Elevating Lower Campus

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Architecture 415 (Concentration Design Studio)
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The Lower Campus of University of Hawai'i at Mānoa (UHM) carries enormous potential to become a vibrant college town. Currently, many of the school's students, staff, and surrounding community have very little involvement with this part of the campus. The UHM athletic department was in search of proof of concepts to help revitalize the site and to alleviate their financial issues. We were able to produce a masterplan that was developed after periodical site visits, meetings, and presentations with stakeholders. With the help of design and financial specialists, we were guided through steps such as conceptualizing and producing the overall vision of the new site. We concluded that the embedment of seven activities within a network of programs and amenities will bring students, the Mānoa community, and the rest of Oahu to Lower Campus. The overall design was presented by sharing our thought process to provide reasoning to our decisions. Computer-generated renderings of different areas were used to help visualize the intended experiences. A final pro-forma was given as well to prove the constructability and provide an overall financial statement. The overall concept can be considered as an example of a solution to other areas with similar existing conditions.

As part of the HI Design Studio, our goal was to respond to the needs of the University of Hawai'i at Mānoa (UHM) Athletics Department. The stakeholders felt that there was a great potential in the Lower Campus of UHM. We focused on 12 acres of the underutilized area. The department wanted a design pro forma that demonstrated proof of concept for financial investment. The overall concept for a new Lower Campus was created through feedback gained from meetings with the university athletics department stakeholders, architects, financial advisors, and the School of Architecture dean. Meetings were held to analyze the site and the existing

Majority of our group are now alumni of the University of Hawai'i at Mānoa. A few of us share an academic goal of earning a doctorate degree in Architecture at the University of Hawai'i at Mānoa. Others wish to continue on in design-related professional fields. This project was completed in our final design studio of the undergraduate program in the School of Architecture. Throughout the process of this project, we learned the many skills that are required to work as a team in order to reach a shared vision. Considering the scale of this piece, we were unfamiliar with many of the problems that it presented. We were pushed to rely on the many resources available such as professionals, stakeholders, and precedents. Overall, we were able to provide an alternative solution that involves our understanding of social spaces, financing, and conceptual design.

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conditions, discuss methods of how to integrate money generating ideas, and to gain assistance from design and financial professionals.

Despite working in separate groups, we all worked as one team during all stages of the project. We shared information that was gathered through research and provided personal feedback on how each team could improve their own unique ideas.

The outcome: A mixed use, high density, multi-generational urban development that bridges the gap between the university and the neighboring community with the potential to connect to the greater community of Oahu through rail. The RAINBOW concept of Rest (relaxation and recovery), Amusement (providing variety), Interaction (through people and sites surroundings), Nosh (food), Boarding (shelter), Outlook (certainty and connection to land), and Workout (health) was suited to not only nurture students and community members' lifestyle but to also aid in the transition after schooling.

Site Analysis / Existing Conditions

Upon our first visit to Lower Campus, we analyzed the existing site and conditions based on three observations (utility, environment, and connection). We also had a meeting with the Athletic Department and stakeholders to better understand their needs.

When taking note of the utility of the site, we agreed that there were athletic facilities and many portables that were not being used frequently. We questioned whether these portables could be put to use within its current location or if they should be relocated to another place on UHM. Sporting venues such as the Stan Sheriff Center did not have an impactful grand entryway. A site visit was conducted during a Hawaii Rainbow Wahine volleyball match against a visiting team. Majority of the visitors used the entrance closest to the parking structure while other entrances were rarely taken. The pedestrian and vehicular circulation seemed to be an empty corridor through Lower Campus.

When observing the environment, we wanted to take advantage of what the site had to offer. The sun path helped further our design later in the design process. The built environment consists of strictly athletic facilities and classrooms. We feel that the scenic views of Mānoa and its surrounding natural landscapes should be taken into consideration while thinking about the experience of visitors.

The overall connection to UHM Upper Campus, the community, and the rest of Oahu could be magnified. Few social and sporting events are mainly the only reason for guests to visit this part of the University.

Project Mission / Goals

Following our initial site visit, analysis, and meeting with the stakeholders, we were able to compose mission statement.

Our mission is to create a new, active lifestyle that provides a convenient and sustainable way of living.

Our group set a list of goals in order to achieve our overall mission:

1. Create Multi-level / multi-use spaces
2. Create a vibrant and welcoming atmosphere
3. Promote sustainability
4. Activate spaces
5. Create a site that is functional throughout the day and night

Concept: R.A.I.N.B.O.W.

After discussing our vision of the site, we developed a creative but feasible approach. The overall RAINBOW concept is the embedment of 7 activities into the site and its facilities. With this idea, we anticipate the lives for those who live within and around the site to be serviceable. To assure the site's feasibility, we conducted numerous precedent studies of other schools, public and social spaces, and amenities. We then took these ideas as inspiration and incorporated similar solutions into Lower Campus.

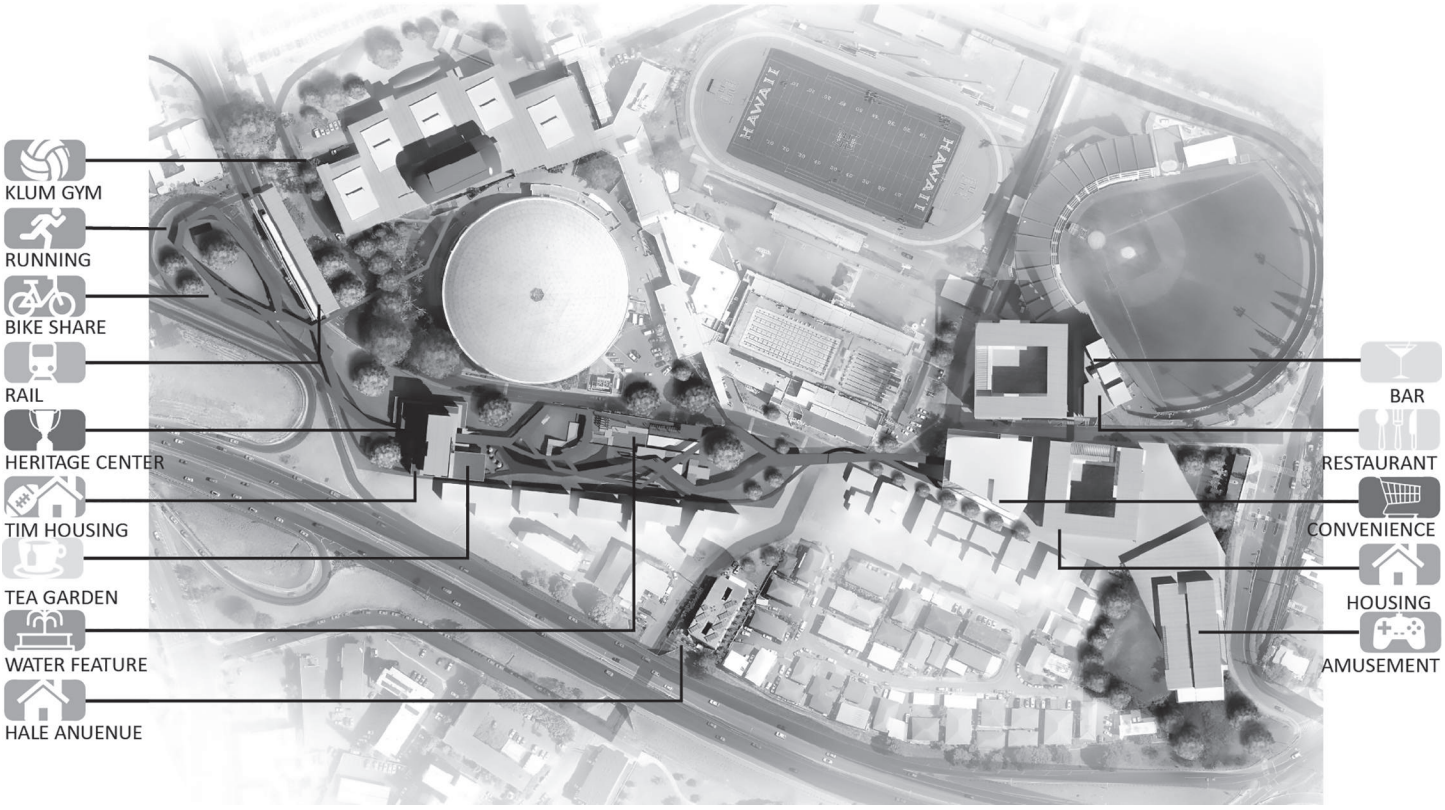

Figure 1 Site Plan rendering of the proposed development of UHM Lower Campus.

Site Master Plan

The site master plan shows the proposed programs and amenities for a portion of Lower Campus (*Figure 1*). Upon entering from the Northwest, one may notice a proposed rail station in which we believe can help connect the rest of Oahu to UHM. The Bikeshare Hawai'i Program was incorporated into the plan to add another layer of transportation and promote a sustainable lifestyle. One of the biggest differences between the existing site and the proposed plan is the presence of public housing and retail. We agreed that having these programs can help draw people in to visit or live on the site. An elevated path is also one of our main design features, running throughout the envisioned development. Overall, there is an increase in interaction between the natural and built environment to create a more dynamic and lively atmosphere. Both the elevated path and green spaces can provide free activities to attract more visitors.

Development Phases

The overall site development can be broken down into 7 phases. Each phase contains the feasible development of buildings, certain programs, and amenities. They are also separated in such a manner to make it possible for more than one developer to contribute to the advancement of Lower Campus. Due to the complexity of this project the overall development of the following structures were not completely designed to the finest detail. However, we were able to present the overall concept of each building through renderings, program information, and successful precedent studies.

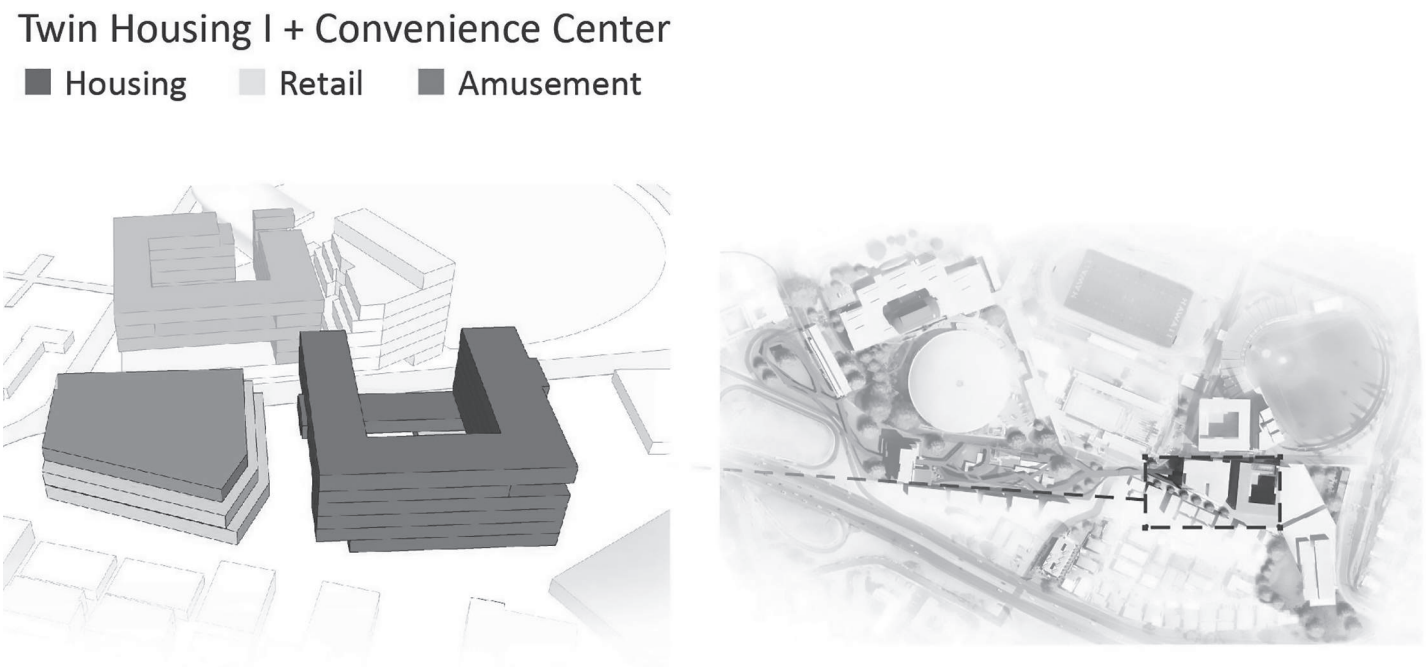

Figure 2 The left massing represents the Convenience Center. The right massing represents Twin Housing I.

Phase 1: Twin Housing + Convenience Center = Convenience of Live

As a team, we felt that it is essential to begin Lower Campus' development with housing (Twin Housing I) and the Convenience Center. Once there are residents within the site, they will seek places to eat, to socialize, and sometimes for a place to have fun. We envisioned these residents to be both students and professionals with busy schedules. Therefore, the Convenience Center contains a variety of programs to reduce the need to leave the site. This type of lifestyle can be spread through word of mouth from the residents to their family and friends to attract more visitors to the site.

Twin Housing I contains an "L" or "U" shaped floor plans with different orientations on each floor to ensure more interaction within the building and its surroundings. This housing contains both one- and two-bedroom units. To promote a welcoming atmosphere, we consider pets to be a part of the family. Therefore, all public housings in this site are pet-friendly. We intend to have shading systems such as louvres for the housing units. These louvres are angled based on the specific sun paths during different times of the year.

The **Convenience Center** consists of three floors of retail and one floor dedicated for amusement. A pet care center and children's daycare center at the ground floor allows for a quick drop-off and pickup routine during anytime of the day. The ground floor also contains a bike share station and a full service bank. An internet café/ lab sits at the top floor for both amusement, professional, or academic work. Weekly vendors will line up to provide food or products during social events. Many of the tenants needs are provided by retail units (*Table 1*).

Figure 3 Perspective rendering of Twin Housing I (*left*) and Convenience Center (*right*).

Table 1 Program List in Each Phase

PHASE 1

TWIN HOUSING I	
Level 2-7	# of Units
1 Bedrooms	37
2 Bedrooms	50

Convenience Center	
Level 1	# of Units
Pet Care	1
Childrens Daycare	1
Full Service Bank	1

Weekly Vendors	
Level 1	# of Units
Food Truck Vendors	10
Level 2	
Super Market	1
Drink Café	1
Level 3	
Health/ Nutrition Store	1
Home Furnishing Store	1
Salon	1
Beauty Shop	1
Bike Shop and Repair	1
Electronic Accessories	1
Level 4	
Internet Café	1

PHASE 2

TWIN HOUSING II	
Level 3-7	
1 Bedrooms	30
2 Bedrooms	41

Multi Complex (Foodcourt)	
Level 2	
Individual Vendors	41

Multi Complex (Restaurants)	
Level 3-6	
Restaurant	1
Level 7	# of Units
Luxury Boxes	3

PHASE 3

Retail	
Level 1-2	
Heritage Center	1
Visitors Center	1
Urgent Care	1
Pharmacy Store	1
Athletic Retail	1
Local Retail	13

TIM Housing	
Level 3-6	
1 Bedroom	16
2 Bedroom	8
Resident MGR	1
Laundry Room	1

PHASE 4

Hale Anuenue	
Level 2-7	
1 Bedroom	82
2 Bedroom	47
Office	1
Reesident MGR	1
Mailroom	1

PHASE 5

Retail Boxes	
Level 1-2	
Retail Box	4;11

PHASE 6

Amusement Center	
Level 1-2	
Arcade	1
Bowling Alley (10 Lane)	1
Table Sports	1
VR	1
Bar and Restaurant	1
Cinema	1

PHASE 7

Klum Gym	
Level 1	
Basketball/Indoor Vball Court	3
Management Office	1
Seating/Bleachers	-
Storage Room	1
Electrical Room	1
Locker Rooms	2
Restrooms	2
Classrooms	-
Level 2	
Seating/Bleachers	-
Rooftop Facilities	
Sand Volleyball Courts (Full Size)	5
Sorage Room	2
Concession	1
Restrooms	2

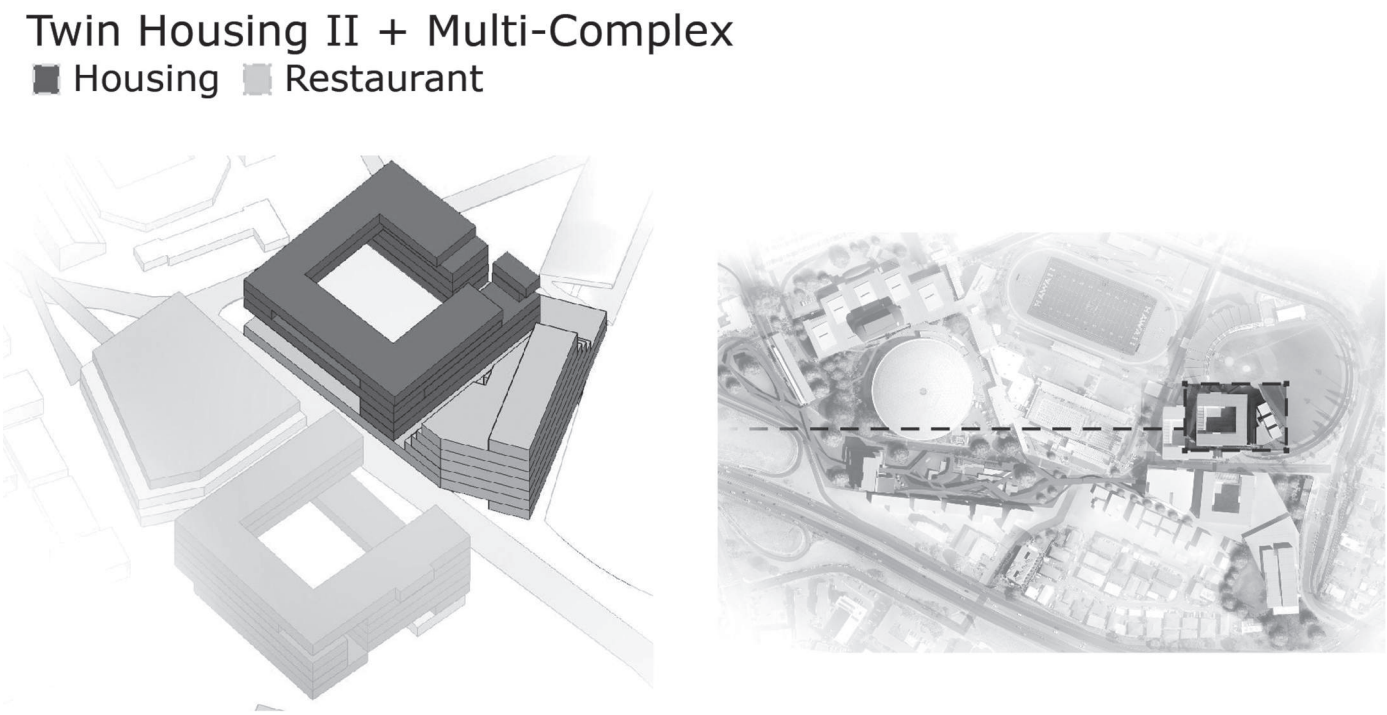

Figure 4 The massing represents both Twin Housing II and the Multi Complex. In this massing, the diagram shows that Twin Housing II sits on one floor of the Multi Complex.

Phase 2: Twin Housing II + Multi Complex = Sustenance of Life

Food and drink are regarded as a source to maintain living things. Therefore, **Twin Housing II** and the **Multi-Complex** containing restaurant units may follow Phase 1. It is here, where visitors and residents can have a meal anytime of the day.

Twin Housing II rests on a portion of Multi-Complex. Its form and floor plans are identical to Twin Housing I, however its orientation is different to react to its surroundings and the changing sun path throughout the year. Below Twin Housing II is a Food court similar to the popular Shirokiya Japan Village Walk located in Honolulu, Hawai'i. The existing precedent has many visitors during any time of the day. However we incorporated an open ceiling to promote interaction through the different programs, installed landscape features, and people.

There are a variety of restaurants within the Multi-Complex (*Table 1*). However, a set of luxury boxes sits atop of this structure to provide exclusive activities and a view of activities taking place in Les Murakami Stadium.

Figure 5 Perspective rendering of East most entrance to the site facing an electric facility (Nearest left building) Twin Housing I (Farthest left building), Twin housing II (Farthest right building) and the Multi-Complex (Nearest right building). An existing electric facility is renovated to have a more pleasing view. We took inspiration from an existing precedent and proposed to create a visual buffer by adding vegetated fences on all sides of the facility. The overall goal of this rendering was to show a welcoming site, and the convenient life of those who live within the site.

Figure 6 The massing contains various types of programs. The brown section represents the proposed Travel Industry Management (TIM) Housing which sits on two perpendicular massing's. These other two sections represents retail units and athletic facilities for both visitors and those who stay in the housing units. The space between the two parallel massing's allow for an elevated path to run through and allow easy access to these programs.

Phase 3: Travel Industry Management (TIM) Housing: Welcoming All Visitors

Since sporting events include the competition between home teams and visiting teams, the cooperation of Travel Industry Management (TIM) is highly valued. This is an opportunity to incorporate the involvement of other institutions within the site.

Phase 3 adds another layer of housing (TIM Housing) dedicated to visiting teams during the sporting seasons. This fulfills one of our goals stated earlier, which is to present a welcoming atmosphere. Retail units provide for the convenience of these residents as well (*Table 1*). A heritage and visitors center allow the community to participate in raising school spirit and pride while educating visitors to familiarize themselves with the history and achievements of the athletes of the past. This area and its surroundings can also be used for pre-gaming activates which is currently absent in the existing site.

Figure 7 Perspective rendering of a view from below the elevated path facing TIM Housing. The overall goal of this rendering was to show the variety of places visitors are able to rest. The bottom floor of TIM Housing consists of programs that can be seen from the outside to entice visitors.

Phase 4: Renovation of Hale Ānuenue

The existing **Hale Ānuenue** in Lower Campus contains three floors of housing units. We decided to add four more floors of single and double bedrooms units (*Table 1*). This housing will be available as public housing. The original form of the building was kept to reduce development costs.

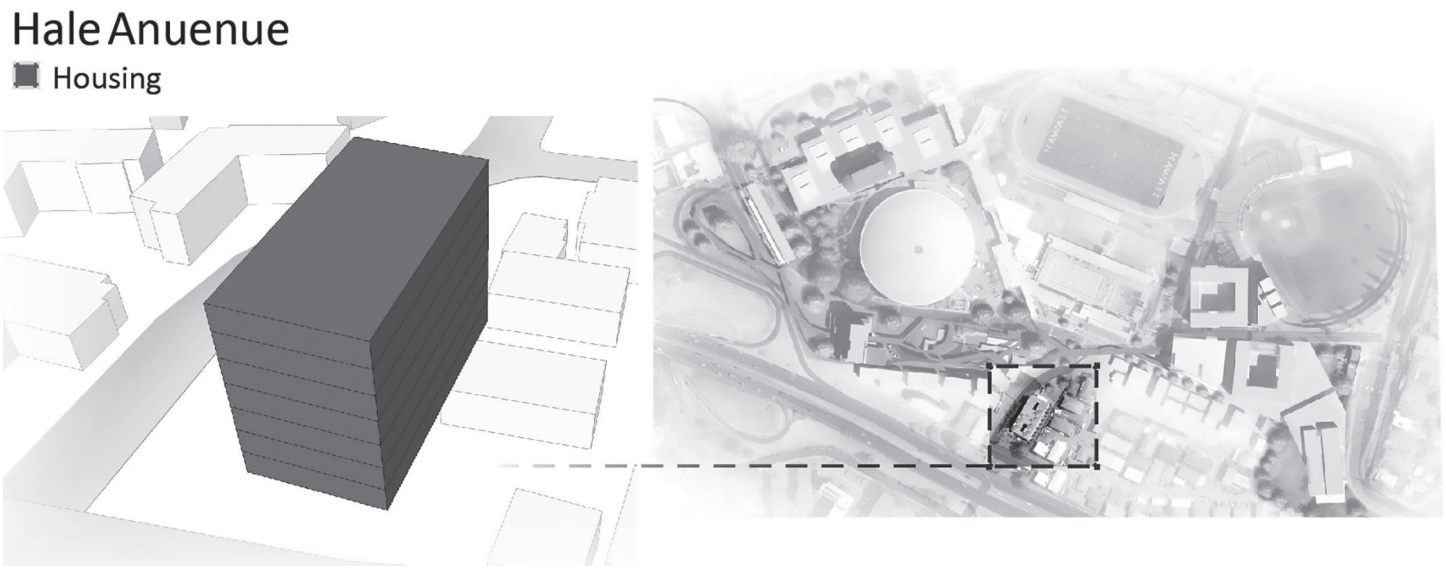

Figure 8 The massing represents a renovated Hale Ānuenue.

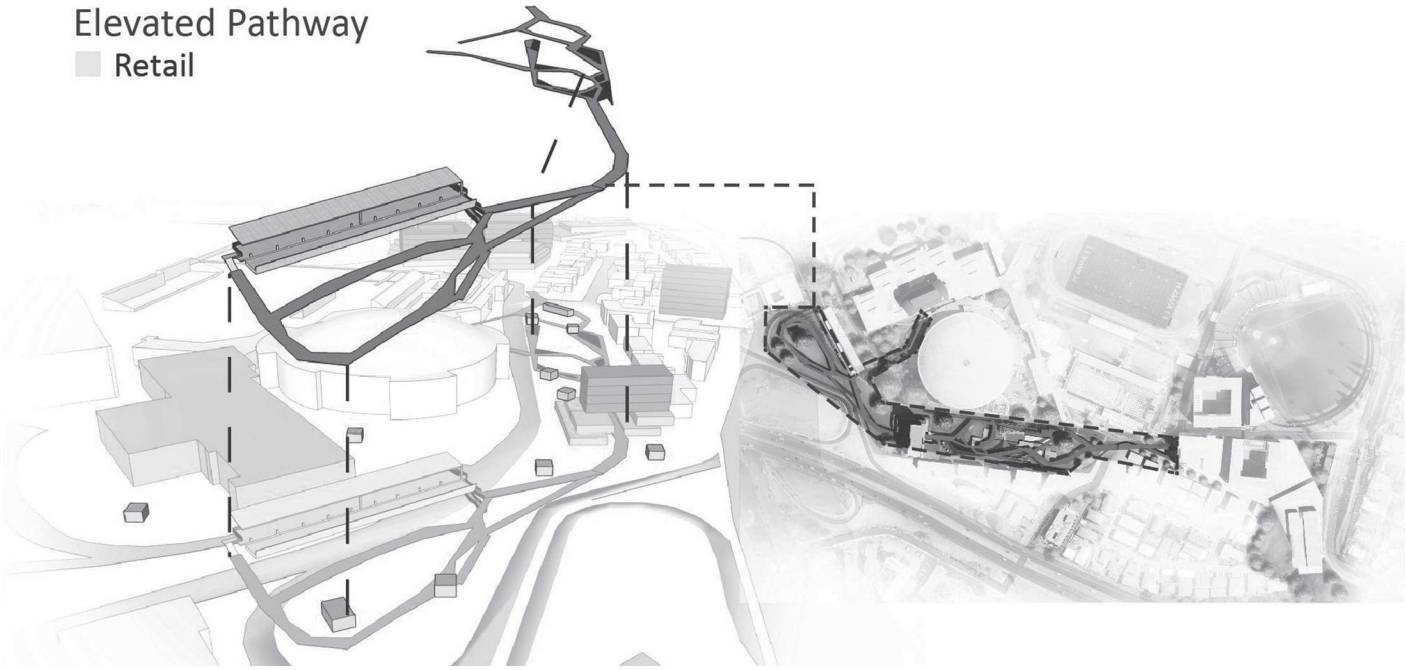

Figure 9 The yellow massing's of the diagram represents retail boxes that are spread throughout the site's greenspaces. The diagram slow shows how elevated path can be easily accessed following the arrival from the proposed rail station.

Phase 5: Elevated Pathway and Retail

The concept of "free activities" brings more visitors into our site and can keep them from leaving earlier than desired. These activities can be found on, below, and around the elevated path. The path also promotes a healthy way of moving through the site. It contains multi-levels to create different experiences and may encourage visitors to come again to try a different route. The elevated path intertwines with the path below, creating spaces intended for interaction. It also provides shade for the visitors that rest or walk beneath.

Throughout the path, there are nodes which are areas in which retail boxes are placed (*Table 1*). They can provide many things from food to products for anyone on the site. The path is multi-generational friendly as it holds areas of rest for elders and fun activities for the youth. It also provides surrounding views that can't be seen from ground level.

Figure 10 Perspective rendering of the Elevated pathway near the proposed rail station (*left*). This rail station is intended to be the final stop of the rout that travels through a portion of Oahu. A bikeshare station lies below risen pathway to provide another way of exercising and moving along the site.

Phase 6: Amusement Center: Convenience of Entertainment

There are moments in time when people decide that they need a break from their busy schedules and seek activities that provide entertainment. The Amusement Center fulfills the remaining needs that were realized after Phase 1. One of the difficulties in the early steps of design was the issue of keeping visitors engaged throughout the whole site. Having this program at one end of Lower Campus gives reasons for visitors experience everything from East to West.

Another important aspect that this area has to offer is its function during the night. This also allows for other surrounding retail units to remain functional to serve these visitors.

The Amusement Center contains an area for table sports, numerous virtual reality video and gaming consoles, a bowling alley, an arcade, and a cinema. A bar and restaurant is located on the top floor to act as an anchor. This can be a main destination visitors intend to visit.

However, its placement and orientation on the site forces guests to travel to other areas before arriving to the restaurant. This increases the chance of more engagement with other areas and social interaction.

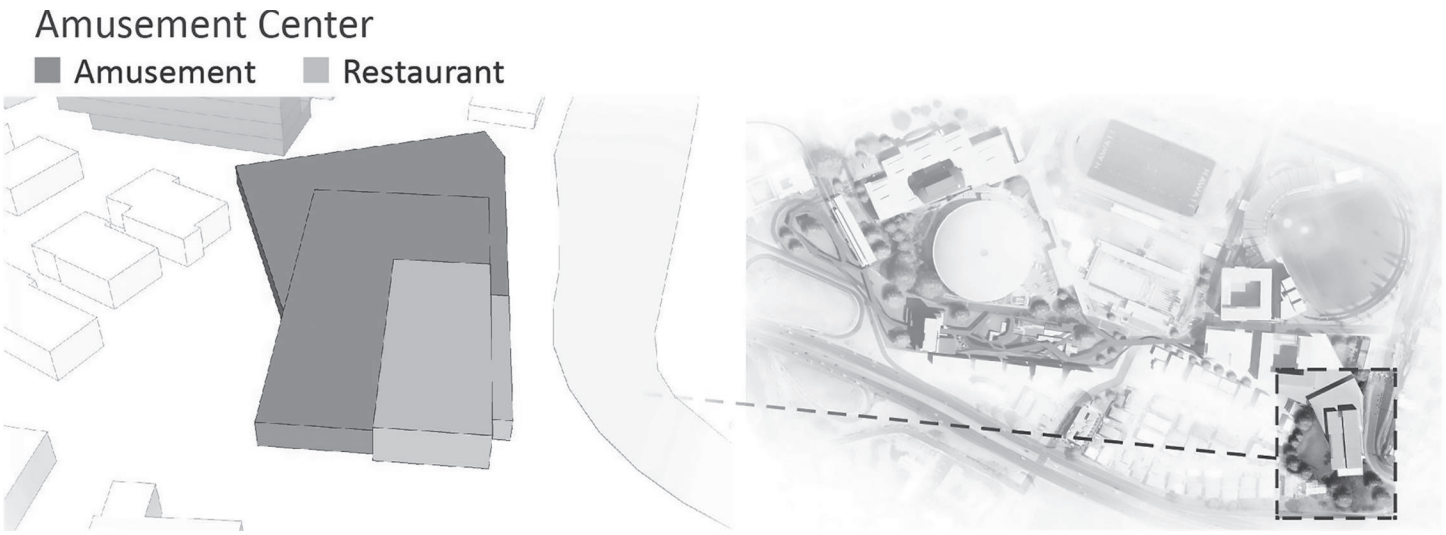

Figure 11 The massing represents the Amusement Center. There are two restaurant retail units. A food elevator (dumbwaiter) can travel to both levels to provide to visitors of both levels.

At the tail end of the Amusement center is the open cinema which is a multi-use space. It can be used for displaying films or movies at night. This can also be rented out for private or public activities (*Figure 12*).

Figure 12 Perspective rendering of the Amusement Center's Open Cinema and anchor restaurant that floats above. The open area and seating is available for rent.

Phase 7: Klum Gym: Revitalizing Antiquity

The existing Klum Gym is underused, as noted during our site visits. However, it is still considered as a building that holds cultural and historical significance. Therefore, we proposed to renovate this facility to add more programs to create a unique sporting venue that can function with multiple activities.

The first floor contains a basketball court multipurpose floor. Five sand volleyball courts rest at the rooftop of the proposed renovated Klum Gym. These courts fulfill the Athletic Department's needs as they hope to use them for future volleyball tournaments.

Throughout this design process, there was an ongoing discussion about the financial aspect of the development. The overall pro-forma was overseen by Shirley Hong. With the help of a financial professional, we were able to present the final projections to the stake holders (*Table 2*). As a group, we struggled to generate desired

Table 2 Final Project Projections

FINAL PROJECT PROJECTIONS	
Total Projected Gross Income (PGI)	$71,534,385.00
Total Effective Gross Income	$4,756,593.00
Total Soft Costs	$26,262,195.00
Toatal Development Hard Cost	$328,227,434.00
Total Development Net Operating Income	$3,288,546.00

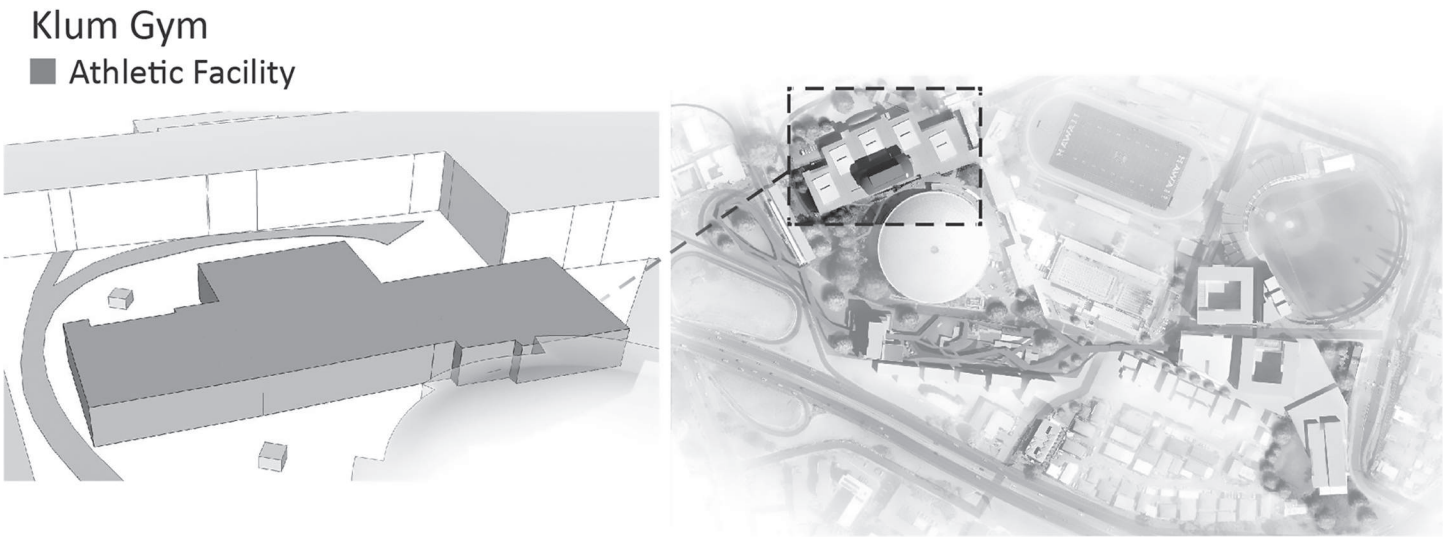

Figure 13 The massing represents the location and size of the renovated Klum Gym. Two retail boxes exist in the front and back of Klum Gym for visitors who arrive and leave the new Gym.

numbers when dealing with the financial aspect of this project. There were numerous trial and errors throughout the process. For example, when an idea was proposed, the construction costs would be high because of material choice or area or construction.

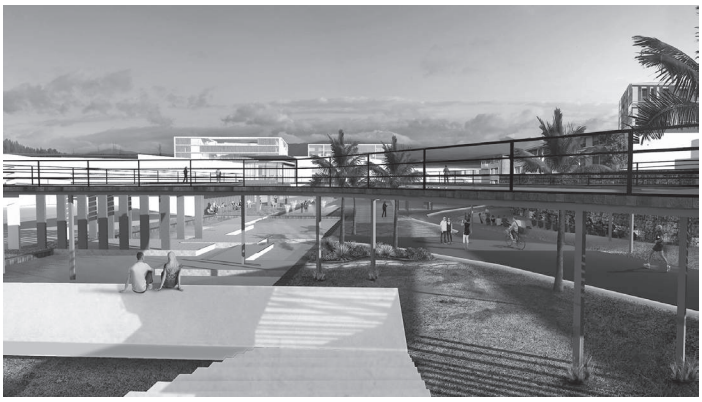

Figure 14 Perspective rendering of a resting area of the elevated Pathway. This resting area frames a view of a water feature that is located south of Stan Sheriff Center.

The thorough design process consisted of numerous site visits, meetings with stakeholders, and group discussions for problem solving and conceptualizing. Through the progression of this project, we were able to provide a feasible option for the Lower Campus of UHM. We were able to provide reasoning to our design decisions and help the Athletic Department visualize a new and elevated Lower Campus.