Museum of Outdoor Arts I Design Build Competition
2022 Design Challenge “Sanctuary Continental”

STUDIO JADE-P

KUBO

University of California, Berkeley
4th-Year Architecture Students

Pericles Bien I [redacted]
Jared Calvo I
Daniel Chiu I
Ethan Oh I
Alexis Kelly-Patino I

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Favorite Song: Pain - PinkPantheress
Favorite Architect: Carlo Scarpa
Hobbies: Hiking, or pretty much doing anything outdoors

Understanding the relationship between identity and architecture is a definitive element of my current design philosophy. My interest in architecture grows every day, driven by my curiosity to discover design solutions that both prevent/limit the effects of climate change while also strengthening our own identities as individuals and as communities through the built environment.

Pericles Bien

Undergraduate architecture student looking to further develop personal design language through projects that emphasize local identity and sustainable innovation.

education

2014 - 2018
Vanden High School. Fairfield, CA

2018 - 2021
Diablo Valley College. Pleasant Hill, CA
AA Degree in Architecture

2021 - Present
University of California Berkeley. Berkeley, CA
BA expected completion 2023

competitions

2020
Cal Poly Design Village

software

Illustrator
Photoshop
InDesign
Sketchup
Rhino
VRay
Revit
AutoCAD
Lumion

professional skills

Model making
Sketching
Team development

personal interests

Fashion
Video Production
Skating
Tennis
Gaming

JARED CALVO

ARCHITECTURE STUDENT

Determined undergraduate with the passion and willingness to learn in order to inspire change in the lives of others through design.

INFO

PROFESSIONAL SKILLS

Team Developer
Physical Model Craftsman
Fast Learner
Creative Problem Solver
Digital Artist
Sketch Artist
Beginner Carpenter

SOFTWARE SKILLS

Revit
Rhino 3D
Grasshopper
Sketch Up
AutoCAD
Lumion
V Ray
Enscape
Adobe Suite

WEBSITE

jaredcalvo.com

EDUCATION

University of California, Berkeley | BA in Architecture | May 2023

Diablo Valley College | AA in Architecture | June 2021

Arroyo High School | TREND Academy | June 2018

Cal Poly SLO | Summer Architecture Program | August 2017

WORK & VOLUNTEERING EXPERIENCE

2020 — Ecobuild Architects
Part-Time Intern | Remote

- curated material finishes for clients
- modeled projects in Revit and Rhino3D
- rendered projects in Lumion & Photoshop

2021 — Ecobuild Architects
Full-Time Intern | In Office

- measured and produced drawings on site
- held Lumion tutorials for staff and employers
- produced deliverables and schedules for various phases of projects

2021 — American Insititure of Architectural Students
Berkeley Member & Representative

- provided software assistance & tutorials
- held model-making tutorials
- helped facilitate events & meetings

COMPETITIONS

2020 — ARKxSITE International Competition | Temple
Individual Submittal

2020 — Interiors of Isolation | Drawings Competition
Individual Submittal | Work Published in Book

2021 — Architectural Poetry Competition | 2nd Cycle
Individual Submittal | Work Published in Book

2021 — Urban Adaptation Competition
Team Submittal

2022 — Last Nuclear Bomb Memorial | Buildner
Individual Submittal

2022 — Dream Villas | Young Architects Competitions
Team Submittal

Favorite Song: Mr. Blue Sky - Electric Light Orchestra
Favorite Architect: Makoto Tanijiri
Hobbies: Coffee, alot of coffee

Jared's passion for architecture stems from his ever-growing eagerness to create. For him, creating things is simply the perfect opportunity to learn something new about the world, himself, and others. It is an adventure for which he wishes to explore every single aspect; architecture is simply the starting point to this goal.

Favorite Song: Glimpse of Us - Joji
Favorite Architect: Richard Meier
Hobbies: Kung Fu, Sketching, Design

For me, architecture offers a unique chance to move the world through the built environment— addressing key issues such as climate change and crafting designs that pay homage to local environments, cultures, and traditions. My passion for architecture stems from treasured memories of carefree LEGO houses, sketching out plans for my childhood home, and a love for design that has followed me into adulthood. As I continue my journey into architecture, I hope to explore my interests in sustainable and culturally sensitive design, while developing a further understanding of how the built environment can be leveraged to change lives for the better.

Daniel Chiu Architecture Student

[redacted]

Profile

Detail-oriented and passionate architecture student currently pursuing a B.A. in Architecture at UC Berkeley with an interest in community-involved design strategies, sustainable design, and adaptive reuse.

Education

University of California, Berkeley
Bachelor of Arts in Architecture
Expected Graduation May 2023

American High School
Graduating Class of 2019

Relevant Coursework

Fundamentals of Architectural Design
Introduction to Construction
Introduction to Architectural Design Theory and Criticism
An Historical Survey of Architecture and Urbanism

Software

Rhino 3D
Chaos VRay
Lumion
Autodesk Inventor
Adobe Illustrator
Adobe InDesign
Adobe Photoshop
ArcGIS

Professional Skills

Digital Artist
Novice Carpenter
Sketch Artist
Model Making
Fast Learner
Team-Oriented
Creative Problem Solving
Multi-Media Design

ETHAN OH

Info

[redacted]

Professional Skills

Digital Artist
Model Craftsman
Sketch Artist
Team Player
Fast Learner

Software Skills

Adobe Suite
Rhino 3D
V Ray
Sketch Up
AutoCAD

Education

University of California, Berkeley
BA in Architecture

Diablo Valley College, Concord, California
AA in Architecture, June 2021

Salesian College Preparatory, Richmond, California
Graduating Class of 2019

Work Experience

Church Musician — 2011- 2017
- Piano player for St. Patrick's Church in Rodeo

Diablo Valley College EOPS/CALWorks Student Worker — 2019-2020
- Student worker at the DVC EOPS/CALWorks office

Safeway Front End Worker/Cashier —2021
- Alcohol Section Cashier

Cal Performances — 2021
- Usher Captain

Volunteer Experience

"Project Santa" — 2016-2018
- High school run Christmas Carnival held for classes of kindergarteners in the Richmond community

Sound Board Operator — 2019
- Set up mics and speakers and controlled the sound for high-school musical

Student Ambassador — 2015-2019
- In charge of incoming student events such as shadow days and tours

CYO Basketball Coach — 2020-2021
- Coach for the St. Patrick School 4th Grade Boy's Basketball Team

Favorite Song: 2seater - Tyler the Creator
Favorite Architect: Gio Ponti
Hobbies: Playing music

What has always fascinated me is the intersection of human culture and its interaction with its surrounding environment. Whether it be the sports and games we have created or the stories and mythologies that we use to identify ourselves, the way these ideas both impact and are impacted by our surroundings has always truly captivated me.

So when presented with this competition, what drew me in was the opportunity to create something that could both be extremely personal to its surroundings yet universally understood on its own. Using Architecture, I was excited to see how regional structures and styles could be combined with universal and iconic forms to create a space that was individual as well as recognizable.

Favorite Song: Habang Buhay by Zack Tabudlo
Favorite Architect: Francis Kéré
Hobbies: Film, Photography, Watercolor painting

As I continue my path into the field of architecture, it continues to make more and more sense as I look back on my childhood and my education thus far. Growing up in an urban environment with an upbringing that was characterized greatly by living in small, cramped apartments, I found that the creative offered me a sense of reprieve and infinite mind space that allowed me to escape from the confines of my living spaces. Architecture became an avenue through which I could gain access to this part of my mind, imagining endless possibilities for future dwellings, parks, and spaces of gathering that I pictured myself occupying with the people I found along the way.

Presently, architecture continues to occupy my life in a similar manner. The lens through which I view the world is now accompanied by a lexicon of architectural terms that I use to comprehend my surroundings, along with an even greater interest in understanding how the built environment shapes the human experience.

alexis kelly-patino

skills

professional
– collaborative design
– model making
– film and digital photography
– digital and hand illustration
– beginner carpentry

modeling software
– rhino3d
– lumion
– enscape

adobe suite
– photoshop
– illustrator
– indesign
– premiere pro
– audition

misc. software
– procreate
– clip studio paint

interests
– journalism
– video editing
– guitar and piano

education

university of california, berkeley
b.a. architecture
minor in journalism
expected graduation – 2023

relevant coursework
– fundamentals of architectural design
– future ecologies: urban design, climate adaptation, and thermodynamics
– introduction to construction

experience

{m}aganda magazine
multimedia associate
2020

– designed magazine spreads showcasing student artwork using adobe indesign
– recorded and edited video footage of various student performances for use on the magazine's website and social media platforms

leadership

gender and sexuality awareness coordinator
pilipinx academic student services
2020-2021

SITE DESCRIPTION

Abundant in culture, language, people, and magnificent natural landscapes, the continent of Asia is home to a myriad of unique architectural and design languages and typologies that build upon millennia of innovation. The Philippines represents the best of what Asia has to offer; as a geographic gateway into the continent, the Philippines features a distinctive culture that draws from its indigenous groups along with Malayo-Polynesian and Chinese influences. This is particularly visible in its vernacular architecture, such as the bahay kubo, a multipurpose stilted house typology that is indigenous to the Philippines and uses native materials including nipa grass, bamboo, and wood.

The chosen site is on the rice terraces of Batad, Philippines, a small village located in the Cordillera mountain range. The Batad Rice Terraces were carved into the mountainous terrain by hand over 2,000 years ago and have been designated by the Philippine government as a National Cultural Treasure. They remain in use today by the Ifugao people, whose ancestors masterfully developed and built the irrigation system of the terraces to use water that flows down from mountain top forests.

The proposed site for the project puts forth a spectacular view of one of the Philippines' most treasured examples of indigenous innovation and also holds close significance to Studio JADE-P, which consists of a team that is mostly Filipino. The design and site selection is an homage to the thousands of years of indigenous Filipino "third-world" technology that has been cast out of the spotlight by a legacy of Spanish colonization and American imperialism. As such, the pavilion is aptly named Kubo, meaning "hut" or "shack". It aims to highlight the multiplicity of Filipino culture as a representative of numerous continental influences and designs while, much like the bahay kubo after which it takes its name and likeness, serving as a space of reprieve and gathering for the community in which it is located.

It is in its use of bamboo that Kubo truly represents the Asian continent. Utilizing Filipino amakan, traditionally woven wall panels fabricated from paper-thin strips of bamboo, as well as bamboo poles and joinery in the overall structure of the design built upon East and Southeast Asian traditions of bamboo construction. The stilted structure of the pavilion above the rice paddies of the site maintains a uniquely Asian and Pacific Islander tradition of raised homes, huts, and shacks. The design, in its reinterpretation of existing Asian architectural typologies and its use of almost-exclusively native materials and building techniques, highlights the cultural intersections that exist within the Philippines and, on a grander scale, the Asian continent.

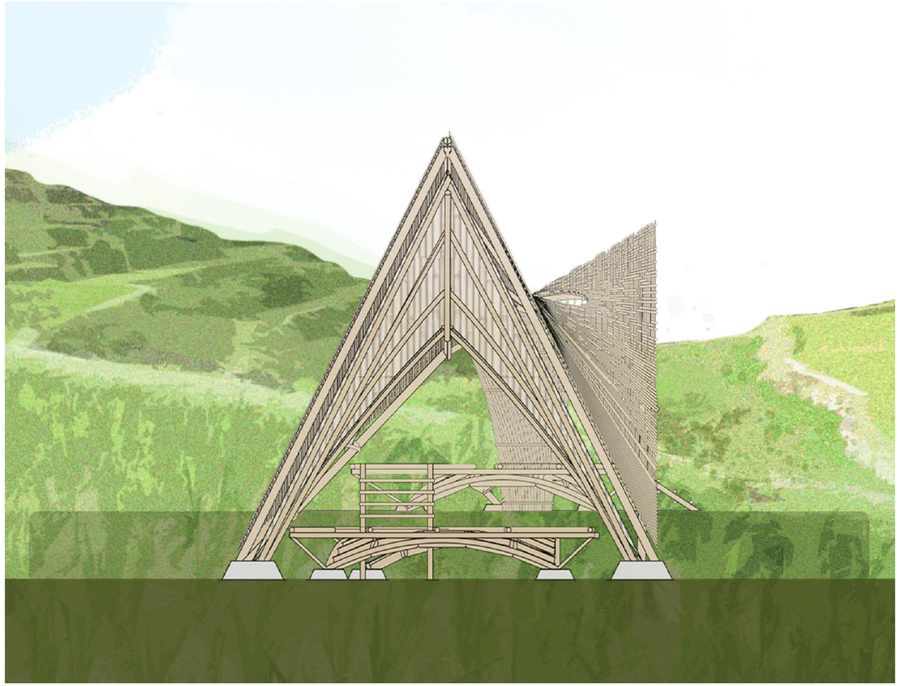
Ariel view of pavilion in relation to local village

CULTURE, COLLABORATION, AND FUNCTION

Every phase of research, concept development, and problem-solving was derived from our efforts to educate and learn from each other's own areas of expertise. With our team consisting of a diverse set of individuals with various backgrounds, our ideas mutated together in a delightfully chaotic way. Through a fully collaborative process, this chaos underwent several rounds of distillation and refinement to introduce a new architectural language by analyzing and redeveloping traditional building typologies and bamboo structures found within the Philippines and other regions of Asia.

Kubo will call upon its Filipino roots in the bahay kubo by serving as a place of gathering for all, from the local villagers, to farmers that maintain and cultivate the rice terraces, and to those who may find themselves lucky enough to look upon the spectacle that is the sun rising above the Cordillera mountains to illuminate the terraces. Being that it is located directly in the rice terraces, it would most likely be rice farmers that are its largest user group, who may choose to use it for rest and shelter from the sun or even as a place to temporarily store their harvests for the day while they continue working. Its location also guarantees its users a vista point of the unique landscape and the nearby village.

Post-digital perspective of pavilion



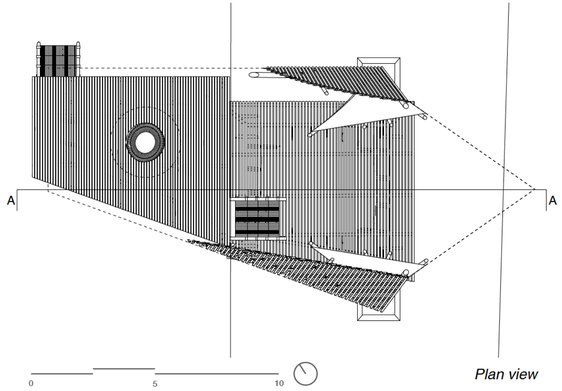
East elevation

MATERIALS & CONSTRUCTION

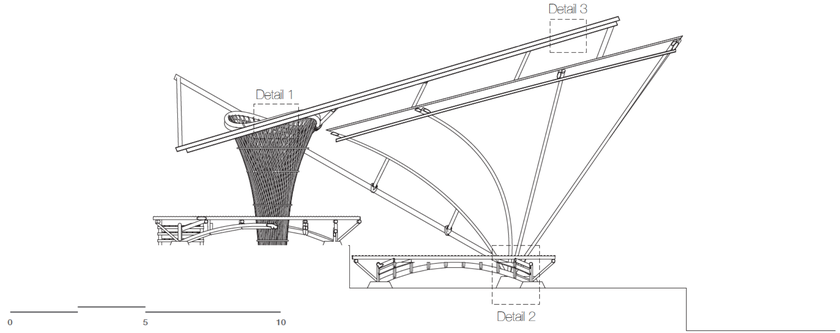
Bamboo is a grass plant that is commonly grown and cultivated in tropical regions of the world. It is a versatile genus that branches out into more than a thousand different species. For this build, we chose to work with a few that are deeply rooted within our site and its culture: Bambusa Balcooa and Schizostachyum Lumampao. Bambusa Balcooa grows to be the largest of its kind, with thick culm walls that give it extraordinary structural qualities; hence it is commonly used in many construction projects. Schizostachyum Lumampao takes on more grass-like characteristics, with thinner culm walls which make it more malleable for delicate practices such as the traditional Filipino craft of Amakan.

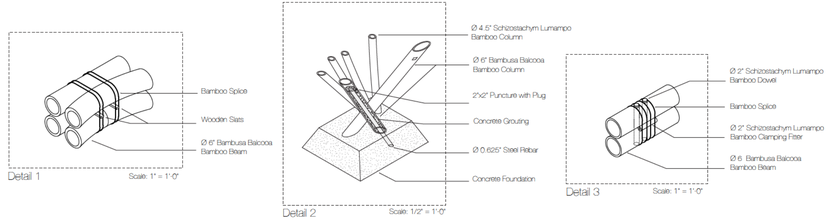
We utilized these two native materials accordingly and developed methods of construction that would express their unique qualities to the fullest. Fixed to a series of concrete foundations, Bambusa Balcooa is spliced, pinned, and tied at the intersections with thin strips of bamboo to develop a simple, yet sturdy framework. Afterward, the structural skeleton is enwrapped with long slats of Schizostachyum Lumampao which interlace over and under each structural member to form the sanctuary's skin. The freedom of constructing a skin out of this thin material allowed us to progressively increase the spacing between each woven piece thus developing a gradient from opaque to transparent, which defines unique spatial qualities on each side of the pavilion.

Our team researched both traditional and contemporary methods of constructing within the Philippines to avoid imposing non-native techniques upon local contractors. Along with being culturally sensitive, this also ensures the design is translated to construction with little to no error. As a result, the Kubo Sanctuary is estimated to be built within a generous time frame of 2 weeks. The concrete foundation and framework will take no less than a few days, while extra time will be allotted to the weavers who must take on the complex assignment of weaving such a large surface area out of bamboo.

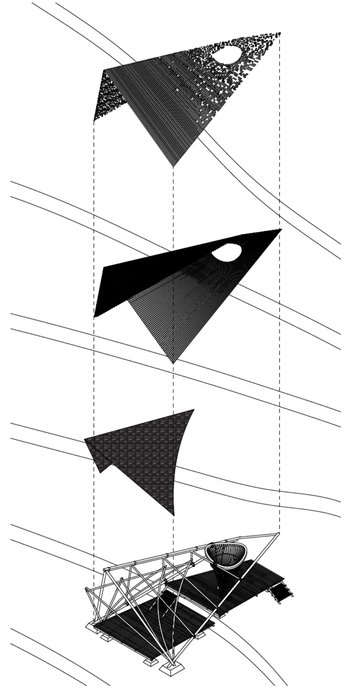


Plan view





Section A and detailed connections

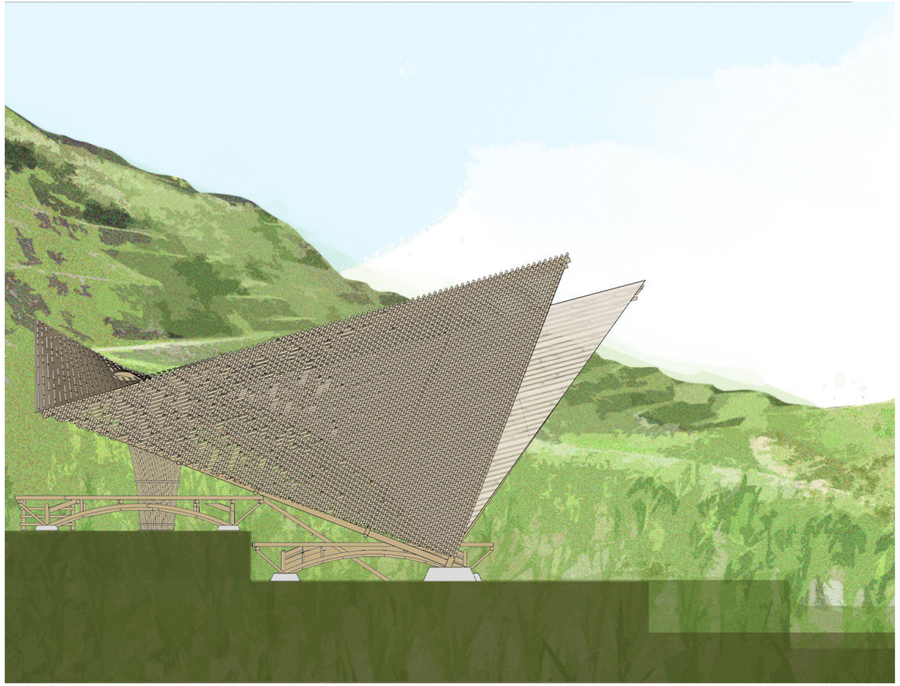


Exploded axonometric

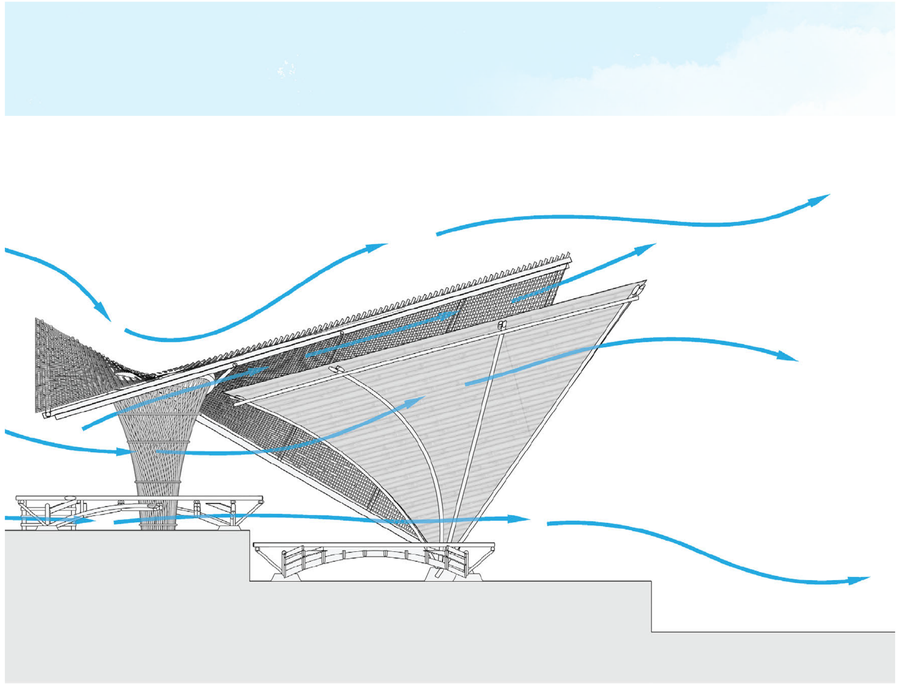
TECHNOLOGY, CLIMATE, AND SUSTAINABILITY

The pavilion addresses the humid and wet climate conditions of the Philippines primarily through the layered roof system. The outermost layer of round bamboo poles responds to the spatial conditions of the pavilion by increasing in density along the eastern portion of the structure, accompanied by the amakan nested roof below, which creates a space for users protected from varying weather conditions. The layered roof system also promotes further passive cooling of the structure by utilizing the exterior roof to capture the brunt of solar gain, trapping heat in between the layers as well as funneling wind that moves through the pavilion.

Sustainability in the design is achieved through the utilization of traditional bamboo construction methods. Introducing modern construction techniques and materials to this region would lead to an excessive amount of waste produced throughout the entire process. Constructing the pavilion using generational knowledge from local communities as well as the use of bamboo, a material known to be highly sustainable as it requires less energy to nurture and work with, will help reduce unnecessary waste and pollution to the natural environment.



South elevation



Air circulation diagram

CONCLUSION

Through rigorous analysis of both traditional and contemporary bamboo structures found throughout Asia, and specific research into vernacular forms that have developed over many years in the Philippines, our team has proposed a pavilion design that unites the old and new in an attempt to strengthen the heritage of local communities, to provide different spatial experiences for a variety of users, and to emphasize the use of sustainable materials and construction techniques.

SOURCES

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BUDGET

MATERIAL	UNIT TYPE	# OF UNITS	WEIGHT PER UNIT	PRICE PER UNIT *(USD)*	PRICE PER UNIT *(PHP)*	TOTAL COST *(USD)*	TOTAL COST *(PHP)*
BAMBOO *(BAMBUSA BALCOOA)*	Poles (5in x 32ft)	30	73.5 lbs	$ 10.00	₱551.80	$ 300.00	₱16,552.00
BAMBOO *(SCHIZOSTACHYM LUMAMPAO)*	Slats (2in x 10ft)	700	3.7 lbs	$ 3.00	₱165.50	$ 2,100.00	₱115,857.00
BAMBOO *(SCHIZOSTACHYM LUMAMPAO)*	Strips (2in x3ft)	14	0.1 lbs	$ 1.25	₱68.80	$ 18.00	₱991.00
CONCRETE *(4000PSI AT 14 DAYS)*	lb/ft^3	26	75lbs	$ 73.00	₱4022.60	$ 1,898.00	₱104,587.00
STEEL REBAR	(½in D x 3ft L)	36	3lbs	$ 7.00	₱390.80	$ 252.00	₱14,068.00

TASK	CONTRACTOR	TIME FRAME	PRICE PER DAY *(USD)*	PRICE PER DAY *(PHP)*	TOTAL COST *(USD)*	TOTAL COST *(PHP)*
CONCRETE FOUNDATION	Concrete Contractors	14 Days	$ 15.00	₱825.80	$ 225.00	₱12,387.00
BAMBOO FRAMING	General Carpenters	2 Days	$ 15.00	₱825.80	$ 225.00	₱12,387.00
BAMBOO EXTERIOR	Amakan Weavers	14 days	$ 12.00	₱660.60	$ 168.00	₱9,248.00
TOTAL					**$ 4,971.00**	**₱285,086.00**

Aerial view of pavilion

View of primary entrance

View from lower platform of pavilion