



2024 HIGH SCHOOL DESIGN COMPETITION

Design Process Entry
1st Place

#58 *Justin Chang*
Potc'ode Maidu A Winged Odyssey

Grade 9
Taipei American School

AFSF

Taipei American School - Justin Chang Gr. 9
Potc'ode Maidu - A Winged Odyssey

Potc'ode Maidu – direct translation from the maidu language for “bat-man”

Preliminary thoughts

When I first reviewed the project brief, the site's context immediately caught my attention. I wanted my project to emphasize the importance of indigenous Maidu culture. Today, as time progresses, many ancient cultures are inundated by modern influences, gradually fading from sight and even being forgotten. The goal of this project is to strike a balance between cherishing and celebrating native culture and embracing modern technology.

As a Taiwanese, there is hardship and erasure faced by indigenous minorities on my island, which parallels the experiences of Native Americans. Therefore, I aimed to highlight the rich history and stories of all indigenous people, specifically the Maidu of Northern California. By doing so, I hope to ensure that their art and voices continue to be remembered by the community. Their resilience in the face of adversity stands as a powerful testament and inspiration for any challenges the community may face in the future, particularly as Greenville rebuilds from the wildfire.

Inspired by the traditional story of Bat-Man in Maidu culture, I incorporated spaces within the project to preserve and celebrate their traditional techniques. This inclusion aims to provide a venue where everyone can continue to practice and share their cultural heritage and grow to be resilient together regardless of background.

History and context

Greenville has a rich history, starting with the Maidu people who originally inhabited the area. During the Gold Rush in the 1850s, settlers arrived, leading to the town's establishment. Despite a major fire in 1881 that destroyed much of the business district, Greenville was quickly rebuilt. The town flourished with diverse architecture from the 1860s to the 1930s. As mining declined, logging and ranching became the primary industries, particularly during World War II. Today, Greenville's economy relies heavily on tourism and recreation, especially following the significant impact of the Dixie Fire, which altered the town's architectural landscape.



The Big Idea!

Additionally, I want to address these main 3 points in my design:

- Maidu culture
- Community & eco-friendliness
- Fire resilience

Maidu Culture

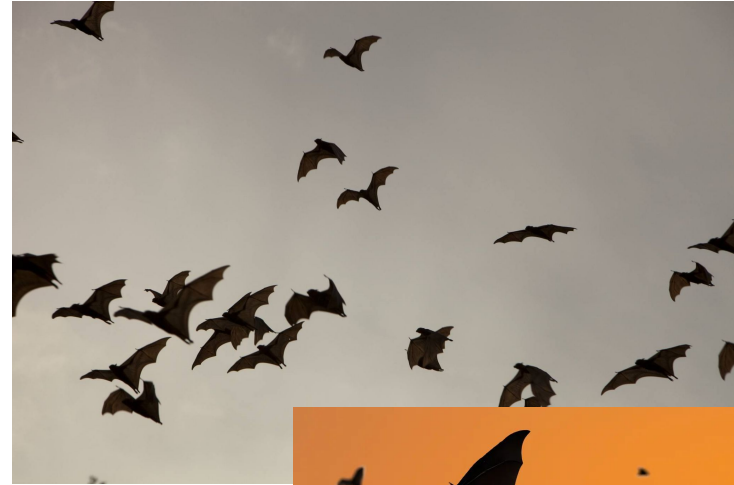
The folk tale of bat man

In the traditional Maibu story of Bat-Man, his journey is one of redemption and transformation. Despite his initial isolation and bad temper, Bat-Man's actions ultimately lead to growth and reconciliation within his community.

While his temper causes harm initially, Bat-Man's desire to make amends for his mistakes drives him to seek companionship for his brother, demonstrating a newfound sense of empathy and responsibility. Bat-Man seeks out companionship for his grieving brother by acquiring two women from another village. Despite facing challenges and conflicts along the way, Bat-Man's journey ultimately leads to him finding a sense of purpose and connection with others.

Even in the face of adversity, Bat-Man's story highlights the power of redemption and the potential for positive change. Through his transformation into a nocturnal animal, there's a sense of closure and acceptance, signifying a new chapter in his life where he can contribute to the world in a more positive way.

<https://sacred-texts.com/nam/ca/mdut/index.htm>



Bats and their resilience towards wildfires

UC Davis research unveils how wildfires in the Sierra Nevada region can surprisingly benefit bats. These winged creatures thrive in the cleared, open forests left in the fires' wake, making their hunting pursuits more efficient. Moreover, studies highlight bats' remarkable resilience to severe wildfires, as they swiftly adapt their foraging tactics to find new food and shelter opportunities. These insights emphasize the need to factor in bats' adaptive behaviors in conservation strategies for fire-prone ecosystems, ensuring their crucial role in maintaining ecological balance is preserved.

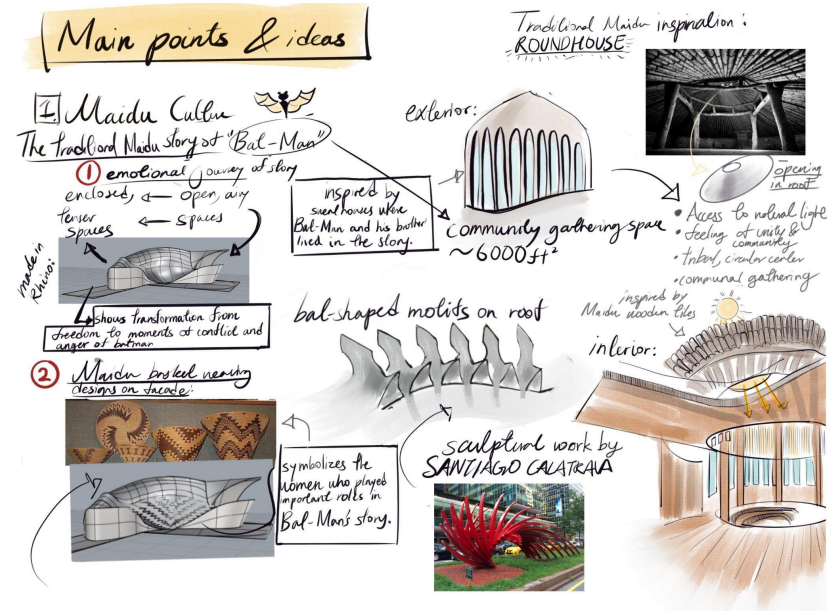
<https://www.ucdavis.edu/climate/news/bats-may-benefit-wildfire>

<https://www.scientificamerican.com/article/burned-habitats-benefit-bats/>

<https://www.parconazionalelvesuvio.it/wp-content/uploads/2020/11/Ancillotto-et-al-Resilient-Response.pdf>

Maidu story and community resilience

The journey of Bat-Man in the Maidu story mirrors the creation of a community resilience center. Just as Bat-Man overcomes isolation and a short temper, the center acknowledges past challenges and provides support for collective healing. Through counseling, education, and community activities, the center fosters empathy and growth, preparing individuals for future adversities. Like Bat-Man's transformation symbolizes acceptance and renewal, the resilience center signifies a new chapter for the community—a space for learning, healing, and unity in the face of challenges.



Main points & ideas

Traditional Maider inspiration:
ROUNDHOUSE

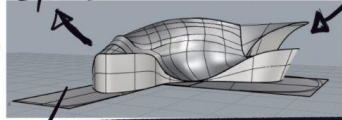


1. Maider Culture The traditional Maider story of "Bal-Man"

① emotional journey of story

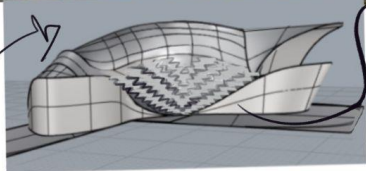
enclosed, ← open, airy
tense spaces ← spaces

made in
Rhino!



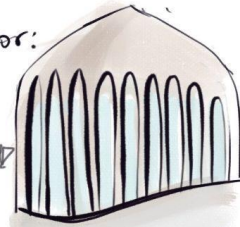
shows transformation from
freedom to moments of conflict and
anger of bal-man

② Maider basket weaving
designs on facade:



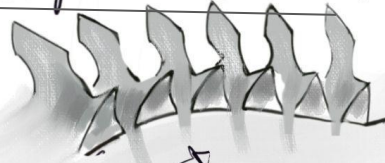
symbolizes the
women who played
important roles in
Bal-Man's story.

exterior:



community gathering space
~6000ft²

bal-shaped motifs on roof

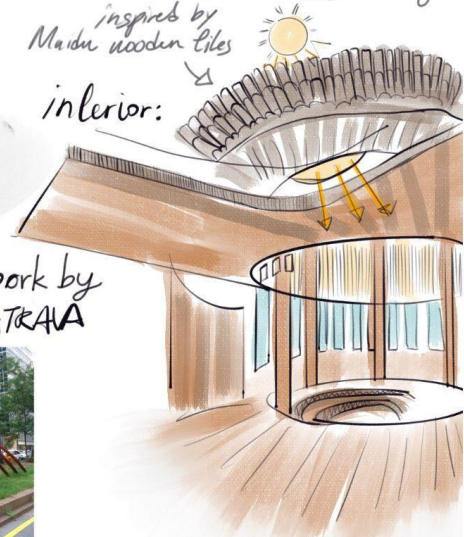


sculptural work by
SANTIAGO CALATRAVA



inspired by
Maider wooden tiles

interior:



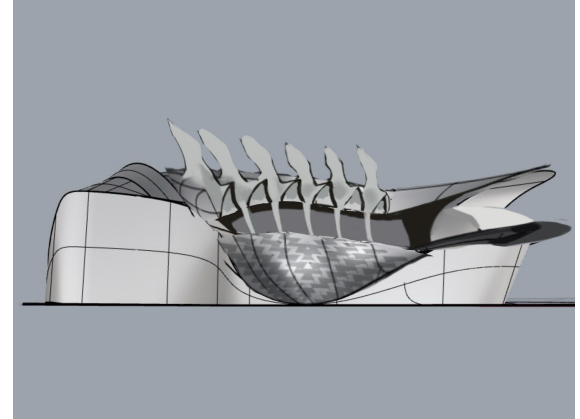
- Access to natural light
- feeling of unity & community
- tribal, circular center
- communal gathering

opening
in roof

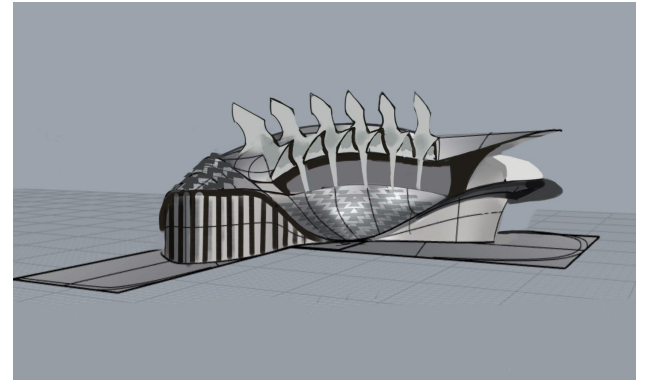
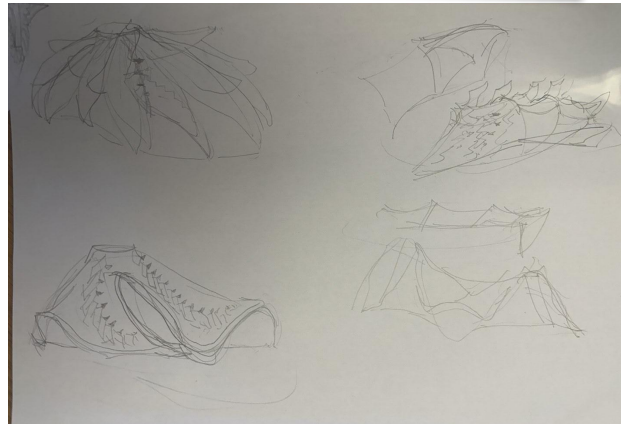


Hand sketch → procreate + rhino

Inspired by Santiago Calatrava's sculptural works, I decided to draft many designs with 'bat-wings' and selected one to render in rhino.



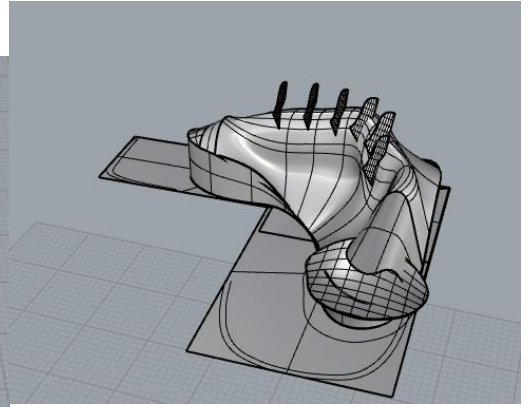
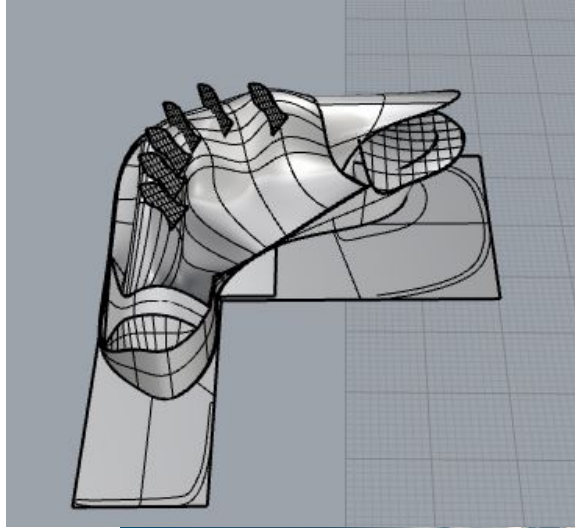
After the Rhino renders, I uploaded the images to procreate and added some detail before rendering it using AI.



Draft AI Renders

As an aspiring architect, I always try to find ways to optimize my workflow.

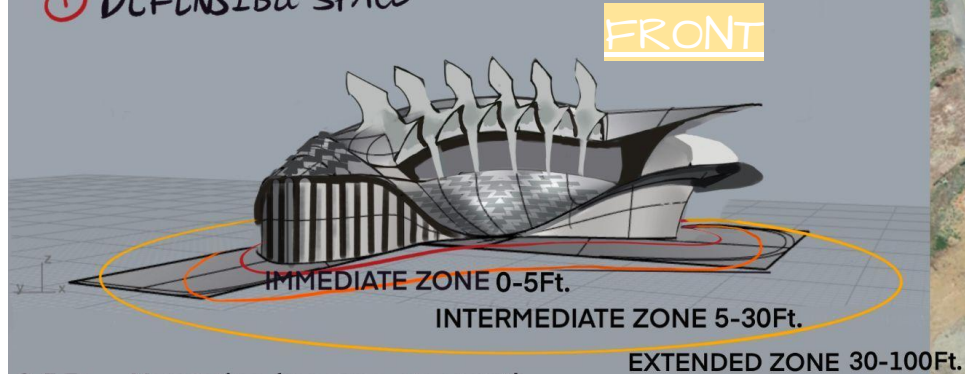
Here are some AI Renders using an Ai tool called 'Veras'. After I am satisfied with the result, I use photoshop to add in some final touches.



Fire Resilience

FIRE RESILIENCE

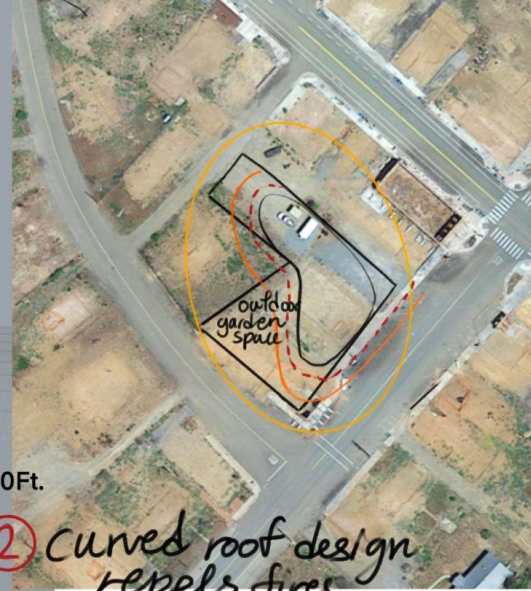
① DEFENSIBLE SPACE



0-5 Ft. — Vegetation-free zone, stone path

5-30 Ft. — Clumps of trees a minimum of 18 Ft. apart

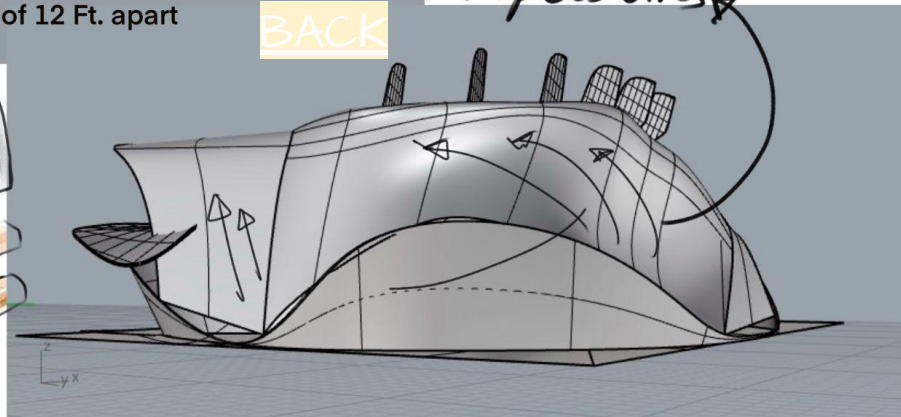
30-100 Ft. — Clumps of trees a minimum of 12 Ft. apart



② curved roof design repels fires

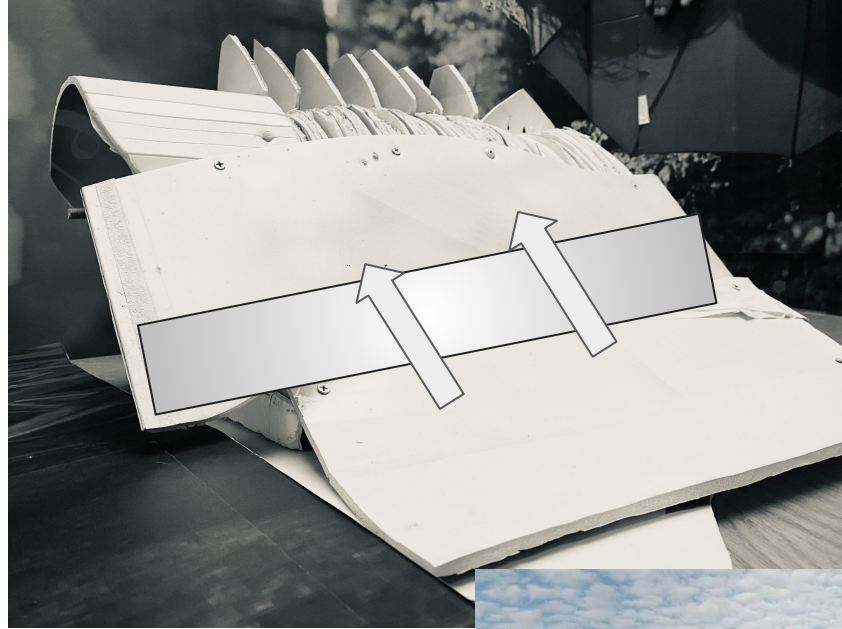
MATERIALS:

- Metal Panel Roofing
 - made of recycled materials & withstands
- Reclaimed wood (CLT)
 - from sustainable sources & treated for fire-resistant
- Fire Resistant Glass
 - ceramic glass, resistant to breakage



3D Architectural Model

Inspired by the 'Q cabin', a fire-resilient design first implemented in the aftermath of the devastating Camp fire in Paradise, California, features non-combustible sidings, sheathing, and structure. This way, there are no entry points where embers get into window frames and between roof shingles which causes fires to spread.

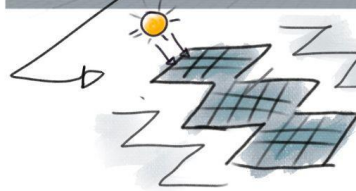
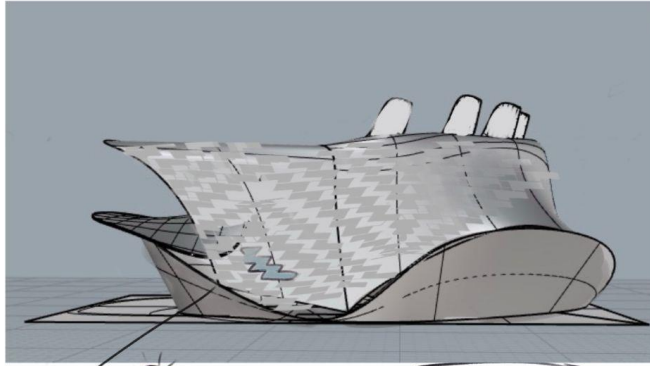


Q-Cabin roof design→



Community

Community & eco-friendliness



Solar panels

Acts as an efficient use of space and reduction of electricity consumption cost.

Renewable + eco-friendly

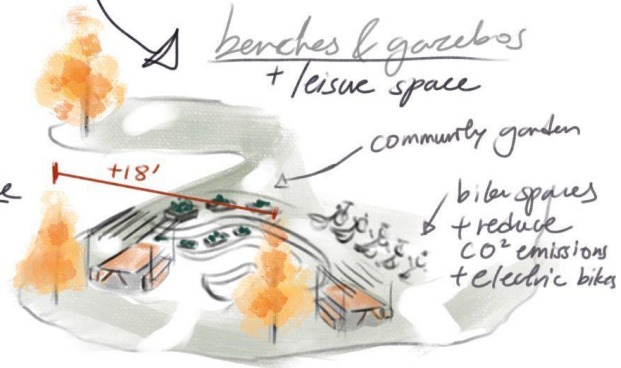
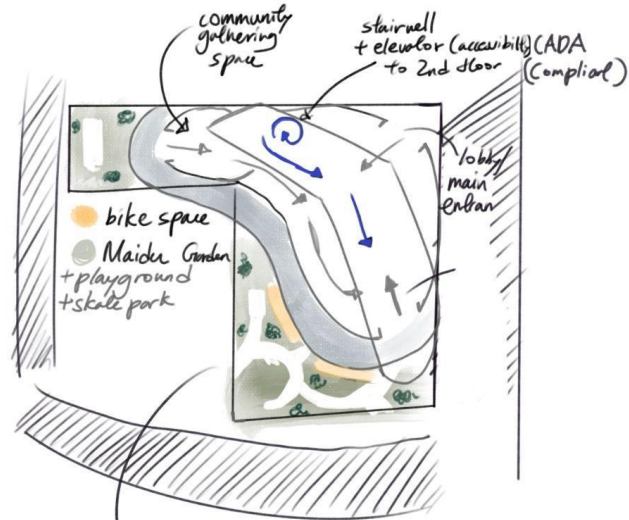
Maiden Garden

• Vegetation types

↳ Lawsonia gold maidenhair, pink oak, columella blaze

- have higher moisture contents & less flammable
provide shade, moderate temperature, help protect against erosion, encourage native biodiversity

↳ integrates Maiden knowledge



Inspiration for interior:



spaces for hang out & discussion

Render in Rhino

The tribal center community gathering space for meetings →



Fire resistant wood, Rooms for resilience based storage and urgent care facilities →



Final Exterior Render



Individual Entry
3rd Place (tie)

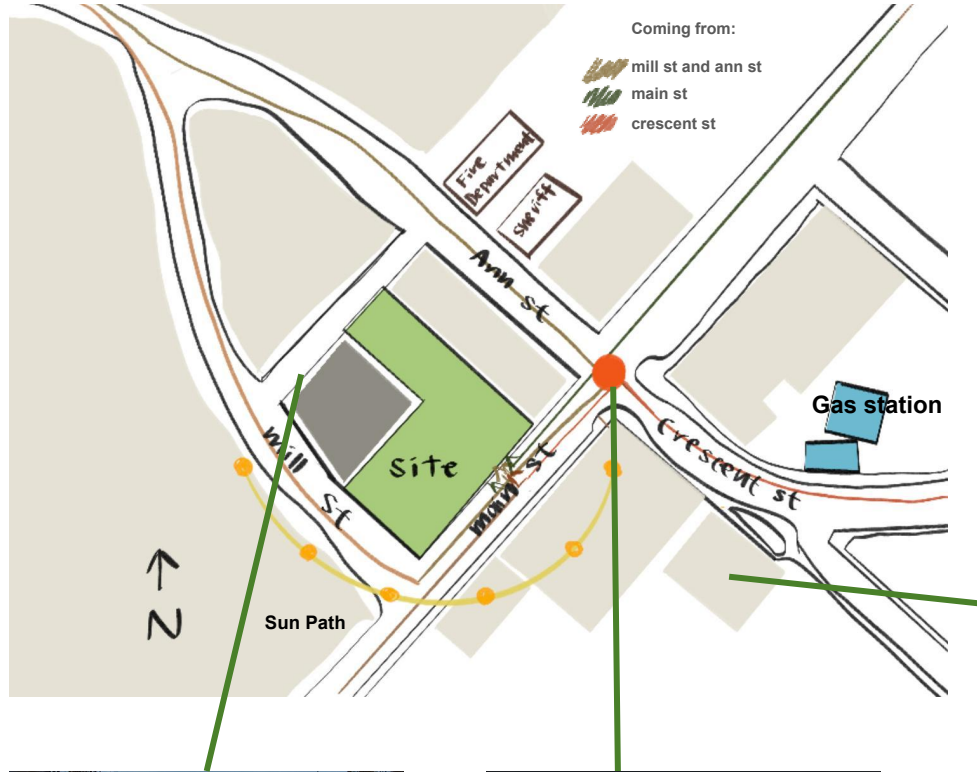
#2 *Kae Chuang* **Folium Spei**

Grade 10
Taipei American School

2024 AFSW

Folium Spei



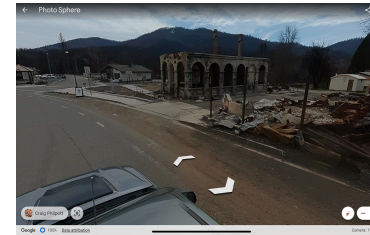


Site Analysis

The site faces the Main street to its southeast and Mill street to its southwest.

The diagram on the right analyzes the sun path, human movements and some sceneries and buildings around the site area.

After fire:



Before fire:



Design Strategy

integration of nature into architecture –



*AI tool Veras used to render

The shape of the building was inspired by an organic shape of a leaf. Leaves symbolizes renewal and adaptation in nature. Similarly, a resilience center embodies the idea of bouncing back from adversity and adapting to challenges. The leaf-inspired design reflects this symbolism, conveying the center's mission to support recovery for people in California.

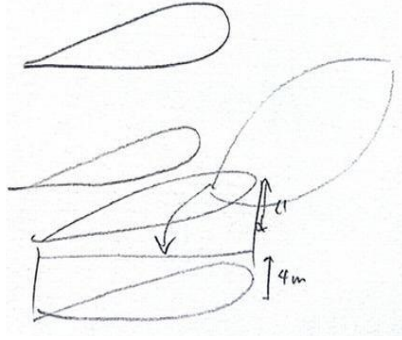
This design choice not only enhances the aesthetic appeal of the struction but also offers functional benefits that suit the needs of a resilience center. The sinuous curvature of the walls serves as a conduit for natural ventilation and daylighting. By integrating numerous curved surfaces, the design reduces glare and harsh shadows, creating a softer and more comfortable lighting environment.

The center incorporates sustainable features such as the installation of solar panels. Strategically placed on the roof and integrated into the architecture, these solar panels help generate renewable energy for the building's operation, enhancing a shift towards more eco-conscious practices.

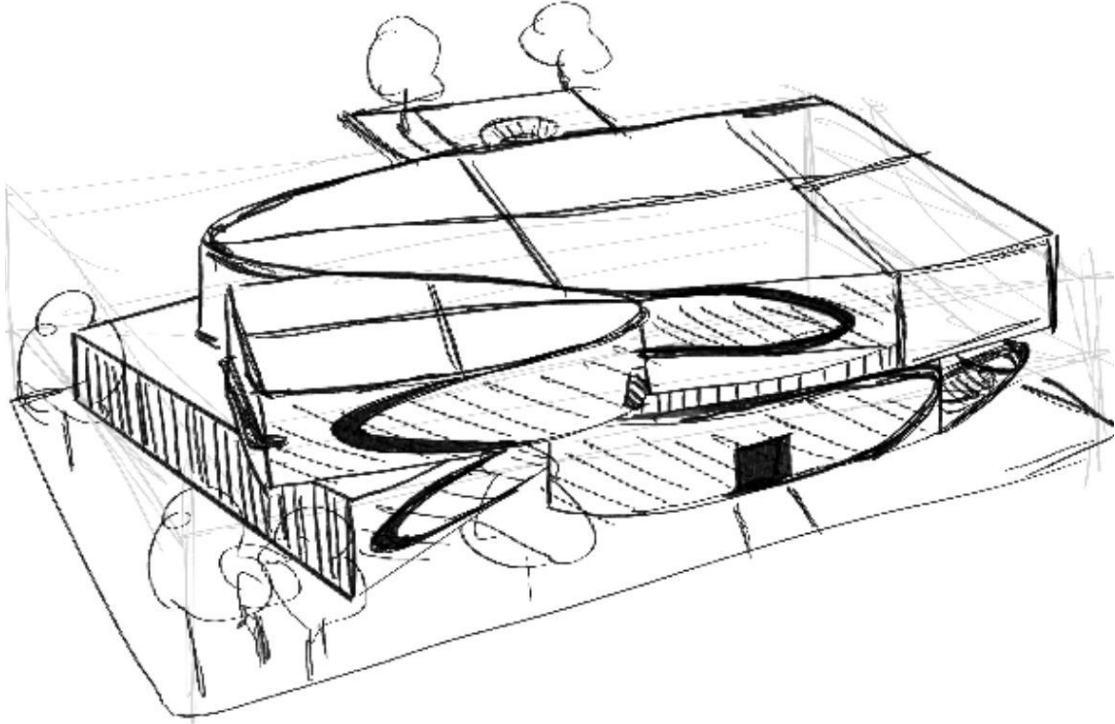
Design Inspiration

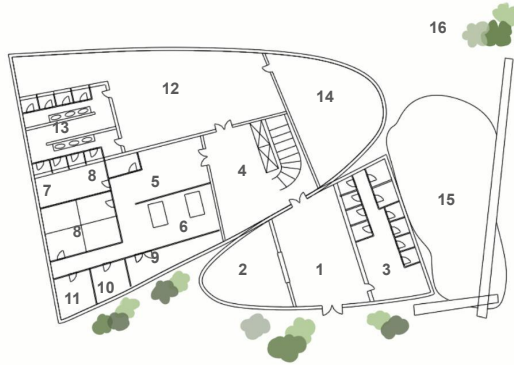
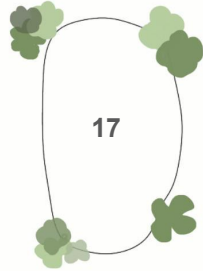


https://treespnw.forestry.oregonstate.edu/broadleaf_genera/california_laurel.html

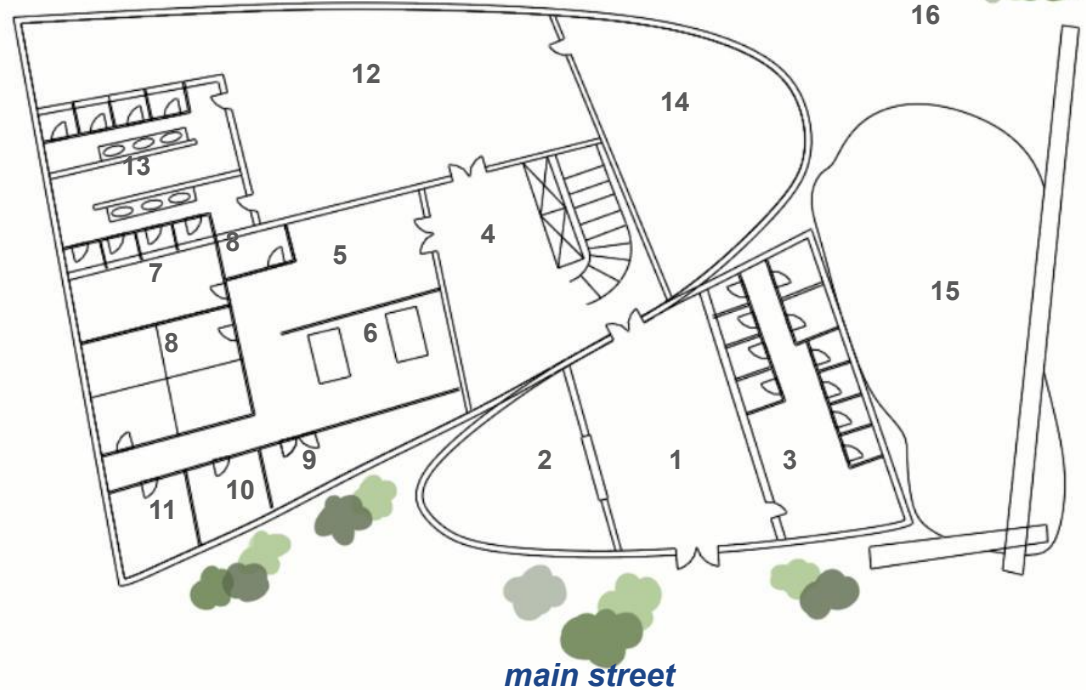


design process





1. Main entrance
2. Bicycle storage
3. Restroom
4. Elevator Lobby
5. Reception (Health Clinic)
6. Nurse work area (Health Clinic)
7. Staff break room (Health Clinic)
8. Exam Rooms (Health Clinic)
9. Storage (Health Clinic)
10. Physician Office 1 (Health Clinic)
11. Physician Office 2 (Health Clinic)
12. Fitness Gym
13. Restroom
14. Multi Faith room kate Park
15. Playground
16. Maidu Garden
17. Skate park



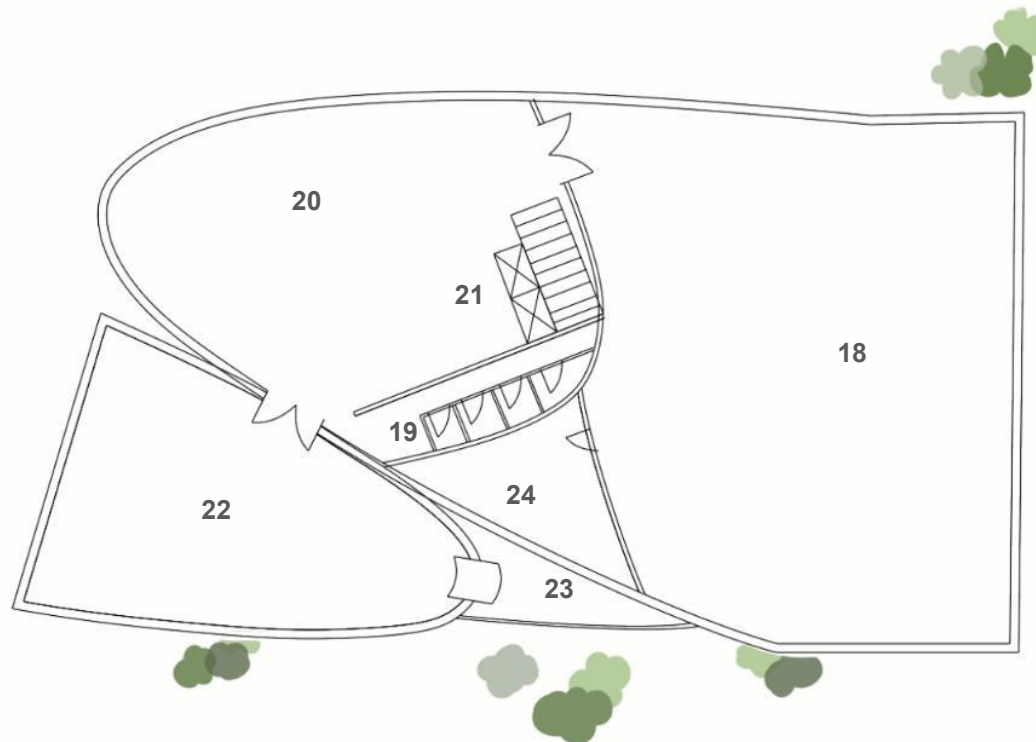
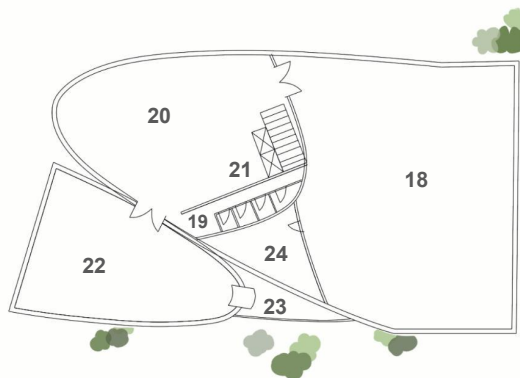
Level 1 Floor Plan

main street



- 18. Gathering Space
- 19. Restroom
- 20. Foodhall
- 21. Elevator Lobby 2

- 22. Learning Hub
- 23. Outdoor Learning Hub
- 24. Resource Library

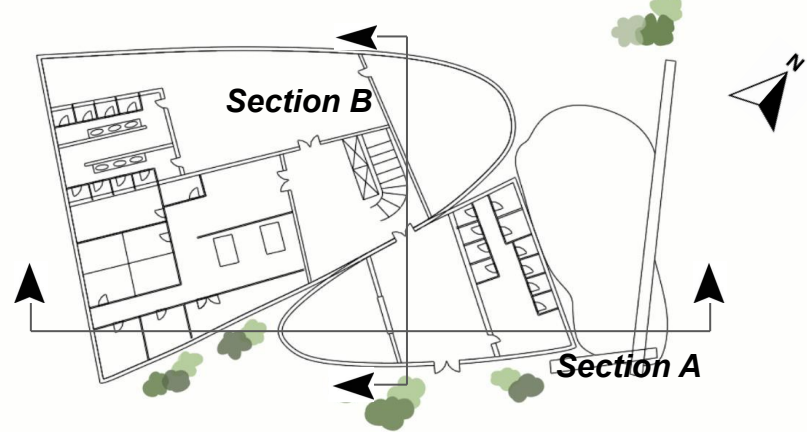


Level 2 Floor Plan

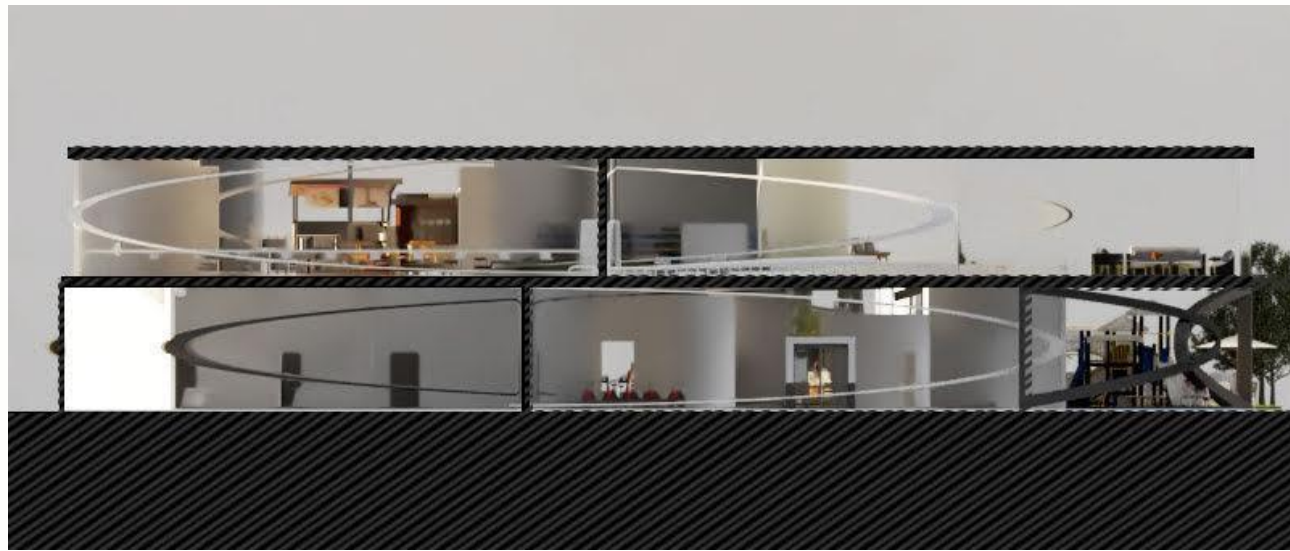
main street

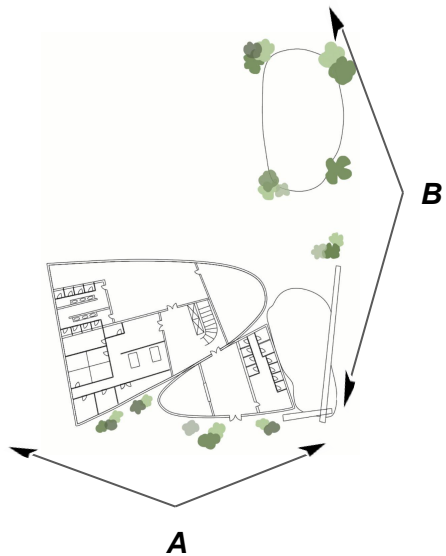


Section B



Sections





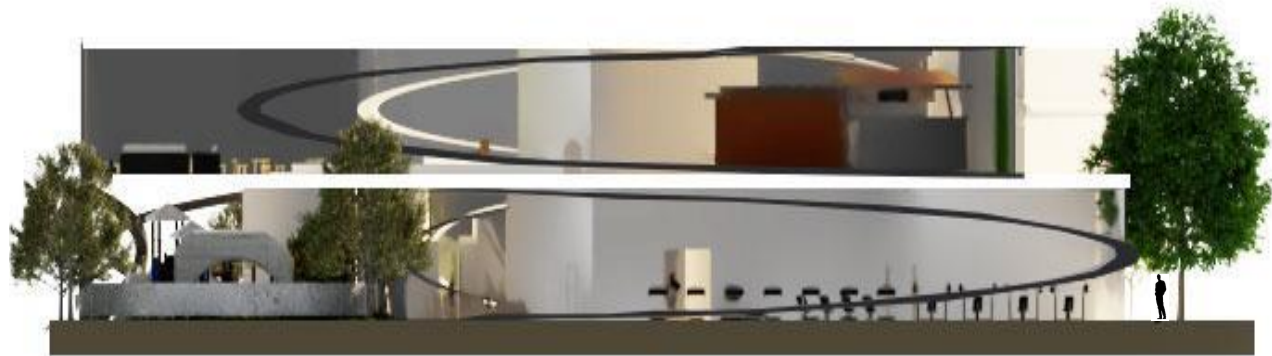
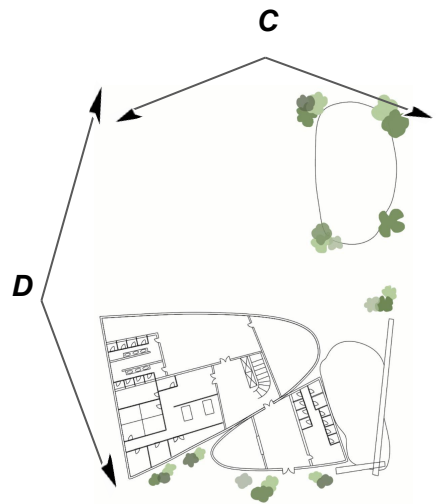
A

Side SouthEast Elevation



B

Side NorthEast Elevation



C

Side NorthWest Elevation



D

Side SouthWest Elevation

View from Main Street



*AI tool Veras used to render

View from Mill Street



*AI tool Veras used to render



View from Fitness Gym



View of Food Hall



View of Learning Hub



View of Garden



Thank You

Architecture Foundation San Francisco