archawai`i School Design:  
*Incorporating “Involving College” Design Principles*  

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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 fulfillment as a Doctorate Project for the degree of Doctor of Architecture in the School of Architecture, University of Hawai`i at Mānoa.

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This doctorate project is dedicated to my parents, Wayne and Victoria Fukumoto. It is for their love and support that I am forever grateful.

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Duane Fukumoto
1.0 Abstract

2.0 Introduction

2.1 Site Analysis

3.0 Student Engagement

3.1 Definition of Student Engagement

3.1.1 Time on Task
3.1.2 Quality of Effort
3.1.3 Student Involvement
3.1.4 Outcomes
3.1.5 Good Practices
3.1.6 Academic and Social Integration
3.1.7 Student Engagement—Involving Colleges

4.0 Extended Literature Review

4.1 Importance of Environment in Student Engagement
4.2 How to Assess Physical Environments

4.2.1 Location
4.2.2 Physical Properties

4.2.2.1 Human Scale
4.2.2.2 Complimentary Between Mission and Physical Plant
4.2.2.3 Spontaneous Interaction Spaces

4.2.3 Psychological Properties

4.2.3.1 Absence of Anonymity
4.2.3.2 Appropriation of Personal Space

4.2.4 Organizational Properties

4.3 Designing Effective Spaces for Student Engagement

4.3.1 Case Studies

4.3.1.1 Durham University – Techno Café
4.3.1.2 Edge Hill University
4.3.1.3 Glasgow Caledonian University- Saltire Center
4.3.1.4 Northumbria University - City Campus Library
4.3.1.5 Universities of Sussex and Brighton
4.3.1.6 Newham College
4.3.1.7 Birmingham Metropolitan College - Matthew Boulton Campus

4.3.2 Conclusions

5.0 Implementing Involving College Principles to archawai`i

5.1 Preliminary Observations at archawai`i

5.1.1 Courtyard

5.1.1.1 24-Hour Observation
5.1.1.2 Dodgeball Tournament

5.2 Professional Counsel

5.2.1 Problems
5.2.2 Precedence
5.2.3 Advising

5.3 Approach

5.4 Design

5.4.1 Architectural Concepts

5.4.1.1 Human Scale
5.4.1.2 Complimentary Between Mission and Physical Plant
5.4.1.3 Spontaneous Interaction Spaces
5.4.1.4 Appropriation of Personal Space

5.4.2 Programmatic Concepts

5.4.2.1 Faculty Office Hoteling
5.4.2.2 Student Initiative
5.4.2.3 Programmatic Alternatives in New Spaces

5.5 Projected Results

6.0 Conclusions

7.0 Bibliography
List of Figures

Figure 2.1-1 archawai`i in relation to courtyard. (Google)
Figure 2.1-2 The Old Quadrange Site Plan (plan by Miyabara Associates)
Figure 2.1-3 The Old Quadrange (UH LRDP Department)
Figure 3.1.3-1 Astin’s (1984) I-E-O Model
Figure 3.1.5-1 Adapted Astin Model for NSSE (NSSE 2012)
Figure 3.1.6-1 Tinto’s Longitudinal Model of College Student Departure
Picture 4.3.1.1-1 Techno Cafe
Picture 4.3.1.1-2 Techno Cafe “Pod”
Picture 4.3.1.1-3 Tutors visiting “Pods”
Picture 4.3.1.2 Conceptual Illustration of how space works
Picture 4.3.1.2-1 Refurbished Edge Hill University LRC
Picture 4.3.1.3-1 Saltire Center gathering space
Picture 4.3.1.3-2 Various Types of learning environments in nearby spaces.
Picture 4.3.1.3-3 Learning spaces with social flexibility.
Picture 4.3.1.3-4 Flexible Seating choices.
Picture 4.3.1.3-5 Inflatable learning space.
Picture 4.3.1.4-1 Northumbria University - City Campus Library
Picture 4.3.1.4-2 Student Study Room Picture
Picture 4.3.1.4-3 Library Basement
Picture 4.3.1.5-1 Centre for Excellence in Teaching and Learning in Creativity
Picture 4.3.1.5-2 Student usage
Picture 4.3.1.5-3 Projection of space
Picture 4.3.1.5-4 Touchboard usage in group work.
Picture 4.3.1.6-1 Newham College
Picture 4.3.1.6-2 Classroom Conceptual Sketch (Michael O’Sullivan Design)
Picture 4.3.1.6-3 Classroom Conceptual Sketch (Michael O’Sullivan Design)
Picture 4.3.1.6-4 Classroom Conceptual Sketch (Michael O’Sullivan Design)
Picture 4.3.1.6-5 Classroom Conceptual Floor Plan (Michael O’Sullivan Design)
Picture 4.3.1.7-1 Matthew Boulton Campus Award Wall
Picture 4.3.1.7-2 Design Area
Picture 4.3.1.7-3 Corridor Artwork
Picture 4.3.2-1 Existing Courtyard
Picture 4.3.2-2 Coffee Cart in use
Figure 5.1-1 Architectural School Courtyard.
Figure 5.3.1-1 Example of view planes from differing levels
Figure 5.4.1-2 Example of glass and wood material integration.
Figure 5.4.1-3 Human Scale spaces
Figure 5.4.1-4 3rd Floor Courtyard Floor Plan
Figure 5.4.2-5 3rd Floor Courtyard Rendering
Figure 5.4.2-1 Existing and Proposed changes to ARCH 205 and Gallery
Figure 5.4.2-2 Circulation of Existing and Proposed Changes to ARCH 205
Figure 5.4.2-3 Render of ARCH 205 Entrance during weekday
Figure 5.4.2-4 Rendering of ARCH 205 Entrance during event
Figure 5.4.2-6 Reception area
Figure 5.4.2-7 Entrance to archawai`i emphasizing connection to quadrangle and student work at the reception.
Figure 5.4.2-8 archawai`i logo (archawai`i)
Figure 5.4.2-7 archawai`i branding and imaging identity system by Adine Close, John Bennet Cruz, Hao In Kuan and Yonghao Yan
Figure 5.4.2-8 Elevation of archawai`i with built-in photovoltaic (BIPV)
Figure 5.4.2-9 Plan of BIPV Canopy
Figure 5.4.2-10 Onyx Solar BIPV Canopy quality of light (Onyx Solar Company)
Figure 5.4.2-11 South Entrance
Figure 5.4.2-12 South Entrance rendering
Figure 5.4.2-13 Green Walls in 2nd Floor Courtyard
Figure 5.4.3-1 Proposed Adjacencies on 2nd Floor of archawai`i
Figure 5.4.3-2 Proposed Adjacencies on 3nd Floor of archawai`i
Figure 5.4.3-3 Example of Informal Space
Figure 5.4.3-4 Furniture examples intended for Informal Spaces (Designers as listed)
Figure 5.4.3-5 Café Spaces
Figure 5.4.3-6 Café Furniture Set . (Producers as listed)
Figure 5.4.3-7 Detail of Café bar-style counter at ARCH 205 entrance
Figure 5.4.3-8 Rooftop Garden and Presentation area
Figure 5.4.3-9 Rooftop Garden with Putting area
Figure 5.4.3-10 Green Roof Design
Figure 5.4.2.1-1 Existing and proposed renovation to 3rd floor office space
Figure 5.4.2.1-2 Existing and proposed renovation to 1st floor office space
Figure 5.4.2.1-3 Breakdown of current faculty at archawai`i (University of Hawai`i School of Architecture 2013)
Figure 5.4.2.1-4 Breakdown of current faculty and classes at archawai`i (University of Hawai`i School of Architecture 2013).
Figure 5.4.2.1-5 Type A offices on the first floor of archawai`i.
Figure 5.4.2.1-5 Type B offices on the first floor of archawai`i.
Figure 5.4.2.1-6 Alternative spaces for Type B faculty members can use for class preparation.
Figure 5.4.2.1-7 Hoteling Space for Type C Faculty
Figure 5.4.2.1-8 AsureSpace™ User access (Asure Software)
Figure 5.4.2.1-9 AsureSpace™ User access via tablet (Asure Software)
Figure 5.4.2.1-8 AsureSpace™ Administration view (Asure Software)
Figure 5.4.2.2-1 AIAS Schedule of Events for Fall 2013 (AIAS Hawai`i)
Figure 5.4.2.2-2 archawai`i lecture marketing (archawai`i)
Figure 5.4.2.2-3 archawai`i’s lecture series calendar (archawai`i)
Figure 5.4.2.3-1 Courtyard arrangement
Figure 5.4.2.3-2 Courtyard during normal business hours
Figure 5.4.2.3-3 Courtyard events during evening hours
Figure 5.4.2.3-4 Courtyard during presentation
Figure 5.4.2.3-5 Café during day operations
Figure 5.4.2.3-6 Dive Bar night operation
Figure 5.4.2.3-7 Rooftop Space during the day
Figure 5.4.2.3-8 Rooftop Space during presentation
Figure 5.4.2.3-9 ARCH 205/Gallery Space during day
Figure 5.4.2.3-10 ARCH 205/Gallery Space for event use at night and presentation
Figure 5.4.2.3-11 3rd Floor Courtyard during the day
Figure 5.4.2.3-12 3rd Floor Courtyard night event
1.0 Abstract

The archawai`i School Design aims to create a design renovation alternative based on the principles of Involving Colleges and student engagement. The focus of the project is on creating or redesigning spaces at archawai`i to encourage more interactions between students, and students and faculty outside of studio and classrooms. Methods of determining the design include interpretative historical research on student engagement in relation to college design, case study research of technical implementation, observational research, and through professional counsel, produce a viable design direction for archawai`i. I expect that this project will be a viable piece of knowledge for the University of Hawai`i School of Architecture to further its mission to inspire transformative design with pre-eminence in the Asia-Pacific region (University of Hawai`i Mānoa School of Architecture 2012).
2.0 Introduction

The University of Hawai`i School Of Architecture is the academic home to approximately 280 students in route to their D.Arch degrees. The school is comprised of approximately 16 full-time and 60 part-time faculty members facilitating the university’s first professional architecture doctorate degree program (University of Hawai`i School of Architecture 2010). It is a school that prides itself on the integration of diverse Asia-Pacific region practices, yet students have trouble connecting on campus.

This project is an attempt to identify architectural techniques that will increase student engagement through interpretative historical research, case studies, observational research, and incorporate professional counsel in order to create a viable design direction to support the University of Hawai`i School of Architecture’s (from hereon arc Hawai`i) mission. The scope is to identify possible design alternatives based on the student and faculty body, and the existing facility program that is at arc Hawai`i. The project will hypothesize how the alternatives will improve student engagement in the spaces.

The original hypothesis for the project believed that redesigning the classroom and through programmatic implementation, would refresh the paradigm of learning spaces at arc Hawai`i. In the first attempt, the project simply looked at the psychological factors of classroom design and implemented it into unconventional spaces. After further research, it was then amended to include the whole physical plant as a learning space (Kuh, Schuh, et al. 1991). The direction then required spaces to take on the aspects of classroom design into more less formal spaces for
learning and incorporate an social flexibility to maximize learning opportunities—these spaces, though high efficiency in learning, do not look like conventional classrooms. In brief, it was concluded that often times, the most flexible, informal, and social spaces is where most learning happens, but it is just a smaller part of what engaging spaces provide for student enroute to their degrees.

The initial questions that shaped the project were inspired by personal experiences during the seven and a half years as a student at archawai`i. One consistent occurrence was simply not knowing students in architecture-specific courses. With a student body of less than 300, anonymity is often a problem, but from 2006-09, it was a common episode to not identify with students of the same studio level in common classes simply by not meeting them. An acknowledgement is that through the tenure at archawai`i, the school has had two different deans and one interim dean leading the program. Along with the changes in leadership, archawai`i has also lost an assistant dean position, and has changed the program from a 7-year D.Arch program to a 4 year (B.Environmental Design) plus a 3-year (D.Arch) program, and also added a Global track program for a M.Arch in China in addition to a D.Arch from archawai`i, and a “boot camp” program in which college graduates (regardless of degree backgrounds) may enter the D.Arch program with an additional semester and summer course set. My graduating class has approximately 10% of the original starting first-year class to graduate in eight academic years (due to program changes). The initial question then asked if classroom design had any influence on student identity in colleges. The development also asked if healthy architectural spaces had any link to education
and possibly salary. Through the interpretative historical research, both links were identified and under the guidance of the project’s committee, a design implementation based on the research principles was the goal.

The project also identifies that the timetable for the research and design portions allow for several design concepts and implementations. It will not attempt to create construction documents for the design. Its focus will remain on how the implementations relate to student engagement and aims to improve it based on *Involving Colleges* principles.

### 2.1 Site Analysis

![Image of Archawai'i in relation to courtyard](figure2.1-1.png)

Figure 2.1-1 Archawai‘i in relation to courtyard. (Google)

Archawai‘i denotes the west-most building in the quadrangle opposite of Hawai‘i Hall. The building was built in 1994 replacing portable wooden structures previously existing on site. The design criteria includes:
The Old Quadrangle is envisioned to provide opportunities for academic and social activities. The existing quality of the space would be retained and enhanced, recognizing its symbolic and historic significance, architectural integrity, and landscape character. The Quad would provide a safe, convenient and accessible environment for all to experience and enjoy.

DESIGN CRITERIA
a. Maintain open space, particularly view planes, formal axis-ways, and preservation and improvement of the central lawn area.
b. Define and clarify circulation patterns by eliminating vehicular traffic and responding to pedestrian movement.
c. Retain and enhance the existing historic significance, architectural integrity and landscape character.
d. Small-scale gathering areas should be located at entries of George, Crawford, Dean, Gartley Halls, and Saunders Hall. A larger-scale gathering area should be located between George and Crawford Hall, allowing for possible outdoor teaching use or special events.
f. An information kiosk is proposed to be located at the southeast entry to the Quad.
g. Site furnishings should include trash/recycling receptacles, drinking fountains, bicycle storage racks and benches, reflecting the Old Quadrangle's historic character. (University of Hawai`i at Mānoa Long Range Development Plan; Group 70 International 2007).

Figure 2.1-2 The Old Quadrangle Site Plan (plan by Miyabara Associates)
The climate in Mānoa is considered a Tropical Savanna Climate located at Latitude: 21 19N Longitude: 157 49W with an elevation of 210 feet. Mānoa has an average temperature at approximately 64 degrees Fahrenheit, and the average amount of precipitation is 65.7 inches with most of it coming in December with 7.4 inches. The month with the lease precipitation is in September at approximately 3.7 inches. On average, it will rain 220 days of the year with an average of 22 days coming in July, and the least in February with 14. It does not snow in Mānoa (Canty and Associates LLC 2013).
3.0 **Student Engagement—Why is it important?**

Student engagement is a term undeniably linked with the success of students’ education (Garrett 2011). Studies show that higher levels of student engagement in college activities may contribute to a difference in salary of about 4.5% (Hu 2009). Also, while not the total amount of the college experience, student engagement has positive effects on problem solving, critical thinking, and persistence (Mauk 2011), as well as higher grades (Carini, Kuh and Klien 2004). These are all integral parts to succeeding in college, and as college faculty would hope, in the working years following graduation. It is important to place emphasis on student engagement, specifically as the commuter and adult learner, a common demographic at the University of Mānoa School of Architecture, as “adult learners are interested in trying to connect their educational experience to the rest of their lives, and the more they can do that, the more involved they become (Richmond 1986).”

Astin claims that involvement, as he defines student engagement, is important to developing aspects of students outside of the classroom.

> We are trying to develop people’s talents as much as we can, which is a different concept from that of trying to make people smarter by developing their cognitive abilities. Talent development is something to which everyone in the institution can be committed. You get dissension when you start talking about which talents to develop. But as a generic idea, talent is something we all value and see as good for the individual and society. (Astin, 1986)

The relevance of students’ success also relates to the institution’s overall mission statement. This mission statement is regarded as the identifying focus of the educational experience. It was claimed that a clear, coherent mission gives students direction and minimizes confusion and uncertainty about what the institution is and
aspires to be (Kuh, Schuh, et al. 1991). Without students, the mission statement is not fulfilled, so it arguable that mission statements are only lived through the success or failure of the student in regard to the mission (Kuh, Schuh, et al. 1991).

Building on the argument of mission and institution, there are several goals that involvement attacks: talents, as mentioned previously, as well as retention of students (Astin, 1986). In conclusions drawn by a 2007 peer review studying the engagement of students about incoming student readiness, it was claimed that first-year students typically study less, write less and read less than they thought they would (G. D. Kuh, What Student Engagement Date Tell Us about College Readiness 2007). The conclusions imply that students are often surprised of 5,796 activities outside of the classroom. The problem then persists: if students spend most of their time outside the classroom, the eclectic mix of student initiative, learning environment, and institution must spend greater effort on educating students outside of the classroom as well as traditional forms of education. Studies show that when institutions emphasize student activities, students become more involved, thereby enhancing active and collaborative learning, and diversifying perspectives when understanding issues (Kuh, Laird and Umbach, Aligning Faculty and student behavior: Realizing the promis of Greater Expectations 2004).

The purpose of this study is to first to define student engagement. Second is to identify what conditions of which student engagement happen at the University of Hawai`i School of Architecture. Finally is to propose solutions pertaining to the environment, institution, and student initiative relating to improving student engagement.
3.1 **Definition of Student Engagement**

While student engagement is a large part of students’ success, the definition of student engagement on the other hand, is not as easily defined. Student engagement is an often discussed but difficult to define variable related to student success. When asked, most, if not all, faculty and students agree that engagement is a highly desirable trait for collegiate academics (Farmer-Dougan and Mckinney 2001).

Among the years, the concept of student engagement has changed:

1. **3.1.1 Time on Task** (Tyler 1930)
2. **3.1.2 Quality of Effort** (Pace, 1960-70’s)
3. **3.1.3 Student Involvement** (Astin, 1984)
4. **3.1.5 Good Practices in undergraduate Education** (Chickering and Gamson 1987)
5. **3.1.6 Academic and Social Integration** (Tinto, 1993)

The study of the National Survey of Student Engagement (from hereon NSSE) describes student engagement as:

The first is the amount of time and effort students put into their studies and other educationally purposeful activities. The second is how the institution deploys its resources and organizes the curriculum and other learning opportunities to get students to participate in activities that decades of research studies show are linked to student learning (NSSE 2012).

The importance of this definition gives us a working constant that defines the success of college experience outcomes. The definition provided by the NSSE is split into two parts that describe first the students’ initiative to better their own
education by making efforts to enrich it and second, the institution’s responsibility to providing a proper infrastructure for learning opportunities and resources. In support, the NSSE’s framework and qualitative survey tools seem to encompass all previous theories mentioned.

In support of the NSSE’s definition, it would be beneficial to understand why the previously mentioned definitions are inadequate as a holistic perspective of student engagement.

3.1.1 Time on Task

Time on task as a general identifier of how effective student engagement uses time as a quantifiable denominator for the effects of student engagement. What time does not quantify is the depth to the enrichment, positive or negative, to the outcomes of the students relative to themselves. To a degree, students who spend more time doing class-related activities, get better grades (Kuh 2004). This, though, does not identify the effect of student engagement on the student well-being. It later becomes a principle of Good Practices by Chickering and Gamson (1987).
3.1.2 Quality of Effort

Quality of effort is an important tool to describe the impact of student engagement on the student him/herself. Merely a tool measured by relativity, it relies heavily on self-report, without correlation data relating to the same increases quantifiable by the institution, quality of effort is a difficult measure to triangulate for validity. What is good about quality of effort is that it shows growth (or deterioration) of a particular subject. This is very useful in the generation of qualitative effect of an experience common among a demographic.

3.1.3 Student Involvement

*Student Involvement* defines involvement as the amount of physical and psychological energy that the student devotes to the academic experience (Astin, Achieving Educational Excellence 1985). The defined *involvement* is Astin's understanding of *engagement*. In 1984, Astin produced his *Input-Environment-Outcomes* (from here on I-E-O) model of college development of students. It described the three parts as:
The model emphasizes that students come in with their own characteristics, yet the total experience of the student happens due to many different experiences during college. They are known as the environment and are not to be confused with merely a physical setting. Finally, the initial inputs with the experiences of the environment renders outputs, which range from personal growth of knowledge, beliefs and values, as well as objectively test scores and grade point averages, and even further: persistence.

Some important assumptions Astin (1984) states is that:

A) Involvement requires investment of energy in objects (tasks, people, activities).
B) It is continuous.
C) It has both quantitative and qualitative features.
D) The amount of learning or development is directly proportional to the quality and quantity of involvement.
E) The Educational effectiveness of any policy or practice is related to its capacity to induce student involvement.
3.1.5 Good Practices

*Good Practices*, by Chickering and Gamson, created a good outline of practices between institution and students. The NSSE created the framework of the study around these principles. The points were tools as well as indicators allowing an enriched dialogue of good practice. By principle, the good practices could be defined by seven points (Chickering and Gamson, 1987):

A) Encourages student-faculty contact.
B) Encourages cooperation among students.
C) Encourages active learning.
D) Gives prompt feedback.
E) Emphasizes time on task.
F) Communicates high expectations.
G) Respects diverse talents and ways of learning.

*Frequent student-faculty* interaction outside of the classroom is the most important aspect to student motivation and involvement. Chickering and Gamson claim that faculty who openly show concern for students allow for student resilience during tough times. Students who find that faculty members care for their academic growth enhances students’ intellectual commitment and encourages them to assess and reassess their own values and plans (Chickering and Gamson, 1987).

In the Saint Joseph’s College core curriculum, faculty members who lead discussion groups in courses outside their fields of specialization model for students what it means to be a learner. In the Undergraduate Research Opportunities Program at the Massachusetts Institute of Technology, three out of four undergraduates have joined three-quarters of the faculty in recent years as junior research colleagues. At Sinclair Community College, students in the “College without Walls” program have pursued studies through learning contracts. Each student has created a "resource group," which includes a faculty member, a student peer, and two "community resource" faculty members. This group then provides support and assures quality (Chickering and Gamson, 1987).

The case studies imply that when there are definitions of roles for students and an involvement of faculty in that definition or model (as with Saint Joseph’s) students then understand the place and expectation regarding students. Massachusetts Institute of Technology case study implies that a large participation of research
happen at a one-on-one basis. Sinclair Community College, have created a program implementation setting up the infrastructure for more students and faculty to be able to have an enriching, customizable, yet effective academic experience. It must be noted, though, that the implementations show higher rates of student-faculty interactions relating to academic experiences, but it does not dictate whether the program was/is successful or not.

Cooperation among students is an important piece of learning in architectural studies due to its social nature. Chickering and Gamson believe that working with others often increases involvement in learning. Good learning, like good work, is collaborative and social, not competitive and isolated. Sharing one’s own ideas and responding to others’ reactions sharpens thinking and deepens understanding (1987). The authors, though, do not believe that this cooperation creates an enriched learning environment around student competition. One may argue that the competitive nature revolving around individual architectural students in studio, and the strive for work publication and awards, the competition aspect of architecture is embedded in the development of students. 5th-year architecture student, Jeremy Mendoza claims that:

"Being in a competitive environment makes you do more, therefore you become a better architect. It teaches you the personal expectations of what you hold yourself to. (Mendoza 2012)"

Second-year student Rubinson Intong Jr. identifies that architecture is a competitive major by nature, but it enhances diversity positively:

"Architecture is a very competitive major. The competition makes you learn about what your classmate is doing. It really encourages diversity (Intong 2012)."

The competitive aspect of architecture is an undeniable element of the learning environment. To discount or to neglect this principle would be negligent. The two
students effectively point out that through student cooperation, parts of the education process, particularly in architecture, is catalyzed by competition. The cooperative nature also nurtures skills that aren’t taught though lecture or research. Both statements identify and support the authors’ value of cooperation.

Encouraging active learning describes active learning as more than students merely sitting and regurgitating factual information. Chickering and Gamson point out that students must process and actively identify and apply learning points to their lives outside the classroom. Students then can relate new learning theories to past experiences and then implement them into their daily lives. It is argued then, students make it a part of themselves.

Active learning is encouraged in classes that use structured exercises, challenging discussions, team projects, and peer critiques. Active learning can also occur outside the classroom. There are thousands of internships, independent study opportunities, and cooperative job programs across the country in all kinds of colleges and universities, in all kinds of fields, for all kinds of students. Students also can help design and teach courses or parts of courses. At Brown University, faculty members and students have designed new courses on contemporary issues and universal themes; the students then help the professors as teaching assistants. At the State University of New York at Cortland, beginning students in a general chemistry lab have worked in small groups to design lab procedures rather than repeat prestructured exercises. At the University of Michigan’s Residential College, teams of students periodically work with faculty members on a long-term original research project in the social sciences. (Chickering and Gamson 1987)

The emphasis on active learning takes traditional practices of instruction further than lecture-type classes. It implies that the most important parts of instruction happen during the process and integration of new learned theories. By processing with peers and exercises outside of the classroom, the academic experience allows
Prompt feedback is a principle that increases the effectiveness of instruction as well as mitigates ineffective academic techniques. Chickering and Gamson argue that a good amount of feedback helps to benefit from courses. It is also stated that students need chances to perform and receive suggestions for improvement. This allows students to reflect on the new information they have learned as well as the opportunity to reassess what previous experiences they started off with enroute to assessing themselves. No feedback can happen without assessment, but assessment without timely feedback contributes to little learning (Chickering and Gamson 1987).

Emphasis on time on task emphasizes that there is no substitute for time spent on a task. More accurately, as students mature, the concept of effectiveness of time spent on task becomes more important. One could spend as much time as another, yet the outcomes may not reflect the same amount of time spent. While particular to students, time on task and emphasis on the effectiveness of that time is useful to both students and professionals.

Mastery learning, contract learning, and computer assisted instruction require that students spend adequate amounts of time on learning. Extended periods of preparation for college also give students more time on task. Matteo Ricci College is known for its efforts to guide high school students from the ninth grade to a B.A. in six years through a curriculum taught jointly by faculty at Seattle Preparatory School and Seattle University. Providing students with opportunities to integrate their studies into the rest of their lives helps them use time well. Workshops, intensive residential programs, combinations of televised instruction,
correspondence study, and learning centers are all being used in a variety of institutions, especially those with many part-time students. Weekend colleges and summer residential programs, courses offered at work sites and community centers, clusters of courses on related topics taught in the same time block, and double-credit courses make more time for learning. At Empire State College, for example, students design degree programs organized in manageable time blocks; students may take courses at nearby institutions, pursue independent study, or work with faculty and other students at Empire State learning centers. (Chickering and Gamson 1987)

Institutions in the examples first define the expectation of students, it then gives suggestions that encourages efficient use of time. The cases also show that not all emphasis needs to be institutionalized. It would also imply that in places that give students the opportunity to design their journey enroute to their degrees, students will spend more time independently studying, and engage with other faculty and students (Chickering and Gamson 1987).

_The communication of high expectations_ is important due to the emphasis that high expectations generally generate more successful results. High expectations are beneficial to all persons involved in the educational journey: students (prepared or ill-prepared), faculty, as well as administration. Expecting students to perform well sets the premise for student success. Institutions and faculty members should hold high expectations for themselves and make extra efforts to uphold and maintain these expectations. Clarity of these expectations should be voiced frequently and should be upheld with supportive action by the institution:

In many colleges and universities, students with poor past records or test scores do extraordinary work. Sometimes they out-perform students with good preparation. The University of Wisconsin-Parkside has communicated high
expectations for under prepared high school students by bringing them to the university for workshops in academic subjects, study skills, test taking, and time Management. In order to reinforce high expectations, the program involves parents and high school counselors. The University of California-Berkeley introduced an honors program in the sciences for under prepared minority students; a growing number of community colleges are establishing general honors programs for minorities. Special programs like these help. But most important are the day-to-day, week-in and week-out expectations students and faculty hold for themselves and for each other in all their classes. (Chickering and Gamson 1987)

Respect of diverse talents and different ways of learning re-emphasizes that there are vast amounts of learning types relating to the same vastness of how students learn effectively. Chickering and Gamson argue that students need the opportunities to show their talents and learn in the ways that work for them. This creates an interesting issue for faculty members: effectively transferring the information they have to students, and also maximize the academic experience of each student. This principle implies there is no one-way to address the diversity principle.

Individualized degree programs recognize different interests. Personalized systems of instruction and mastery learning let students work at their own pace. Contract learning helps students define their own objectives, determine their learning activities, and define the criteria and methods of evaluation. At the College of Public and Community Service, a college for older working adults at the University of Massachusetts-Boston, incoming students have taken an orientation course that encourages them to reflect on their learning styles. Rockland Community College has offered a life-career-educational planning course. At the University of California, Irvine, introductory physics students may choose between a lecture-and-textbook course, a computer-based version of the lecture-and-textbook course, or a computer-based course based on notes developed by the faculty that allow students to program the computer. In both computer-based courses, students work on their own and must pass mastery exams. (Chickering and Gamson 1987)

Currently, the NSSE uses an adaptation of Astin’s I-E-O model by readdressing the environment model as shown below:
3.1.6 Academic and Social Integration

Tinto’s (1993) academic model incorporates five core concepts when looking at student retention:

1) Pre-Entry Attributes
2) Goals/Commitments
3) Institutional Experiences
4) Integration
5) Outcomes

Graphically, Tinto’s longitudinal model of College Student Departure is illustrated:
Figure 3.1.6-1 Tinto’s Longitudinal Model of College Student Departure

Tinto (1993) approaches the student engagement by investigating why students leave instead of why they persist in college. Persistence in college is defined as “the act by a college student of remaining continuously enrolled at the institution originally chosen for their college education” (Mauk 2011).

In the model that he provides, Tinto (1993) acknowledges that students come into college with certain pre-entry attributes (much like the claim of Astin’s I-E-O model) but it wasn’t the largest reason for students leaving. The largest reason for students leaving was a lack of connection with other students and faculty (Tinto 1993, Mauk 2011). Tinto (1993) also found that students who have more integrated social and academic experience were more likely to persist; it then suggests that
students with strong friendships and working relationships with faculty are most likely to stay in college (Mauk 2011). In relation to inputs influencing sociability among new students, a large part of psychological adjustment and maturation comes from making new friendships in the first year of college (Swenson, Nordstrom and Hiester 2008). This places a large amount on stress to create spaces and supportive infrastructure to establish and maintain relationships between students. Tinto (1993) also argues that previous theories place too much of an emphasis on financial backing and low grades as inputs; instead, he claims that they were extreme cases of students withdrawing from college. Students with the same financial and GPA conditions who connected significantly did not withdraw, strengthening the argument that student to student relationships is an important component of student persistence (Mauk 2011). Other input variables that are difficult to account for is the concept of “social fit” (Bean 1985). Bean noted that students with an active social life self-reported lower GPAs but students who had higher demonstrated early and strong levels of institutional fit showed higher levels of persistence. Furthermore, Bean claimed that peer interactions were more important that faculty interactions (Bean 1985).

3.1.7 Student Engagement in Involving College Contexts

In the book “Involving Colleges” (Kuh, Schuh, et al. 1991), in addition to previous frameworks, it first attempts to define what an involving college is. It then identifies the parts to the institution that create the involving college and offers
solutions to existing colleges to take steps to meet more favorable conditions.

In part one, Involving Colleges are defined as college environments that encourage active learning outside of the classroom (Kuh, Schuh, et al. 1991). Some of the indicators of involving colleges include:

- Faculty members make time for students
- The blending of curricular and out-of-class learning experiences is acknowledged and valued
- Everyone is held to high, clearly communicated standards
- Institutions value undergraduate learning wherever it occurs

The theory places a large emphasis on out-of-class learning experiences (Kuh, Schuh, et al. 1991). Involving colleges attempt to enrich the Astin’s statement about excellence:

True excellence lies in the institution’s ability to affect its students and faculty favorably, to enhance their intellectual and scholarly development, and to make a positive difference in their lives. The most excellent institutions are, in this view, those that have the greatest impact – “add the most value,” as economists would say – on the student’s knowledge and personal development” (Astin 1985).

It is concluded then, that when out-of-class experiences compliment the institution’s educational purposes, they contribute significantly to student learning and personal development (Kuh, Schuh, et al. 1991). First, the student learning is defined as the acquisition by students of lasting knowledge or skill consistent with the educational purposes of the institution (Kuh, Schuh, et al. 1991); next, personal development includes the attitudes, skills, and values that enable one:

- To understand and reflect on one’s thoughts and feelings
- To recognize and appreciate the differences between oneself and others
- To manage one’s personal affairs successfully
- To care for those less fortunate
  To relate meaningfully with others through friendships, marriage, and civic and political entities
- To determine personally and socially acceptable responses in various situations
- To be economically self-sufficient (Kuh, Krehbiel and Mackay 1988)

It is defined that out-of-class learning experiences are those that are in active participation in activities and events that are not part of the curriculum but nevertheless compliment the institution's educational purposes (Kuh, Schuh, et al. 1991). It is listed that some of the spaces are, but are not limited to the hallway, laboratory, library, residence hall or union—as well as collaboration on research and teaching projects (Kuh, Schuh, et al. 1991). In E. K. Wilson’s literature, it is said that 70 percent of what a student learns during college results from out-of-class experience (Wilson 1966). It is specifically stated that these activities include seven kinds:

- Cultural
- Social
- Political
- Communication
- Religious
- Academic
- Athletic (Wilson 1966)

Research has shown in favor of the out-of-class participation in such ways:

- Participation in orientation activities positively influence both social integration and institutional commitment, leading to indirect positive effects on satisfaction and persistence (Pascarella, Terenzini and Wolfe 1986).
- Students involved in out-of-class activities are more positive about their college experience, are more satisfied with their social life, living environment, academic major (Kegan 1978) and are more likely to graduate
Out-of-Class activities provide opportunities for development of leadership skills, such as teamwork, decision-making, and planning (Schuh and Laverty 1983).

- The ability of students to establish the capacity for mature, intimate interpersonal relationships is positively related to participation in campus organizations and recreational activities (Hood 1984).

The second part of the book emphasizes the promotion of student learning and development. Kuh places a large emphasis on the academic strategy of mission and philosophy: "For Involving Colleges, no factor is more powerful in promoting student involvement in learning than the institution’s mission and philosophy" (Kuh, Schuh, et al. 1991). Kuh claims that the mission and philosophical statement allows for a constant compass in which institutions can embed every decision relating to the institution and its members. “Mission and philosophy provide a rationale for the institution’s educational programs, policies and practices” (Kuh, Schuh, et al. 1991). Kuh claims that for missions to be successful they must:

- Be relatively clear and coherent
- Support high, but reasonable expectations for student achievement undergirded by an ethic of care.
- Determine and legitimate distinctions among individuals and groups.
- Enable multicultural and multiracial student subcommunities.
- Provide a unifying focus for all members of the communities. (Kuh, Schuh, et al. 1991)

Derivative of the mission and philosophy is an institutional culture that is a developed phenomenon of an institution’s organizational structure, policies and practices; some of its indicators are:
• History
• Traditions
• Language
• Sagas
• Physical Setting
• Symbols and/or Symbolic Action
• Values and Assumptions (Kuh, Schuh, et al. 1991)

According to the NSSE, they distinctly lay out indicators of good student engagement.

• Level of Academic Challenge: the extent to which expectations and academic work challenge students to learn
• Active and Collaborative Learning: students’ efforts to actively construct knowledge
• Student-Faculty Interaction: level and nature of students’ contact and interaction with faculty
• Enriching Educational Experiences: students’ participation in activities that broaden their experience and Knowledge
• Supportive Campus Environment: students’ perceptions about the institution’s commitment to their success
And cultivation of positive relationships among different groups on campus (NSSE 2012)
4.0 Creating Higher Student Engagement Spaces at archawai’i

4.1 Importance of Environment in Student Engagement

Kuh claims that student engagement happens in two ways: a) in-class traditional teacher-student interaction and b) out-of-class informal learning environments (Kuh, Schuh, et al. 1991). The campus environment includes all the conditions and influences, such as physical, chemical, biological and social stimuli, that affect the growth and development of living things (Western Interstate Commission for Higher Education 1973). It is important to understand how the physical environment either hinders or enhances the student engagement in both the in-class and out-of-class spaces. In this sense, student behavior is a product of students interacting with the institution’s various subenvironments: physical spaces, policies, and people (Hubner 1979). Therefore, the previous claim argues that the physical environment students interact with directly affects the level of student engagement.

4.2 How to Assess Physical Environments

Biard (1988) claims that physical learning environments can be assessed in four ways: demographic, perceptual, behavioral, and multimethod. Demographic work uses approaches that reflect data like student characteristic and distribution of majors; perceptual relies heavily on responses to surveys reflecting the perception of the institution; behavioral assesses observations of actions of all users
in the physical environment; finally, multimethod uses all three as a combination. The methodologies Biard proposes are derivatives of these physical environments, Kuh pushes these categories into more objectifiable approaches in *Involving Colleges* (1991).

Involving Colleges are assessed through four shared characteristics: locations, physical properties, psychological properties, and organizational properties (Kuh, Schuh, et al. 1991). Kuh later acknowledges that cultural properties also represents a large influence on physical environment, but the broad term of “culture” is difficult to objectify and argue.

### 4.2.1 Location

No matter where a college is located, a common institutional statement is that the college is a perfect location for enacting their mission, philosophy, policies, and practices (Kuh, Schuh, et al. 1991). It illustrates that all colleges claim to be a *good place* for college. Sensitivity by the institution allows leaders to portray the qualities of the location and turn them into advantageous educational support. Therefore, it is important to understand how locations of campuses affect their abilities to influence students.

### 4.2.2 Physical Properties

The physical environment of Involving Colleges contributes to the students learning and development in two ways: the properties of the physical environment
shapes behavior, either encouraging or discouraging students from taking advantage of learning opportunities; and student involvement in the process of designing and redesigning the physical environment can promote student learning and development (Kuh, Schuh, et al. 1991). Kuh (1991) claims that physical plants of the Involving College are generally attractive, well-maintained, and complement the institution’s educational mission and purpose in a clear manner. Simply, Involving Colleges create good working and learning environments by developing a good sense of human scale.

4.2.2.1 Human Scale

Human scale is an important element as to creating a good learning space. It is varied as to why, but in short, human-scale physical learning spaces engender a sense of efficacy and confidence (Hall 1966). This is important since students are not the only ones who feel helpless or hopeless when the built classroom environment is beyond their control. (Veltri, Banning and Davis 2006) Faculty members often feel the same anxieties plus another negative emotion: fear. (Veltri, Banning and Davis 2006). Human-scale physical structures allow students to become familiar with and feel competent in their environment, they also permit a sense of environmental mastery and control and encourage interactions that contribute to social cohesion and feelings of security and safety (Kuh, Schuh, et al. 1991). Simply, good learning environments allow all users to become comfortable, thereby creating conditions where users’ engagement becomes most efficient.

Benefits of human scale tend to have a qualitative demeanor. For example,
smaller, low-rise dormitories seem to be more cheerful, friendly, relaxing, and spacious than larger, high-rise dormitories (Kuh, Schuh, et al. 1991). Cohesion and social interaction characteristics of small living units seem to mediate tensions and stress common to academic communities (Bickman 1973, Moos 1979).

Human-scaled learning environments are small and comfortable, whereas large, vault-like classrooms remain architecturally splendid, but are inadequate in providing the basic interaction required by instructors and students (Daily Times 2003). Hall (1966) claims that human-scale environments are not over-crowded, blend in with the natural surroundings, and accommodate small number of people in structures usually no more than three stories. Examples of dorms as such described exist at Stanford University, where 85 percent of undergraduates are in more than 70 student dorms and houses. None of them accommodate more than 280 students, and most have fewer than 60 residents (Kuh, Schuh, et al. 1991).

In conclusion, human scale creates one of the best efficiencies of space due to the effectiveness of formal learning environments (Hall 1966), in relation to total volumetric space.

4.2.2.2 Complementary Between Mission and Physical Plant

A physical setting and mission should be linked and easily perceived when experiencing the space. As mentioned before, it is important for institutions to have a clear and coherent mission and vision statement; In involving colleges, this connection between philosophical and physical settings are apparent and enriching to the overall experience for the users of the space (Kuh, Schuh, et al. 1991).
Kuh (1991) notes several examples that illustrate the link between Mission and Physical Plant.

Xavier University campus, with its limestone main building replete with arches, spires, and religious statues, is a lasting monument to its Catholic heritage. [...] At Grinnell College, the union is called the Forum, a facility that hosts meeting rooms, a snack bar, student government, and so forth. Located near the center of campus, the Forum attracts a large number of students. A cup of coffee is only 16 cents, a price that encourages students and faculty members to use the facility between classes. The name of the building indicates what is expected to take place there. “Open Forums” are presented frequently, an opportunity for students to state and debate their position on matters of importance to the Grinnel community and beyond, such as women’s safety and cultural and ethnic issues. Thus, the Forum is a physical manifestation of one of the guiding tenents of the institution’s mission: involvement in current social and political issues.

The Miami Campus is “what a college should look like”; “it is a Hollywood view of a college campus.” Considerable effort is put forth by the building and grounds staff to maintain Miami’s pleasant, well-kept image. [...] Dining tables in residence halls are covered with tablecloths. The food, in generous supply and attractively presented, is of high quality. The walls in some of the dining rooms are covered with wallpaper and attractive furniture. (Kuh, Schuh, et al. 1991)

The examples clearly state previous attempts to allow institutional philosophies in the design of the school. While the manifestation of the aesthetic are arguable, each example successfully exemplifies how a particular concept was chosen and then exaggerated to emphasize a particular philosophy relating to the school.

In the end, when done holistically, complementary design that exhibits the institution’s philosophies help to remind users about the overall intentions of the institution.

4.2.2.3 Spontaneous Interaction Spaces

Involving Colleges deliberately create spaces that encourage spontaneous interactions through the use of space in campus facilities and the natural landscape (Kuh, Schuh, et al. 1991). In relation to why this is important, it pushes the idea that
70 percent of learning happens outside the traditional classroom (Wilson 1966), therefore an institution should place if not as much, but more emphasis on the physical environment other than the formal classroom.

Good examples of spontaneous interaction spaces do several things:

a) Make informal socializing possible without extra effort.

b) Spontaneous interactive spaces should not impede on functions of other spaces.

c) Various forms of socializing possibilities.

d) Spontaneous interactive spaces should be placed in places that increase chances of interaction but should not show that it is trying to spur interaction.

Some examples of spontaneous interactive spaces are in Stanford where small groups can congregate in wide hallways and stairwells, benches near walkways, or bulletins and chalkboards near every entry foyer of houses or dorm. They all allow students to stop and visit without obstructing the functions of other students and spaces (Kuh, Schuh, et al. 1991).

4.2.3 Psychological Properties

Colleges should designed with accessibility and wayfinding, as accessibility is the main determinant whether the physical plant encourages or discourages student initiative and learning (Kuh, Schuh, et al. 1991). Accessibility is an aspect of environment design that can be controlled regardless of the size of the school—this alludes to the importance of human scale in conjunction with the degree to which people are friendly and helpful, and the arrangement of the facilities (Kuh, Schuh, et al. 1991).
As far as the qualitative aspects of the college, while the size of schools are generally reactive to the amount of students the college desires, colleges should always be comfortable, personal, and manageable in larger institutions (Kuh, Schuh, et al. 1991).

Two aspects of a community that display generally favorable psychological properties are (1) Absence of Anonymity and (2) Appropriation of Personal Space (Kuh, Schuh, et al. 1991).

### 4.2.3.1 Absence of Anonymity

An·o·nym·i·ty: (Noun) The quality or state of being unknown to most people (Merriam-Webster, Incorporated 2013)

Kuh admits that for smaller institutions, because of its size it is easier for smaller institutions to maintain an absence of anonymity. The natural movement for the student body is a mixing of the students at a manageable scale. It is, then important to have enhancing peer groups whose values are compatible with the institution’s educational purposes (Clark and Trow 1966; Newcomb 1962). Involving colleges should instill and promote the importance of students supporting each other and encourage independence, interdependence, developing its own culture in alignment to the institution’s (Kuh, Schuh, et al. 1991). Basically, with the absence of anonymity, students who are in involving colleges should never feel or get lost in the crowd.
4.2.3.2 Appropriation of Personal Space

Involving colleges offer spaces that offer solitude. These spaces should be appropriated since in the absence of anonymity is relevant, students should find places that they are not always “on tap” (Kuh, Schuh, et al. 1991). Kuh also notes that in these spaces, students take temporary ownership of their surroundings. Many involving colleges have policies that permit students to adapt their residence hall rooms to personal tastes through paintings and the construction of unusual furniture configurations (Kuh, Schuh, et al. 1991).
4.2.4 Organizational Properties

Learning and personal development is highly influenced by the organization of the college experience. Involving Colleges reduce the distance between the student’s experience and his or her individual sense of responsibility, thereby creating student responsibility, influence, and autonomy (Kuh, Schuh, et al. 1991).

Programatically, Involving Colleges offers abundant opportunities for students to participate actively in campus activities. They include:

- Leadership Positions
  - Departmental clubs/organizations
  - Social clubs/organizations
  - Student government
- Recreational Sports
- Campus and Off-Campus Work opportunities
- Internships
- Cooperative Education arrangements
- Paraprofessional roles in student affairs
- Board of Trustees (Kuh, Schuh, et al. 1991)

Additionally, Involving Colleges find ways, formal and informal, to encourage students to get involved, often even prior to admission so that students “feel” welcomed and invested into before stepping on campus (Kuh, Schuh, et al. 1991). It is important, though, to find a balance between the formal and the informal events as it has been found that some times student defer from more formal events in favor of informal ones (Moffat 1988).
4.3 Designing Effective Spaces for Student Engagement

Spaces that allow for time to network, discuss and debate encourage student learning (Markwell 2007). At archawai`i, lecture classes (Arch 100, 235, 271, 272, 320, 321, 322, 521, 522, 523, CEE 472) have a history of incorporating group projects creating learning dynamics in which the classrooms are able to accommodate the needs of the class when in the class timeframe. Some of the issues with certain classes that have group dynamics is that:

- Lecture rooms are only open to students during their class time.
  - Numerical locks have been placed on doors without sharing of access codes.
- Not all students are architecture majors, therefore convenience is partial to studio-classmates over non-architecture students.
- Not all architectural students who are in the same group are in the same studio, thereby requiring a condition where they can meet.
- Limited courtyard accommodations do not make it preferable to extend study outside of the classroom.
  - Alternative spaces are reserved for architecture students.
    - Student Lounge
    - Studios
    - Reading Room
• Observations of the courtyard show, though, that students use courtyard to study, but they are limited to two tables with access to power outlets, therefore short usage times are recorded.

A general conclusion can be made that the archawai`i courtyard has the most potential as an engaging space. Several reasons conditions leading to intervention at archawai`i:

• Many case studies show that when food or drink is available, it creates a good dynamic that brings students into spaces.
  o The archawai`i courtyard has an operating coffee cart that attracts primarily architectural students, but shows minimal interest by non-architectural students.

• The courtyard also is in close proximity to lecture rooms, thereby keeping non-architectural students away from the reserved spaces for architecture students on the ascending floor.

• If met, the conditions of the courtyard could be a good middle ground for faculty to meet with students either formally, or informally.
  o Generally architectural students’ spaces are in the studios.
  o Faculty members have personal offices and they are all on one side of the architecture building with limited access hours.

• Student organizations show interest in producing more events in the courtyard after hours.
• Courtyard needs to accommodate the social activities in a flexible fashion.

• Sharing of student work happens in the formally in the gallery and in passing the main office entrance of the school. The architectural courtyard is the only place where all students go through at all times, creating a better opportunity to share archawai`i culture and work.

• Main office entrance is only open from 8:00 A.M - 4:00 P.M. Also, there are two other nodes of entry to the architecture school, so not every user utilizes this entrance and sees student work.

• Gallery is open only during limited times and exhibitions.

• The courtyard is used as a reception after architectural special lectures and is the only option to accommodate such conditions.

One of the main objectives of the project is to extend the classroom into the courtyard to accommodate more informal learning environments; it is an accommodation to the social nature of architecture studies. Statistically, 70 percent of what a student learns is a result of out of class experience (Wilson 1966), it is in the best interest to make those opportunities available and accommodating.

According to the Joint Information Systems Committee (from hereon JISC), a non-departmental public body in the United Kingdom that researches higher education in learning, teaching, research, and administration believes that:

An educational building is an expensive long-term resource. The design of the individual spaces needs to be:
- Flexible—to accommodate both current and evolving pedagogies
- Future-Proofed—to enable space to be re-allocated and reconfigured
- Bold—to look beyond tried and tested technologies and pedagogies
- Creative—to energise and reinspire learners and tutors
- Supportive—to develop potential of all learners
- Enterprising—to make each space capable of supporting different purposes

A learning space should be able to motivate learners and promote learning as an activity, support collaborative as formal practice, provide a personalised and inclusive environment, and be flexible in the face of changing needs (JISC 2006).

The following case studies have been chosen due to the examples of alternative techniques in which to create better informal learning environments. The reason the case studies do not reflect simply courtyard studies is because of the implementation value. The intent is to create an extention of the classroom in an informal fashion. The highest levels of success point to studies in which social integration and non-formal alternatives were incorporated with technology and a more informal setting.

Essentially, archawai`i is similar to some of the contexts of the case studies due to its open floor flexibility, and its ability to accommodate different functions. The main difference is the courtyard’s outdoor environment. By concept, a roof is all that separates the archawai`i context with many of these public case study spaces which are indoors.

Objectively, the case studies illustrate techniques in which student engagement either increased or existed where there was either less or none before. The assessment of these case studies will lead to conceptual solution in which the design portion of this project will address in the context at archawai`i.
4.3.1 Case Studies:

4.3.1.1 Durham University – Techno Café (JISC 2006)

*Picture 4.3.1.1-1 Techno Cafe*


Project: Prototype of future development focusing on refurbishment.

Context:

Durham University had two types of IT facilities: a) lecture-style: each student had his/her own machine. B) Central facility: projector in a lab with desks facing projection. British Computer Society Accredidation requires second year students to do a large group project. Due to size and scheduling, the IT facilities could not support the work of the group activity. The concept of the Techno-Café was that an individual should be able to work in a team environment that is facilitated by computers but not driven by them.

Another conceptual integration was that there is not only a drive for integration of technology, but also sustainability with its usage. The lighting was designed for cost effectiveness, and also students were responsible for turning off equipment when not in use, a ‘hopeless situation’ within old labs, but students
learned through and implementation of a competition-based sustainable workshop.

In this way Durham tries to encourage sustainability not only by setting appropriate standards itself but also by getting students to consider the active choices that they make. (JISC 2006)

Program:

- Bar facilites
- Vending Machines
- 10 "Pods" for group work (2 for groups of 8, 8 for groups of 6+tutor)
  - Central table
- 48" monitor
- Dimable backlighting
- Soundproofing
- Appropriate power outlets
- Laptop
- Tablet PC
- Smartboard (or similar technology)
- Video conference ability

- 40-60 Person Capacity

Conditions:

- No restrictions to any form of technology.
- Students bring their own technologies.
- Wireless network, but LAN available
- Groupwork is interscholasic, half from Durham, the other half from Newcastle
- Students must take a sustainability workshop
- Students emphasized to take responsibility of facilities

Observations:

- Durham avoids describing the space as a teaching room, lab or suite because all of those start to communicate to the students that this is a traditional means of teaching. They want students to see it as is their space so only refer
to it as the Techno-Café although it is technically a suite of group work spaces.

- It has been used for a broad range of activities: teaching, examinations, induction and tutorials.
- A tutorial at Durham would typically be around six students for an hour doing activities.
- The end of the booth is open which means that a demonstrator facilitating a more traditional lab lesson or an academic leading a tutorial can see and communicate effectively with the students within the booth.

Cost of Project:

- Including equipment was just under £300K ($48,2910 USD)

Success Factors:

- Materials
  - The use of chrome rather than white plastic, whilst adding to the cost, can actually make a huge difference to the look and feel. Using soft materials with soft lighting does make a difference to the way it is perceived.
  - Bright colors in the Techno-Café are done in the traditional Durham palatinate (purple) again giving it a sense of Durham identity but also giving it in a color that isn't the traditional magnolia.
There is 'wavy' lighting on the ceiling that breaks up the hardness of a ceiling and looks a bit towards science fiction.

Giving students a nice facility that enables them to do the kind of work they wanted to do in a very relaxed and supportive environment makes them react very differently to the obvious pressures in an academic program that is trying to get them to stretch themselves.

**Student Responsibility**

Previously they used to get people to log in and log out as a means of recording their stint to make sure they stayed there for two hours. Many are now staying for three or four hours at a time. If you give students the respect and the facilities they appreciate that: they work better and they work longer and they work more effectively.

Students take care of shared technologies.

**Concerns:**

**Privacy**

Interestingly students are now concerned about privacy with regard to the competitive element of the project to a much greater extent than when they were in a traditional PC lab. They have even asked for curtains at the end of the booth (much to the hilarity of the designer). They wanted to be closed in and encapsulated in their little booth which is an interesting concept in terms of how they perceive
ownership in terms of the location and how they really want to preserve that degree of space as being their own.

Conclusions:

- Students took a long time adjusting to the new technological space, removing themselves to old-style lab alternative
- Students needed to be encouraged to use new facility.
- Students then needed to be educated on how to use the new facility.
- The new spaces became a direct interface, substituting needs for virtual interfaces like e-mail between group members.
- LCD technology was recommended over plasma.
- Concerned with the risk of electrocution if students spill drinks and have sourced an inventive gadget that protects the transformers under a rubber seal, still allowing students to eat and drink around liquid-sensitive technology. In the 18 months of running the Techno-Café no equipment has been damaged.
- In the 18 months of running the Techno-Café no equipment has been damaged.
4.3.1.2 Edge Hill University – LRC (JISC 2006)

Time of Study: July - August 2006

Project: Refurbishment over a period of 8 weeks: Social Learning Space on the Ground Floor of the Learning Resource Centre (LRC).

Context:

The 15 year old Learning and Resource Center had a fixed seating arrangement with open spaces for PC usage. Students requested more social space and areas for laptop use.

The education resource collection has been 'weeded' down by one-third to make space. There is also a café that offers food and drink alternatives for students who use the space. It is also a space free from restriction from food and drink.

The idea is aligned with constructivist pedagogies and students being active in the way that they learn and work together. It helps to enable that and ties in with the teaching and learning approaches within the University in which students are allocated more time outside of formal teaching than they used to. It also fits with the principle of diverse leaning needs and the fact that there is no typical student so they need to be able to personalise the learning environment according to their individual needs and requirements. (JISC 2006)

Program:
Express PC stations

Café

Rooms for group study (With fixed PC) – Full capacity 120 persons

Mobile zones within LRC to mitigate cellphone usage in quiet places

Various forms of furniture that allows for social learning spaces (informal)

Conditions:

No restriction to food and drink

Wireless enabled

Students can bring books from library to individual stations

Students can borrow a laptop or bring their own

Observations:

It was expected that social meetings might have constituted the majority of what went on but it feels more like the other way round - students are going in there to work and socializing while they are there.
• Group rooms retain a sense of informality and personalization as well as allows students to integrate personal technology.
  o It has been said this area becomes too noisy to study.
  o Mobile zones were created for cell phone users to mitigate added background noise.

Cost of project:

• £80-90k ($104,125.99-$117,141.74)

Concerns:

• The increase in users created a large increase in noise. Students needed to be aware that for quieter places of study, there were available quiet spaces upstairs.
  o If one wanted a quiet space in the new refurbished area, it did not exist.
• Café hours were from 8:30 A.M.-9:30 P.M. When the café closed, the whole social area lost its ambiance.
• Only 10 loanable laptops. Students weren't able to use the services offered with excellence.
• Internet users often were timed out and/or lost connectivity (about half the users).

Conclusions:
• Flexibility is the key, it allows for students being able to make use of the space in the way that really suits them. The number of them that take their shoes off to sit on the comfy sofas is incredible.

• Students don’t tend to move the furniture very much as they can find a space which suits them without pulling things together. There are large round tables that can fit 6 or 7 students around comfortably.

• The refurbishment was done over the summer when the LRC is quieter and summer programs don’t include initial teacher training programs so it was acceptable for the educational resource center to be out of action for a while.

• The space is successful because of the diversity of the ways in which students can work in there and the fact that they can easily integrate the technology and make use of their own technology. It brings together a lot of the things they would really like to be able to do in working with the library stock, accessing library systems, learning together and they can even eat and drink.
4.3.1.3  *Glasgow Caledonian University- Saltire Center* (JISC 2006)

*Picture 4.3.1.3-1 Saltire Center gathering space*

Time of Study: January 2003-January 2006

Project: New build

Context:

Saltire is an acronym that stands for:

S:  *Service* to our Students

A:  *Active* approaches to

L:  *Learning* and

T:  *Teaching*, a 21-century way of managing our

I:  *Information*, the repository of our

R:  *Research* collections, and

E:  *Engaging* our students.

The Saltire is also the name of the Scottish flag. Also known as the St Andrew's Cross. The Saltire is pictured at the center of the University's crest. An appropriate name for a campus hub; the social, intellectual, and cultural heart of the campus.

The brief developed to be about creating a building that offered a non-institutional important third place; a key place that people want to come to. With the increasing flexibility of delivery it would have a significant role in encouraging and supporting the sociality of learning, and generally add to the value of the student’s experience of life as part of a University. Key to this is encouraging departments to make their work more visible by having events and exhibitions in the Saltire Centre. (JISC 2006).
Program:

*Picture 4.3.1.3-2 Various Types of learning environments in nearby spaces.*

*Picture 4.3.1.3-3 Learning spaces with social flexibility.*

*Picture 4.3.1.3-4 Flexible Seating choices.*
• 1800 places to study
  o 600 seat learning café
  o 400 computers
  o 150 laptops to borrow
• Various seating options
• Central information desk
• Seminar area
• Consultation rooms
• Café
• Teaching/Tutoring areas on 1st and 4th floors
• Library resources (books)
• Assistive technology is available with special height desks and high specification computers.

Conditions:

• Building is wired
• Furniture is flexible and easy to integrate technology
  o Many seats can be moved
  o They are informal styles of seating (like bean-bag chairs) and allow for quick removal to fit the needs of users
  o Many of the seating arrangements have built-in power outlets and internet LAN lines.
• Digitally controlled compact storage of printed books for space efficiency.
• An audible 'shush' lets users know when they are entering a quiet zone.
• Printers and photocopies have been screened so as to minimize disruption.

Observations:

• It is a single point of access for all services for students within the university, alongside the books, journals and computers expected of such a facility.
• The design of the building iterates the aims and aspirations of the university: that differences in learning style are to be welcomed, that learning should be seen as a social activity rather than just a solitary one, and that students should, as far as possible, be in control of their learning environment and of their own learning.
• The arrangement of most furniture within the social areas of the center can be easily reconfigured to match the size and purpose of the group and, where a discreet meeting point is called for, an inflatable igloo wall can be brought in to provide a sound baffle.

Success Factors:
• The Saltire Centre is designed to be a self-regulating and highly flexible environment. Arrangement and type of computers, tables, shelving and background signals of sound and color help users to recognize the type of activity preferred in each area. Data and power are carried in under floor cabling.

• Bespoke furniture contains power sockets to support use of laptops, plasma screens for viewing multimedia resources, display screen technologies, and for battery charging. Inflatable screens create an 'igloo' in which discussion can take place between groups, yet there is no permanence about these structures. Furniture can be reconfigured in the social areas for a range of purposes.

• Sound transference is contained by the separate access to floors from a central atrium stair with bridges across to each self-contained floor of the center, by sound baffles in the ceiling, and by acoustic signals that suggest the type and level of sound each area is intended to support.

• The ground floor of the Centre provides a 2,500 sq. m. one stop shop for all services to students - with individual service desks, meeting pods, inflatable barriers to create a meeting point, six consulting rooms located in the same environment as study spaces, and a café. The effect is that of a 'mall' in which students can shop for services, access email, find refreshments and meet others.

• This highly innovative model of learning presents a challenge to the established didactic, centralized model, in which control over students’
access to, and behavior with, learning materials is the norm. Experiences from the Learning Café have shown that there is a pattern to the way in which users behave within such spaces. Higher noise levels are to be expected at the start of a semester or academic year, when the need for social interaction is at its highest. This will then naturally diminish as the semester progresses and as the demands of the curriculum impinge on student behavior.

Conclusions:

- Lots of appropriate situational technology is better than high tech solutions that few understand. Encourage people to bring and use their own technology.
- Celebrate the opening. Prepare resources for academics to introduce the new facilities to students.
4.3.1.4 Northumbria University - City Campus Library (JISC 2006)

Time of Study: 2003-December 2006
Project: Refurbishment and IT upgrade
Context:

By 2001, the City Campus Library at Northumbria University was used to capacity and refurbishing was in order to update the old-fashioned spaces. While technological services were being updated, the spaces in the proximity did not reflect the same strive for cutting-edge updating. Student satisfaction began to drop especially in light of the new age IT demands and the library’s lack of infrastructure to accommodate.

'Great Learning, Great Experience, Great Future' is the banner of Northumbria University and this was used to guide the design. The journey through the building had to be learner focused; the promotion of a high quality student experience is central to the University’s mission statement. The student voice is important and developments were based on sound pedagogy with support for innovation in learning and teaching. (JISC 2006)
Program:

- Basement: Learning Café
- Ground floor: Student services counter
- Floors 2-6: extensive and regionally significant library stock with associated study areas

Conditions:

- Students also wanted a hybrid space with resources, study spaces, IT, secure environment and social space all under the one roof.
- Whole building (9 floors) must be wireless enabled.
- Laptops are on loan at floor 1
- Through the Learning Portal, the students can access (among other services):
  - the Skills Plus programmer (written by the Library and Learning Services staff, together with Student Services, covering information literacy, research and study skills)
  - NORA - a much improved search engine that gives access to the library's online resources
  - Blackboard Learning Platform
- The space includes a large number of fixed PCs and printers.
- Innovative Radio Frequency Identification Technology (RFID) book tags are being used to make self-service borrowing and return of books the norm.
- Smart Boards and audio-visual equipment planned for the study rooms.
- Smartcard access and using to pilot 24x7 in May 2007.
- Students receive emails warning them that their books are due for return. They can then renew online (this has been a facility for staff for some years).

Observations:

Picture 4.3.1.4-2 Student Study Room
Picture 4.3.1.4-3 Library Basement
• Originally, surveys and observations showed that students were trying to use the spaces in different ways but the layout and furniture worked against them.
• Sub-basement houses lesser used stock in compact shelving with associated study areas.
• The Basement Learning Café expresses the importance and understanding of social and informal learning as a fundamental part of the student experience.
• Bean bags, easy chairs, vending machines and a shop provide students with an informal, relaxed space to discuss their work and conduct group projects.
• The Ground Floor houses the Welcome Desk, inviting students, staff and visitors into the building, as well as orienting them around the campus and beyond. It is also the focus for borrowing and return of Library materials using the latest RFID and self-service technologies.
• The first floor is the hub of student support, offering face-to-face enquiries, telephone links from all the floors, a 24/7 helpline service and wireless laptop loans. It also offers a choice of learning spaces for group and individual use, including:
  o An IT area with PCs
  o Bookable Research hubs
  o A flexible learning space which allows students to reconfigure furniture and IT to suit their changing requirements
  o Information Skills teaching rooms
• The Learner Support team visits all areas of the building to offer a one-to-one enquiry service at the student’s workspace throughout the day.

Cost of Project: £6M. ($9,647,403.48 USD)

Success Factors:

• The Radio-Frequency Identification (RFID) book tags together with the streamlined self-check machines have allowed a completely new ground floor layout that helps users to borrow and return items, access the Keytext collection and check their loan details quickly and intuitively. As a result self-service issues have risen from 16% to 82% in 12 months (as of December 2006).

• The Smartcard system (introduced in 2001) has simplified access to a range of Library Services, provided security for users and generated management information from which services were planned and foundations laid for a cost effective extension of opening hours. Functionality has been gradually extended to included membership of the Students' Union, Sport Northumbria, 24/7 access to IT facilities in Pandon Building, and car parking at the Coach Lane Campus. In September 2006, the card was used for the first time to support Academic Registry with online student enrolment. From September 2007, the card will be used to control access to the new City Campus East and out-of-hours access to other university buildings.
The wireless network allows students to work anywhere on campus, and the library provides them with a secure and welcoming environment that combines many services and facilities in one space, with long opening hours so that the students enjoy meeting and studying there.

The warnings emails and online renewal system has resulted in a 42% increase in online renewals and better circulation of stock for the benefit of other users.

Skills Plus has been integrated into academic programs and students are able to include it in their Personal Development Portfolios.

Conclusions:

- By creating programs in the spaces that students can use for their work after graduation, it encourages users to use the facilities based on the physical relation due to the programmatic implementation.
- Offering a mix of formal, fixed computers and informal social-study spaces creates a comfortable environment encouraging students to spend more time in the areas.
- Wireless enabled areas help to incorporate technology in social-learning spaces.
- New technologies of the library system makes for easy use of the facilities, thereby encouraging students to use its resources more often.
  - Statistics show the growth in usage and efficiency.
• Self-service programs also allow students to take responsibility of the resources they use.
4.3.1.5 **Universities of Sussex and Brighton** (JISC 2007)

![Centre for Excellence in Teaching and Learning in Creativity](image)

**Time of Study:**

- University of Sussex: April 2006 - March 2007
- University of Brighton: July 2005 - March 2007

**Project:** Refurbishment and remodel of wall, ceiling, floors and windows

**Context:**

The CETL program is a HEFCE initiative designed to establish centers of teaching and learning excellence in different areas of learning and for these to then act as exemplars for the dissemination of good practice throughout the HE community. So, for example, at Brighton they also have the Centre for Excellence in Teaching and Learning through Design. The aspiration is around creativity - to increase the creativity of our teaching and teaching of creativity. (JISC 2007)

**Program:**
Exhibition space – workshop space
  o Brighton: ~200 m²
  o Sussex: 300 m²

Grid ceilings for
  o 8 Hand-held Video Camera
  o Movable Walls
  o 8 Fixed Webcams
  o 8 CCTV Cameras
  o 16 Projectors
  o 12 Plasma Screens
  o 360 Degree LED controlled lights
  o 18:18 DVI matrix
  o 32:32 PAL matrix
  o 8 wall-mounted touchscreens

Refreshment Facilities

Conditions:

  • 16 projectors for 360 degree projection within spaces
  • Spaces need to be wired and have internet access.

Observations:
The space is essentially a white box with moveable walls that revolve or slide across, curtains and screens, and lights - and the whole of the ceiling is a grid.
work so you can hang further lights or projectors or videos or cameras on it. The technology is embedded within the space to maximize impact without creating a distraction.

- This is principally to minimize the logistics involved in managing a large number of small devices for large, and variable, groups of students. Instead we have focused on technology that has been built in to the architecture of the space - nearly all of the technology is fixed to the ceiling grid or embedded within the walls.

  - This is not only easier to manage and maintain over time but also has the benefit that the technology is not overly foregrounded on the learner's perception.

  - The technology doesn't dominate the space - individual devices and systems come into play only whenever necessary to support a particular learning activity.

Cost:

- Total: £3.75 million ($6,024,377.04 USD)

Success Factors:

- The design challenges the expectations and assumptions learners may have about learning spaces and open them up to new experiences - the aesthetic of the Creativity Zone is unlike any other teaching space in the University.

- Another important aspect will be that flexibility and support are embedded throughout. Providing technology facilitators, learning facilitators and
creative facilitation as part of the service means that we can hand-hold tutors through what is quite a challenging process - as they reflect on their current teaching practice and explore both technology and space in order to look at alternative ways of achieving their learning objectives.

- Not only are we using more AV resources than most current teaching spaces have access to, but we have also tried to be innovative in how we use them - learning from the arts and theatre sector to not just provide information but to present information in an engaging manner, actively creating immersive spaces, generating experiences that engage people, excite them and draw people in to the learning.

- The space doesn’t involve educating tutors on how to use the space. It was designed in a way where users can use the space intuitively.

Conclusions:

- Because this project has so much to do with the funding, so a large emphasis was getting the stakeholders to holistically understand the vision of the project and allow them to buy in.

- Because designing innovative spaces is such a complex process, it challenges most educational institutions and it requires a little bit more investment in terms of willingness to do things differently - you have to remain flexible in order to address some of the unexpected issues that only surface during the build phase. This needs to be factored into the design process.
A final tip would be to try to get clear visual representations of the design at each stage. One of the biggest obstacles we have faced in building an innovative space is getting people to buy in to something they didn't fully understand. Getting yourself good visual representations, whether that's a physical model, virtual model, layouts or artist's impressions, can make all the difference - people can only really give you the right input if they really understand what you are trying to achieve.
4.3.1.6 Newham College (JISC 2007)

Time of Study: March 2007

Project: Refurbishment of two ‘Concept Classrooms’

Context:

The pedagogic origin of the project comes from the college’s own internal quality assurance processes on teaching and learning. The desire was to move away from teachers adopting a straight didactic approach and develop more interactivity in teaching and learning with a learning activity areas approach.

The concept is that the center of the room, which is almost encased in a floor to ceiling glass wall, is a group learning zone and each of the four corners of the room is a different style of learning from self-research, from printed materials, through to PC based research, through to small discussion areas etc. (JISC 2007)

Program:
Picture 4.3.1.6-2 Classroom Conceptual Sketch (Michael O’Sullivan Design)

Picture 4.3.1.6-3 Classroom Conceptual Sketch (Michael O’Sullivan Design)
Picture 4.3.1.6-4 Classroom Conceptual Sketch (Michael O’Sullivan Design)

Picture 4.3.1.6-5 Classroom Conceptual Floor Plan (Michael O’Sullivan Design)
• Classroom of 100-150 m²
  o Group learning zone
  o Self-research areas
    ▪ Printing facilities
    ▪ PC’s
    ▪ Discussion Areas
  o 40-50 learners
  o Interactive whiteboards
  o Projectors

Conditions:

• There will be more than one member of staff there but it may be a lecturer as the lead facilitator of the teaching and learning and assisted by student learning advisers who are learning support staff so it would lean towards a team teaching approach.

• The furniture is high quality furniture that allows the whole area to feel different from traditional college learning environments.

• The notion is a multi-activity concept of promoting learning
  o In the center space there may be a short lecture taking place.
  o In different corners there could be groups breaking out into PC based research or supported learning.
  o It is wholly wired up for web-based learning throughout the facility and there are cupboards installed in other parts of the area that will contain materials such as text books, videos or CD ROMs etc.

• Because of the physical layout of the room and the use of floor to ceiling glass screens, which are curved, there can be sound separation between the areas
and at any one point there could be 5 members of teaching and learning staff operating in the room.

- The principle behind the concept classrooms was to get away from teachers adopting a straight didactic approach even when there was information and learning technology in the classroom such as interactive whiteboards and multimedia projectors.

Observations:

- Because half of the unit is a glass wall the students are asking lots of questions as they walk past and they want to know what’s going on. Talk to both students who use the area and those who don’t.

- The three teaching rooms were simply chalk and talk classrooms. They had a whiteboard at the front with a data projector and chairs and tables. The project came at the right time during the year as they needed to replace furniture in other classrooms so everything was recycled.

- The only change is to the shape of the interactive desks. Initially the plan was for circular desks. They actually painted everything on the floor first to see how it all fitted in and found that what looks good on a drawing doesn’t necessarily look good or work in reality. The desk was changed to more of an oval shape at nil cost because the manufacturers provided both types of desk.

Cost:
The cost of the East Ham campus project is £150,000 ($240,749.98 USD) + VAT for the building works, an IT investment of c. £50,000 ($80,249.99 USD) inclusive, and a furniture budget of £50,000 ($80,249.99). (JISC 2007)
4.3.1.7 Birmingham Metropolitan College- Matthew Boulton Campus (JISC 2006)

Picture 4.3.1.7-1 Matthew Boulton Campus Award Wall

Time of Study: 2006

Project: Relocation and Refurbishment

Context:

An e-learning specific for general and specialist teaching facilities with vocational areas, creative arts, operating theatre, a nursery, and a café. The intent was to attract both inner city students, as well as full and part-time professionals. The adjacency to a four-year college encourages students to move seamlessly into a four-year degree.

Program:
- Vocational Areas
- Creative Arts Area
- Clinical Operating Theatre
- Child Nursury for 60
- Cafe

Conditions:

- Matthew Boulton College wanted to put IT at the center of things in order to provide learners with a rich online resource. Reduction of paper has been a key driver and the storage of hard copies has been radically reduced as a result of the use of technology to store electronic copies.
- The College piloted the IT over a year in advance of the move to ensure familiarization with the equipment and software.

Observations:

- The modernity of the building and its furnishings have had an impact on level of interest from prospective students.
  - Enrolment demand in the year of opening was significantly higher than expected.
• No two areas are the same making it an interesting environment to study in.
• The building has a real emphasis on creating real world type environments for students. There is an operating theatre in the building, dental suites, printing and technology/digital areas.
• The fashion section has prominent shop style windows along a corridor to effectively showcase students’ latest designs.
• As a design school, students have a lot of finished work. The design of the school allows students to display their work and take ownership and pride in their products.

Success Factors:

• The space is very flexible. Side wings give a modular approach over 9 floors.
• Users have a real sense of ‘ownership’ of the building.
• It is very attractive with quality finishes and the students do feel proud of their environment and as a result are very protective of it.
4.3.2 Conclusions

After case study, three fundamental aspects to the successes of some of these example are:

- **Flexibility**
  - The ability of a space and tools within it to accommodate various demands of users with ease and swiftness

- **Technology**
  - The ability of a space to accommodate the individual needs of a user or number of users’ technology (Cell phones, laptops, etc.)

- **Accessibility**
  - The ability of users to easily use appropriated space without training or preparation.
  - The intrinsic ability of spaces to allow the most efficient use of appropriated spaces.

Courtyard:
Picture 4.3.2-1 Existing Courtyard

Flexibility:

The social spaces in the courtyard are somewhat flexible. Furniture is durable, tables are extremely difficult to move, but lightweight chairs are very easy to move from table to table. The style and materials of the furniture is rather contemporary, an important step towards making the courtyard inhabitable where there was nothing existing before. The courtyard’s ability to be cleared and used for different events is evident as it has been used in various architectural events, receptions, parties, meetings (formal and informal), and class presentations.

Technology:

The social spaces in the courtyard is lacking in its ability for students to incorporate their technology. There are no shared places of technology, and the power outlets
are limited as pictured above. There are only 2 outlets in the main courtyard, and 4 more on the walls in the surrounding walkway corridors closer to less social furniture. Attempts have been made to bring new essence to the courtyard including a large whiteboard, and large shading elements to provide better conditions for activity.

Accessibility:

The main courtyard is the largest and most accessible space in archawai’i. In order to go to any class, a walk in/through the courtyard is required. Unfortunately, there are not enough light sources for use after hours when there are still late classes.

Successes

• Various furniture selections have added nodes in which students can study, socialize and spend leisure time.

• By having most of the social space in the courtyard, it controls where non-architectural students go.

Concerns:

• Protection from elements continue to be a resounding issue that hinders courtyard usage

• Lighting is needed for usage of spaces after hours
• As the best opportunity for non-architectural users to experience the space, our courtyard does not show off our architectural culture.

Café:

Picture 4.3.2-2 Coffee Cart in use

Flexibility:

The use of the physical cart is very good. It has the ability to serve coffee as well as reception, alternative drinks and bar for when it other events are happening during closed hours. During days that it rains, the coffee cart has the ability to move to a more covered area.

Technology:

The café is very simple, it is a refrigerated cart with a drip coffee, and espresso machine. A problem that it has is that when equipment malfunctions, it often closes down. Students then no longer have the convenient option of walking downstairs to
the cart. It could use an upgrade for faster preparation time and more accountable use.

Accessibility:

Due to the café’s simplicity, it is very easy to use; it is also very accommodating to customers, granted all they demand is a cup of coffee or tea. The café’s lack of awareness, signage, and food options is a considerable problem that illustrate the expectations of customers with previous café experiences. Adding value to exploring this option, a food option may be a viable way for the coffee operations to become a sustainable project.

Successes

- The café in the courtyard is a hub that brings in a lot of attention exemplified in the overlay illustration in the appendix.
- Coffee prices are very affordable
  - If AIAS member, discount incentive for going to cart.
- Never a problem with vandalism or theft.
  - Students cherish and welcome the addition of convenient caffeinated drinks in the courtyard.
- During night events, café is used as a drink reception (multi-use).
- Heavy architectural faculty use of coffee cart

Concerns:
• Students who visit cart does not stay in courtyard.

• Non-architectural students rarely use the coffee cart
  
  o Lack of signage/awareness
  
  o No food

• Supply and equipment often runs into problems shutting down operations.

• Hours of operation
  
  o Regular times during finals week, extended hours would be helpful
  
  o Cart closes before the end of the final classes in school.
5.0 Implementing Involving College Principles to archawai`i

5.1 Preliminary Observations at archawai`i

In addition to initial site analysis and design parameters by the University of Hawai`i Long Range Development Planning Department, the following are site analysis materials for archawai`i prior to design.

5.1.1 Courtyard

Two observations were conducted in the archawai`i courtyard: a twenty-four hour observation with the intent was to determine how the current courtyard in its layout is used by people during the regular day; and a dodgeball tournament for architectural students to see how students use the courtyard in a forced function.

Highlights of the event can be found at http://goo.gl/y7tcEc (Fukumoto, Dodgeball final 2012)
The physical layout of the courtyard is as in the figure below.

Figure 5.1.1-1 Architectural School Courtyard.
5.1.1.1 24-Hour Observation

During the fall of 2012 semester at archawai‘i, the school’s circulation patterns were changed due to construction to an adjacent building. It forced users to enter and exit from different nodes than in previous years. Conditions that were not previously experienced were the additions of a coffee cart and furniture.

Video compilation of work can be found:

- Time lapse:
  
  http://goo.gl/vnZlRO
  
  (Fukumoto, Sequence 01 2012)

- Circulation Pattern:
  
  http://goo.gl/OUoq0j
  
  (Fukumoto, Courtyard Study of Circulation at UH School of Architecture 2012)

- User activity pattern:
  
  http://goo.gl/J9otVd
  
  (Fukumoto, Courtyard Study of People at UH School of Architecture 2012)
According to the study, there were six main activities in the courtyard:

- Studying
- Coffee
- Socializing with other users
- Eating
- Individual cell phone usage
- Idle waiting

Certain trends in the usage of space created several overall conclusions:

- Most activities happen in first half of the day, from 8:00 A.M. to 1:30 P.M.
- Most morning users are in a mix of groups and individuals whereas later users tend to be just in groups.
- Users of the courtyard are directly correlated to the times of class.
- Faculty members almost never use the courtyard.

Some of the reasons why the courtyard is used in this fashion is directly related to class times. The morning usage is related to two classes in the architectural auditorium by non-architectural majors. They do not have essential ties that would keep them in the courtyard other than for preparing for class prior. The instructor generally dictates when the students enter the facility, when the professor enters, the students follow. After talking to a student in an undergraduate sociology class, she described why she only spent time during time for class:
“The school is detached, far away from the other places I need to be. If it wasn't for this class, I would not even have known the architectural school was here [...] I don’t feel like this is my place to study or hang-out. Aside from that, there isn’t always an (power) outlet, and it can get kind of noisy as students pass by. [...] It would help if there was food (Student 2012).”

The student points out that non-majors do not find the place social due to its proximity from the rest of the campus, a condition that the school of architecture cannot address. The interviewed also mentioned that the building doesn’t reflect architecture, saying if not for the sign on the front, it could be a school of any major; a minor failure of the mission and physical plant (Kuh, Schuh, et al. 1991) concept.

The second point about the groups of users in the courtyard is related to the types of classes held. The reason why a mix of groups and solo individuals inhabit the courtyard in the morning is because large lecture courses are held in the auditorium. The amount of people (over 120 at 10:20 A.M. and 11:20 A.M.) account for groups of friends to attend class together. Groups generally gather at tables and chairs nearest to the auditorium, whereas individuals who attend class by themselves tend to stand along walls, study in the reception of the auditorium, or use the small tables nearest to the power outlets. Later in the day, groups usually are the ones who use the courtyard when waiting for classes to start. These classes are on the north end of the courtyard and are primarily architectural majors. The classes are much smaller (up to 40) and they lead to students using the tables and chairs closest to the lecture rooms. Individuals who do use tables initially are usually joined by other classmates, a condition not usually found in the earlier large classes facilitated by the auditorium.
Usage Trends Based on Activity

Studying

According to the observation study, for studying, users who do so have a few trends:

- People of longer studying periods are usually alone.
- Those who are alone usually study near a power outlet with a computer.
- Groups tend to start studying while waiting for classes for short times periods.
- Between 1:00 P.M. and 2:45 P.M. studying usually does not take place in the courtyard.

According to the table attached, people who study for extended periods of time are by themselves and have a computer. Because the condition of power needs to be addressed, those who study usually find themselves pushing tables closer to the east part of the courtyard, or they use the south side tables or the ones in the auditorium reception. Larger groups who prepare for class generally prepare without computers and take more of a social fashion. Also, during lunch periods without classes, the courtyard isn’t generally used for study, one may speculate that the time would be used for eating, though there is little of that action. With studios starting at 1:30 P.M. and no food options in the courtyard, it is most probable that students go elsewhere to purchase food and consume it there with nearby Balè, food trucks, and
Campus Center. Another popular place for the conditions of socializing, studying, and eating would be the studio spaces.

*Socializing*

According to the observation study, for studying, users who do so have a few trends:

- Students usually socialize before and following class.
- Socializing periods usually last from 5-10 minutes.
- Socializing happens for architecture students through impromptu crossing of paths and when students join other architectural students at a table.
- Socializing for non-architectural majors generally happen when a group of friends sit at a clear table.

*Coffee*

According to the observation study, for studying, users who do so have a few trends:

- Often, users visit cart and leave within 5 minutes (length of time for coffee making)
- Only about 1-2 users per day is not an architectural student.

*Idle*
According to the observation study, for studying, users who do so have a few trends:

- Idle users usually are individuals waiting for class to begin.
- Almost all idle users are non-architectural users.
- If seated, idle users use furniture in places that don’t encourage socializing.

Eating

According to the observation study, for studying, users who do so have a few trends:

- Eating trends show no preference to any proximity.
- Correlation of eating times are generally lunch and before afternoon classes.
COURTYARD OBSERVATION STUDY

- STUDY
- SOCIALIZE*
- COFFEE
- IDLE
- EAT
- CELL PHONE

* Engaged with another person
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0730</td>
<td>Socialize</td>
</tr>
<tr>
<td>0800</td>
<td></td>
</tr>
<tr>
<td>0830</td>
<td></td>
</tr>
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- STUDY
- SOCIALIZE*
- DRINK
- IDLE
- EAT
- CELL PHONE

* Engaged with another person
5.1.1.2 Dodgeball Tournament

On November 25, 2012, a dodgeball tournament was held for the architectural students with an incentive of $25 credit to the architectural printing lab and free coffee for one month for the winners. There were thirty-two participants in eight 4-man teams.

Several objectives of the event was:

- Provide students with an event non-architecturally related.
- Test the effectiveness of marketing within the architecture school.
- Create momentum for student organization to get involved.
- Test the bounds of how much students want to do things in the courtyard.

To test and assess these objectives, the results encompass a number of derivatives and student responses.

Assessments:

- *Students took kindly to doing non-architectural related events.*

Surprisingly, there was a great student response to participation in the dodgeball tournament. Although one month from the final push of architectural finals, students still attended the event with an enthusiastic sprit as the time of the event drew closer. Students also created teams that were cross-studio. Undergrads and grads talked about making teams consistently, also, when a team dropped out, another team easily filled its position. In attendance, there were 3 faculty members
in early attendance and 102 students to watch the event, most of them watching at
the mid-point of the tournament.

- Marketing for the event was not too time-consuming.

Marketing for the event did not take long. Success was found with one main
e-mail blast 4 days prior to the event as a main reminder, and 8 printed posters up
for 14 days. The most efficient form of marketing was informal visits to students in
studios where they could easily make teams in a comfortable setting.

- The overall strive for excellence exceeded students’ expectations and built
  momentum for a sequel.

Students’ overwhelming response in attendance created an interesting
position to do the same event again. Students also were happy to pledge their time
and help for the next event. Also, the bridge between AIAS and UH Intramural Sports
has been built, encouraging a higher chance to follow up with another event.

- The event showed how far students will go to participate in the events the
  conditions allow them to buy into.

During the event, it started to rain, yet students continued to participate with
minimal repercussions due to the weather. One team, though, did drop out for safety
reasons. The final match was in the rain and it featured the two teams assimilating
themselves to the more dangerous conditions. Spectators simply relocated to the
upper level balcony and lower level relocated chairs and tables.

It illustrated that events that allow students to invest their interest into
encourage a higher chance at success. Also, the incentive offered at the conclusion of the event served as a large part of the enrichment to the event.

Conclusions

It is very possible that students are open to doing non-architecturally related events, though the expectation of such events are not high. This is due to the number of events that are detached from some design-related activity. The event proved that it does not take a lot of people to run the event (as it was just myself and two AIAS members). Marketing is less about the number of visual reminders as much as it is about timing and effectiveness. This event also served as a bridge for student organizations to get involved with their interests in mind: UH Intramural Sports providing the athletic tools, and AIAS serving the students with food and drink and archawai`i sponsoring the prizes. The event also showed that when students get involved, they do so with a sense of enthusiasm that shows during the events. The overall embrace of the event set itself up nicely for another episode, yet it still requires students to organize.

For further success, several points will help to strive for success:

- *Students look for convenient ways to fulfill their non-architectural interests in convenience, be open to non-design related events.*
- *Provide incentive for students to participate.*
- *Provide a variety of student incentive from event to event.*
- *Get faculty involved.*
- *Encourage faculty members to market event.*
• Awareness is the fundamental to marketing, often times in small settings word of mouth is the most efficient way to raise awareness.

• Be creative with marketing tools.

• Allow students to get involved with event organizing.

• Honor student volunteers, they provide momentum and marketing credibility.

• Encourage the cross pollination of student organizations getting involved and putting their name on events.
5.2 Professional Counsel

In response to the advice of committee member Brotman, I met with Stanford Lee, AIA to discuss potential solutions for archawai‘i. He is an alumni of archawai‘i in 1981, co-owner and principle designer at Next Design, LLC. Previous and ongoing experience include school design and renovation at Maryknoll Schools.

5.2.1 Problems

Upon counsel Mr. Lee identified several problems that could be addressed through architectural intervention and programmatic implementation of spaces.

1) The school identifies that the courtyard is the epicenter of the school’s culture.
   - One problem with the courtyard is that the accessibility to the main studios is separated vertically.
   - The one studio that is on the same floor is behind the staircase.
   - There are potentially other spaces in the school that could be used as potential social spaces.

2) The school lacks an aesthetic lending itself to an architectural school nor to its studies.
   - Doesn’t look like an architecture school.
   - Doesn’t share any architectural emphasis.

3) The separation of the faculty and students is emphasized.

4) The architectural school’s orientation should have a larger connection to the quadrangle.
5) The weather in Mānoa makes use of school public spaces inconsistent thereby discouraging prime places.

6) The alumni association, advisory council, and faculty are often not in agreement about archawaiʻi’s direction signifying disunity.

5.2.2 Precedence

Mr. Lee explained several principles to approaching solutions, backed by a project he is currently working on at Maryknoll High School.

1) Visual connection between vertically separated floors help to soften the separation and add to the visual dynamic of spaces (courtyard-specific typology).

2) Controlling weather conditions in public outdoor spaces are important for encouraging consistent use.

3) Previously when archawaiʻi (then the School of Architecture) was in its portable spaces on the same site, the orientation in addition to grass landscape helped to create intimate, human-scaled, and casual meeting spaces that was used for both formal pin-ups and social gatherings. It also helped to mix the different year students, also faculty members were very involved in spending time with students, notably on the weekends for extracurricular activities.

4) Material selections make a considerable difference in creating comfortable, usable spaces.
5) Creating more flexible spaces that are on temporary timetables for faculty spaces will shorten the distance between faculty members from students—hoteling as a programmatic concept.

6) A connection to the quadrangle will create a more defined orientation for the overall archawai‘i.

7) Orient changes towards faculty and architecture students. It is not so important to have to share architectural culture with non-architectural students. Healthy communities display the health of their community naturally and users who don't consider themselves inherently a part of that community can tell the status of that health.

5.2.3 Advising

In addressing problems, several general goals were put before offering potential solutions:

1) Increase use of public spaces.
   a. Increase the amount of student-faculty interaction in public spaces.
   b. Appropriate space for cross-studio work in public spaces, not in studios.

2) Look like a contemporary school.
3) “Open” up the school.

Potential Solution Approaches.

Courtyard:

1) Create a covering to control the weather.
2) Incorporate flexible furniture.
3) Have flexible power sources.
4) Create visual connection between 3rd and 2nd floor.
5) Address 1st year studio hiding behind staircase.
6) Appropriate space for students to use and share culture.
7) Address shading and ventilation.

Overall:

8) Aesthetic needs to be comfortable and inviting.
   a. Incorporate warm materials.
   b. Use contemporary aesthetic.
9) Connect archawai’i to the quadrangle facing Hawaii Hall.
10) Connect adjacent spaces to appropriate studio-public connection
    (potentially on the roof).

Faculty:

11) Introduce hoteling as a programmatic solution to faculty space.
12) Consider appropriating Room 101-A as potential faculty space (if necessary)
Programmatic:

13) Incorporate faculty, alumni, and advisory council with student events.

14) Students should be encouraged to take ownership of maintenance of school.

15) Facility should be open to exterior parties to rent architectural spaces.

16) Faculty members should be encouraged to use public spaces as much as possible.
5.3 Approach

Regarding approach, the I-E-O model as depicted (and adopted by NSSE), inputs are non-negotiable in the sense that the college environment has very little (if not, none) influence on it. Outputs is the products of the inputs and environments.

The project aims to enrich the environment at archawai`i through architectural intervention. The NSSE emphasizes its five points that the college environment will influence in output, of which not all points can be solved through architecture.

The physical environment of Involving Colleges contributes to the students learning and development in two ways: the properties of the physical environment shapes behavior, either encouraging or discouraging students from taking advantage of learning opportunities; and student involvement in the process of designing and redesigning the physical environment can promote student learning and development (Kuh, Schuh, et al. 1991).
In cooperation with Mr. Lee’s advising, this project will provide two proposals that go together to create an “Involving College” at archawai`i:

1) A design renovation that incorporates “Involving College” properties to the archawai`i physical environment.
   a. Physical Properties
      i. Human Scale
      ii. Complimentary Between Mission and Plant
      iii. Spontaneous Interaction Spaces
   b. Psychological Properties
      i. Absence of Anonymity
      ii. Appropriation of Personal Space

2) A programmatic proposal to implement “Involving College” activities in archawai`i spaces.
   a. Events
   b. Policies
5.4 Conceptual Design

Based on Involving Colleges physical properties, the renovation concepts should first make clear that the physical environment reflects its mission, fosters spontaneous interaction spaces, and are all in a manageable human scale. To do so, the architectural approach is as follows:
5.4.1 Human Scale

It was advised that smaller spaces create human places (Kuh, Schuh, et al. 1991). Architectural interventions that take place at archawai`i should make an effort to make spaces that are very small, comfortable, and flexible. Some measures that contribute to breaking scale include making visual connections between vertical levels.

![Figure 5.3.1-1 Example of view planes from differing levels.](image)

In order to enrich this concept, using transparent materials (with an appropriate amount) should add to the dynamics at archawai`i. A very simple example is the hand rail systems going from plaster and concrete, to something lighter and transparent like glass. In addition to the transparency of glass, the materials chosen to help create a more welcoming environment include wood cladding and flooring.
Figure 5.4.1-2 Example of glass and wood material integration.
As part of human scale, spaces designed should not exceed a vertical change of more than two levels.

Figure 5.4.1-3 Human Scale spaces

*Area 6—3rd Floor Courtyard.*

Figure 5.4.1-4 3rd Floor Courtyard Floor Plan

The 3rd Floor Courtyard will take the place of the existing seven offices. Here is the space directly adjacent to full and part-time lecture faculty. The
implementation of hoteling (to be discussed later) will relieve the need for the office spaces. Also, due to the nature of faculty members with temporary ownership of rooms will increase the circulation of faculty members, thereby increasing the opportunity for spontaneous interactions in adjacent spaces. As the connection from archawai`i to the quad, this courtyard will be of one floor open to below. Adding to the courtyard’s ambience and human scale, a water feature will be added to add ambient noise and offer some fixed single seating.

Figure 5.4.2-5 3rd Floor Courtyard Rendering
5.4.2 Complimentary Between Mission and Plant

In order to make architectural interventions relating to the mission and the plant, it is important to know the mission, vision, and values of archawai`i.

The mission of archawai`i is:

**Building for the 21st Century**

The School of Architecture responds to our unique location in the Asia-Pacific region and recognizes the privilege and responsibility to address cultural, environmental, and social diversity. We commit to passionate and engaging community participation through teaching, learning, research, professional practice, and service. (University of Hawai`i Mānoa School of Architecture 2012)

The vision of archawai`i is:

**Global Connections**

The School of Architecture inspires transformative design at the global scale with pre-eminence in the Asia-Pacific region. (University of Hawai`i Mānoa School of Architecture 2012)

The values of archawai`i:

- Knowledge
- Creativity
- Passion
- Community + Environmental Responsibility (University of Hawai`i Mānoa School of Architecture 2012)

A school statement that elaborates on the collection of mission, vision, and values include:

The UHM School of Architecture is first and foremost a flagship professional school, providing the opportunity for a student to earn an accredited degree in the field of architecture. The only U.S. school of architecture in the middle of the Pacific region, it has been actively and directly engaged in the life and mission of the Mānoa campus by participating in a number of design/research/outreach efforts on campus and in the community.

The University of Hawai`i is one of the most culturally diverse universities in the United States, so the student body and faculty within the School are naturally diverse. The University is a Carnegie tier-one research institution, and the only National Resource Center for Pacific Island Studies, and one of only nine National Resource Centers for Southeast Asian Studies. This status provides many opportunities for pursuing funded research unique to the region, resulting in an exceptional level of support for many of the research and study areas the School has chosen to pursue. The Asia Collection at Hamilton Library at the Mānoa campus is recognized as one of the nation’s best, and the Hawai`inuākea School of Hawaiian Knowledge is the only one of its kind. The rich cultural diversity of the faculty and student body, the emphasis on bridging between Asia and the West, the close ties with institutions in Korea and China, and the curricular structure of the
The physical interventions based off of the school’s statements must reflect in some manner: generally speaking, spaces must incorporate knowledge, induce and be use creatively, be approached with passion, and must be community and environmentally-oriented.

Spaces designed should be flexible so that they can reflect the mission, vision, and values of archawai‘i. The spaces should be able to take different programmatic functions in accordance to the academic schedule, time of day, and event coordination—this will be elaborated in the programmatic design portion of the project.

Area 4—Gallery

One of the main places where we share the breath of our knowledge is the gallery space. Students generally do not exhibit the gallery though it is open daily from 9:00 A.M. to 4:00 P.M. which is a good amount of time for the gallery to be open.

Since most of the time the usage of the area is wanderers and for formal gallery openings, it was advised that forcing students to go through it might be a way to share archawai‘i culture, especially for auditorium users who generally consist of non-architecture students from other departments. Students generally enter and exit through the one entrance as depicted below.
Figure 5.4.2-1 Existing and Proposed changes to ARCH 205 and Gallery
Figure 5.4.2-2 Circulation of Existing and Proposed Changes to ARCH 205
But by bringing out the entrance, we force users through gallery spaces without hindering their abilities to get to the auditorium, but also the path of the circulation isn’t longer.

Also, by bleeding extending the entrance, the reception area can be used more effectively as an extension of the gallery in the event of special events, or more formal gallery openings. Additionally, the half-height bar-style counter facilitates the needs of temporary study spaces directly adjacent to the auditorium. The half-height counter allows for a visual connection that recommendations by Mr. Lee and Chairperson Llewellyn both said would be favorable.

Figure 5.4.2-3 Render of ARCH 205 Entrance during weekday
The renovation to this particular place aims to enrich the experience of creativity and knowledge by making archawai`i culture more accessible to all users in the physical environment and connect them visually without increasing their physical distance from the areas and tasks they have at archawai`i.
Figure 5.4.2-6 Reception area

Adding to the architectural concept to open the school towards the quadrangle, the closed office area reception that exists now will be taken out and only closed after business hours with a garage-type door. In addition, models of previous work will be put into the area as students circulate.
through the walkway (as it does now).

Figure 5.4.2-7 Entrance to archawai`i emphasizing connection to quadrangle and student work at the reception.
**Branding and Imaging System**

Also to note would be the signage and repetition of the use of the school branding and imaging.

Figure 5.4.2-8 archawai`i logo (archawai`i)
Figure 5.4.2-7 archawai`i branding and imaging identity system by Adine Close, John Bennet Cruz, Hao In Kuan and Yonghao Yan
The identity system, according to designer, Yonghao Yan:

The final system utilizes a single commercial 'press sheet' based on standard (Western) paper dimensions as a template. It exists as a whole composition, but can be used in its different parts. When the individual parts are folded (indexing paper folding as an Eastern tradition) they reveal different perspectives and multiple uses that are not obvious until explored. This interchangeability of forms as well as the folding, exemplifies the fluidity of interchange between East and West as well as the particularity of each perspective. It also produces the school’s entire identity system out of a single press sheet and, in so doing, becomes attentive to the environment and issues of sustainability (Yan 2010).

The identity system is very important and encompasses the mission, values, and vision in a contemporary aesthetic.
Canopy

Figure 5.4.2-8 Elevation of archawai`i with built-in photovoltaic (BIPV) canopy

Figure 5.4.2-9 Plan of BIPV Canopy

The initial advising that would make the most difference in getting users to spend time in the courtyard would be to control the site’s erratic rainfall. In addition, it was advised that the project was in need of an element
that would be unique—in short, something that could denote an edginess.

The BIPV canopy was the design alternative that would first control the weather, and then integrate a sustainable system that wouldn’t deteriorate the quality of light in the space. Onyx Solar Company uses BIPV options in order to shade and cover spaces.

Due to the site’s global position, the BIPV is installed only where direct sunlight can reach it and still cover the courtyards (2nd and 3rd floor) at archhawai’i as depicted in figure 5.4.2-9.

Figure 5.4.2-10 Onyx Solar BIPV Canopy quality of light (Onyx Solar Company)
Figure 5.4.2-11 South Entrance
A rising culture at archawai`i is the group of users who use a bicycle as the primary means of transportation. The south entrance at archawai`i aims to provide adequate bicycle parking, which does not exist currently, and also make the transportation option more accessible by having direct access to the street via ramp.

Figure 5.4.2-12 South Entrance rendering

Also incorporated are green walls to help mitigate direct heat gain through the exterior materials. Another passive sustainable system that is emphasized are the green spaces for informal use. It is also an appropriation of more privatized space as the main focus and amenities are in the 2nd floor courtyard.

South-facing circulation paths are generally not used for circulation. During events, it becomes the barbeque area, but during the regular hours of the day, it is primarily a place for smokers. While not necessarily a problem,
the place is hidden and rather unfriendly. As a major part of our sustainable systems courses, grass environments have been known to be an environmental and socially friendly additive. The idea of adding grass is a consideration of taking advantage of the direct sunlight and a push for a more comfortable environment for a subculture in our community.
Another gesture for sustainable systems is the introduction of green walls that face south.
5.4.3 Spontaneous Interaction Spaces

Spontaneous Interaction Spaces account for approximately 70% of the learning for students in their physical environment outside the classroom (Wilson 1966). In order to do so, the project aims to create a language of accessibility, flexibility, and informality (Sinclair 2013). The project’s most emphasized spaces are directly adjacent to classrooms and teachers' offices.

Figure 5.4.3-1 Proposed Adjacencies on 2nd Floor of archawai`i
This hypothesizes that the spaces will be used more often for socializing and learning, as well as create more opportunities for faculty and students to interact.

The spaces will require furniture and IT integration in order to stay relevant with architecture technologies and still offer appropriate amounts
of informality.

For spaces designed for socializing and learning, furniture used should be very informal. One example of use is bean bag arm chairs. They are easy to move, and easily changes orientation. Coffee tables with power integration properly facilitates IT integration in these areas.

Figure 5.4.3-3 Example of Informal Space
5.4.3-4 Furniture examples intended for Informal Spaces (Designers as listed)

The other type of space that will exist at archawai`i is the café spaces meant for users who stay for short durations. These users are generally those who use the spaces for eating and drinking, and/or are waiting for classes, usually at ARCH 205.
Figure 5.4.3-5 Café Spaces
Figure 5.4.3-6 Café Furniture Set

Figure 5.4.3-7 Detail of Café bar-style counter at ARCH 205 entrance. (Producers as listed)

These furniture examples will encourage use flexible enough for café and beer garden use, while also available to be used with high turnover rates.
5.4.4 Appropriation of Personal Space

Because of the relatively small size of student and faculty body at archawai`i, it is often very difficult for users to find spaces in the school where they are not accessible. Appropriating some personal space where users can “get away” is important to balance the spaces of which heavy engagement is happening—they, though should not take away or compete from each other. Thoroughfare should be limited and not as easily accessible.

Area 3—Rooftop

As part of an appropriation of private space, area 3—the rooftop is the designated space intended for users to find more private proximities. The rooftop garden allows for a more leisure oriented experience that allows users to be alone.
Figure 5.4.3-8 Rooftop Garden and Presentation area

The roof is still covered by the BIPV canopy and offers a space for students that is not directly connected to the interior of archawaiʻi, thereby physically separating
students from the being constantly accessible.

Figure 5.4.3-9 Rooftop Garden with Putting area

Figure 5.4.3-10 Green Roof Design

The reason for the space is to offer a space with a relaxing byproduct. A golf putting facility is a reference to an Asia-Pacific custom doing business over a friendly golf game. It is an alternative offering stress relief, as well as a place appropriate to enjoy by oneself.
5.4.2 Programmatic Concepts

Learning and personal development is greatly influenced by the organization of the college experience (Kuh, Schuh, et al. 1991). There are several concepts that are working for archawai`i that has changed the results of this project over the two years in observation, but there are still some implementation techniques that can greatly influence how students react to spaces at archawai`i.

Some acknowledgements that must be noted before sharing some programmatic recommendations include:

- University of Hawai`i at Mānoa is still largely considered a commuter school (Nelson\Nygaard Consulting Associates Inc. 2011)
  - This means that it is largely up to users to engage with activities or other users at archawai`i outside of classes.

- The archawai`i academic program has reached a stable status since no changes have taken place in the program chart since the integration of Global track—even though the dean situation is currently in interim status.

- The student organization (American Institute of Architecture Students—AIAS) has grown in leadership positions and has made significant progress in enriching the student quality of life.
5.4.2.1 Faculty Office Hoteling

Meetings with Clark Llewellyn, former Dean of Architecture, and current Global Track lead, indicate that the archawai`i has a need for more faculty space, but doesn’t necessarily have the space in order to expand to create new faculty spaces. With advising from practicing architect, Stanford Lee, he suggested office hoteling as an option to reduce the need for more office space while still having the opportunity to having more faculty come in. Based on research, “knowledge workers, particularly salespeople, customer representatives, and consultants, indicate they spend only 30% of their time in the office” (Alamo PC Organization, Inc. 2010). It was also said that through practical application, Lee’s firm has found that the hoteling implementation has cut down the need for permanent space by about 50%, and they have been able to implement hoteling in industries as difficult as medical and commercial (Lee 2013).

The implementation at archawai`i will be in two parts:

1. Renovation of 3rd floor courtyard and reassignment of full-time research faculty members.
2. Implementation of hoteling system.
Part 1—Renovation—1st and 3rd Floor

Figure 5.4.2.1-1 Existing and proposed renovation to 3rd floor office space
Figure 5.4.2.1-2 Existing and proposed renovation to 1st floor office space
Research faculty, according to Llewellyn (2013), is an important financial sector to archawai`i. He claims it is important to allow them to do their work without distraction. While it would be favorable to have all faculty members adjacent to student engagement, it is not favorable for research workflow and it would be difficult to encourage research faculty to interact with students. Instead of continuing to allow this bunkering effect happen in opportune spaces, appropriating space that is less accessible poses a good placement for both research faculty and students to encourage student engagement at archawai`i.
Part 2—Hoteling Implementation

The second part to the programmatic concept is to implement the hoteling technique for faculty members. Currently, archawai`i’s faculty include:

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Figure 5.4.2.1-3 Breakdown of current faculty at archawai`i (University of Hawai`i School of Architecture 2013)

The two affiliate faculty, and one faculty member have offices that are not located at archawai`i. Additionally, due to other responsibilities to archawai`i, six faculty members have personal offices not in the 3rd floor hall of offices bringing the total of faculty members who require offices at twenty-one (21). With the renovation, there will be 8 3rd floor hoteling offices, 1 larger space for class preparation in the reading room (which some faculty members already use), and 4 1st floor offices. This statistic appropriately fits as hoteling is supposed to cut the individual need for offices in half (Berg 2001).

The remaining faculty members shall be broken up into different categories to determine where they will assign themselves.

- Type A—Long usage (0-12 hour segments)
- Full-time research faculty
- Multiple-class educator

- **Type B—Medium Usage (0-5 hour segments)**
  - Studio Teachers
  - Multiple-class educator

- **Type C—Minimal Usage (0-2 hour segments)**
  - Teachers with one class
  - Minimum requirement of room

Following is a breakdown of the 2014 spring semester as a basis to distribute teachers:
Figure 5.4.2.1-4 Breakdown of current faculty and classes at archawai`i (University of Hawai`i School of Architecture 2013).
With discernment and attention to the workload of classes, we can break down the amount of usage:

**Type A Users**

- 4 full-time faculty members
  - Example: Palagi, Kim-Johnson, Bergum, Rockwood

The recommendation of these examples are a number of reasons like total amount of classes taught, how time consuming these classes are, and how important will stable office hours teacher need especially if students engage with the educator on an on-demand nature.

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Figure 5.4.2.1-5 Type A offices on the first floor of archawai`i.
Type B Users

Figure 5.4.2.1-5 Type B offices on the first floor of archawai‘i.

Type B users are the most common of all types. They will use the office spaces on the third floor. Usage includes up to an average of 5 hours.

- Capacity for Type B users at archawai‘i is 16 faculty members
- Current Type B user examples requirement 8:
  - Despang, Mitchell, Miao, Anderson, Ashraf, Akiona, Noe,
    Stilgenbauer

I acknowledge that current faculty numbers have enough offices for a private office for each faculty member, but that may not necessarily be the case if archawai‘i intends to grow. Statistically, archawai‘i has enough room to have 8 more Type B Faculty members, financially permitting. To account for that growth, class scheduling and office hours can be juggled so that same-type (elective, studio, lecture) classes are at the same time on the same day, or on opposite days to account for office hours manageable at peak times.
Alternatively, in the event that scheduling producing impossible hoteling options, encouragement of some of the public spaces or more high-turnover spaces could be used as pictured below:

Figure 5.4.2.1-6 Alternative spaces for Type B faculty members can use for class preparation.
Type C Users

Figure 5.4.2.1-7 Hoteling Space for Type C Faculty

Type C Users are faculty members with the least (relatively) workload and can be most flexible with their office use. The approximate time of use is in 2 hour segments.

- Type C workstations are at 6
- Capacity is 12
- archawai`i demand is 7
  - Simon, Turin, Kaufman, Chapman, Meguro, Park, Zapka

IT integration is important as workstations must be inductive to working with private information, such as grades, from all workstations. It also must have the flexibility to move from station to station. Office etiquette is important in Type C workspaces since the highest frequency of turnover has the ability to hinder efficiency of faculty member.
Hotel Scheduling Methodology

In order to implement this technique, a software with mobile access should be implemented in order for faculty members to schedule their office times. While at the start of the semester, office hours is often shared information from teachers to students, demands change throughout the semester. The scheduling system must abide to these changes and offer options and alternatives in a clear and accessible manner.

AsureSpace™ has a holistic scheduling program with the Resource Schedule and Meeting Room Manager. With these programs, users who are granted access (administration, faculty, student leaders) will be able to schedule

- Meeting room scheduling
- Shared workspace
- Video conferencing equipment
- Catering, Janitorial and other services
- Event/Executive Centers
- Training room scheduling
- A/V and other equipment (Asure Software 2013)

Access can be granted through many different methods by users’ preferences

- Digital Signage
- Floor Plan/Kiosk
- Microsoft Outlook
- Lotus Notes
- Web Interface
- Mobile Device (Asure Software 2013)

User access will look like below:
Figure 5.4.2.1-8 AsureSpace™ User access (Asure Software)

An important aspect to accessibility is the mobile option for scheduling workspaces as well as seeing availability:
Figure 5.4.2.1-9 AsureSpace™ User access via tablet (Asure Software)

Administration access looks like below:
Figure 5.4.2-8 AsureSpace™ Administration view  (Asure Software)

Having this web will allow administration to track the use of archawai`i’s facilities, most notably:

- Capture and consolidate critical event related information
- Provides visibility into each detail of the event
- Drag & drop feature allows users to modify event time and location quickly and efficiently without opening event details
- Track event costs
- Streamlines workflow by configuring the management process the way you work
- Review daily activities and filter them by status and service orders
- Assign tasks to specific individuals (Asure Software 2013)
Conclusions About Hoteling

Hoteling is a viable solution to offer the ability for the faculty body to grow without adding more office space. It also allows a more accessible and convenient option for students to schedule and meet with teachers. Aside from the scheduling benefits, the one system also opens itself up to other logistical items that require scheduling such as technology rental and custodial duties relative to proximities, something that has been an issue.

What is going to make an impact for users to start buying into hotelling is:

- Clarity on what type of user he or she is.
- Clarity on why user is distinguished as type A, B, or C.
- Emphasis on why it is important to hotel:
  - Student Engagement
  - Sustainability

Prospectively, hoteling and the scheduling implementation will help archhawai’i by publicizing a one-system matrix of events, schedules, and office hours/locations. It will also cut down on costs for air conditioning and lighting. Finally, and most important, hoteling discourages faculty from bunkering down and overstaying as the mindset of these offices are for temporary use, and etiquette will dictate these shared spaces—indirectly, the spaces should be easier to maintain.
5.4.2.2 Student Initiative

Student Initiative in taking responsibility of their college experience should be considered an important part of the culture at archawai`i. As stated previously, students who are more involved in out-of-class activities, are more positive with their social life, living environment, and academic major (Kegan 1978) and are most likely to graduate (Kuh, Schuh, et al. 1991) and persist (Mauk 2011).

Currently, there are two organizations at archawai`i that supports the enrichment and honors architecture students: the American Institute of Architecture Students (AIAS) and Tau Signma Delta Honor Society—Gamma Mu Chapter. Both organizations pertain primarily to architecture or design culture. They both do in and outreach in the community to spread awareness of archawai`i. Outside of these organizations, students generally look outside of archawai`i for their other interests.

Acknowledgements

The American Institute of Architecture Students believes that

At the local level, the purpose of the AIAS is to bring architecture students at UHM together in fellowship; to facilitate communication between members, the faculty, and the administration at the SoA; to provide supplemental services to aid students in their education; to serve as a link between AIAS members, the Honolulu Chapter of the AIA and the regional and national organization of AIAS. At the national level, the mission statement of the AIAS reads: “The purpose of the AIAS shall be to promote excellence in architectural education, training and practice; to foster an appreciation of architecture and related disciplines; and to organize architecture students and combine their efforts to advance the science and art of architecture. (American Institute of Architecture Students Hawai`i 2013).

What wasn’t much of an influence through personal experience as an undergraduate, has become a thriving community that serves the sharing of
architecture culture and related interests to art and design. The in and outreach that AIAS does includes connecting with professionals in the Honolulu architecture industry by offering a job fair and charrettes that connect with businesses. This is very important for offering students the opportunities to bridge the gap between theory and application—as this custom also reinforces the practicum portion of the academic program, this way in a less directed and more practical method (internship).

Figure 5.4.2-1 AIAS Schedule of Events for Fall 2013 (AIAS Hawai`i)

AIAS’s schedule is relatively dense, averaging 3 major events a month—tapering at the start and the end of the semesters. The schedule of events shows a lot of
progress as personal experience of AIAS in 2006 was only about 3-4 major events a semester with 3-5 students on the leadership council. The current class of officers have doubled with 8 members and with 8 major events a semester. The growth of the major student organization is promising and general feelings toward AIAS is very positive.

**Recommendations**

While AIAS does a good job at supporting the architecture culture of archawai`i, it is also important to note that students do not just have interests that are design-related. Also, the archawai`i administration does a satisfactory job at providing lecturers and provide reception afterwards.

![Figure 5.4.2.2-2 archawai`i lecture marketing (archawai`i)](image-url)
Figure 5.4.2.2-3 archawai`i’s lecture series calendar (archawai`i)
Consideration to other interests should be a priority for the leadership council. For example, previous experiences have shown that there is athletic interests that persist though the participation in intramural sports at lower campus with fair amounts of participation from archawai`i students. In the dodgeball courtyard experiment, it shows that the interest was very stable and even through dangerous weather conditions, students persisted. Important aspects of the results include the general demand to have more events like that, the student rewards for winning did not cost money, AIAS partnered to provide refreshments, and the Intramural Sports Department outside archawai`i supplied athletic equipment.

The observation can conclude that:

- Students will participate in non-art/design related events
- Events do not always have to cost money
- Students stepped up to make the event happen when asked for help
- The events are also a way to promote archawai`i by collaborating with other organizations on campus (win-win).

The recommendation does not relegate itself to athletics, others suggestions could include other common student activities such as music (open mics), beer garden (beer pong tournaments), social dances (dance club), exhibitions (galleries), etc. While the recommendations are on the liberal side of events, it is important to note that students’ interests are liberal, and events should reflect the same nature.
Students also need to be continuously reminded of current events happening at archawai`i for them to be effective. Fifteen years ago, it took four repetitions for user initiation. Today, it takes sixteen repetitions to have users initiate (Robbins 2013). What this means is that it takes on average sixteen times for someone to see something to take interest in something marketed. AIAS does a decent job marketing, but could benefit from having a more visible and effective marketing presence at archawai`i.

Concerns that exist include having a bulk of students commute as opposed to dorm. Also, as the organization grows, leadership should reflect growth, so doing more events will be manageable, and should be more stable during the start and the ends of the semesters. Support from a breath of faculty members should be considered as a priority if student engagement is the goal.
Programmatic Alternatives in New Spaces

New public spaces in archawai`i should be have accessibility, flexibility, and informality (Sinclair 2013). As part of that flexibility, new spaces should do several things functionally:

- Accommodate presentations for final review
- Accommodate spontaneous interaction
- Accommodate appropriately sized events

By accommodating the flexibility of the three points above, spaces can take new shapes but still reflect the mission and values of archawai`i and increase student engagement.
Area 1—2nd Floor Courtyard

Figure 5.4.2.3-1 Courtyard arrangement

During regular times of day, courtyard arrangement should be the primary student engagement area. Often it should reflect a dynamic as follows:
The rendering suggests that what happens in the courtyard during the day will consist of leisure, study, socializing, and food/drink. It is recommended that through collaboration between AIAS and the archawai`i lecture series, the receptions could incorporate a social aspect that get students involved, thereby reinforcing a student autonomy and ownership, regardless if students are members of any organization.
As stated before, the courtyard should be able to accommodate final reviews during the last week of the semester.
By utilizing the courtyard in this manner, lectures could even happen in the space, making sharing of knowledge and engaging events more accessible and visible, as opposed to in the most formal place in archawai`i (ARCH 205—auditorium). By having such events in the courtyard, it will reinforce flexibility, accessibility, and informality—in which case, guest lectures should take on an environment different from conventional classrooms if academic enrichment is the goal, not the identical environment regular course lectures take place.

**Area 2—Café**

During day business hours, the café should take the form of a coffee shop with light food options. With Sodexo shutting down the previous coffee cart experience, the company who stopped drink service at archawai`i could actually serve as the food and drink provider at the school. This is favorable since archawai`i does not have room for a kitchen to make food. Sodexo can prepare food items at their registered kitchen at Campus Center and deliver to the designated spot at archawai`i. Incorporating food in addition to caffeinated services previously provided at the coffee cart should also increase engagement by non-architecture students who were once turned away by a membership requirement for coffee and an absence of food. A proposed schedule would be coffee and food available from 7:30 A.M. to 4:45 P.M. and the dive bar would operate from 5:15 P.M. to 9:30 P.M.
A recommendation for the night operations that would make archawai`i unique is to have a dive bar. Inspired by spaces in Taipei, Taiwan’s night markets, and interstitial
spaces in Minneapolis, MN, and Melbourne, Australia where third spaces turn themselves into dive bars and civic theatres.

**Area 3—Rooftop**

![Rooftop Space during the day](image)

Figure 5.4.2.3-7 Rooftop Space during the day

The rooftop, as mentioned previously, is the designated space that suffices for the appropriation of private space. It expects low amounts of circulation and medium to long times of use. Like other spaces created, it should accommodate the last week of the semester’s presentation finals. In order to maintain the private ambiance, it is recommended that events in this proximity hold 5-25 people.
The rooftop is also a favorable place for party and reception as it is located on the south-side of archawai‘i, has a relatively unobstructed view for sunset.
Area 4—Gallery

Figure 5.4.2.3-9 ARCH 205/Gallery Space during day

Aside from the physical change adding the gallery to ARCH 205 as a way to share architecture culture with students enroute to their lectures, the spaces should operate relatively the same but also offer tackable surfaces that allow marketing materials and pin-ups for final presentation and receptions for the adjacent space like gallery openings. Because of the close proximity, along with the 2nd floor courtyard, events in the courtyard could range from 10-130 people comfortably.
Figure 5.4.2.3-10 ARCH 205/Gallery Space for event use at night and presentation
Area 6—3rd Floor Courtyard

![3rd Floor Courtyard Image]

Figure 5.4.2.3-11 3rd Floor Courtyard during the day

The third floor courtyard will be open to holding small events from 1-20 people comfortably. During the day, it is priority that the space is not held down by event scheduling as it is the secondary and tertiary space for faculty to use for spillover of office function. During the night, the proximity will be open for small reception and presentation.
Figure 5.4.2.3-12 3rd Floor Courtyard night event
5.5 Projected Results

Direct Results from Architectural Renovation and Programmatic Implementation

With the architectural and programmatic interventions of this project, it aims to hypothesize how archawai`i will be changed. Usage of the school by users (excluding special events) project to increase from 200 users as observed, to 368 users—a 54.3% increase in usage.

With the renovations, the 2nd floor courtyard will be the main place for archawai`i culture whether it is architectural or not. This is a development that shifts from the studio spaces to the shared public space.
**SOUTH SIDE DEPICTION**

- **STUDY**
- **SOCIALIZE**
- **DRINK**
- **IDLE**
- **EAT**
- **CELL PHONE**

*Engaged with another person*
These results must acknowledge a few acknowledgements:

- Spaces like the 3rd floor courtyard and rooftop does not exist, therefore the results include an infinite percentage of activity increase of those spaces.
- The south-side observation found that most users in the area were smoking. Recent university policy bans such activity on campus. archawai`i will abide by the campus policy, but has no protocol for enforcement.
  - The same usage of the space is expected, but is discouraged.

The interaction between teachers and students should increase outside of the classroom. If the head faculty of archawai`i encourages and reinforces programmatic techniques like hoteling, public proximity presentations, event attendance and participation, teachers and students will have more time to interact. Unfortunately, this concept is somewhat idealistic as it shifts the paradigm of teacher time outside of class. Mixed results is to be expected, but if administration mandates and/or poses incentives, I believe favorable results will follow resulting in higher frequency of student-teacher interaction outside of classes or studios.

archawai`i mission, values, and vision should become clearer in students and faculty. The cooperation between branding and imaging practices, as well as architectural interventions should make clear how the physical plant and the activities that happen inside of archawai`i reflect values of excellence in design,
sustainability, and cultural diversity with a pre-eminence to the Asia-Pacific region. The intervention of the BIPV canopy will cut down on the electricity demand for archawai`i with approximately 22,504 sqft. of required coverage (This project will not attempt to calculate energy production as it is outside of the scope and focus). Also, green walls and roofs on south-facing walls will passively reduce the need for climate control. Additionally, the 3rd floor courtyard will also reduce HVAC demand for approximately 1,020 sqft.

Proposed interventions also physically allows archawai`i to grow. With approximately 13 more office spaces, archawai`i can also expand its faculty.

archawai`i will also be able to host more events due to the increase in venues. This could be an alternative for raising finances for archawai`i. It will, also, spread awareness of archawai`i on campus as well as outside of the university community.
**Indirect Results from Architectural Renovation and Programmatic Implementation**

Due to the shift in paradigm of socializing from studios to 2nd floor courtyards, cross-pollination of students is expected among different studio levels. Anonymity will be difficult to find among students, but will generally remain among students who choose to not actively participate in archawai`i events, most likely in commuter students and part-time and students working jobs outside of the University of Hawai`i.

The project results expects that because of increased student engagement, higher quality of experience at archawai`i will lead to higher retention rates, autonomy and responsibility in academic journey, and produce more industry-ready graduates. Resulting pride taken in graduates will potentially could bring clarity to an unclear alumni association stance and presence at archawai`i. A change in this perspective could be very impactful for both students and faculty.

In the event of additional faculty, an increase of students may be expected as expansion of classes available will potentially offer a more diverse and holistic education, thereby increasing interest from aspiring architecture students.
6.0 Conclusions

Incorporating Involving College principles at arčhawai`i is a multi-phased proposal that includes architectural and programmatic solutions that aim to change paradigms of arčhawai`i spaces. While the neoclassical architecture is a requirement for buildings that are facing the old quadrangle, it is unfavorable that the physical plant does not reflect its mission, values, and vision, especially as an architecture institution. In order to progress into a more holistic direction, this policy by the University of Hawaii LRDP department must be broken. The holistic experience of the student (and indirectly faculty) must take priority over policies based in “historical significance, architectural integrity and landscape character” (University of Hawai`i at Mānoa Long Range Development Plan; Group 70 International 2007) that have not made much impact on students’ college experience.

In order to have the best chance at making this change, arčhawai`i users must become acquainted to its mission, vision, and values. It is essential that for students and faculty to make decisions based on these cardinal directions. The aesthetic, functions, and culture of the school should always reflect a commitment for students to experience and be an integral part of arčhawai`i’s vision and offer them the opportunity to take ownership and propel and enrich it. To illustrate the type of environment that arčhawai`i must strive for, students must feel safe enough to take risks on behalf of the school to propel its goals and overarching vision via conferences, competitions, outreaches, functions, and ultimately work following graduation.
The proposed architectural interventions aim to better facilitate the mission, values, and vision of archawai`i. The interventions intentionally aim to increase student engagement and awareness of the archawai`i mission, values, and vision—making it a clear point that is beneficial to their education and experience.

Programmatic solutions are efficient and quick implementations that will reinforce workflow changes proposed by this project. For it to work, a unified management system for scheduling will make progressive techniques like hoteling a reality and offer viable options that will make the educational experience and maintenance manageable and efficient. With the changing landscape of IT integration and venue creation at archawai`i, this programmatic solution will reinforce the paradigm-shifting concept of faculty office use, as well as grant transparency and accessibility of faculty members for students. Additionally, it will make IT rental and venue scheduling more efficient—thereby increasing the quality of education. Keys to success will be ease of access, safety, reinforcement of use, and maintenance.

Student initiative is still, at the end of this project, the key for student engagement. While architectural and programmatic interventions do what they can to promote student engagement, students will still have to choose to engage or not engage. This project predicts that the interventions proposed offer a favorable physical and educational environment at archawai`i that creates an institution that shows its support and commitment to the success of its students.

Evidence shows that schools that emphasize student engagement as a priority in their institution’s experience support results beneficial for both
graduates—financially, and institutions—financially, visually, and in student performance and completion.
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