and pristine landscaping. This part of the campus is well maintained and welcoming. The athletics complex is also a prominent region as well. There are a variety of athletic activities and events to take part in. The Center for Hawaiian Studies also has its own presence. Its architectural character and landscape features are referential to the native Hawaiian culture. These areas are used by pedestrians as places of reference when orienting oneself through the campus.

There are also art pieces, unique trees and other site features that distinguish specific areas of the campus. Varney Circle for instance has a water fountain that marks the symbolic center of campus. It is used as a key point of reference for pedestrians. The Founders Gates at the intersection of University Avenue and Dole Street are also landmarks of great importance to the university. These mark the pedestrian and vehicular gateway to the campus. However, the scale of these gates, in relationship to University Avenue, diminishes its presence in the area. Art pieces are also prominent in the campus. A few notable permanent installation pieces are the ‘Gate of Hope’ sculpture near the East West Road entryway, ‘The Fourth Sign’ sculpture to the north of the Art Building and the Thai Pavilion on the East West Center campus. These features of the campus setting are used by pedestrians as points of reference when orienting themselves throughout the campus.

Figure 129: 'Gate of Hope’, painted steel sculpture by Alexander Liberman, 1972.

Figure 130: 'The Fourth Sign', painted steel sculpture by Tony Smith, 1976.
There is a great desire among campus users for improvements to the campus for wayfinding. Figure 131 shows proportionately, the desire for specific features to improve upon wayfinding capabilities. Campus map boards are the highest in demand. Although a few map boards exist around campus, most are faded and unreadable (Ref. Figure 132). As an alternative, several responses call for a phone application that allows people to navigate their way throughout campus grounds by easily accessible digital maps. This technological innovation in wayfinding would allow for an alternative solution to the problem. However, it fails to address the physical deficiencies of the campus setting.

Signs are the second highest wayfinding feature in demand. More than half of the responses in the “other”
category elaborated on the importance of signs. In particular, there is great demand for the name of buildings to be clearly visible at main entrances. This would allow for people to easily identify the buildings they utilize. Other ideas involving signs include the creation of big funky street signs grouped at central locations that point to specific buildings; signs along pedestrian paths, near the entry points of buildings, that point to the identified structure; and the creation of unique building signs by students and faculty. There was also disappointment expressed regarding the University of Hawai’i sign near Bachman Hall (Ref. Figure 133). Its lack of visibility and prominence is perceived in a negative light. There exists a desire to improve this physical feature as it plays a vital role in campus identity.

Figure 133: Barely visible signage on planter wall to the west of Bachman Hall.

Many survey participants desire improvements to the layout of the campus. Figure 131 indicates that 15.5% of students, faculty, and staff desire larger central plazas with distinctive elements. This sentiment was also shared by all of the individuals that were involved in the interview portion of this study. Accordingly, there is a high demand for McCarthy Mall to be extended into the area where Varney Circle currently exists. The existing roadway, used primarily for parking, interrupts pedestrian movement and detracts from the beauty of the surrounding landscape areas. Most interior vehicular circulation pathways are perceived in a likewise manner.

The existing layout and physical features of the campus have positive and negative aspects in regard to wayfinding. On the one hand, the varied forms of architecture, art pieces and other landmarks enable people to orient themselves throughout campus based on the uniqueness of these aspects in the setting. Once one becomes familiar with the setting, these features are effectively used. However, for those whom are new to the campus setting or are returning after several years away, improvements to the legibility of the campus is needed. The high demand for signage on buildings, map boards and improved outdoor spaces shows evidence of this need. Plus, when survey participants were asked how frequently they used campus maps to find their way around campus, 43.8% of responses indicated that they use it at the beginning of the semester; 17.8% use campus maps monthly; 3.5% use it on a weekly basis; and 34.5% do not use campus maps at all. According to these proportionate figures, more than half of the university population use maps to find their way around campus. This trend indicates that there is a need for improvements to enhance wayfinding features in the campus setting.
6.9. Positive Campus Experience

The University of Hawai‘i campus has some positively perceived environments in its physical setting. Survey participants were asked to identify their favorite points of interests as well as indoor and outdoor places that they liked. Points of interests or nodes are places that receive a significant amount of use by pedestrians and have a distinct ambiance in its physical and social setting. For example, McCarthy Mall is recognized as a main pedestrian thoroughfare and social setting. Large trees and planters are situated along the central pathway, providing shade and places for people to sit and socialize. From this pathway, campus users have access to buildings alongside it, lawn areas and a couple of food vendors. These aspects make this place one of the most favorable places on-campus. Adversely however, it is also one of the most disliked places due to the poor condition of pathways, planters and buildings. The following sections discuss the types of ‘Favorable Campus Environments’ and identify places selected as ‘Favorite Place’ and ‘Points of Interest’. There are also insights into preferable environmental qualities for a variety of campus uses.
6.9.1. Favorable Campus Environments

Favorable outdoor places in the campus setting take on a variety of formal and spatial qualities. Figure 135 identifies key types of outdoor places people enjoy. These include landscape regions (large landscaped open areas), scenic spots (places with a variety of plant life to view), courtyards (outdoor areas, usually with seats and/or tables, that are enclosed by one or multiple buildings), sitting spots (popular outdoor areas shaded by architectural features) and athletic fields. Each of these types of places serves a specific function in terms of the experience of the setting. This section discusses the definition of each type and identifies the most popular ones.

Figure 135: Diagram showing all areas selected as 'Favorite Outdoor Places' and 'Points of Interests'.
Landscaped regions or open spaces are relatively large areas of the campus that people identify as embodying the “college campus feeling.” Like the central facilities (libraries/student center/dining facilities) of the campus, these areas are places that the majority of people on-campus use on a daily basis. In terms of wayfinding, these spaces were identified by survey participants as key regions that people use to gauge the relative location of their intended destination points on campus. Pathways in and out of these places connect people to other landscape regions and campus facilities.

The character and functionality of open spaces are especially important in the experiential nature of the campus setting. Building facades, outdoor seating, pathways, and landscape features define the perceptive boundary condition of these places. The most popular open spaces and landscape regions are McCarthy Mall (Figure 136), East West Center campus, and Hawaii Hall Quadrangle (Figure 137). Of these places, McCarthy Mall is the only one selected as one of the least favorite places on-campus. This is due to the poor conditions of pathways and incoherent building facades. In comparison, the East-West Center campus and Hawaii Hall Quadrangle received positive responses due to the cohesive nature of the building designs, upkeep of facilities and grounds, and beauty of landscape features. Though lack of seating was a common concern for all of these places.

Scenic spots are another type of outdoor place on campus. They are specific locations that contain a variety of plants that are strategically combined and situated for aesthetic purposes. The most popular choices of this type of place are the surrounding outdoor environments of Sinclair Library and Paradise Palms; the area between Hawaii Hall and Varney Circle; the Bamboo courtyard in the Art Building; and the East-West Center’s Japanese Garden. There are fundamental differences amongst these places
in terms of the degree of user interaction with landscape features. The outdoor areas associated with Sinclair Library, Paradise Palms Cafe, Hawaii Hall, and the Art Department are designed to be viewed from an exterior perspective. This means that pedestrians are only partially surrounded by landscape features, which limits the interaction of the user with the setting. The Japanese Garden on the other hand, was voted as the most popular outdoor environment. The primary difference from this place to the others is the nature of its boundary condition. Accordingly, the articulated landscaped environment of the Japanese Garden completely surrounds the users within the space. It has been described as an oasis or place of escape from the campus setting.

Courtyards are outdoor environments that are physically bounded by site walls and the facades of one or more buildings. This type of place focuses the campus user’s attention toward the enclosed space created. Popular examples of these include the courtyards of Kraus Hall (Figure 138), Hemenway Hall, Bilger Hall, Shidler College of Business (Figure 140), and the Sustainability Courtyard (Figure 139). Fundamental differences of these include use, functionality, boundary definition, and interaction of users of the space with the natural surroundings. Kraus Hall courtyards, like the bamboo forest of the Art Building, also serve as scenic spots. However the nature of its enclosure, as defined by walls and building envelopes on all four sides, classifies it as a courtyard. The courtyards in Hemenway Hall, Bilger Hall and Shidler College of Business are focused on activity rather than landscape features. Accordingly, there are outdoor places to sit, eat, socialize, and study during the day.

Sitting spots are places where people enjoy sitting for leisurely activity. An ideal campus would provide a variety of places for people to sit and interact with each other and
the surrounding environment. The University of Hawai‘i at Mānoa campus however offers few places to sit outside. There has been much demand from campus users for more places to sit and gather. According to the diagram of Figure 135, the most popular places to sit correspond with identified favorite courtyards and covered patio spaces. In addition, East-West Center’s Japanese Garden and the steps of Queen Lili‘uokalani Student Services Center and Campus Center are amongst the most favorite sitting spots.

Covered patio spaces are outdoor areas that are covered by architectural features overhead. The most favorite selected are Sinclair Library’s lanai spaces and the ground floor areas of Saunders Hall, Art Building, and Jefferson Hall (Figure 142). Each of these places has a different character according to the design of the building and surrounding environment. Sinclair Library lanais have unimpeded access to views of the campus and city to the south of its location (Ref. Figure 144). These spaces are conveniently accessible to campus users and provide outdoor places to study. The ground floor of Saunders Hall has recently been updated from an open-air passageway to a social setting with the addition of sitting space, tables, and a food vendor. Jefferson Hall is boldly designed with a cantilevered volume that provides protection from the elements as one reflects upon the beauty of the surrounding environment. Each of these building designs attribute to the indoor/outdoor lifestyle of the region.

Athletic fields are outdoor spaces used for activities involving sports. The location of these places in the institutional setting gives clue to the role of sports in the campus community. All sports facilities are currently in the Makai campus. This separation of sports facilities from the central campus has been perceived of in a negative light due to the inconveniences associated with having to walk a far distance downhill to get to such facilities and the perception of detachment from the central campus. In addition, the scattered layout of temporary buildings, poor condition of landscaped areas, and lack of adequate lighting at night have caused concern for safety and a questioning of the value of these places to the institution. In comparing the current layout of the campus to that of the first 50 years of its development, the role of sports in campus culture has become less visible and integral. Hence, there is a clear relationship of campus values and development decisions.

These six types of favorable outdoor campus environments play a significant role in the University of Hawai‘i’s sense of place. Honolulu’s tropical climate provides near ideal temperatures for people to enjoy outdoor settings. Campus environments that encourage the use of outdoor areas and cultivate the indoor/outdoor lifestyle in the islands enriches the regional identity for the campus. Figure 145 identifies the places selected as the top ‘outdoor environments’ and ‘points of interest’. Two notable selections are the East West Center’s Japanese Garden and McCarthy Mall. The Japanese Garden is known for its tranquil look and feel while McCarthy Mall has a more active social ambiance. All selections have unique attributes that give it its distinct presence, ambiance and identity.
Figure 145: Diagram showing the top favorite outdoor environments and outdoor points of interest.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Favorite Outdoor Environments</th>
<th>Percentage of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>East-West Center – Japanese Garden</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>McCarthy Mall</td>
<td>17.6</td>
</tr>
<tr>
<td>3</td>
<td>Kraus Hall – former well-kept condition of courtyards</td>
<td>10.8</td>
</tr>
<tr>
<td>4</td>
<td>Sustainability Courtyard</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>East West Center campus</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Table 2: Favorite Outdoor Environments

<table>
<thead>
<tr>
<th>Rank</th>
<th>Outdoor Points of Interest</th>
<th>Percentage of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>McCarthy Mall</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>East West Center – Japanese Garden</td>
<td>18.8</td>
</tr>
<tr>
<td>3</td>
<td>Sustainability Courtyard</td>
<td>8.8</td>
</tr>
<tr>
<td>4</td>
<td>Varney Circle</td>
<td>7.8</td>
</tr>
<tr>
<td>5</td>
<td>Hemenway Hall Courtyard</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Table 3: Outdoor Points of Interest
Indoor and outdoor environments selected as ‘Most Favorite Place’

Campus buildings are also positively experienced places. Figure 146 identifies the top 8 ‘most favorite buildings’ on-campus as well as all other selections of favorite places, indoor and outdoor. When asked what their favorite places were on-campus and why, survey answers varied from identification of one area or building to multiple places on campus. Almost every building on the UH property was mentioned. Specific indoor and outdoor areas were described in detail. Data collected from survey responses were compiled, organized and analyzed in a quantitative manner. This method on analysis enabled the development of statistical data describing the degree of significance of specific attributes to campus settings. The following section discusses key findings.
6.9.2. Preferred Environmental Qualities

In analyzing the collective qualities of all of the identified favorite places on-campus, key patterns emerged. Main categories of qualitative and functional aspects include: (1) Activity; (2) Aesthetics; (3) Amenities; (4) Comfort; and (5) Functionality. Campus environments, both indoors and outdoors, can be evaluated based on this criteria.

(1) Activity

Activity refers to the specific types of functions and human interactions that occur and the perceptive volume of activity in a place. University settings involve a broad range in human interactions and active functions. There are places to socialize, eat, study, shop, exercise, reside in, teach, work, learn, etc. The amount of each type of activity on a campus depends on the institution’s values and vision for the campus lifestyle. How an institution accommodates these aspects affects how its campus constituents identify with and perceive of its setting. The level of activity in a place also affects how people perceive of it. If someone were in a mood to socialize, places where a lot of people are engaged in conversation and leisurely activity would be desirable. On the opposite end of the spectrum, for someone whom prefers a quiet, contemplative atmosphere for studying or relaxation, places devoid of loud activity and people would be sought after. Hence, the amount and type of activities that occur in an environment affect user preference of for its use.

The most popular activities on the UH campus include dining, socializing, comfortable walks through campus, observation of scenery and local birds that occupy the campus, study and sitting. The degree of preference for each type of activity varies between indoor and outdoor settings. For indoor settings, the following statistical figures apply for activity preference: Study (36.5%); Socialization (20%); Dining (15.6%); Active places (6.6%); and Work (5%). In comparison, outdoor activity preference includes: Socialization (21.6%); Study (13.4%); Dining (11%); Leisurely walks (9%); Sitting (8%); and Active Places (8%). These statistical figures show how the degree of preference for each activity differs from indoors to outdoor places. It also reveals the fact that campus life and local life especially involves the use of both interior and exterior spaces for a variety of activities.

(2) Aesthetics

Aesthetics concerns factors that attribute to the beauty of a place or the appreciation of beauty. The top aesthetic qualities and conditions appreciated at UH include: scenic views, cleanliness, beauty, landscaping, trees and upkeep. Places that provide access to scenic views of landscape and/or urban settings are favorable for both indoor and outdoor environments. This was the top aesthetic quality mentioned for interior settings with 25.5% of responses concerning it. Cleanliness and beauty are also important. The degree of which an indoor or outdoor environment is clean and beautiful affects user preference for its use. East West Center’s Japanese Garden was selected as the most beautiful place on campus accordingly with 48% of survey responses in agreement. Additionally, beauty on-campus can be greatly enhanced by strategic
landscaping and tree planting. The condition of the existing campus landscape and buildings are both appreciated and criticized by campus users at UH Mānoa. There exists great concern for the upkeep and maintenance of campus grounds and facilities. Places that are well maintained like the East West Center campus, Bachman Lawn and Hawai’i Hall Quadrangle are highly appreciated for its noticeably well-maintained landscaping.

(3) Amenities

Amenities are desirable or useful features or facilities of a building or place. At UH Mānoa, these include services offered at campus facilities; specific types of facilities; and physical features that contribute to the functionality, aesthetic character and convenience of places on campus. For interior environments, the top preferences include: food (27.8%); Internet access (12.3%); computers (11.4%); access to electrical outlets (10%); drinks (7.3%); available services (6.5%); and books (5%). The degree of which these features are made available or are allowed to be used significantly impacts user preference of specific places. For example, Sinclair Library (17.9%) was ranked higher than Hamilton Library (16.4%) because people are allowed to drink and eat inside (Ref. Figure 142). Both libraries however provide a sufficient amount of the other listed amenities. In comparison, amenities preferred for outdoor settings include food (32%), drinks (20%), water features (20%) and gardens / scenic landscaping (8%). There is a considerable demand for increased variety and quality of existing accommodations and services on campus. Places with quality food, music, printing services, computer access, coffee, and/or supplies are amongst the desired options.

(4) Comfort

Comfort is especially important for all campus users. Qualities of comfort include privacy, spaciousness, thermal conditions, noise level, aroma, touch or feel, safety, ambiance, and lighting. Depending on the mood or intentions of the individual or group, a combination of specific traits appeal more than others. Plus, the degree to which specific traits are desired for an environment depends of the type of activities that occur in the place. Within campus buildings, the following are the top preferences selected: peaceful (31.7%); thermal comfort (24.4%); spacious (6%); comfortable seating (6%); privacy (5.1%); available amenities (4.3%); ambiance (3.6%); proper light quality (3.4%); and safety (3%). In comparison, top comfort preferences for outdoor areas include: peaceful (53.5%); thermal comfort (16.5%); privacy (8.6%); spaciousness (5.5%); and available amenities (7%). Thermal comfort and peacefulness are hence highly valued on campus.

(5) Functionality

Functionality refers to the quality of being suited to serve a purpose well. The majority of comments from campus users concerned the layout, availability and flexibility of use of seating and table space; study space options; hours of operation for campus facilities; access to electrical outlets; and available resources. Seating is very important for both indoor and outdoor environments. Flexible seating and table
arrangements allows for the ability to adjust the amount of available seating for groups of various sizes. It also allows for the transformation of the spatial layout to suit different purposes. This is true for classroom settings as well as a variety of social situations. For social settings, the availability of a variety of different types of seating makes a place more appealing. It gives people more options to choose from. Additionally, covered table seating is a desired amenity for outdoor areas. The frequent rainfall at the Mānoa campus and presence of birds in the campus trees make covered seating areas a necessary option. There is also a desire amongst campus users for longer hours of access to campus facilities. This is especially true for libraries and dining facilities for people whom study and work into the evening hours.

Any combination of these characteristics of a place evokes positive emotion, interaction, and identity. Figures 147 to 150 identify places where specific activities and functions are preferred and the qualities that are associated with those places.

Figure 147: Places Campus Members Dine At
Please indicate the extent to which the following environmental qualities make a place more appealing to Hang Out / Socialize at.

![Bar chart showing the positive qualities of social places.](image)

Figure 148: Positive Qualities of Social Places

Where on campus do you spend the most time Studying at?

![Bar chart showing the places campus members study at.](image)

Figure 149: Places Campus Members Study At
Please indicate the extent to which the following environmental qualities make a place more appealing to Study / Work in

- Cleanliness
- Privacy
- Views of beautiful scenery outside
- Natural ventilation from cool island breezes
- Shade (outdoor area)
- Flexibility in available seating
- Sense of security
- Light quality

Figure 150: Qualities that influence the use of places for study or work
6.10. Desired Campus Amenities

When survey participants were asked, “what kind of activities or amenities does the university campus need more of?” a variety of responses came in. Type of activities fall into the following categories: arts, leisure, educational, interdisciplinary, community, commercial, sustainability, and 24/7.

- Regarding the arts, there is a desire for more concerts, theatre, cinema, and galleries to display art by students and faculty.

- Leisure activities are also in demand. These include recreational sports, social events, campus clubs, and competitive activities.

- There is a desire for a sense of community on campus. Activities involving interdisciplinary interaction between departments, signature campus events, cultural events, and places that enable social interaction.

- Regarding professional development, there is also a demand for more guest lectures, workshops, employment opportunities, and internships. It is important for people to improve upon the skills that are valuable for their professional careers and gain a clearer understanding of the current job market.

- Commercial activities are also in demand. There is much desire for an increase in dining options, retail, coffee shops, and supply stores. The convenience of having a variety of amenities on campus is very appealing to students, faculty, and staff.

- Sustainability is important as well. There have been numerous requests for more recycling, energy efficiency, conservation of water and material resources, and encouragement of alternative modes of transportation. The visibility and encouragement of these practices are highly desired.

- There also exists a demand for a 24/7 lifestyle. A plethora a responses called for activities throughout the day, night, and weekends. The campus today limits the hours of operation. This constricts the amount of student interaction and ability to foster a sense of community and vitality.
6.11. Negative Campus Experience

The campus environment as it exists today has a significant amount of issues concerning its physical condition. Buildings, landscaped areas and pathways have been left in disrepair for a majority of the university property. As a result, significant efforts are currently underway to improve the quality of this academic setting. There are extensive renovations of existing facilities and plans to transform this commuter centric campus into a pedestrian and bicycle friendly place. It is important however to acknowledge and discuss the issues that are present in the campus physical setting. So far, deficiencies in wayfinding, pathway configuration and entry conditions have been
discussed. This section covers the negatively perceived qualities in both indoor and outdoor environments. The categories of environmental preference covered in section 6.9.2 also apply to negative perceptions of a place. It provides a framework for the evaluation of settings.

6.11.1. Least Favorable Campus Environments

Survey participants were asked which places on campus are their least favorites. Primary concerns were in regard to upkeep and maintenance of pathways, corridors between buildings, and especially the landscaped areas. There exist significant portions of outdoor spaces with dead grass and sickly plants. This lack of upkeep of outdoor areas communicates to pedestrians that there is very little value or sense of pride in the campus environment. The landscaped regions on both sides of University Avenue are especially criticized. On the Western region, where the College of Education is situated, pathways were reported as unsafe due to surface cracks. Additionally, there are no sidewalks from children to walk from the parking lot to classrooms in that area.

The condition of campus buildings is what most survey responses were focused on. As discussed in the previous section, on the University of Hawai’i’s physical development, campus buildings were erected with individually distinctive styles that have little to no relation to the surrounding context. Consequently, campus users perceive of this diverse mixture as incoherent and distasteful. Over 51% of comments however, concerned specific buildings on campus. Campus users eagerly identified their least favorite structures and the qualities that justify their reasoning. Figure 15 identifies places on campus selected as the least favorites.

An interesting phenomenon occurred when comparing the “least favorite places” with the “most favorite places.” According to Figure 152 and Tables 4 & 5, Campus Center and Hamilton Library were voted in the top 5 of both categories. Sinclair Library was voted in the top 10. These particular buildings can be considered central facilities of the campus, as most students, staff, and faculty utilize them. Evidently, the places people utilize the most are those that receive the most criticism. Since the general university population must access the central facilities for their daily use, the design and maintenance of such places are significant to campus identity and functionality. Campus Center for example has received a lot of positive feedback due to the availability of services, dining options, lounge space, and social atmosphere. It has however received more than twice as much negative responses due to the inconveniences experienced from overcrowding and on-going construction. The main libraries of the campus have been compared to each other, primarily in terms of comfort, flexibility, and ambiance. Sinclair Library gains preference due to the amount and variety of study spaces, available plug outlets, views of the surrounding environment, functionality in terms of being able to eat and drink inside; sunlight; wind; and long hours of operation. Hamilton Library, on the other hand, has been praised in comparison for its AC, silence, privacy, resources, interior views of the surrounding environment, proximity to Paradise Palms, and spaciousness. Both provide some similar conditions, but the main differences are temperature, flexibility in use, and ambiance.
Figure 152: Most & Least Favorite Places

<table>
<thead>
<tr>
<th>Rank</th>
<th>Most Favorite Places</th>
<th>Percentage of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Campus Center</td>
<td>11.5</td>
</tr>
<tr>
<td>2</td>
<td>East West Center’s Japanese Garden</td>
<td>10.6</td>
</tr>
<tr>
<td>3</td>
<td>Hamilton Library</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Sinclair Library</td>
<td>8.8</td>
</tr>
<tr>
<td>5</td>
<td>McCarthy Mall</td>
<td>7.5</td>
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</tbody>
</table>

Table 4: Most Favorite Place at UH Mānoa

<table>
<thead>
<tr>
<th>Rank</th>
<th>Least Favorite Places</th>
<th>Percentage of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Campus Center</td>
<td>24.7</td>
</tr>
<tr>
<td>2</td>
<td>Main Parking Garage</td>
<td>4.3</td>
</tr>
<tr>
<td>3</td>
<td>Landscape area surrounding Sinclair Library</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Hamilton Library</td>
<td>3.8</td>
</tr>
<tr>
<td>5</td>
<td>Kuykendall Hall</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Table 5: Least Favorite Places at UH Mānoa

UH Mānoa Campus
Most & Least Favorite Places
6.11.2. Negative Environmental Qualities

In analyzing the collective negative perceptions of UH Mānoa, key patterns emerged that identify specific categories of distasteful qualities. User responses were primarily concerned aesthetic quality; functionality and use; and discomfort.

(1) Aesthetic Quality

The majority complaints concerned the lack of upkeep and maintenance of existing buildings. There are visible traces of paint peeling from various surfaces, dysfunctional restroom facilities, interior and exterior walkways in disrepair, mold in some buildings, and the fading color of aging structures. These noticeable conditions are the cause of reported feelings of sadness, disappointment, “bad vibes”, and frustration. Campus values were put into question as a number of respondents claimed that there were practices of selective maintenance and a general feeling of unwelcoming.

(2) Functionality and Use

In terms of functionality and use, there was much concern in regard to educational facilities. Classroom facilities, especially those with fixed seating, were described as limiting in terms of preventing students from engaging in group discussions or allowing for a variety of seating patterns conducive to learning. Dated equipment was also mentioned. There exists a strong desire for the university to invest in more up-to-date teaching technologies and create classroom environments that are flexible in response to the changing nature of educational practices.
classrooms with moveable furniture, concerns were expressed regarding the proportionate size of desk surfaces and the growing number of furniture in disrepair. Desks used in Moore Hall for example have small table space for students. It makes the learning experience difficult with insufficient workspace.

Availability of sitting spaces and table seating were also key concerns. The closing off of exterior spaces where the ongoing construction of Campus Center is taking place, led to a decline in the amount of available sitting space and places to eat and socialize. Campus Center dining and lounge areas have consequently become places of discomfort. Reports of overcrowding, sanitation of common seating areas, loud noise from construction, distractions, and especially the inconvenience of blockades that interrupt main pathways that run through that area have led to Campus Center being ranked as the number one most hated place on campus. According to Figure 152, 25.8% of all survey participants have bad feelings about that place. Several respondents questioned the addition of new buildings on-campus considering the detrimental condition of existing buildings and exterior spaces. Others have recommended specific landscaped areas around campus, as places to accommodate the demand for more sitting and table spaces. McCarthy Mall, Legacy Path, Hawai‘i Hall Quadrangle, and Andrews Outdoor Theatre are specific sites that have been requested to be more functional in terms of providing spaces for people to gather, socialize, contemplate, eat, and study.

(3) Discomfort

Human comfort is also important for all students, faculty, and staff. Air
conditioning issues arose in terms of temperature, functionality, and the visibility of AC units on the facades of several buildings along McCarthy Mall (Figure 168). The temperature in buildings and certain rooms, especially in Hamilton Library, were claimed to be too cold for the occupants of the spaces. More efficient use of the equipment was recommended. Also of concern are the AC units in Kuykendall Hall. These were reported to be either inoperable or too cold. Some students question the need for these units, as they prefer to be able to view the outdoors instead of being prevented from seeing the outside. The unusual phenomenon of blocked views of the outside environment and windowless rooms on campus has brought upon a questioning of the appropriateness of the design of facilities. Security crates, AC units, and dysfunctional louvers block access to prospective views (Ref. Figures 155, 157 & 158). The floor-to-ceiling windows of Moore Hall were also criticized as it prevents users of the space from inviting the cool island breezes inside.

Low lighting levels is an issue brought up in many responses concerning safety. The campus at night is dark. There are very few lights for those who live on campus or for people to remain there until the late evening hours. This lack of visibility makes campus users feel unsafe. In addition, the recent influx of dangerous activity on-campus has led to the desire for added security measures. There have been requests for more security services and emergency phones. A sense of safety is crucial in a campus environment.

6.12. Desire for Change in the Campus Physical Setting

There is strong desire for change in the physical context of UH Mānoa. The current condition of the campus limits interaction amongst campus users, which especially constricts the development of communal culture. Amenities are in high demand throughout campus. Places to eat, drink, socialize, study, recreate, gather, relax, contemplate, and enjoy the surrounding environment are very much in demand. Campus users recognize both the need for expansion in current facilities and improvement upon existing structures. When asked, “If you could change one thing about the campus, what would it be?” 25 percent of respondents called for improved maintenance and repair of the existing buildings and landscaped regions. The poor condition of the physical environment has had a negative impact on identity and functionality of the campus in general. Perception of safety is especially important. There is an increasing desire for more lighting at night and visible presence of security guards. The layout of campus as a commuter-centric place has also been criticized. There is a desire for improved pathways that encourage multimodal movement or better coordination between the different circulation methods. This means that students, faculty, and staff would like the flexibility of movement by walking, bicycling, skateboarding, and the use of mopeds throughout campus. Alternatively, there is a desire for the creation of paths designated for each mode of transportation. Parking is also a key desire. Since the majority of the university’s population arrives to campus by automobile, the number of available parking and proximity of facilities to the campus are highly desired. The landscape of the university is a key concern. It is the most distinctive part of the campus image today. Buildings on-campus is another key factor. The condition of both natural and built environment has significant influence on the identity of the place.
6.13. Qualitative Research Summation

The University of Hawai‘i at Mānoa campus is a place in need of significant improvement in its physical setting. This qualitative research section uncovered issues regarding the commuter centric layout, entry experience, wayfinding and environmental conditions of both interior and exterior spaces on campus. The following are key findings made in each section:

Commuter Centric Layout
- Transportation modes use
- Vehicular and pedestrian circulation patterns
- Temporal use of campus grounds and facilities
- Entry points
  - Most utilized entry points and pathways
  - Identification of negatively perceived entry paths and associated environmental qualities

Wayfinding
- How people orient themselves throughout the campus
  - Use of landmarks, identifiable campus regions, art installations and maps
- Deficiencies in wayfinding features
- Desired improvements

Positive Campus Experience
- Identification of favorable campus environments
- Preferred environmental qualities for indoor and outdoor places
  - Activity; Aesthetics; Comfort; Functionality
- Identification of places where people study, dine, socialize & work
  - Preferred environmental qualities for each type of activity

Desired Campus Amenities
- Identification of activities that would potentially contribute to a desired campus lifestyle

Negative Campus Experience
- Identification of the least favorite campus environments
- Negative environmental qualities
  - Aesthetic; Functionality and Use; Discomfort

Desire for Change in the Campus Physical Setting
- Identification of desired improvements of the campus setting

These research findings can greatly contribute to the improvement of the campus setting. It is important to consider how the physical environment of the university setting impacts its users. The following section discusses UH Mānoa’s 2007 Long Range Development Plan and how research findings from the qualitative research section can contribute to the current plans for the campus.
CHAPTER 7
UH Mānoa’s 2007 Long Range Development Plan (LRDP)

7.1. Critique of Key Themes of the LRDP

The University of Hawai‘i at Mānoa’s physical development today is guided by key themes defined in the 2007 UH Mānoa Long Range Development Plan. These themes include: (1) Globally Connected Hawaiian Place of Learning, Leadership and Service; (2) Livable Urban Campus; (3) Outdoor Spaces for Living and Learning; and (4) UHM – Leader in Environmental Sustainability. These themes, along with key aspects of the university’s master plan, were evaluated according to the research conducted thus far.

The first theme, “Globally Connected Hawaiian Place of Learning, Leadership and Service” is derived from the University of Hawai‘i’s Strategic Plan. According to the 2007 Long Range Development Plan, “this LRDP theme reflects an aspiration of the campus to be a physically appropriate Hawaiian place as it functions as a global center of learning, leadership and service.” The relationship of the campus to the Ahupua’a of Waikiki is a key aspect of this theme. Campus development to the present day has significantly altered the condition of the land. Views of the mountain and the ocean, utilized as the basis of geographic orientation in the Hawaiian tradition, has been constricted as a result. It is in the best interest of the campus to preserve the remaining view corridors wherever possible. In addition, the impact of campus development on historic patterns of water flow and the ecology of the place is a key concern. Accordingly, development projects should “allow the highest practicable levels of permeability of ground water, guide rather than impede historic patterns of water flow,

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enhance native species of plants, etc. This understanding of the impact of university development to the ahupua’a of Waikiki and the ecology of the region clearly expresses the university’s consideration of place and the values of the people that inhabit it. In terms of its relationship to the research, this theme exemplifies the basis of Hawai’i’s sense of place from an environmental responsibility standpoint. The emphasis of preserving the views of the mountain and the ocean especially relates to enhancing the experiential nature of the place.

The second theme “Livable Urban Campus” recognizes the need to “create and highlight a residential lifestyle for a campus that has traditionally been viewed as a commuter campus.” Providing facilities to support an active lifestyle for students, faculty, staff, visitors, and researchers is the key focus. Accordingly, additional housing facilities with supporting campus amenities would be developed on-campus to liven up the place. This vision addresses the vast amount of responses from survey participants for a more active lifestyle on-campus. The current conditions of the setting are considerably lacking in available amenities. This theme would have a positive impact on the campus experience if fully implemented.

The third theme, “Outdoor Spaces for Living and Learning,” recognizes the appropriate strategy of embracing an indoor/outdoor lifestyle. According to the LRDP, the plan envisions “the spaces between buildings as either “outdoor rooms” functioning in concert with indoor spaces as venues for education, social gathering, recreation, contemplation, unprogrammed uses, or as outdoor corridors.” This idea of transforming the spaces in between buildings into usable places, addresses the innumerous complains about the conditions of pathways between existing buildings. The removal of parking lots from central spaces, as the master plan of the campus suggests, allows for this transformation to take place. By making outdoor areas into places for people to interact, the university would be enhancing the functionality of the place and how people identify with it.

The fourth and final theme is “UHM – Leader in Environmental Sustainability.” This vision addresses the need to improve upon environmental sustainability practices. University of Hawai’i at Månoa has a variety of experts that work on issues and projects concerning the topic. In regard to its relationship to user responses, there was great concern for the visibility of sustainable practices and the efficiency of buildings. Many people at the University of Hawaii, who are concerned for the environment that surrounds them, share this vision. Passive design approaches in the built environment, especially improve upon enhancing a sense of place on the campus.

7.2. Analysis of the LRDP Master Plan

A master plan was created for each region of the University of Hawai’i at Månoa campus. The intent was to illustrate how the key themes are to be integrated into the campus setting. Since it defines the future vision of the campus, an analysis of the layout

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16 Ibid, 8.
17 Ibid, 5.
18 Ibid, 6.
according to the findings of the research provides a basis for understanding how the research can help inform decisions.

![Diagram](image)

**Figure 162: LRDP Gateways, Malls, Pathways, and Plazas**

The future vision of the campus involves a transformation of a commuter-centric environment to a pedestrian-focused environment. Figure 162 is a diagram that illustrates key ideas in terms of the gateways, malls, pathways, and plazas. Gateways are the main entrances into the campus setting. These are located at the red asterisk symbols indicated in the map. In comparing these locations to the most frequent entry points indicated in the study, with the exception of the entryway between Queen Lili‘uokalani Student Services Center and Webster Hall, these spots are consistent with the statistical data received. Also evident in the diagram is the removal of most on-campus roadways and parking structures. One of the biggest issues with the campus layout as it exists today is the interruption of pedestrian paths with automobile pathways. This transformation of the setting addresses key issues in campus identity and experience today and most certainly would improve the experiential nature of the campus environment. Also indicated in the diagram are the increase of open space, extension of McCarthy Mall, the creation of outdoor learning environments, more landscaped regions, and pathways that improve upon circulation patterns that exist today.

The research findings from the survey support the majority of decisions made in the master plan. Further analysis of circulation patterns of pedestrian movement can inform more efficient ways of organizing paths. The research results concerning environmental qualities desired for places associated with specific activities can also provide a framework for designing both interior and exterior spaces that enhance user experience of the setting. The current plans for the campus addresses the need to enhance
the indoor/outdoor experience. What is not discussed is the repair and maintenance of current facilities. This aspect is of primary concern to people who experience the place on a daily basis and needs to be addressed.
CHAPTER 8
Campus Design Principles for UH Mānoa

8.1. Key Principles to Enhance the University of Hawai‘i’s Sense of Place

In order to enhance a sense of place at the University of Hawai‘i at Mānoa campus I propose the following key principles: (1) Enhance a sense of community; (2) Develop distinctive outdoor spaces that encourage user interaction with the landscape; (3) Embrace the local climate in the design of indoor and outdoor spaces; (4) Develop a cohesive character of key open spaces; (5) Enhance an awareness of the surrounding context of Mānoa valley, Moili‘ili, and Waikiki; (6) Create adaptable learning environments; (7) Ensure proper maintenance of campus grounds and facilities; (8) Engage in tactile sensibilities in the experience of pathways and buildings; and (9) improve upon the legibility of the campus environment.

(1) Enhance a sense of community: Identity with a place involves perceptual influences from both the environmental and social context. Shaping the physical setting in ways that encourage communal interaction and identity with the place can enhance a sense of community. Providing places to sit, eat, socialize, study, relax, contemplate, recreate, and enjoy the qualities of the natural and built environment enable user interaction with each other and the places they encounter.

(2) Develop distinctive outdoor environments that encourage user interaction with the landscape: Hawai‘i’s natural environment is the most distinctive aspect of the region. Embracing this phenomenon in the campus setting enhances the perceptive relationship of the institutional setting to the broader context of Hawai‘i. User interaction with the landscape especially enhances a sense of place in enabling people to connect with their natural surroundings.

(3) Embrace the local climate in the design of indoor and outdoor spaces: Comfort is a key concern amongst campus users. The relatively stable local climate conditions of Mānoa Valley allow for the development of integral strategies in building design and outdoor places that embraces natural qualities of the local wind, rain, sunlight, and vegetation. This approach to design can also be utilized to enhance the efficiency of the campus setting in terms of improving upon sustainable practices and building performance.

(4) Develop a distinctive character of key open spaces: The character of open spaces on-campus contributes greatly to the identity of the institutional setting. Like central facilities, these places experience the bulk of pedestrian movement and activity. Enhancing user connection with these places improves upon perceptions of the institution’s values toward the educational experience. The UH Mānoa campus has a few key open spaces including: Hawai‘i Hall Quadrangle, McCarthy Mall, and Legacy Path. Each of these places has a unique character. Further enhancement of the distinction of these areas allows people to identify with these places and distinguish amongst the key open areas on campus. This especially improves upon
wayfinding capabilities.

(5) Enhance an awareness of the surrounding context of Mānoa valley, Moili‘ili, and Waikiki: The University of Hawai‘i at Mānoa campus is an integral part of the surrounding community. Students, faculty, and staff utilize the areas around campus for their daily life activities. Enhancing connection with the surrounding environment further improves upon the University’s sense of place. From the experiential standpoint, this can be achieved by integrating prospective views of the surrounding region. This strategy can be utilized to evoke intrigue and encouragement in exploring the surrounding environment. The creation and enhancement of pathways that connect the campus to other regions of the surrounding area would also improve the experience of the place as it allows for more interaction, convenience, and accessibility. In addition, it may be of interest to expand the university property or activities into the adjacent urban setting. This would allow campus users to interact directly with the community surrounding the campus.

(6) Create adaptable learning environments: The university campus is the embodiment of an institution of higher learning. Academic endeavors are the core basis of the institution. Hence, it is crucial for a university setting to provide effective learning environments. Also significant is the ability of an institution to adapt to the changing nature of educational practices. The university’s ability to accommodate various teaching methods through the design of its physical setting improves upon the perceptive value of its place in society. Improvement upon the functionality of the institutional setting can greatly enhance the identity of the University of Hawai‘i in the region and abroad.

(7) Ensure proper maintenance of campus grounds and facilities: The quality of the physical conditions of the campus grounds and facilities impacts user perceptions of the place. Key patterns found in research revealed significant issues and concerns for sanitation, functionality, aesthetic quality, comfort, safety, and legibility of the campus environment. Improvement upon existing conditions of the campus would greatly enhance the experiential nature of place. Continued maintenance would further improve user relationship with the setting.

(8) Engage in tactile sensibilities in the experience of pathways and buildings: A key aspect in the experiential nature of the built and natural environment is tactile perception. Human beings perceive of the places they experience in their own unique ways. However, the sensory experience of environments remains common. As people traverse to their intended destinations on campus the condition of the surfaces they encounter affects their level of comfort, pace, and awareness of the surrounding environment. Pathway conditions are key example of this. Poorly maintained paths can cause tripping hazards, puddling, and concerns for safety. However, if the condition of the pathway were well maintained, this improves upon the perceptive value of the pedestrian experience. Furthermore, the perception of scale especially impacts user perception of the place. Material choices in paths and
building surfaces, and its relationship to human scale affect how people perceive of a particular place. A brick or stonewall, as opposed to a smooth concrete surface, is perceived with greater comfort due to the perception of scale in relation to the human body. Selective materiality of the built environment is key to enhancing user perception and comfort in the university setting.

(9) Improve upon the legibility of the campus environment: Wayfinding is a crucial aspect of the university experience. Improvements in the legibility of its physical setting are key to enhancing user perceptions of the place. Key principles 1-8 establish a basic framework of creating a distinctive university experience. Further exploration of ways to define and improve upon existing paths, nodes, landmarks, open spaces, and the edges of campus can make wayfinding on campus a comfortable experience. Emphasis on enhancing user perception of the particularities of the place can greatly improve upon the University of Hawaii at Manoa’s regional distinction.

These key principles form the conceptual basis of which a distinct regional identity for UH Mānoa can be developed. The applicability of these principles is explored in the next section.
PART III: DESIGN PROJECT

Chapter 9
Project Information

9.1. Introduction

The University of Hawai‘i at Mānoa has the potential to be a place that embodies distinct qualities in its physical environment that enhances campus users’ connection to and experience of its regional setting. As the flagship campus for the University of Hawai‘i system, the Mānoa campus represents its academic institution and the state of Hawaii. Its physical attributes influence how people perceive of the institution and its relationship to the region. Its location at the opening of Mānoa Valley provides unique design opportunities to embrace scenic views of the surrounding landscape; develop an architectural and landscape vocabulary in response to local climate conditions, topography, indoor/outdoor lifestyle and embody in its physical setting, distinct qualities identifiable to the region. The entry experience into the campus setting is especially significant to campus identity. How people arrive, circulate throughout and orient themselves in the campus impacts their behavior and interaction with the surrounding environment. This section explores means of enhancing the University of Hawai‘i at Mānoa’s identity through campus design and planning strategies.
9.2. Design Intent

The intent of this design exercise is to demonstrate the applicability of the key principles described in chapter 8. A site was chosen on-campus that provides design challenges that enable the exploration of the defined key principles. The result of this exercise is a clear vision of a potential future for the campus. Both a strategy to analyze existing conditions and improve the setting with a Critically Regionalist framework in mind is unveiled.

9.3. Project Scope

The scope of this exercise consists of a site analysis and design exploration concerning the following aspects: (1) Site Layout; (2) Automobile Network; (3) Bicycle Network; (4) Bus Network; (5) Pedestrian Network; (6) Land Use; (7) Landscape; and (8) Climate.

- Site layout refers to the organization of campus buildings, landscape, pathways, and site elements. How these components are situated on the campus grounds affects user interaction, behavior and perception of the place.

- The automobile, bicycle and bus networks refer to the spaces, circulation routes, and facilities that accommodate the use of these transportation modes to the campus. Since this is a commuter campus, the arrival experience onto the property plays a significant role in its identity.

- The pedestrian network is a critical focus as it concerns the character, layout and conditions of pathways and places that people experience on-campus. Wayfinding is also a key aspect of the pedestrian experience. The organization and attributes of campus signage, buildings, pathways and landscape shapes the legibility of the campus setting. How people orient themselves in a campus significantly affects their level of comfort within it.

- Land use patterns concern the type of activities programmed for indoor and outdoor places. Campus activities are significant to the institution’s image. How an institution accommodates the need of places for social interaction, study, dining, recreation, research, work, residency and other activities that define campus life, affects how people perceive of the institution’s values toward the educational experience and how they identify with the campus culture and physical setting.

- Landscape design also plays a critical role as it shapes our experience of the scenery on- and off-campus. The character of the campus landscape provides a distinct narrative that shapes peoples understanding of the local ecology and enables human interaction and connection with nature. Campus user experience of the landscape beyond, defined by prospective views of nearby landforms, urban context and large bodies of water (especially in Hawaii), heightens awareness of
distinct features of the surrounding region and provides for pleasurable experience of the place. The institution’s relationship to the surrounding context is embedded in how its physical setting shapes people’s interaction and experience of the region.

Climate is especially important in the Critical Regionalist design approach. The unique conditions of local light, wind flow, rain and vegetation on-site are attributes that can be strategically integrated into the design to heighten awareness of the local climate and provide comfortable settings for people to enjoy.

Each category plays a significant role in the campus experience.

9.4. Process & Factors of Analytical Influence

The process of site analysis included direct observation and documentation of existing conditions; as well as a comparison of how the research findings of the qualitative survey correspond to observed conditions on-site. Additional aspects that influenced the researcher’s analysis include: (1) a temporal experience of the setting; (2) past investigations into the condition of campus facilities at UH Mānoa; (3) understanding of the historic development of the campus; (4) knowledge of the development plans for the campus; (5) prior research on campus planning and design strategies; and (6) a Critical Regionalist perspective in regard to campus development.

Temporal experience of the setting refers to the researcher’s understanding of the campus through direct experience over time. At the time of the site analysis phase of the project, the researcher had a decade of past experience with the campus setting. This experience included use of campus grounds and facilities for academic, social and leisurely purposes.

Past investigations into the condition of campus facilities at UH Manoa also influenced the researchers perspective on campus planning and design. He was previously involved in efforts, by the Environmental Research & Design Laboratory (ERDL) at UH Mānoa, to survey all existing buildings operated by the University of Hawaii. Until recently, modifications to existing buildings had not been properly documented, consolidated and analyzed. One of ERDL’s key focuses is to get an accurate inventory of the spatial dimensions, functions, personnel in space and other attributes of all properties that belong to the university. The data collected from the study provides an accurate account of existing conditions that influences decisions regarding physical improvements to facilities and the management of spatial functions.

Understanding of the historic development of the campus also played a significant role in the project. The interpretive-historical analysis of UH Mānoa campus in Chapter 5 uncovers the factors that shaped how the campus developed into its current condition. This information made the disparate conditions of the design
Knowledge of the development plans of the campus gave the researcher an understanding of past and current strategies for campus improvement. Chapter 7 discusses the key themes in UH Mānoa’s 2007 Long Range Development Plan and how the findings from the qualitative research phase support or could possibly inform development decisions for the campus.

Prior research on campus planning and design strategies also influenced design decisions and the site analysis phase. The evolution of university design, as discussed in Chapter 1, unveils the historical transformation in conception of the physical form of campus environments. Understanding of key concepts in campus design and planning enabled the researcher to analyze the existing conditions of UH Manoa in comparison. The discussion on the experiential nature of campus environments in Chapter 2 especially heightened the researcher’s understanding and awareness of how the physical condition of the campus impacts how people interpret environmental qualities and conditions and its influence on behavior and the academic institution’s identity.

Further exploration into a sense of entry in campus environments, as discussed in Appendix C, provides insight into patterns of land use, circulation, wayfinding and layout of entry conditions to campus settings. That research endeavor involved a comparative analysis of six campuses in the San Francisco Bay Area region through on-site observations and analysis of the development plans of each campus. In the process of conducting the research, an understanding of the design strategies previously discussed in Chapters 1 & 2 accumulated and shaped the researchers perspective in regard to campus entry design. The project site, as a main entry area into the University of Hawai‘i at Mānoa campus, could then be analyzed with this additional knowledge in mind.

With a Critical Regionalist perspective, the researcher paid particular attention to unique conditions of the local climate, topography, prospective views of the surrounding landscape and urban area; and regionally identifiable material and plant life. The campus physical environment’s response to these conditions are key concerns of the analysis and design phase.

All of these factors form the conceptual basis of analysis and design for the UH Mānoa campus.

9.5. Site Location

The site selected for this design project is one of the main entry areas into the University of Hawai‘i at Mānoa campus (Ref. Figure 191). It was selected due its prominent location at one of the most traversed areas on-campus and the significant amount of criticism received from campus users in the Qualitative survey regarding campus identity,
poor environmental qualities and negative entry experiences. The next section analyzes the existing conditions of the site.

Figure 164: Location Map - Site location on the University of Hawai‘i at Mānoa campus.
CHAPTER 10
Site Analysis

Analysis of existing site conditions reveals key issues in the entry experience into the campus. As discussed in Chapters 5 & 6, the poor condition of the buildings, pathways, landscape and other site features has a negative impact on campus identity. Plus, the rapid development of the physical setting has resulted in a hodgepodge of building styles, the presence of long term temporary facilities, discontinuity of paths and landscape areas, difficult wayfinding conditions and the lack of a distinct identity in the institution’s physical setting. Each of these issues are discussed in the following sections.

10.1 Existing Site Layout

The hodgepodge condition of campus buildings on the project site can be understood when reviewing the historic development of it. The majority of campus buildings to the west of University Avenue has the distinctive pitched roof which was the popular regional design trend from 1920 - 1940. Hemenway Hall, Founder’s Gate and Andrews Outdoor Theatre were also built in this era. However, Andrews Outdoor Theatre is an open air facility. Bachman Hall, Sinclair...
Library and the former University Bookstore were all built after World War II in a modern regional style. The significant difference in physical appearance are the clean lines and rectilinear geometry. These designs however were responsive to local climate conditions of wind flow direction, daylighting and prospective views of the surrounding landscape and campus landscape areas. The former bookstore lost its regional character when the lanai area was enclosed due to expansion of the facility in its transition into a Student Services Center. Campus Center was built next to it in 1973 due to the increase in demand for student hang out spots (formerly accommodated by Hemenway Hall). This massive structure disrupted the consistent orientation of campus buildings with the introduction of an angular pattern in plan.

Other facilities on site include the wooden portables and annex buildings. Figure 139 shows the location of these long term temporary facilities. These structures were situated here to accommodate the deficient amount of space available for administrative functions. The incoherent nature of the campus built environment is partly due to the diversity of architecture. Other aspects that contribute to the disparate nature of the campus are described in the next sections.
10.2. Existing Automobile Network

![University Avenue & Dole Street Intersection](Image)

The intersection at University Avenue and Dole Street is negatively perceived by campus users. Key issues concern the scale of the street in relation to Founder’s Gates; lack of signage for wayfinding and campus identity; and vehicular congestion. One phenomena that occurs frequently around UH Mānoa is the unfortunate case of people getting lost while driving to the campus. The disparate look and feel of campus buildings and landscape on either side of University Avenue and Dole Street leaves drivers, whom are unfamiliar with the campus, clueless as to where certain facilities are. Signage for motorists are insufficient or non-existent in some cases. Occasionally, drivers ask pedestrians for directions to campus facilities. These wayfinding issues are significant concerns among campus users. Additionally, the scale of the street in relation to Founder’’s Gates diminishes its presence and use as a gateway. Drivers are left confused when they pass the gates, since there are no distinctive landmarks that suggest that they had

![Existing Automobile Network](Diagram)

Figure 173: Photo: University Avenue & Dole Street Intersection.

Figure 174: Existing Automobile Network. Campus roads and vehicular pathways intersect with pedestrian passageways.
arrived at the campus. Instead, visitors to the campus tend to get lost driving up University Avenue, since it leads into the community. The confusing entry experience driving to the campus has a negative impact on its identity and needs to be addressed.

Another issue regarding the automobile network concerns interior campus roadways and parking lots (Ref. Figure 174). Surface parking areas take up a large portion of available open space. These asphalt areas absorb the radiant heat from the sun, which further amplifies the level of discomfort. The presence of automobiles along main pedestrian thoroughfares especially detracts from the beauty of the setting. Pedestrians are cautious to stay clear of vehicular traffic as they traverse throughout the campus. The lack of landscape areas due to the presence of surface parking lots and campus roads makes the experience of the campus unappealing to the eye and unwelcoming.
10.3. Existing Bicycle Network

Figure 177: Diagram - Bicycle Network. Existing bike lanes lack continuity on University Avenue.

The existing bicycle network is also problematic. Figure 144 shows the existing bike lanes, routes and parking facilities on the project site. There are currently no bike lanes extending up University Avenue, past Dole Street. Bicyclists are forced to negotiate the use of vehicular roadways with motorists. This causes tensions between the two. Safety is a key concern. There have been a lot requests from campus users to have more bike lanes on roadways around UH Mānoa and throughout the city. A bicycle-friendly network that provides safe routes through the campus and into surrounding neighborhoods is preferred. Currently, bicyclists take vehicular pathways into campus. Bicycle parking facilities are situated throughout campus grounds. At times, pedestrian, bicycle and vehicular traffic intersect which is a huge safety concern.

Figure 178: University Avenue, north of Dole Street, has no bike lanes (2013)

Figure 179: Dole Street bike lanes on both side of the road (2013).
10.4. Existing Bus Network

Public transportation access to the campus is another factor to consider in the experience of the setting. “Sinclair Circle” bus stop receives the highest amount of campus members whom utilize the bus services on a daily basis. As a main entry point for the public, there is great potential to improve the campus image by providing a distinctive landmark element at this location. The bus shelter that currently exists there is too small to accommodate the amount of people who utilize the bus. At times of inclement weather, this lack of adequate shelter causes discomfort for those waiting for public transportation to arrive. There have been several requests to expand the current structure for greater functionality or potentially create a distinctive landmark shelter that also functions as a main pedestrian gateway into the campus. Other bus stops in the area also lack adequate functionality and aesthetic appeal. The bus stop south of the intersection of Dole Street and University Avenue for example only provides one bench for commuters. Bus riders have to wait standing up without any protection from the weather. The small bus stop to the north of the College of Education has similar issues. Public transportation is highly utilized by campus members. The experience of the campus setting from the bus stop locations should be considered in campus improvement plans.

Figure 180: Existing Bus Network.

Figure 181: “Sinclair Circle” bus stop (2013).
10.5. Existing Pedestrian Network

Pedestrian pathways and entry points play a significant role in the campus experience. Regardless of the mode of transportation utilized to access the university setting, each person walks to their desired destinations once on campus grounds. Ideally, the layout of pedestrian pathways, campus signage, landscaping and the built environment of the university would be organized and designed in manner conducive to wayfinding and establish a distinct character identifiable to the institution. Unfortunately, this is not true for the existing site nor the majority of the campus setting. Figure 182 shows the current Pedestrian Network.

There are inefficiencies in the layout of pedestrian pathways. People tend to take the most direct route to their desired destinations on campus. The current layout of sidewalks, surface parking lots, landscaped areas and campus roads makes pedestrian travel through the site inconvenient. Vehicular and pedestrian circulation routes intersect in areas throughout the campus. People are forced to walk through parking lots, roadways and landscaped areas at times to get to the places that they want to quickly.

Plus, the poor condition of pathways negatively affects the experience of the setting. Throughout the campus, sidewalks have been neglected to the point of disrepair. Cracks in pedestrian pathways cause concern for safety for people whom walk or skateboard through campus. This condition has caused people to trip on occasion due to cracks and the development of water ponds in inclement weather. Proper maintenance of paved pathways and surrounding landscape needs to be considered a priority.

Wayfinding is the critical issue here. In addition to the above mentioned physical conditions, there are little to no cues in the physical setting to direct pedestrian traffic. Campus map boards are barely legible. There is a lack of adequate signage on buildings and for directional purposes. Plus, pathways lead to buildings with no apparent function; campus parking lots; and unwelcoming sitting places. Improvements are needed.
Figure 183: Founders Gate, east of University Avenue. This entry portal leads pedestrians up University Avenue. However, there are no clearly defined entry pathways into the campus setting from here. It is ambiguous as to what this entry gate leads to. Additionally, the scale of the two Founders Gates is diminished by the six lane street between them.

Figure 184: Bachman Lawn, midday. Pedestrians tend to walk through the great lawn to get to their desired destinations.

Figure 185: “Sinclair Circle” bus stop receives a significant amount of pedestrian and commuter traffic. The existing bus shelters provide inadequate shelter for commuters. It is a heavily utilized entryway into the campus. However, its visual presence is minimal.

Figure 186: Existing trees south of “Sinclair Circle” bus stop block views of surrounding scenery. However, these trees do provide shade for the bus shelter.
Figure 187: Existing campus map board at the “Sinclair Circle” bus stop. This campus directory is barely legible. The ink on the printed map is faded and spatial information is outdated.

Figure 188: Close up view of the existing map board.
Figure 189: Pathway from “Sinclair Circle.” This humble pathway receives a significant amount of pedestrian traffic. Its heavy use makes this one of the main entryways into the campus. However, it is clearly not intentionally designed for this purpose. There are no distinctive elements identifying this as a main entryway.

Figure 190: Pathway leading north between Sinclair Library and Hemenway Hall. Poorly maintained landscaping and ugly buildings with ambiguous functions make the pathway experience feel unwelcoming. Plus, there are no signs to direct pedestrian traffic to other spaces on campus. People new to the campus are left confused.

Figure 191: Accessible Ramp leading up the terraces south of Hemenway Hall. Existing terraces used for surface parking lots and administrative buildings segment the flow of pedestrian and bicycle traffic. This ramp is used by both bicyclists and pedestrians. It is a safety hazard and visual blight.

Figure 192: Pathway between the lower terrace, south of Hemenway Hall, and Bachman Hall. There is a hodge podge of tree life that do not add any aesthetic value to the place. The buildings on top of the terrace are eye sores for campus users.
Figure 193: Outdoor seating area located south of the lower terrace, north of Bachman Hall. Decrepit conditions of sitting space contributes to the negative perception of the place. Tree litter and dead grass surround the area.

Figure 194: View of Bachman Hall from the seating area to the south of the lower terrace. Bachman Hall's physical condition is noticeably getting worst. This historic structure is in need of repair. The deteriorating condition of existing buildings is a major concern for campus users.

Figure 195: Stairway leading up to the lower terrace. Stray cats frequently occupy this area. In rainy weather, the odor of cat litter and urine make this place unpleasant.

Figure 196: View of terraced pathway from the roadway south of Hemenway Hall. Pedestrians walk pass buildings with unknown functions and surface parking lots. The path intersects with an existing roadway. Pedestrians and motorist move slowly to avoid collision.
Figure 197: Vehicular pathway between Hemenway Hall and Campus Center. Currently, this corridor is heavily used by pedestrians. The ongoing construction of Campus Center has restricted access to the facility through detoured passageways and the west entrance. Bicyclists, motorists and pedestrians traverse through this corridor with caution.

Figure 198: Path to the west entrance of Campus Center. It is an area that receives a significant amount of pedestrian traffic. Radiant heat from asphalt road surfaces makes this path uncomfortable to traverse. A makeshift canopy structure was constructed at the base of the stairway to accommodate a variety of functions. Vehicles and construction trailers also occupy the space. More thought needs to be put into the intended function and aesthetic character of this place.

Figure 199: View of Diamond Head from the top of the staircase of the west entrance to Campus Center. Despite the presence of disparate buildings, poor landscaping and lack of pleasant outdoor environments, there still exists distinct views of the surrounding scenery that gives this place great potential.
10.6. Existing Land Use

The current land use patterns at this entry area adds to the negative perception of the place. Campus members expressed frustration from a lack of purpose and functionality of the entire area between Dole Street, University Avenue, Sinclair Library and Campus Center. There existing numerous buildings on-site that have no apparent function. These decrepid buildings take up valuable space that could be used for other functions. Temporary portable buildings also occupy the area. These structures are used to supplement the existing building stock. As administrative buildings, these buildings do not contribute to campus culture and lifestyle. Instead, this area is a dead space, devoid of activity. Surface parking lots and vehicular pathways occupy a large part of the site. Pedestrians, whom are unfamiliar with the site, may get confused as to where they are on campus due to the lack of activity, signage or any indication of campus life.

Existing open spaces in the area are also criticized by campus users. Andrews Outdoor Theatre, to the south of Campus Center, has received a significant amount of negative feedback due to lack of access and functionality. It is rarely ever used. There is significant interest in opening up the outdoor theatre to give people an option of a place to socialize outdoors. The grand lawn to the west of Bachman Hall also received a lot of criticism as well. It is a large open space that is not used for any purpose. People often tranverse through this well-kept lawn space to enter into campus. There is a strong desire amongst campus users to increase the functionality of this open space and incorporate a landmark structure to enhance the identity of the campus. The existing campus sign, to the west of Bachman Hall, fails to accommodate this need. This is also true of the Founders Gates, at the intersection of University Avenue and Dole Street, due to its diminished presence in its scalar relationship to the streets. The existing site has significant issues in its identity. However, it also has immense potential.
Figure 201: View of temporary wooden portables, located south of Sinclair Library. The presence of these structures greatly increases negative perceptions of the campus. There were a significant amount of negative feedback from participants of the qualitative research survey, regarding these structures. Accordingly, it gives the campus a “third world feel.”

Figure 202: Bachman Lawn. The lack of functionality and identifiable campus features on this site are aspects highly criticized by campus users. This area has great potential for enhancing the campus character and regional identity due to the significant amount of pedestrian and commuter traffic into the area. Plus, there are exceptional views of the surrounding context from this site.

Figure 203: View of campus parking lots on the terraces to the south of Hemenway Hall. The building to the right of the picture has no windows or openings to the north, west and south sides of the building. There is very little activity in this area due to the presence of such facilities and campus parking lots.

Figure 204: Pathway leading to the west entrance of Campus Center. A small canopy structure was constructed at the base of the staircase to accommodate a variety of functions. The photo depicts its use as a farmers market. It is also used to house radio show DJs during live events, information booths, small social functions, blood bank services and other commercial activity. There is an apparent need for multifunctional places here.
10.7. Existing Landscape

Figure 205: Satellite image of project site.

The existing landscape on the project site is one that lacks a cohesive and distinctive character. Lawn areas to the west and south of Bachman Hall, as shown in Figure 205, are noticeably well maintained. In comparison, most other landscape areas nearby are left dry and filled with a variety of trees and plantlife. There are significant concerns regarding the condition of campus landscapes as it greatly affects how people interact & identify with the campus setting. Although the large monkeypod trees that line University Avenue and Dole Street contribute to a distinctive street character for the campus, the interior campus grounds lacks that cohesive look and feel. There is a great demand for more indigenous and endemic species of plant life on campus. Increasing the presence of regionally distinctive landscaping can greatly enhance the character of the existing campus setting. The current Landscape Masterplan proposes an increase in the amount of campus trees throughout campus. This strategy serves the purpose of providing more shaded areas to improve thermal comfort outdoors. The combination of both strategies, in adding more indigenous and endemic plants as well as large trees, can improve comfort and enhance campus identity through the creation of signature campus landscapes.

Figure 206: View looking towards Bachman Hall from the west side of University Avenue. Bachman lawn is much greener that this area.

Figure 207: Landscaped area north of Bachman Hall parking lots. Dead grass and a variety of trees are present on-site.
Prospective views of distinctive features in the surrounding landscape and urban environment are prominent on campus. Bachman Lawn for example has signature mountain and cityscape views (Ref. Figures 208-209). It is unfortunate however that this area is used sparingly. “Sinclair Circle” bus stop is the only functional space in this area. Bus riders get a glimpse of these scenic views as they enter into the campus. Increasing the functionality of this space can greatly contribute to campus regional identity.

There is also tremendous potential for embracing scenic views of the surrounding context throughout campus. The layout of trees, buildings, pathways and other site features can be designed to reinforce such experiences. Unfortunately, some areas on-campus neglect such opportunities. Glimpses of scenic views can be found in unexpected places. Figures 209 and 210 show two areas on the project site that can benefit from the use of signature views to enhance the campus experience.
Figure 210: A panoramic cityscape view, looking south from the south side of Hemenway Hall, is hidden by site trees and buildings. Campus users often overlook this prospective view. A transformation of this setting is needed to enhance the campus setting in its relationship to the landscape and urban environment beyond.

Figure 211: A stunning panoramic view exists at top of the stairs of the west entrance to Campus Center. It is unfortunate however this area is used sparingly. The existing buildings in this area are devoid of activity for campus members to embrace these scenic views. This area has great potential.
10.8. Climate Conditions

Local climate conditions play a crucial role in a Critically Regional Campus Identity. A campus physical setting that is responsive to the quality of the local light, thermal conditions, humidity, wind flow and rain can greatly enhance the experiential nature of the setting. Human comfort is significantly affected by local climate conditions. In Honolulu, temperatures range from 70 to 85 degrees on average. Manoa especially gets a lot of humidity due to frequent rain showers in the area. Rainbows as a result are a distinct part of the regional identity. Additionally, Hawaii is a tropical climate; which means that prolonged exposure to direct sunlight can increase body heat to uncomfortable levels. To mitigate these circumstances, passive design strategies that integrate natural ventilation, reduce direct exposure to sunlight and the radiant heat from surrounding surfaces can greatly improve comfort. Replacement of the existing asphalt surfaces on the project site with landscaped areas or light colored surfaces can reduce radiant temperatures significantly. Increasing the amount of site shading through architectural features and trees can also help improve comfort levels on site. The critical factor is human comfort. If people feel comfortable in both interior and exterior spaces on campus, their appreciation for the local climate and institution’s regional presence would be enhanced.

Figure 212: Manoa’s frequent rain showers and rainbows are unique to the place.
CHAPTER 11
Site Design

A new vision for a Critically Regional Campus Identity for UH Mānoa is the culmination of this research project. The key principles defined for this campus setting provides the conceptual basis of which significant transformation of the university’s sense of place can emerge. This design exercise demonstrates the applicability of the Critically Regional Campus Design Framework on the project site. The design strategies are intended to be applicable to other regions of the university campus environment and potentially other institutions that have a regional identity focus. Below are the key principles that are implemented in this design project:

• Climate Responsive Design & Planning
  • Embrace the local climate in the design of indoor and outdoor spaces

• Topographic Character of Campus Environs
  • Integrate buildings, pathways and pedestrian circulation networks with the site topography. Enhance human connection to the landscape.

• Scenic Views of the Surrounding Landscape Features and Urban Context
  • Shape the physical setting of the campus to increase access to signature views

• Tactile Experience of Place
  • Integrate regionally identifiable material into the campus physical setting.

• Regional Campus Landscape
  • Incorporate indigenous and endemic species of plants and trees on campus grounds. Create signature campus landscape settings.

• Activate Outdoor Spaces
  • Introduce land use patterns that enhances the indoor/outdoor lifestyle of Hawaii.
  • Enhance a sense of community.

• Enhance the Entry Experience into the Campus
  • Define a distinctive experiential narrative for entrance into the campus setting.

Figure 213: Aerial Rendering of the Proposed Campus Entry
11.1. Proposed Site Layout

The proposed layout of the project site was designed in response to key findings in the site analysis. Issues concerning the Automobile Network, Bicycle Network, Bus Network, Pedestrian Network, Land Use patterns, Landscape and Climate were addressed in this design exercise. Key modifications to the campus setting include:

- **Automobile Network**
  - University Circle (a new road junction that moves traffic in one direction around a central island; a monument is introduced that identifies the campus setting)
  - Reduce the amount of surface parking lots on campus.

- **Bicycle Network**
  - Provide bike lanes on both sides of University Avenue

- **Bus Network**
  - University of Hawai’i Bus Station (New signature gateway into the campus)

- **Pedestrian Network**
  - Introduce pathways that provide direct routes key open spaces
  - Prototypical campus signage elements to improve wayfinding

- **Land Use**
  - Mānoa Cafe and Campus Center West (New places to dine, socialize, study and interact with the landscape setting.

- **Landscape**
  - University Terraces (Signature landscape area on the campus)
  - Introduce indigenous and endemic species of plants and trees on the site
  - Integrate campus landscapes with scenic views of the surrounding context

- **Climate Responsive Design and Planning**
  - Design strategies to improve comfort and preserve environmental resources

Figure 214: Proposed site plan.
11.2. Proposed Automobile Network

The proposed Automobile Network drastically transforms the experience of the intersection of University Avenue and Dole Street; and reduces surface parking lots on campus property. A new traffic circle replaces the former intersection. In its place is a landmark structure that distinguishes this area as the main entryway into the campus setting. The traffic circle (or University Circle) moves traffic in one direction around a central island (Ref. Figure 216). Landscaping on UH property, surrounding this monument, further enhances the distinctive character of this place.

The transformation of the commuter-centric campus layout to a pedestrian oriented setting requires reduction in the presence of surface parking lots on campus grounds and the concentration of vehicular storage and circulation routes to strategic areas of the campus. Figure 215 shows the proposed layout of the automobile network. Parking lots are situated at peripheral locations, especially near main pedestrian entry routes into campus. It is important to note that a new 900 space parking structure is planned for construction at the site of Klum Gym, south of the proposed Faculty Center. Taking this into consideration, an increase in the amount of pedestrian traffic to this area is expected. Concentration of vehicular parking facilities at main entry areas increases pedestrian traffic into these places, which reinforces the use of designated areas as main entry points.

The scale of University Avenue is also altered. A new median landscape strip with trees reduces the perceptive size of this busy street. New landscape strips are also to be situated on both sides of University Avenue abutting the existing pedestrian sidewalks. The reduction in size of this main street increases the prominence of both Founders Gates and enhances the landscape character of the street.

![Figure 215: Proposed Automobile Network diagram.](image)
University Circle Monument

- Landmark structure that distinguishes this area as the main entryway into the campus

- Monument Design Features
  - University of Hawai’i Emblem
  - Blue rock stone base
  - Turquoise Bronze metal surface
  - Glass form at the top

- Material Palette & Symbolism
  - Blue Rock
    - Regionally identifiable material
    - Stone material used for ancient Hawaiian tools and weapons
    - The Makai Campus, south of Dole Street, was the former quarry for this stone
    - Symbolism: Earth
  - Bronze metal
    - Material chosen for its temporal qualities. The color of this metal changes from a dark brown bronze color to turquoise over time. This enhances the experience of the place in allowing people to identify the experience of the campus setting in relation to the color of the metal at the time.
    - Symbolism: Sail
  - Glass
    - To be illuminated at night.
    - Symbolism: Sky
  - Form Concept
    - Land ship - Marks the location of which the journey into the campus begins
Figure 218: Elevation renderings of University Circle Monument
11.3. Proposed Bicycle Network

Figure 219: Proposed Bicycle Network diagram.

Improvements to the Bicycle Network coincide with changes to the Automobile Network. Accordingly, bike lanes are proposed for both sides of University Avenue. These new circulation routes would improve bicycle traffic and safety going up this busy street. Figure 220 shows a street section of this design feature. Existing travel lanes lie parallel to the bike lanes. A landscape strip separates the pedestrian pathways from bicycle and vehicular traffic. This buffer zone reduces the spatial tension that occurs when bicyclists and pedestrians circulate side by side or on the same paths. It also provides space for scenic landscaping to enhance the street character which improves the experience of the setting for people passing by. The median landscape strip adds to the landscape character in reducing the scale of the street. Also important to note is the bicycle lane around University Circle. This lane separates bicycle traffic from automobiles routes.

Figure 220: Proposed Street Character. Bike lanes on both sides of University Avenue. A landscape strip creates a comfortable distance between bicyclists and pedestrians.
11.4. Proposed Bus Network

![Figure 221: Proposed Bus Network diagram.](image)

Improvements to the Bus Network for the project site includes concentrating commuter arrival stops to strategic locations and introducing a landmark bus station as the new gateway into the University of Hawai‘i at Mānoa campus. Figure 221 shows the layout of the proposed Bus Network. Bus stops south of Andrews Outdoor Theatre and west of the University of Hawai‘i Bus Station would be situated on opposite sides of the road and parallel to each other. The purpose of this layout configuration is to increase pedestrian traffic, from buses coming from either direction, to specific places along the periphery of campus. This strategy is also used for the Automobile Network in the placement of campus parking lots. By concentrating arrival points near main entryways, it increases the volume of pedestrian movement and activity into the space. Also important to note for these smaller bus stations is the recessed area for the buses to turn into when picking up or dropping off passengers. This recessed space separates the buses from the main vehicular circulation routes.

The most prominent feature on the project site is the University of Hawai‘i Bus Station. It would provide a sufficient amount of space for bus service and alternative uses of the covered outdoor area. The form of the structure is consistent with the conceptual basis of the University Circle monument. It is composed of 3 tensile fabric structures grounded onto the site by stone anchors. The scale of this building is monumental. The stone anchors in this case also function as planters, that grounds the building into the site; amphitheatre seating for commuters and visitors; and display space for the digital display screen. Bronze with a turquoise color would be the primary structural material for the tensile fabric. Figures 222, 225 and 228 shows how this structure would look like.
University of Hawai‘i Bus Station

- Landmark structure that distinguishes this place as the main pedestrian gateway into the campus

- Form Concepts
  - Land Ship
    - 2 red sails supported by a tall 100-foot pillar (Inspired by the Hōkūleʻa)
    - Blue rock stone anchors (Earth - Vessel of which the journey begins and takes place)
  - Rainbow
    - Red tensile fabric structure, in the form of an arch, supported by a frame structure (Inspired by Mānoa’s rainbows)

- Material Palette
  - Blue Rock Stone
  - Turquoise Bronze Metal
  - Fabric

Figure 222: Aerial view of the proposed University of Hawai‘i Bus Station

Figure 223: Map key - Aerial rendering of the site.

Figure 224: Hōkūleʻa is a performance-accurate full-scale replica of a wāʻa kaulua, a Polynesian double-hulled voyaging canoe. She is best known for her 1976 Hawai‘i to Tahiti voyage performed with Polynesian navigation techniques.
Regional Experience Aspects

- **Daylight Quality**
  - Shadows created by the filtering of light through the canopy structure and site trees

- **Regional Campus Landscape**
  - Indigenous and endemic species of plants integrated into the stone anchor planters
  - Aroma from fragrant flowers distinguishes this place from others
  - Signature landscape character

- **Climate Responsive Design**
  - Canopy provides protection from the rain and solar heat
  - Open air structure invites local winds into the space
  - Form of the canopy structure directs rain water into the planters

- **Views of the surrounding landscape and urban area / Activate Outdoor Spaces**
  - Iconic structure increases use of this place. More people are brought here to appreciate the signature views of Mānoa, Moili‘ili and Waikiki cityscape.

- **Topographic Character of Campus Environs**
  - Stone anchor planters grounds the canopy structure into the site

- **Tactile Experience of Place**
  - Regionally identifiable material (Blue Rock) used in stone anchors
  - Amphitheatre seating, integrated into stone anchors, enables direct interaction with the stone land forms.
  - Material palette of canopy structure also used for University Circle

- **Enhance the Entry Experience into the Campus**
  - Main pedestrian gateway into UH Mānoa
11.5. Proposed Pedestrian Network

The proposed Pedestrian Network improves wayfinding, circulation patterns, campus cohesion and campus member’s experience of the regional landscape. Key features of the network includes the following:

- **Wayfinding**
  - Use of campus signage, landmarks, signature open spaces, land use patterns and distinctive regional landscaping to improve the legibility of the campus setting
  - Enhance a sense of entry into the campus

- **Circulation Patterns**
  - New entry pathways that provide direct routes to key open spaces and improves pedestrian circulation

- **Campus Cohesion**
  - Direct relationship of pathway configuration and landscape character on both sides of University Avenue
  - Use of a cohesive material palette for buildings and site elements (University Circle; University of Hawai‘i Bus Station; campus signage; and other surfaces in the physical setting of the campus)

- **Regional Landscape Experience**
  - Use of indigenous and endemic species of plants and trees along pathways and signature landscape areas
  - Prospective views of the surrounding landscape and urban areas
  - Encourage the use of outdoor areas by providing places to dine, study, socialize and interact with the campus community
  - Shade pathways with site trees

*Figure 227: Proposed Pedestrian Network diagram.*
Pedestrian Entry Pathway near Founder’s Gate

- **Wayfinding**
  - Campus map board orients people to the campus setting
  - View of University of Hawai‘i Bus Station (Landmark structure that enhances the identity of the campus and this site in particular)
- **Circulation Patterns**
  - Direct route into the campus
- **Campus Cohesion**
  - Material palette creates a cohesive character
  - Plant life in the stone anchor forms, planters and orientation space (by the map board) unifies these landscape areas and architectural features
- **Regional Landscape Experience**
  - Use of indigenous and endemic species of plants and trees along pathways and signature landscape areas
  - Shaded sitting space provided in an area with signature views of the surrounding landscape and urban context
  - Coconut trees shade the diagonal pathway and contributes to regional landscape character
  - Introduce fragrant and colorful flowers into key landscape areas
Campus Signage Prototypes

- Use of prototypical elements contributes to campus cohesion

- Material Palette
  - Turquoise Bronze Metal
  - Glass

- Design Features
  - University of Hawai‘i Emblem (Located at the top of each sign)
  - Glass display space (Content depends of type of signage)
  - Bronze metal sculptural folding plane (Form directly relates to the University Circle Monument)

- Types of Signage
  - Building Identity Freestanding
    - To be located near the entrance of campus buildings
    - Contents: Building name and address
    - Identifies campus buildings
  - Directory
    - To be located near main pedestrian entrances and key open spaces
    - Contents: Campus map board
    - Graphically describes the layout of the campus
  - Pedestrian Gateway
    - To be located at pedestrian entry points
    - Contents: Name of pedestrian gateway
    - Naming of pathways and places on campus contributes to wayfinding. It enables campus members the ability to identify specific entry points by name. Places without a specific name or identifying feature are challenging to describe specifically.
Diagonal path leading towards Campus Center

- **Wayfinding**
  - Clearly defined pathway configuration enhances legibility of the campus setting
  - Landmark buildings at signature open spaces contributes to its identity
- **Circulation Patterns**
  - Main gathering areas located in places where pathways intersect
  - Continuity of pathways up University Terrace
- **Campus Cohesion**
  - Extension of greenspace into University Terraces creates continuity in the landscape character of open spaces
  - Cohesive material palette of campus facilities
  - Repeated landscape pattern
    - Coconut trees at University Terrace, at the end of this pathway (Figure 231), relate to those at the beginning of this pathway (Ref. Figure 230)
- **Regional Landscape Experience**
  - Use of indigenous and endemic species of plants and trees along pathways and signature landscape areas
  - View of mountains beyond Campus Center
  - Site trees provide shading along pedestrian pathways and at key open spaces
Pathway south of Sinclair Library

- **Wayfinding**
  - Signature pathway experience distinctly different from all others on campus
  - Unique integration of landscape and architecture adds to the visual distinctiveness of the place
  - Distinctive places on campus are easily identifiable, which contributes to wayfinding
- **Circulation Patterns**
  - Continuity of pathways up University Terrace
- **Campus Cohesion**
  - Repeated pattern of landscape integration with architecture. Campus Center West and Mānoa Cafe are seamlessly integrated with each other.
  - Cohesive material palette of campus facilities (Blue Rock/Concrete/Greenwalls)
  - Repeated landscape pattern
    - Coconut trees are planted near Founders Gate (Figure 230); at University Terrace (Figure 231); and to the south of both Mānoa Cafe buildings (Figure 233)
- **Regional Landscape Experience**
  - Use of indigenous and endemic species of plants and trees along pathways and signature landscape areas
  - View of mountains beyond Campus Center
  - Site trees provide shading in active social spaces
  - Signature campus landscape
11.6. Proposed Land Use

The proposed land use pattern enhances the indoor/outdoor lifestyle of Hawai‘i in the campus setting. Landmark structures are used to enhance the identity of the institution; while also attracting more pedestrian activity to this area. As a result, more people have access to signature views of the surrounding landscape and urban context on this site. The distinct landscape setting also contributes to the regional character of the place. Mixed use facilities are introduced near signature open spaces and places with prospective views of the surrounding context. University Terrace is intended to be an active outdoor setting which would be surrounded by places to dine, study, relax and socialize. Campus members can spend their idle time having a picnic in the park-like setting and gathering with their fellow colleagues. Mānoa Cafe would provide a desired amenity for commuters at the University of Hawai‘i Bus Station and the plaza to the east of it. Although the Faculty Club to the south of Dole Street is not designed in this project, it is situated on a site that has exceptional views of Diamond Head, Moili‘ili and Waikiki’s cityscape. The concentration of pedestrian traffic to the project site, as discussed in the Automobile Network and Bus Network sections, would also greatly contribute to the use of this place as a main entrance to the campus.
Active plaza to the west of the University of Hawai’i Bus Station

- **Activate Outdoor Places**
  - Outdoor seating south of Manoa cafe
  - Manoa cafe provides a much desired amenity to commuters at the University of Hawai’i Bus Station, plaza to the east of it and University Terrace

- **Circulation Patterns**
  - Main gathering areas located in places where pathways intersect
  - Continuity of pathways up University Terrace
  - New pedestrian mall, located south of University Terrace and Campus Center, would receive significant amount of pedestrian traffic. It connects the project site to the landscape region to the east of Andrews Outdoor Theatre

- **Campus Cohesion**
  - Cohesive material palette of campus facilities
  - Repeated pattern of landscape integration with architecture. Campus Center West and Manoa Cafe are seamlessly integrated with each other.
  - Repeated landscape pattern
    - Coconut trees are planted near Founders Gate (Figure 230); at University Terrace (Figure 236); and to the south of both Mānoa Cafe buildings (Figure 233)

- **Regional Landscape Experience**
  - Signature campus landscape setting
  - Site trees provide shade for signature open spaces and the terraces of Campus Center West
11.7. Proposed Landscape

The proposed landscape plan for the university involves the creation of signature campus landscape settings; integration of indigenous and endemic species of plants and trees; blending of architecture with nature; enhancing a cohesive character of campus landscape areas; and shaping the physical environment of the campus to provide access to scenic views of the surrounding landscape and urban area. These design strategies can greatly enhance the University of Hawai‘i’s sense of place and identity in the region.

- Creation of signature campus landscape settings
  - Distinctive campus landscape environments enhances wayfinding by enabling campus members to identify where they are on campus in relation to these places.
  - These environments also encourage use of outdoor settings by attracting people to them.

- Integration of indigenous and endemic species of plants and trees
  - Development of a distinct regionally identifiable landscape character.

- Blending of architecture with nature
  - Improve thermal comfort in interior spaces.
  - Enhance relationship of natural and made-made environments.

- Enhancing a cohesive character of campus landscape areas
  - Repetitive landscape patterns. Extension of existing campus lawns into new signature landscape areas. Repeated use of specific trees and plants in different areas of the campus.

- Shape the physical environment of the campus to provide access to scenic views of the surrounding regional context
University Terrace

- Creation of signature campus landscape settings
- Integration of indigenous and endemic species of plants and trees
  - Contributes to the distinct character of a regionally identifiable landscape
- Blending of architecture with nature
  - Mānoa Café and Campus Center West are both integrated with the existing terrace. Vegetative roof and walls directly relates to the terrace lawn spaces.
- Enhancing a cohesive character of campus landscape areas
  - Repetitive landscape patterns
  - Cohesive material palette of campus facilities
- Shape the physical environment of the campus to provide access to scenic views of the surrounding regional context
  - Campus landscape blends with landscape and urban area beyond campus grounds
Climate responsive design and planning plays a critical role in the vision of a Critically Regional campus identity for UH Mānoa. The following aspects define this strategy:

- Daylight Quality
  - Appropriately illuminate interior and exterior spaces with natural daylight. Exposure to daylighting conditions gives people a sense of the local light quality as the day goes by.
  - In outdoor spaces, the shadows created by the filtering of light through site trees can become a unique trait of a place.
  - Likewise, for indoor settings, light can be introduced into a space in ways that enhance its experiential qualities.

- Comfortable Thermal Conditions
  - Enhance human comfort in both indoor and outdoor settings with appropriate design responses to the local heating or cooling needs.

- Rain Water Protection, Experience and Conservation
  - Provide shelter from the rain with architectural and landscape elements.
  - Seek opportunities to enable a unique experience of it as appropriate. For example, the unique sound of rain drops on the University of Hawai’i Bus Stop canopy during inclement weather can be identified as a distinct experiential aspect of the place.
  - As appropriate, shape the campus physical environment in a manner that conserves water and allows rain to nourish the landscape.

- Air Quality and Wind Flow
  - Shape the physical environment of the campus in a manner that directs appropriate wind pressure to interior and exterior spaces to improve comfort levels.
  - Ensure proper air quality of habitable spaces.

Positive experience of the local climate conditions in the campus setting makes the experience of the university enjoyable; which enables a greater appreciation for the institution and regional setting.
PART IV: CONCLUSIONS

CHAPTER 12
Lessons Learned

12.1. Overview

The University of Hawai‘i at Mānoa is a place with the potential to embody in its physical environment distinct experiential qualities identifiable to the region. Its potential for a region-specific identity was the main focus of this research endeavor. There were three main parts of the investigation that delved into specific aspects of the campus experience. Part I: University Context discusses the evolution of university design; the experiential nature of campus environments; and regional campus identity. These topics shape and define the regional campus design framework. Part II: UH Mānoa Context explored the region surrounding the campus; the historical development of UH Mānoa’s physical setting; the experiential nature of the campus; UH Mānoa’s 2007 Long Range Development Plan; and the Campus Design Principles for UH Mānoa. The content of this section unveiled the nature of University of Hawaii at Mānoa’s sense of place and key principles to enhance its regional identity. Part III: Design Project explored the applicability of the defined key principles and regional campus design framework on a site at the UH Mānoa campus. The following sections briefly summarize lessons learned from the three main parts of the research, followed by an overall conclusion.

12.2. University Context

A critically regional campus design strategy extends the concepts of Critical Regionalism and sense of place into university design and planning practice. Lessons learned from chapters 1-3 contribute to this conception. Campus identity is grounded in the relationship of human perception and the physical attributes of its setting. The discussion on the evolution of collegiate environments in Chapter 1 showed evidence of experimentation in ways to shape the physical setting to communicate nonverbally, the inherent values of institutions. Each trend in campus design brought about a variety of forms that influenced how people identified with the institutions and interacted with its setting. The impact of campus physical environments on its human constituents became the subject of analysis in the field of environmental psychology. Chapter 2 discussed related concepts of nonverbal communication of the build environment, placemaking, placemarking and wayfinding. How these concepts are integrated in campus settings shapes the nature of its experience and identity.

The concepts of placemaking and placemarking are especially crucial in defining the campus environment and image. In Richard Dober’s text Campus Design, he provided a comprehensive analysis of campus design, of which the principle components
were “buildings, landscapes, and circulation systems.”

Placemaking is Dober’s concept for the overall structure of the campus environment. This includes the “positioning and arrangement of campus land uses and pedestrian and vehicular routes, the location of buildings and functional open spaces… the definition of edges, and the interface between campus and environs” (p.5).

Through the integration of campus elements, placemaking allows for the creation of an “institutional metaphor” that guides the development of the campus. This “institutional metaphor” serves as a collective picture that characterizes the total campus design. On the other hand, placemarking is focused on “certain physical attributes which give a campus a visual uniqueness appropriately its own” (p.5). These include landmarks, style, materials, and landscapes. The combination of these elements leads to a “distinct sense of place” on campus.

According to Dober, “placemaking resembles town planning, producing the larger picture of the future, while placemarking involves the specifics of campus architecture, landscape architecture, and site engineering.”

The integration of Critical Regionalist theories into the concepts of placemaking and placemarking establishes a basis of which an institutional metaphor for a Critically Regional campus identity can be made. Site-specific attributes of climate, topography, materiality and landscaping are characteristics of place that can be utilized to contribute to its identity.

12.3. UH Manoa Context

University design and planning concepts in the broader context of the practice influenced the initial and subsequent stages of development of the University of Hawai’i at Mānoa campus. Changes in the social, political, economic, and cultural context affected the pace of development and nature of expansion. Trends in architecture in Hawaii and abroad were introduced to the campus environment; which inevitably led to its current condition of a hodge-podge of stylistic expressions. The chronological overview of its physical development identified the nature of its architectural diversity and issues in terms of identity, sense of place, maintenance of its physical condition and how people perceive of its built environment.

The qualitative analysis of user perceptions of the place identified key patterns in how the campus is experienced and perceived of in its current condition. A number of issues became evident in the study including functionality; maintenance and upkeep of built and natural environments; disparities in cohesion of architectural forms and regions of the campus; circulation patterns; wayfinding; experiential qualities that influence how

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2 Ibid.

3 Ibid.

4 Ibid.

people perceive of constructed environments; basis of identity with places on campus; and the impact of these on user perception of the place. Taking these factors into consideration, one can identify key aspects in need of focus. These include comfort, aesthetics, functionality, activity, amenities, movement, and experience of regional qualities. The conceptual basis of Critical Regionalism implies a keen understanding of the particularities of a place and methods of enhancing the experiential relationship of the user to the physical setting. In order to enhance a sense of place of the region, understanding of these elements as they apply to the specific place informs a Critically Regional response. The key principles identified especially establish a framework to improve the campus identity.

12.4. Design Project

Figure 243: Photo – Existing site of proposed diagonal pathway

Figure 244: Rendering - Proposed entry pathway
A design project was the culmination of the research project. It was an exploration of the applicability of the conceived principles in a Critically Regional Campus Design Framework. The scope of this exercise consisted of a site analysis and design exploration concerning the following aspects: (1) Site Layout; (2) Automobile Network; (3) Bicycle Network; (4) Bus Network; (5) Pedestrian Network; (7) Land Use; and (8) Climate. In the site analysis phase, the key issues regarding these topics were revealed. The physical condition of the campus today is in need of improvement. Solutions to the design issues were explored and conceived of in the Final Design.

12.5. Summation

The goal of this research project was to define a design strategy that would enhance UH Mānoa’s regional identity. Concepts of Critical Regionalism and sense of place formed the basis of which this design and research approach was conceived. Critical Regionalist design practice involves a critical response to distinct attributes of a regional context including its topography, climate conditions and character of its physical setting. The intent is to enhance human connection to an environment’s distinct regional qualities; which contributes to place identity. Sense of place is a concept that is integrally part of the Critically Regionalist framework. It involves a situation of deep, unselfconscious immersion in a place. Critical Regionalism heightens this connection by incorporating a sense of understanding of the context, both spatially and temporally. Considering these aspects of Critical Regionalism and sense of place, a research strategy arose that included investigation of UH Mānoa’s physical development; distinct qualities of its climate, topography and regional setting; and how the physical environment of the university impacts its users perceptions of and identity with the place.

In exploring these aspects, a broader perspective of the campus environment and the impact its physical setting has on campus members developed. The physical form of the campus setting is a result of a vast array of contextual influences including changes to the social, political, economic and cultural context of the region. Trends in university design and planning practice; architectural trends in Hawai’i and abroad; and significant historical events affected the pace of development and diverse nature of architectural content on-campus. The hodge podge condition of UH Mānoa contributes to negative perceptions of the campus. However, it was found that the perceived quality of the physical setting, in its accommodation for comfort, functionality, activities and aesthetic attributes, is principle to campus member’s perceptions of and identity with the place. The lack of proper maintenance and upkeep of existing facilities and landscape was a topic of contention amongst campus members. Improvements to the physical condition of campus grounds and facilities, in consideration of these aspects, would greatly contribute to positive campus experiences. The Critically Regional Campus Design framework, defined and explored in the research, provides a conceptual basis of which a Critically Regional Campus Identity for UH Mānoa can be established.
APPENDIX A
Historical Events Timelines
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<tr>
<th>Year</th>
<th>UH Central Campus</th>
<th>UH Māiea Campus Buildings</th>
<th>UH Mānoa Campus Buildings</th>
<th>UH Off-Campus Buildings</th>
<th>UH Academic Subjects</th>
<th>Events and Activities</th>
<th>UH Campus Planning</th>
<th>University Design &amp; Planning</th>
<th>Hawaii Architecture Periods</th>
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<tbody>
<tr>
<td>1937</td>
<td>- Marcus location began being cleared. Pavilion site and diary farm were built.</td>
<td>- regular courses started in the College's first building on Young Street in 1928.</td>
<td>- Agriculture, Engineering, General Sciences, and Home Economics.</td>
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<td>College of Hawaii Campus Plan - John Maxon Young - Bank of the Hawaii Islands Quadrangle development.</td>
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<td>Gothic Revival</td>
<td>Renaissance Revival</td>
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<td>1940</td>
<td>- College of Hawai'i moved to its permanent location.</td>
<td>- World War II start.</td>
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<td>1940</td>
<td>- University of Hawai'i</td>
<td>- World War II end.</td>
<td>- Waning tradition, tragic incident on the slopes of Hawai'i Hall lead to ban of racing in 1930.</td>
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<td>1950</td>
<td>- Parrington Hall (Academy) and Willard Hall (School of Education)</td>
<td>- Education and Performing Arts.</td>
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<td>- Original Maui Building (U.S. Department of Agriculture)</td>
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<td>- Founders' Gate, Yarran Circle, Andrews Outdoor Theatre</td>
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<td>- Old Gilmore Hall Crawford Hall (Social Sciences), Hammon Hall (Union Building), and Miller Hall (Home Economics)</td>
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<td>Marine Laboratory on Coconut Island</td>
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<td>- Further development of pathway into &quot;a series of places to sit, gather, study, stroll, and lounge&quot;</td>
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<td>- &quot;Waimanalo Plan&quot; update</td>
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<td>- Energy Crisis of 1973: Major innovations to new buildings due to poor design and shoddy workmanship, Vandals and Crime</td>
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<td>- Anti-War activism - Army ROTC building in Query set on fire; Vietnam War opposition; Protests</td>
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<td>Medical sciences, Psychology, Basic Sciences, Public Health, Business Administration</td>
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<td>Medical facilities expansion to community hospitals</td>
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<td>Waikiki hotel rooms leased to 500 students; Condominium apartments also rented</td>
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<td>Widespread condemnation of U.S. involvement in the Vietnam War; General questioning of the entire basis of Higher education; PUGS system; Environmental Movement</td>
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<td>- Rapid Waikiki resort and condominium development in the 1960s and 1970s</td>
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<td>- Environmental Movement</td>
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<td>- Rise in population density and cost of single homes led to rapid development of high-rise condominiums and apartments from Diamond Head to Pearl City</td>
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<td>- Rapid Waikiki resort and condominium development in the 1960s and 1970s</td>
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<tr>
<td>Period</td>
<td>UH Central Campus</td>
<td>UH Manoa Campus Buildings</td>
<td>UH Manoa Campus Buildings</td>
<td>UH Off-Campus Buildings</td>
<td>UH Housing</td>
<td>UH Academic Subjects</td>
<td>Events and Activities</td>
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<tr>
<td>1990</td>
<td>Marine Sciences Building, Law School Library</td>
<td>Seawater Pool &amp; Complex completion</td>
<td>Marine Sciences, Law, Athletics</td>
<td>Age of Computers</td>
<td>Post Modernism</td>
<td>Historicism; Restoration of open space, human scale and order; historically inspired motifs on new structures</td>
<td>1967 UHM Long Range Development Plan</td>
</tr>
<tr>
<td>1999</td>
<td>Trailers L, M, N, P Studio Building</td>
<td>Army ROTC Building</td>
<td>Persian Gulf War end</td>
<td>Persian Gulf War start</td>
<td>- All development proceeds continue into the 1990s</td>
<td>- All development proceeds continue into the 1990s</td>
<td>- All development proceeds continue into the 1990s</td>
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</tbody>
</table>

<table>
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<tr>
<th>Period</th>
<th>UH Central Campus</th>
<th>UH Manoa Campus Buildings</th>
<th>UH Manoa Campus Buildings</th>
<th>UH Off-Campus Buildings</th>
<th>UH Housing</th>
<th>UH Academic Subjects</th>
<th>Events and Activities</th>
<th>UH Campus Planning</th>
<th>University Design &amp; Planning</th>
<th>Hawaii Architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>C-MORE (Bioremediation expansion)</td>
<td>Medical Research</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
<td>- Construction expansion</td>
</tr>
</tbody>
</table>

- September 11 Attacks
- Need for speed and efficiency
- The Great Recession
- Growth in Hawaii's economy and infrastructure for years to come
- Research to establish sustainability standards for residential and commercial buildings
<table>
<thead>
<tr>
<th>UH Central Campus</th>
<th>UH Manoa Campus Buildings</th>
<th>UH Mānoa Campus Buildings</th>
<th>UH Off-Campus Buildings</th>
<th>UH Housing</th>
<th>UH Academic Subjects</th>
<th>Events and Activities</th>
<th>UH Campus Planning</th>
<th>University Design &amp; Planning</th>
<th>Hawai’i Architecture Periods</th>
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<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-BIM modeling of all</td>
<td></td>
<td>-UH Mānoa Landscape Master plan</td>
<td>-Campus improvement initiatives - Survey to transform UH Mānoa into a pedestrian-friendly campus; increased signage to improve wayfinding</td>
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<td>New Campus Center</td>
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<td>Recreation Expansion</td>
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<tr>
<td>New Information technology Center (4-5 stories), Gradle Hall (full renovation), Kaukendall (UH Net Zero Energy Renovation)</td>
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</table>

**UH West Oahu Campus**
Appendix B
Qualitative Research – Online Survey
University of Hawaii - Sense of Place

Campus Experience

My name is John Manuia. I am a graduate student, enrolled in the University of Hawaii at Manoa School of Architecture Doctor of Architecture (D. Arch) degree Program. As part of my academic curriculum, I am required to do an in-depth research project. The purpose of this investigation is to assess the experiential nature of the University of Hawaii at Manoa campus in an effort to uncover ways to improve its experience through design and planning strategies. I am asking you to participate in this project because you are at least 18 years old and a member of the University of Hawaii community.

During this research project, I will keep all data from the surveys in a secure location. Only I will have access to the data, although legally authorized agencies, including the University of Hawaii Committee on Human Studies, have the right to review research records.

Participation in this research project is voluntary. You can choose freely to participate or not to participate. Do keep in mind though that the results of this project will help me and other researchers learn more about methods to improve the design and planning of college campus environments. Your participation is very much encouraged.

If you have any questions about this project, please contact me at jmanuia@hawaii.edu. If you have any questions about your rights as a research participant, in this project, you can contact the University of Hawaii, Committee on Human Studies (CHS), by phone at (808) 956-5007 or by e-mail at uhirb@hawaii.edu.

Please print this section for future reference. Mahalo.

*1. Where is your favorite place on the University of Hawaii at Manoa campus and why?

*2. Where is your least favorite place on campus and why?

*3. Please indicate the extent to which the following environmental qualities make a place more appealing to Study / Work in

<table>
<thead>
<tr>
<th>Environmental Qualities</th>
<th>Most appealing</th>
<th>Somewhat appealing</th>
<th>Neutral</th>
<th>Less appealing</th>
<th>Undesirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanliness</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Privacy</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Views of beautiful scenery outside</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Natural ventilation from cool island breezes</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Shade (outdoor areas)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Flexibility in available seating</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Sense of security</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Light quality</td>
<td>○</td>
<td>○</td>
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</table>
**University of Hawaii - Sense of Place**

*4. Please indicate the extent to which the following environmental qualities make a place more appealing to Hang Out / Socialize at.*

<table>
<thead>
<tr>
<th>Quality</th>
<th>Most appealing</th>
<th>Somewhat appealing</th>
<th>Neutral</th>
<th>Less appealing</th>
<th>Undesirable</th>
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</thead>
<tbody>
<tr>
<td>Closest to Dining facilities</td>
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<tr>
<td>Cleanliness</td>
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<td>Privacy</td>
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<tr>
<td>Available amenities</td>
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<tr>
<td>Views of beautiful scenery outside</td>
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<tr>
<td>Natural ventilation from cool island breezes</td>
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<tr>
<td>Shade (outdoor area)</td>
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<tr>
<td>Flexibility in available seating</td>
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<tr>
<td>Sense of security</td>
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<tr>
<td>Light quality</td>
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<tr>
<td>Comfortable seating</td>
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</tbody>
</table>
**5. Please indicate the extent of which each facility type is needed on campus**

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Several more needed</th>
<th>1-3 more needed</th>
<th>Neutral</th>
<th>Less is needed</th>
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<tbody>
<tr>
<td>Bookstores</td>
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<td>Supply shops</td>
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<td>Food vendors</td>
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<td>Retail vendors</td>
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<td>Coffee shops</td>
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<td>Athletic facilities</td>
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<td>Study rooms</td>
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<tr>
<td>Outdoor seating areas</td>
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<td>Classrooms</td>
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<td>Lecture halls</td>
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<td>Research Laboratories</td>
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<td>Offices</td>
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<td>Auditoriums</td>
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<td>Printing services</td>
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<td>Galleries</td>
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<td>Dormitories</td>
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<tr>
<td>Vehicle Parking Structures</td>
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<tr>
<td>Bike Parking</td>
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<tr>
<td>Lounges</td>
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<tr>
<td>Performance spaces</td>
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</tbody>
</table>
### Wayfinding & Activities

**6.** Which areas on campus would you consider significant nodes or points of interest?

**7.** Which buildings on campus would you consider significant landmarks?

**8.** Where is your least favorite pathway onto campus and why?

**9.** Where is your most frequent entry point onto campus?

**10.** How frequently do you use campus maps to find your way around the university?

- Daily
- Weekly
- Monthly
- Not at all
- Only at the beginning of the semester

**11.** Which of the following features would greatly improve your ability to identify where you are on campus?

- More Signs
- Campus map boards
- Larger central plazas with distinctive elements
- Improved landscaping
- Other (please specify)
University of Hawaii - Sense of Place

*12. Where on campus do you spend the most time Eating at?
- Dining facilities (Campus Center/Paradise Palms/Manoa Gardens/Heau Pizza Hut)
- Uncovered exterior seating areas
- Inside my office / lab / classroom / studio
- Covered exterior seating areas
- Campus center lounge
- I do not eat on campus
- Other (please specify)

*13. Where on campus do you spend the most time Studying at?
- Hamilton Library
- Sinclair Library
- Dining facilities (Campus Center/Paradise Palms/Manoa Gardens/Heau Pizza Hut)
- Uncovered exterior seating areas
- Inside my office / lab / classroom / studio
- Covered exterior seating areas
- Campus center lounge
- Not a student
- Other (please specify)

*14. Which scenic area on campus do you enjoy the most?
- East West Center - Japanese Garden
- Krauss Hall - Pond / Courtyards
- Hawaii Hall Quadrangle
- McCarthy Mall
- Andrews Outdoor Theatre
- Other (please specify)
**University of Hawaii - Sense of Place**

**Demographic Information**

**15. When do you visit the University of Hawaii at Manoa campus most?**
- [ ] Early Morning (12-7 am)
- [ ] Morning (7-10 am)
- [ ] Midday (10-3 pm)
- [ ] Afternoon (3-6 pm)
- [ ] Evening (6-12 am)
- [ ] Weekends

**16. How long have you been coming to the university campus grounds?**
- [ ] 0-2 years
- [ ] 3-5 years
- [ ] 6-8 years
- [ ] 10+ years

**17. Where are you from?**
- [ ] Oahu
- [ ] Neighbor Islands
- [ ] U. S. mainland
- [ ] Pacific Region
- [ ] Europe
- [ ] Asia
- [ ] South America
- [ ] Australia
- [ ] Africa
- [ ] Other (please specify) [ ]

**18. Please indicate your gender.**
- [ ] Male
- [ ] Female
19. Please indicate the age range you are in
   - 18-20
   - 21-25
   - 26-29
   - 30-35
   - 36-40
   - 41-49
   - 50+

20. Please indicate your primary mode of transportation to the University.
   - Rainbow Shuttle
   - Walk
   - Skateboard
   - Bicycle
   - Moped
   - Automobile
   - Bus

21. How are you associated with the University?
   - Undergraduate Student
   - Graduate Student
   - Faculty
   - Staff
   - Researcher
   - Contractor
   - Visitor

22. What kind of activities or amenities does the university campus need more of?

23. If you could change one thing about the campus, what would it be?
Appendix C
Sense of Entry in Campus Environments – Case Study Research
Introduction

Campus identity begins with the entry experience. The sequence of the encounter shapes how people interpret and relate to the constructed setting. Buildings, landscape, pathways, open spaces, signage, amenities and symbolic features are the components that comprise campus environments. How these elements are organized and articulated influences user perception, use, and legibility of the place. This research project involved a comparative analysis of entry conditions to six campuses in the San Francisco Bay Area region. The selected sites include entrances to the (1) University of San Francisco, (2) Lette-terman Digital Arts Center at Presidio, (3) Facebook campus at Menlo Park, (4) University of California Berkeley, (5) Stanford University and (6) San Francisco State University.

My hypothesis is that a sense of entry is experienced when the user is perceptually engaged with environmental cues at an entry point that leads one through a defined spatial sequence. How the physical features of campus environments are organized, defined and configured impacts user perceptions of the place and behavior within. Land use patterns also impact how people identify with a campus setting. A comparative analysis of entrances across different campuses can thus provide a generative sample of patterns in design strategies for entry conditions.

This investigation involved a comprehensive case study approach. Data sources included archival evidence and formal and spatial analyses. Each case study campus entry was analyzed by direct observation in initial site visits, review of existing data, field verification, and graphic representations of layout configurations. Existing data was collected through photographs and analytical sketches during site visits. In addition, the physical development plans of each campus, derived from the individual institution's websites and other electronic resources, provided pertinent data in regard to building use, campus layout, parking, arrival points, landmarks, wayfinding features, contextual information, and strategies for physical development of the existing campus settings. This information, in combination with field verification of data, was utilized as the basis of analysis and research conclusions.

Each campus setting has multiple entry points which vary in layout, land use, amenities, landscape features and spatial sequence. In order to compare entry conditions, specific examples were selected and organized into six categories. These include: (1) Formal Procession; (2) Scenic Node; (3) Gateway; (4) Plaza; (5) Urban Corridor; and (6) Scenic Corridor. The following sections provide a description of each of these categories and case study examples that reveal key patterns in the design of entry conditions.

1. Formal Procession

The traditional grand entrances to the University of San Francisco (USF) Lone Mountain Campus, University of California Berkeley (UC Berkeley), and Stanford University are each unique in their layout, aesthetic attributes and experience. However, there are common aspects between them. Figure 1 shows the location of these entrances. An expansive lawn distinguishes the campus grounds at this entry point from the adjacent properties. Pathways, vegetation, buildings, landmarks, nodes, bus terminals, and parking are arranged in a layout that define the entry sequence. Figure 2 shows how these elements are integrated.

![Figure 1: Formal Procession - Entry Locations. (A) University of San Francisco Lone Mountain Campus; (B) University of California Berkeley; (C) Stanford University](image-url)
At each of these entrances there is a symbolic node on the open space shaped by the vehicular round-a-bout. It signifies the main arrival point to the campus. It is a gathering spot that aligns with a main axis in the campus plan. At this location, one is in direct view the processional corridor that leads to key focal points or landmark buildings. Parking lots, bus terminals, and entry pathways for pedestrians from the adjacent neighborhoods are situated in proximity to enable access to the symbolic node. The approach to this location differs in each campus setting.

At the University of San Francisco, this node is in the form of terraces that step up to the level of the main academic building (Figure 2A). As one progresses to each level of the terraces, the view of the surrounding neighborhood unfolds itself. The terrace at the highest elevation provides a stunning view of the city. Two rows of trees from this node to the entrance of the main academic building defines a processional pathway. Large trees behind the main buildings and surrounding the vehicular pathway frame the view of the campus. The layout of this hilltop campus entryway creates a sense of hierarchy in its relationship to the surrounding community. It speaks to the value of higher education.

At the UC Berkeley west entrance, the symbolic node is also at the top central location of the round-a-bout (Figure 2B). One has a framed view of the large open space and city beyond when looking away from the campus. There is also a direct view the tree lined corridor into the campus. In this case, the vehicular route extends into this corridor to a smaller round-a-bout that has access points to vehicular and pedestrian pathways to central open spaces and landmark educational buildings. Parking is located along the round-a-bout and adjacent streets as well as in a parking structure across the street from the central pedestrian pathway to the symbolic node. The main campus sign, located at the southern vehicular entry portal of the round-a-bout, is a symbol of the campus’ identity. This layout provides a scenic experience along the round-a-bout and into the campus setting. It distinguishes the user experience of the adjacent urban community from the campus proper.

Figure 2: Spatial Configuration. (A) USF Lone Mountain Campus’ Formal Entrance; (B) UC Berkeley’s West Entrance; (C) Stanford University’s Formal Entrance
Buildings across the campus entry are also property of the university. Figure 4 identifies the land use patterns for each of the campuses. Administrative and student service buildings are situated across the street from the UC Berkeley west entrance. Plus, there are nearby places to eat, shop, dine, recreate, and access the main transit terminals that connect the various regions of San Francisco Bay Area. This region is oriented toward student culture.

Stanford University has a grand formal entry sequence (Figure 2C & 3C). The symbolic node is located at the center of the round-about terminus of the tree-lined boulevard into the campus. From this location, one has an impressive view of the main quadrangle and bell tower beyond. The tree-lined boulevard, symbolic node, and entrance to the quadrangle are aligned along a central axis. It expresses a sense of hierarchy in the pathway leading towards the church at the center of the main quadrangle. These buildings are the key landmark structures of the campus. Parking and bus terminals are located in proximity to this spot. It marks the beginning of the pedestrian zone. There are no roadways leading into the campus from this entry point.

2. Scenic Node

Another type of entrance is the Scenic Node. It is a landscaped region with gathering areas and paved pathways within. Key examples include entry areas at San Francisco State University and the Letterman Digital Arts Center - North entrance (B) and West pedestrian entry pathway (C).
man Digital Arts Center at Presidio (Figure 3). Figure 5 shows the layout of these entry conditions.

The mini pocket park near the main parking structure of San Francisco State University is a scenic node. It is an outdoor gathering area on an artificial hill (Figures 5B, 6A & 6B). Students entering into the central part of the campus from the parking structure pass through and gather in this place. It is surrounded by tall trees that frame views of the surrounding buildings. The central part of this node is a sunken outdoor space. It allows daylight into the Student Health Center below.

The Letterman Digital Arts Center, located at one of the main entry points into Presidio in San Francisco, has a large landscaped region for visitors to gather and recreate in. It is composed of 4 large structures that occupy the southeast to northwest edge of the property, forming a bent L-shaped pattern (Figure 3B & 3C). This building arrangement creates a large niche used as a public park as part of the entry experience into Presidio. The complex as a whole is a scenic node. Figures 5B and 5C shows the layout the north and east entry points into this property.

The north entrance into the Letterman Digital Art Center (Figures 5B & 7B) is the main public entry from Highway 101. Views into the
The east pedestrian entrance provides a different experience. Figure 7C shows the layout of this entry condition. The entry pathway aligns with the crosswalk connecting the campus to the adjacent neighborhood. A campus map board is situated near the street entrance. It describes the layout of the complex which enables people to navigate their way around the place. From this point, one has a direct view of the distinctive architecture that characterizes the place (Figure 8B). The pathway acts as a pedestrian spine of which one has access to the restaurant, coffee shop, main office buildings, landmark nodes with framed views of the Exploratorium building beyond, and access to other pathways into the park and the south and west entryways (Figure 7C). Additionally, the park setting provides a scenic experience for those who work in the office buildings and visit the place.
3. Gateway

A gateway is an entry portal framed by one or more landmark structures that define a processional pathway through it. This type of entry comes in various forms. The UC Berkeley north and south entrances and Letterman Digital Arts Center west entrance are unique examples of this (Figures 9).

The UC Berkeley north gate features two monumental pillars (Figure 9A) that has a central axis aligned with the street perpendicular to the campus property line (Figure 11A). These pillars are situated on a circular plaza with benches along the west and east side of it. Small pillars along the north and south perimeter of the plaza enhances the users awareness of the plaza shape and symbolic presence. This gateway marks the entry portal between the campus and the community. The street along this central axis has a variety of amenities that students and community members can use.

Figure 9: Photos. (A) UC Berkeley north entrance - Landmark pillars as symbolic gateway (B) UC Berkeley south entrance - Sathera Gate; (C) Letterman Digital Arts Center west entrance - Entry portal under a pedestrian bridge connecting two campus buildings.

Figure 10: Gateway - Entry Locations. (A) UC Berkeley - North Entrance; (B) UC Berkeley - South entrance; (C) Letterman Digital Arts Center - West Entrance.

Figure 11: Spatial Configuration. (A) UC Berkeley - North Entrance; (B) UC Berkeley - South Entrance; (C) Letterman Digital Arts Center - West Entrance.
engage in. Figure 12A shows the land use pattern associated with this type of development. There are places to shop, dine, eat, and reside in. Two bus stops located near this gateway support pedestrian use of the commercial outlets in the area.

The UC Berkeley south entrance is also an active area for student life. There are performance arts venues, public plazas, restaurants, bars, student services, and stores on the campus property (Figure 12B). These types of amenities extend into the urban context along streets both parallel and perpendicular to this entry point. A bus terminal, located near the intersection of the pedestrian mall and street along the property line, brings frequent visitors to the area. This region is a popular destination for students and tourists alike.

Like the north gate, there is a defined central axis. Trees along this pedestrian mall are lined in three parallel rows that lead to the three entry portals of Sather Gate (Figure 9B). The procession of trees enhance its symbolic presence. Sather Gate accordingly is an iconic landmark that is associated with the identity of the campus.

Another type of gateway is the west entrance into Letterman Digital Arts Center. Figure 9C shows the form of this entry portal. It is defined by an enclosed pedestrian bridge that connects two main structures. The corridor beneath this bridge takes the form of a monumental gateway. At the center of the gateway is a pedestrian pathway that leads one into the landscaped setting.

The spatial sequence into this entrance starts near the street. Figure 12C shows how the space is configured. A map board is located to the right, when looking at the entry. It enables people to identify where they are in the campus. Three pillars separate the arrival point near the mapboard, from the pedestrian pathway under the bridge. It is a threshold for visitors to pass through. A similar condition can be seen in Figure 12A at the north gateway to the UC Berkeley campus. It is a subtle way of enhancing awareness of the entry portal configuration. All three gateways have a central axis, processional sequence of spaces, and landmark elements that define a distinct threshold.

Figure 12: Land Use. (A) UC Berkeley - North Entrance; (B) UC Berkeley - South Entrance; (C) Letterman Digital Arts Center - West Entrance
4. Plaza

Plazas are large outdoor spaces for public gatherings and activity. UC Berkeley’s Sproul Plaza (Figure 13A, right), Lower Sproul Plaza (Figure 13A, left), and Class of 1914 Fountain Plaza (Figure 13C), as well as the San Francisco State University Lower Campus main public plaza (Figure 13B) are each uniquely different. However, there are common elements and design patterns that link these plaza conditions. These include a distinctive landmark element or site feature, framed views into the plaza, a large public outdoor space with places to sit and gather; and amenities that prescribe to a desired character of the place.

Landmark site features typically are in the form of sculptures, water fountains, or other public art pieces. These elements act as distinctive markers of the place. Figure 13 shows the location of these features on each of the plaza sites. One key factor is siting these features in a spot that is visible from main pedestrian pathways outside of the plaza. This exposure draws people into the space. Trees and buildings along the perimeter of the plaza can be used to frame views of landmarks and site amenities.

Land use patterns are especially important in a plaza setting. It establishes...
the desired character and ambiance of the place. The Sproul plazas at UC Berkeley for example, are oriented towards student services, entertainment, and social activities (Figure 15A). Framed views into Lower Sproul plaza reveal a bar with outdoor seating, the performance arts theater, and a tall pillar as its landmark element. The plaza serves the theater and provides a venue for public events. The restaurant and coffee shop above, accessible from Sproul Plaza, has outdoor seating that overlook the lower plaza. The interrelationship of these two plaza levels and site amenities enhances the desired ambiance of a social and entertainment hub.

The University of San Francisco main plaza by contrast has a formal character (Figure 15B). St. Ignatius Church, situated at the southwest corner of campus, shares the plaza and landscaped area. Amenities that surround this plaza include a main library, mixed use building with offices and lounge areas, academic buildings, and a public park. Its programmed for community recreation, formal events, and peaceful study.

The Class of 1914 Fountain Plaza is a place of symbolic significance. 1914 was the year that the University of California became a statewide system. The fountain was installed in the plaza to commemorate this milestone. It is situated at the intersection of both vehicular and pedestrian pathways (Figure 13C). It is thus the main focal point of the area. The Hearst Museum of Anthropology, located adjacent to the fountain, adds an amenity to the site that coincides with the historic value of the place.
5. Urban Corridor

Urban corridor is an entry pathway between buildings of high density use and occupancy. There are public and private spaces along the corridor. Plazas provide spaces for communal gathering and social activities. Site amenities are situated at key locations along the path. The facades and street life within the corridor define the character of the place. Key examples of this type of entry experience is the northwest entry corridors into San Francisco State University (Figure 16A) and Facebook campus at Menlo Park, California (Figure 16B).

There are two urban corridors into the southwest section of San Francisco State University (Figure 17A). Figure 16A shows its layout configuration. The north entry corridor is a jagged path. At each bend along the journey, there is an amenity for campus users to engage in. Since this is a residential area, the amenities include dining, health and fitness centers, and student services (Figure 19A). Also, there are access points to adjacent plaza spaces for the residential community clusters.

The southwest entry corridor, shown on the same diagram, also has open spaces and amenities along its path. As one progressed into this corridor from the adjacent street, a large plaza is revealed along the left side of the path followed by a small café and food vendor on the right side. Both amenities support each other in providing a place to eat and socialize. This path intersects with the north entry corridor where the Student Services and Student Health Center buildings are located. It is an appropriate site for these functions.

The Facebook campus likewise has a jagged main pathway along its central corridor (Figure 16B). As one proceeds down the path, more amenities are revealed. The campus interior corridor is designed as a pedestrian street. There are

Figure 16: Spatial Configuration. (A) San Francisco State University - Northwest entry corridors; (B) Facebook Campus, Menlo Park

Figure 17: Urban Corridor - Entry Locations. (A) San Francisco State University - Northwest entry corridors; (B) Facebook Campus, Menlo Park
places to dine, shop, linger, meet for collaborative discussions, service equipment, or gather with fellow colleagues and friends. Outdoor spaces include large plazas, small gathering areas, outdoor dining areas, and scenic spots. It’s a mixed use development. Employees have access to amenities that enable them to enjoy their communal work environment both inside their office space and outdoor areas. Access to this complex is through enclosed lobbies at the end points of the spine and in a central building. There are also entry corridors between structures that lead into the main plazas. Figure 18B shows the landuse pattern associated with this experience.

6. Scenic Corridor

Scenic corridor is a narrow entry pathway, between large buildings with lush landscaping, that leads one through a spatial experience that gradually reveals the landscape setting beyond. The southeast entry corridors into San Francisco State University (Figure 19A) and south entry pathways of the Letterman Digital Arts Center (Figure 19B) are key examples of this type of entry.

Both of these campuses have a large outdoor landscaped area as its core scenic gathering place. Buildings and trees along the perimeter of these campuses provide framed views of the interior space. Additionally, landmark elements are strategically placed in spots that draw people inwards. The landscaping and pathway configuration is organized in a manner that slows down the journey into a gradual unveiling of a signature moment in the campus experience.

The San Francisco State University main pedestrian entrance is a scenic corridor. It is situated at the southeast corner of the campus. Figure 20A shows the layout of this entry point. This location is a main transit hub for the area. There are muni bus and train terminals near the main intersection.
A large pillar at the southeast corner of the property is a signature landmark feature of the entryway (Figure 22A). It identifies the campus through the use of signage on its surface. This pillar is located at main entry points along the perimeter of the campus. It enables people to locate the main entrances.

The spatial sequence from this landmark feature is clearly defined. Upon arrival, people are drawn toward the pillar. The pedestrian pathway adjacent to it, between the administrative and academic building, then comes into view (Figure 22B). One can see a small statue in the distance. This draws people inward. Figure 22C shows a view of the statue at a closer distance. It is situated at the center of the main library plaza.

The plaza is on a plateau that overlooks the central open space. Expansive lawns, intersecting pedestrian pathways, large trees, and landmark buildings are the key features that characterize this signature space. Figure 21 shows a view of this space from the plaza. The entire campus is organized around this main scenic area.

Letterman Digital Arts Center at Presidio in San Francisco has a different layout for its scenic corridors. Figure 20B shows the site plan for this entry condition. Key components of this design include (1) a threshold,
(2) curvilinear pathway, (3) node, (4) landmark, and (5) viewpoint.

The spatial sequence begins at the threshold. Six pillars line across the start of the pathway, near the south parking area (Figure 24A). These elements symbolically define the entry portal for the passageway. From this point, one can see the facades of the buildings on both sides of the corridor and trees that block direct views of the site ahead.

The curvilinear pathway and vegetation shapes the journey along this corridor. Trees are strategically placed in spots that expose the viewer to key features incrementally. For example, the node at the center of the pathway is hidden at first. As one moves closer, its presence become more apparent. Figure 24B shows a view of the node and landmark beyond. This node is strategically placed and landscaped to provide an intimate experience of the constructed view.

A statue is placed at the center of a viewpoint. It is the focal point that leads the viewer to the end of the pathway. Beyond the statue is a view of the main dome of the Exploratorium. It is the signature landmark feature of Presidio. One also has a view of the entire landscaped region of the Letterman Digital Arts Center complex.

Both scenic corridors integrate landmarks, site trees, buildings, and viewpoints to navigate the user to the desired destination. This incremental unveiling of the signature feature of the campus gives the user a unique and memorable experience.

Figure 23: Land Use. (A) San Francisco State University - South west entry corridor; (B) Letterman Digital Arts Center - South entry pathways

Figure 24: San Francisco State University photos. (A) Campus Signage Landmark at southeast corner of the property; (B) Scenic Corridor; (C) Landmark feature in the main library plaza
Summation

This investigation involved a comprehensive analysis of entry conditions into campus environments. Six campuses were studied through direct observation, review of existing data, and the creation of analytical diagrams. Key patterns emerged in the study enabling categorization of entry conditions and identification of key design strategies per entry type. These case study examples and identified design strategies will be used as the basis of my D. Arch design project.

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