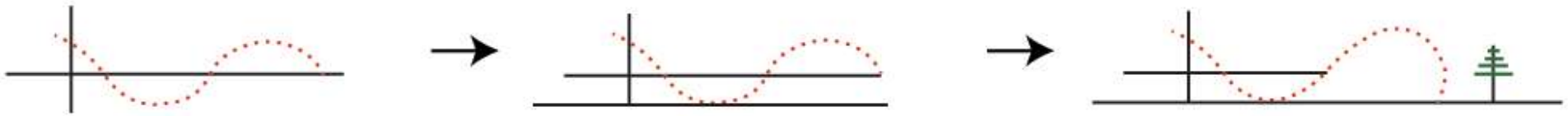
PORTFOLIO

2010-2019



Asmita Dahal

Architect | Sustainable Designer

https://arasmitadahal.wixsite.com/portfolio

(Recommended in desktop view)

INFO

Address: 4210 Red River street, Austin, Texas, 78751
Phone: 512-909-4450
Email: ar.asmitadahal@utexas.edu
Websites:
- www.linkedin.com/in/asmita-dahal
- https://bit.ly/2U10tTr
  (Architecture work sample)

EDUCATION

Master of Science in Sustainable Design(MSSD)
The University of Texas at Austin
Current GPA: 3.95
August 2017-May 2019

Bachelor of Architecture
Pokhara University
Overall GPA: 3.86
August 2010-April 2016

EXPERTISE

Architecture Design
Architecture Drafting
3D modeling
Renderings
Energy Modeling

Softwares
AutoCAD (2D, 3D)
Autodesk Revit
Rhino
SketchUp
Lumion
ArcGIS
Adobe Creative Suite programs
Climate Consultant
Open Studio
Energy Plus
eQuest
Sun Calculator

Curriculum vitae

EXPERIENCES

Teaching Assistant (TA)-UTSOA
- Environmental Control-I (Dr. Juliana Felkner), Fall 2018
- Environmental Control-II (Prof. Michael Garrison), Spring 2019

Graduate Research Assistant (GRA)-UTSOA
- Researched for Solar Decathlon design challenge, Fall 2018

Summer Intern
Sawyer Studio LLC, Elgin, Texas, May 2018-September 2018
- Worked in preparation of renderings, visualization and construction drawings of proposed sculptures.
- Coordinated the installation of designed sculpture at the University of Houston.

Lead Architect
Disaster Management Department, Kathmandu Metropolitan City Office (KMC), Nepal, April 2016 – August 2017
- Supervised the building code implementation in Kathmandu for reconstruction projects of residential and commercial buildings after 2015 Gorkha Earthquake
- Monitored the retrofitting of Bagh Durbar (Historical Palace) and existing fire brigade
- Designed the new building for fire brigade and Disaster Management Center in Kathmandu

Freelancer
April 2016 – August 2017
- Designed and constructed residential buildings (2nos.) with different passive solar techniques, Kathmandu, Nepal
- Designed interior of Residence Building, Bar and Restaurant

Intern Architect
Archi Plan Consultancy Nepal, August 2014- December 2014
- Assisted in site analysis, conceptual planning and model making and drafted architectural drawings and detail drawings of Hotel Soaltee of two different locations.
- Drafted architectural and municipal drawings as well as 3D improvisation and site supervision of Hotel Le sherpa and chayadevi complex, Thamel, Nepal
- Generated 3D modeling and rendering of multiple projects including Hotel Megauli and Lamatar Housing, Nepal

ACCREDITATION AND LICENSE

Licensed Architect
Nepal Engineering council since 2016
Solar Decathlon building science training, 2019

Working on (expected within April 2019)
LEED Green Associate Certification
LEED AP Building Design + Construction (LEED AP BD+C)

HONORS

Thesis Topper – Pokhara University; Nepal, 2015
University Topper Scholarship
Pokhara University; Nepal
Fall 2014 – Spring 2015
Consolation prize-Bus Stop Design; Nepal Architecture Student Design Competition, 2014
Consolation Prize-Nepal Tourist Centre; Nepal
All Nepal Architecture Student Design Competition, 2014

LEADERSHIP

President, Komputer in Developing Countries (KIDS), 2018-Present day
Board member, Sustainable Architecture Committee, Society Of Nepalese Architect (SONA), 2016
Board Member, Academic Council of Architecture Student (ACAS), 2014-2016
General Member, Architectural Society of Architecture Student (ASAN), 2014-2016

REFERENCES

Matt Fajkus:
matt.fajkus@austin.utexas.edu
Juliana Felkner:
juliana.felkner@austin.utexas.edu
Michael L. Garrison:
mgarrison@utexas.edu

RELEVANT COURSES

RELEVANT GRADUATE COURSES
-Light/Sustainable Design
-Regenerative Architecture
-Smart Cities
-Transit Oriented Development
-Solar Geometry and Energy Flow in Building
-Energy Modeling and Design Process
-Sustainable Architecture Design
RELEVANT UNDERGRADUATE COURSES
-Building Science I, II and III
-Passive solar Design
-Settlement planning
-Urban Design
-History of (Eastern, Western, Modern and Nepalese) Architecture

CERTIFICATION

Training of Trainers (TOT), 2016
- On Earthquake Resistant Building Construction Technology for District level Planning Implementation Unit Technical Professionals
- Organized by National Society of Earthquake Technology, USAID and Nepal Government

Urban Base Map and Integrated Municipal GIS, 2016
- Organized by Genesis Consultancy and Kathmandu Metropolitan City office
- Training on ArcGIS and prepared GIS mapping of Kathmandu metropolitan city, ward 35

Structural and Seismic Engineering, 2016
- Organized by CityNet Yokohama and Kathmandu metropolitan City office
- Training on structural and seismic engineering with case study of Japanese traditional structures

Participated in ARCASIA Jamboree, Malaysia, 2014
Participated in 54th Annual NASA convention, Gujarat University, Ahmedabad, India, 2012

VOLUNTEERING

- **Worked for Prof. Garrison in the preparation of the residential building drawings in Travis county Texas.**
- **Worked as project coordinator in Aussie Action Aboard project, Lamjung, 2015**

-Constructed a stone architecture for Mother's community Group with Australian architects, engineers, nurses, and local peoples for 20 days in the rural area of Nepal

- **Worked in research for magazine 'PRAXIS', Blue Coffee Pvt. Ltd., 2013**

-Conducted a building assessment and detail drawings on Police Stations at Kathmandu valley
-Worked for the organization of different programs and seminars

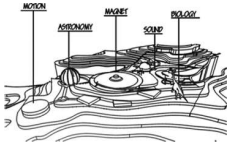
Area of Interest: Environmental Controls, Building Science, Sustainable Architecture, Passive Solar Systems, Design with Climate, Historic Architecture

TABLE OF CONTENTS

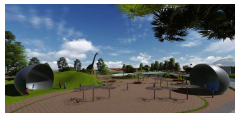
Science Center

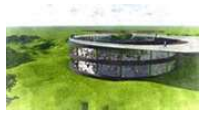
Thesis Project, Bachelor of Architecture
Spring 2015, Nepal Engineering College, Pokhara University
Best Thesis 2010, BArch | NEC

Architecture Thesis of Bachelor Degree was successfully completed with the research and design of the Science Center. The site for Science Center was selected at Dadhikot, Bhaktapur with area 729942.5 sq. ft, and total elevation difference of 65ft in east-west axis and 100 ft in a north-south axis. Science Center was facilitated with Exhibition halls, Planetarium, Observatory, Research Center, Restaurant and Park. The Concept for design is to exhibit center itself with different scientific technologies. The plaza at the heart of the center exhibits Magnetic Levitation, Park exhibits the Sound Mirror. the Rotating Restaurant Exhibit Motion while Planetarium is conceptualized in Saturn shape to exhibit Astronomy. Considering the Topographical setting of the site the buildings are arranged and designed.

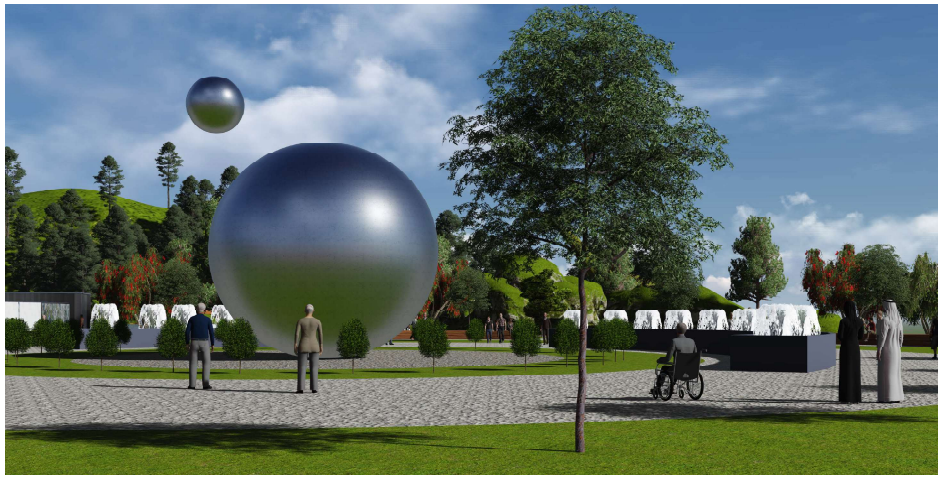


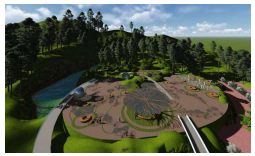
Magnetic Levitation


Sound Mirror

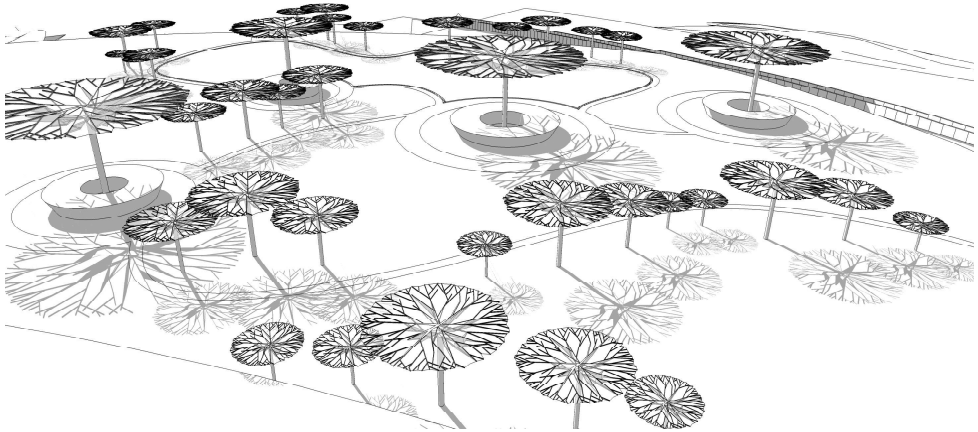

Rotating Restaurant (Motion)

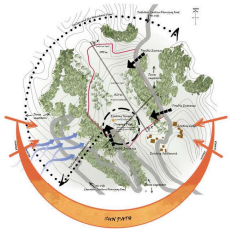

Dinasour as Exhibit


ARCHITECTURE itself as an EXHIBIT exhibiting: MAGNET, SOUND, MOTION, BIOLOGY AND ASTRONOMY

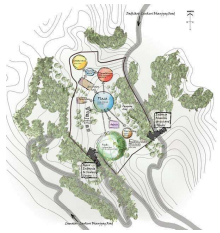


Artificial tree structures on the park that cast a shadow as a tree. It has a transparent solar panel at the top which generates the energy for the science center. On human scale when people walk below the structure it gives the feeling of the tree due to the shade, shape and the shadow and they generate energy as a tree does in nature.

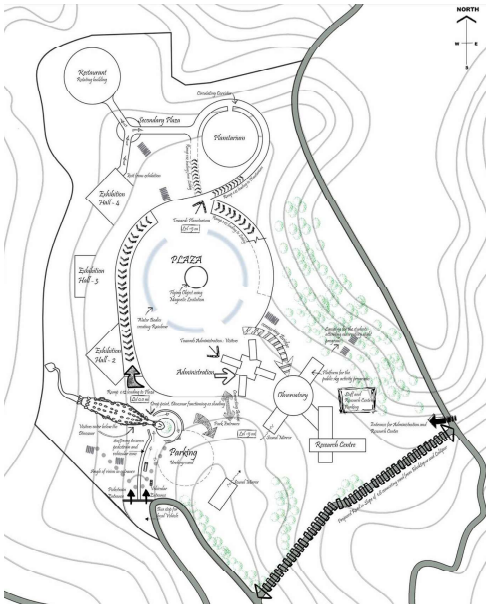




Site analysis



Conceptual Planning



Location:
Dadhikot, Bhaktapur, Nepal Area: 729942.52933 sq. ft

Access:
12ft wide road on north and south side of the site approaching from Bhaktapur and Patan and heading towards Lankuri Bhanjyang hill station.

Surrounding environment:
Road and forest on north and south, a settlement on the south-east, barren gentle slope land on the west.

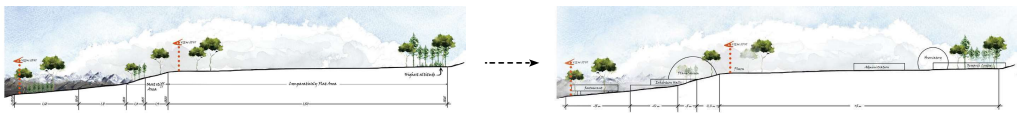
Infrastructure:
Availability of electricity, sufficient natural water sources, telephone, road etc.

Climate:
Monsoon

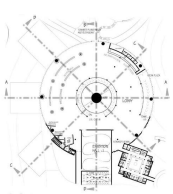
Land Use:
South- forest, North- proposed park, Ganesh Man Sigh Park, East- barren land, West- Barren

Vegetation: Pine trees on the way to the site and the evergreen tree at top of the hill.

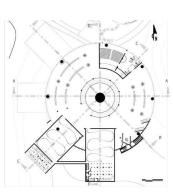
Local Material:
Wood, Brick and Stone Architecture: around 30% of building around are with traditional Nepalese architecture and remaining are either modern or repaired one to the old traditional building with modern material and style.



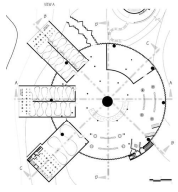
Section through out the site showing site analysis and site development



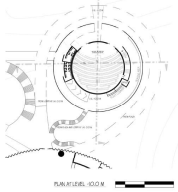
Exhibition hall one



Exhibition hall two



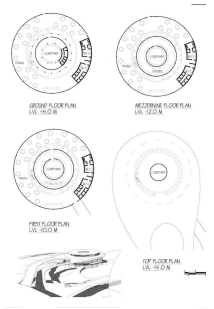
Exhibition hall three



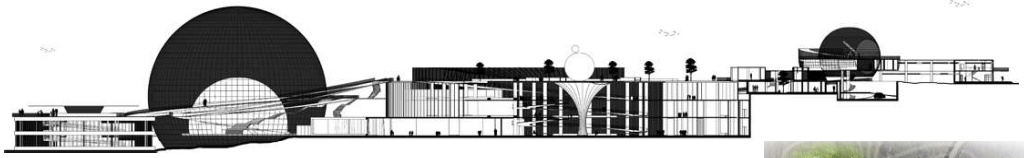
Planetarium

Restaurant Section

Restaurant Section



Restaurant



Section throughout the Site

Planetarium

Park

Exhibition Halls

Administration courtyard

Exhibition Lobby

Exhibition Hall

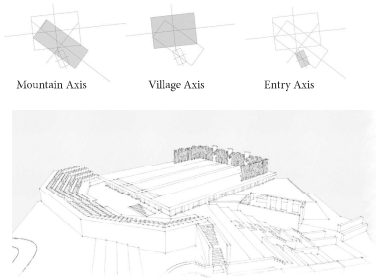
Master plan

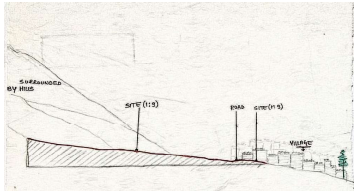
Archery Center

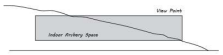
Fall 2014 | Settlement Planning | NEC

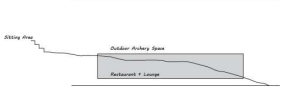
Instructors: Prof. Vijay Burathoki
Associate Prof. Baburam Bhattarai
Associate Prof. Krishna Pd. Bhuju
Assistant Prof. Sankalp Pokharel

Archery Center was conceptualized after the settlement study of Marpha village. Marpha village is located in Mustang District, Himalayan Region. After the study of household and building survey held by our group of six members, each member analyzed the condition of the village and conceptualized the projects that are necessary for the development. Since Archery is an old and traditional game of Himalayan region I decide to design Archery Center in Marpha. Developing the trek route to Dhaulagiri and providing view spot at the end of the village with the view of the village and Nilgiri Moutain is secondary propose of this design while promoting Archery and developing Annual Archery festival to district level is the primary one.









SITE ANALYSIS:

LOCATION:The southern corner of Marpha

SITE:7 Ropani 2 Anna

GRADIENT1:9 slope site

CLIMATIC CONDITION:
Cold and Windy

SITE SURROUNDING:
EAST: Village
WEST: Hill
SOUTH: Hill
NORTH: Old Settlement

ACCESS AND APPROACH:
5' wide road in the east and
5'- 8'wide Dhaulagiri trek route in the north

SWOT ANALYSIS

STRENGTH
Located at top of the hill
Surrounded by hill
In a gradient of 1:9
At the corner of the village

WEAKNESS:
Irregular site
Decreasing slope
Tertiary road

OPPORTUNITY:
Dhaulagiri trek route through the site
Perfect view of Nilgiri and Village
Inside the village

THREAT:
Of northern seasonal wind
Of drainage due to slope site
Lack of security due to two public road


Entry


Outdoor Archery Space during snow


Trek Route


Outdoor Landscape Area


Outdoor Archery Space

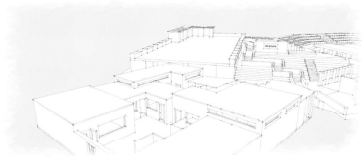

Administration Courtyard

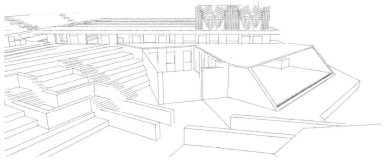
AIMS OF DESIGN:

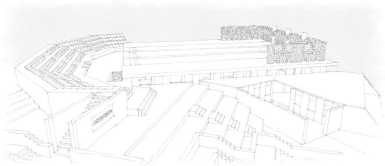
- To provide comfortable space for archery festival.
- To develop traditional archery competition at the regional level.
- To conduct archery practice in indoor archery space in the winter season.
- To provide a community hall for community programs.
- To provide one roof for community representatives.
- Design merchandise with facilities of selling archery equipment made in workshop nearby.


Section of the Administration through y-y


Section of the Outdoor Archery Space through x-x



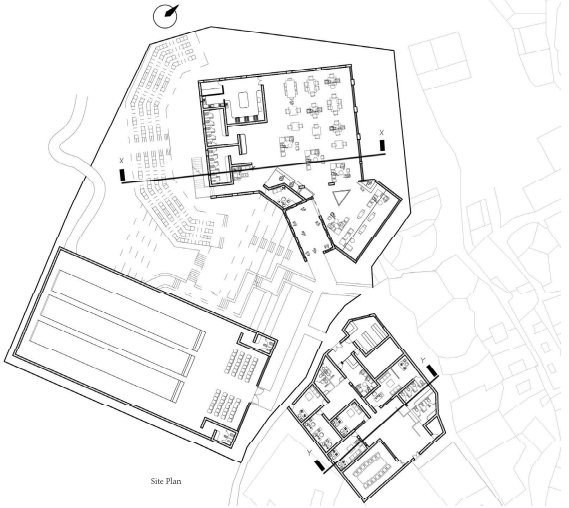





3D Section through Administration showing courtyard spaces

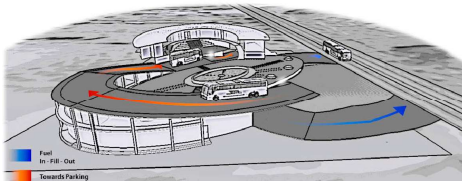

3D Section through Outdoor Archery


3D Section through Outdoor Archery showing ventilation approach with visual obstruction

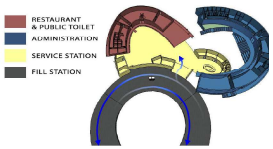

Site Plan

Highway Service Center

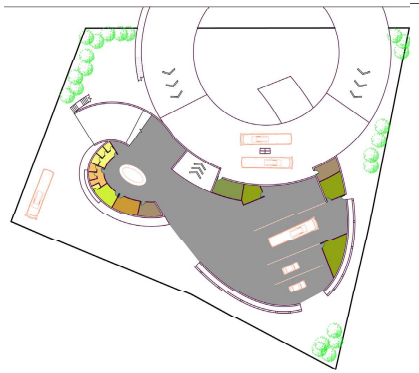
2014 | Design Competition | Asian Paints



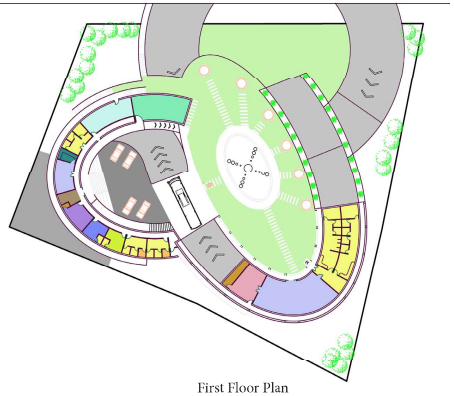
Concept



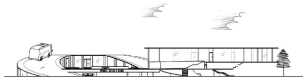
Highway Service Center with facilities of Restaurant, Fuel Station, Service Area, and Administration unit is designed for Kurintar, Nepal. The site is located at a hilly region of Nepal with 35037.6 SQ. FT area along Prithvi Highway. Representing the basic curve character of the highway, the whole structure was design. Utilizing the level difference of the site, the split design is conceptualized with different function at a different level. Since 90% of entry is through the vehicle, grand ramp structure was used and the drop point for the restaurant is conceptualized in such a way that will emphasize the view of river, hill and the highway. Outdoor and indoor sitting facilities are provided focusing more on outdoor sitting. The outdoor sitting facility was designed punching ground so that people can enjoying sitting on the ground.



Ground Floor Plan



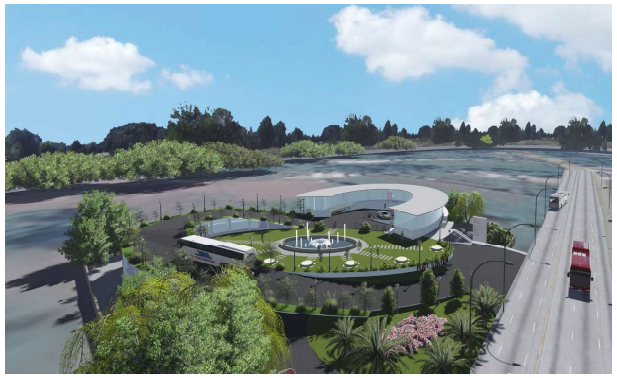
First Floor Plan



South Elevation

East Elevation

North Elevation



Overall view of the center

Outdoor Space

Drop point

Overall View

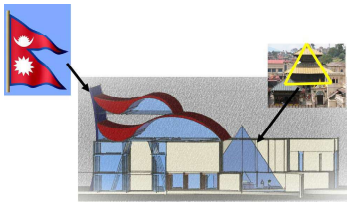
Outdoor Dinning Space

Night view of entrance

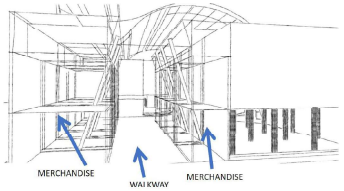
Nepal Tourist Center

2014 | All Nepal Architecture Student Design Competition | SONA

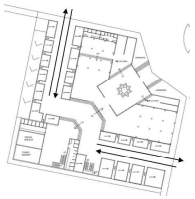
Consolation Prize Winner Design



Abstract of National Flag at top

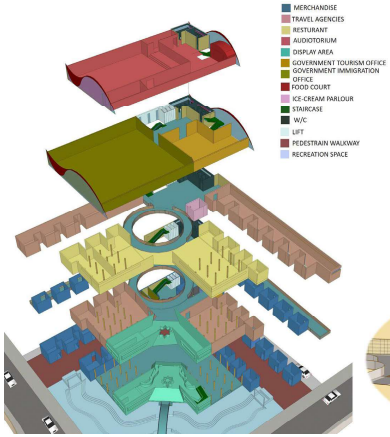


Replicating the traditional settlement : Walkway in between two merchandise



Reducing traffic of main street by allowing public through the center

Nepal Tourist Center with facilities of Restaurant, Travel Agencies, Government immigration office, Shops, and the auditorium is designed for Kathmandu, Nepal. The site is located in the capital city of Nepal. This project is imagined to provide a platform for tourist where they can find government offices and agencies they needed for trekking in Nepal under one roof. Representing the old settlement with shops of either side and walkway in between, this center is conceptualized to replicate the old settlement pattern of Kathmandu. Along with that, the unique shape of the national flag of Nepal is abstracted to give the iconic look and identify to the building.



LOCATION:
Tri Devi Marg, Thamel, Kathmandu, Nepal

AREA:
25273.66 SQ FT

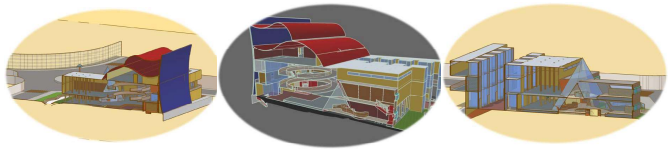
ACCESS AND APPROACH:
7 m wide metallic road approaching to a site in both east and north

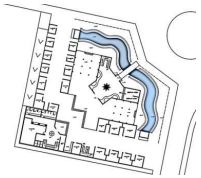
LAND USE:
25% of the site is used by travel agencies (8 in nos.) and merchandise while the rest site is used for parking.

CLIMATE:
Monsoon climate

TEMPERATURE:
Mean MAX TEMP. 29-32 C , Average MIN. 12-14 C

SITE SURROUNDING:
Private building on the south with election commission nearby, SAARC building on the west. Garden of Dream and Kesar Library on the north, US recreational club on east and Narayanhiti museum on east-north



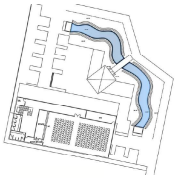


Ground FLoor Plan

First FLoor Plan

Second Floor Plan

Third Floor Plan



Fourth Floor Plan

Overall view of the center

Outdoor Landscape

View from road

Overall View

Outdoor Landscape

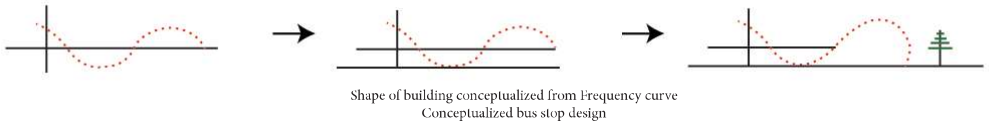
Outdoor Landscape

Bus Stop Design

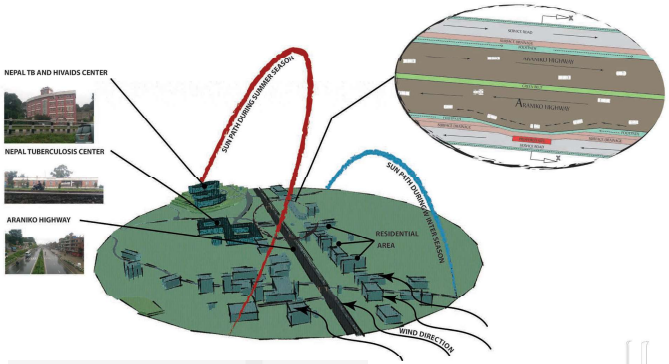
2014 | Architecture Student Design Competition | Asian Pain

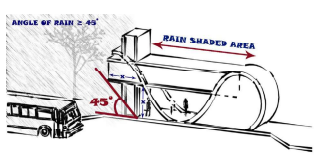
Consolation Prize Winner Design

Bus Stop with facilities of sitting, water closet, mobile charging station, and the vending machine is designed for Bhaktapur, Nepal. A site with area 484.37 sq.ft. is located at Araniko Highway. Volume was conceptualized from the sinusoidal curve representing the motion and frequency change in the highway. Function following the form the ground floor accommodates the facilities of sitting, physically challenged people water closet, mobile charging station, and vending machine while the first floor accommodates the facilities of male and female water closets.

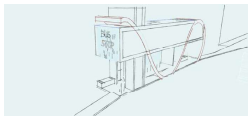


Shape of building conceptualized from Frequency curve
Conceptualized bus stop design

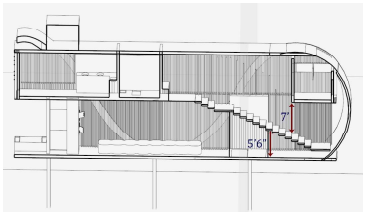




Weather Analysis

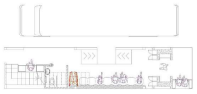


Circulation Analysis



3D Section through the Bus Stop

Disability Access

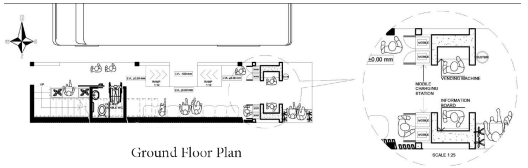


Sitting Activity

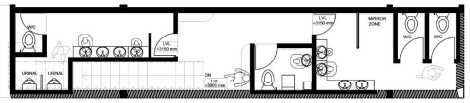
Standing Activity

Walking Activity
Ground Floor

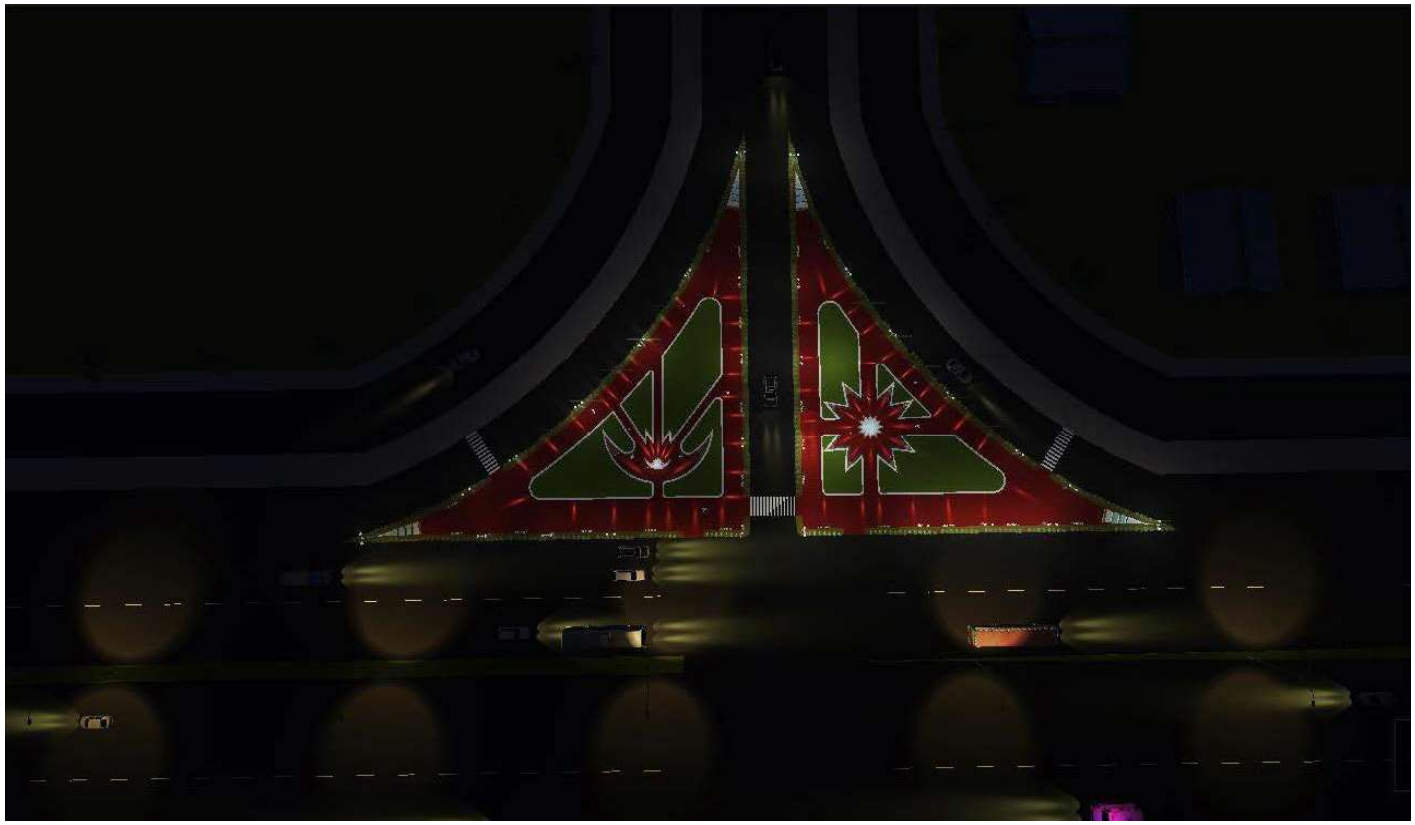
Walking Activity
First Floor



Ground Floor Plan



First Floor Plan

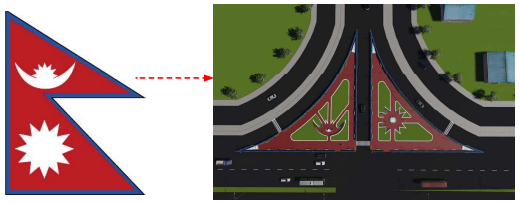


Road Island Design

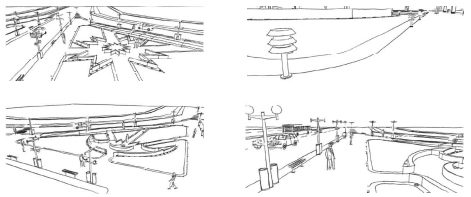
Spring 2013 | Landscape Architecture | NEC

Instructor: Dr. Bharat Sharma

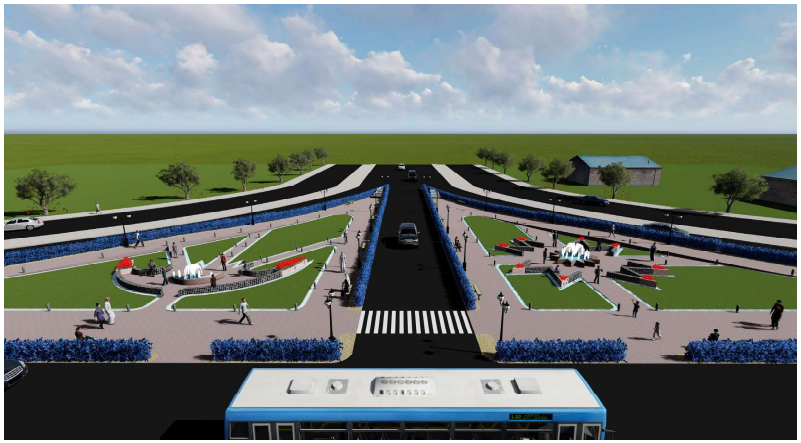
Road Island Design was designed assessment of landscape architecture. It was a group project of two (Ashesh Sapkota and Me). The site of this project is located at Bhaktapur with an area of 25079.9 sq. ft. Two triangular shaped sites are located at the historic place Bhaktapur on the way to Bhaktapur Darbar Square. Since the site acts as a gateway to the Darbar Square, the island is conceptualized from the abstraction of Nation Flag. Utilizing the shape of the site, two sides of the island is designed as the two triangular shapes of the flag with sun and moon at the center of each. The border of the flag and the island is designed as blue whereas using the red brick pavement the Red color of flag is presented.



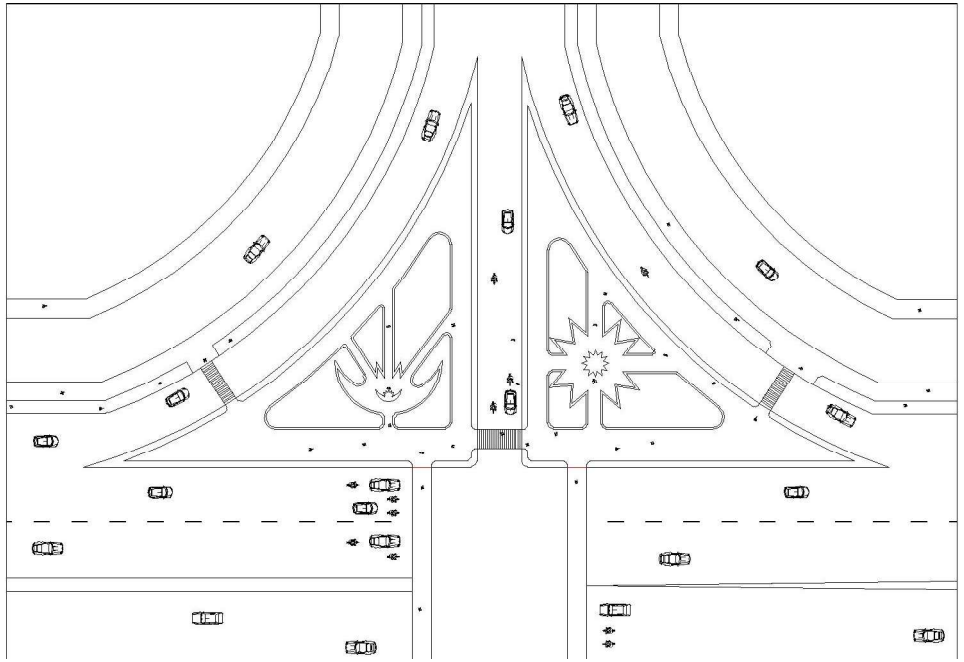
Concept from the national flag



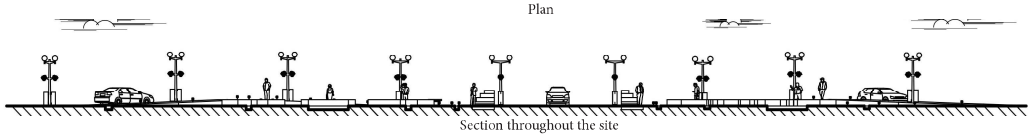
Conceptual sketch



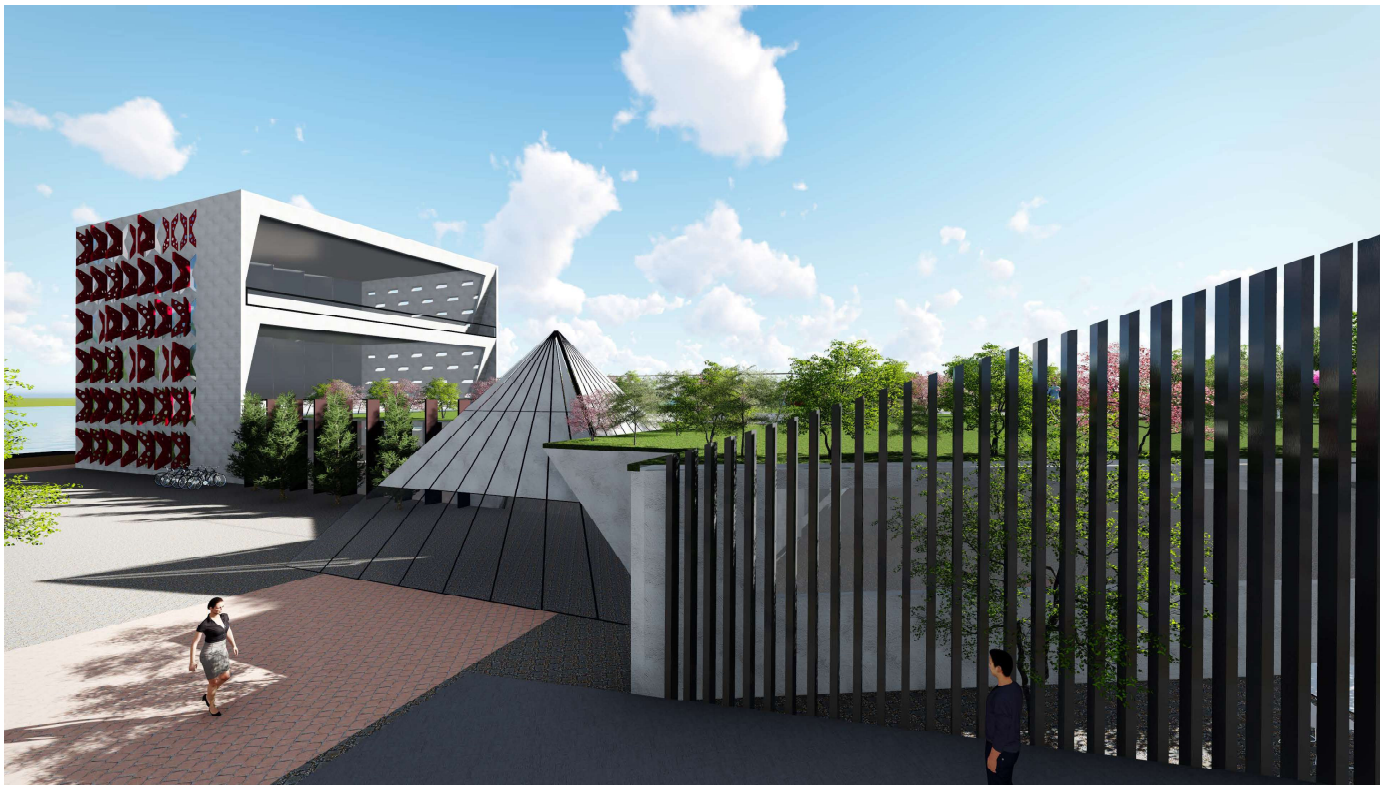
Overall view of the park from the road



Plan



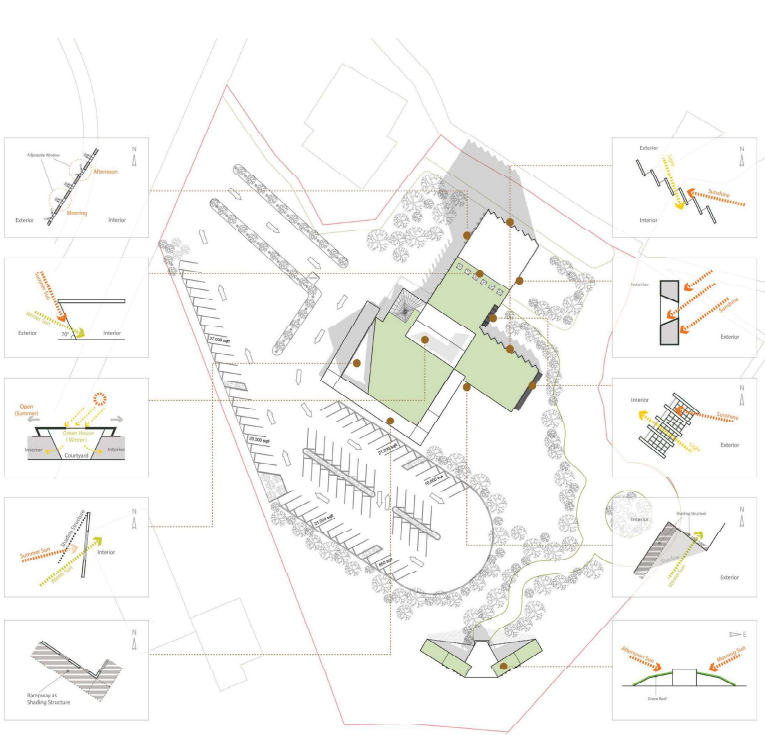
Section throughout the site



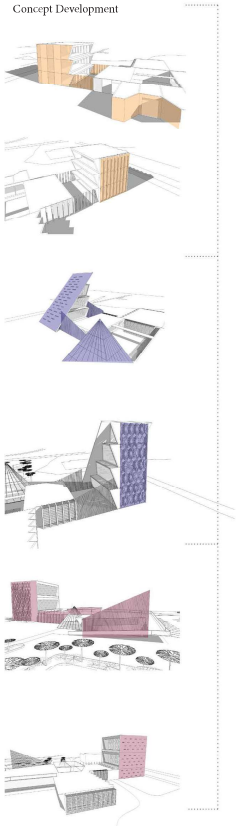
Living Laboratory Building

Spring 2018 | Sustainable Architectural Design | UTSOA

Instructors: Dr. Juliana Felkner
Project Partner: Cristobal Robles, Wei Zhou and engineers from civil department



Concept Development

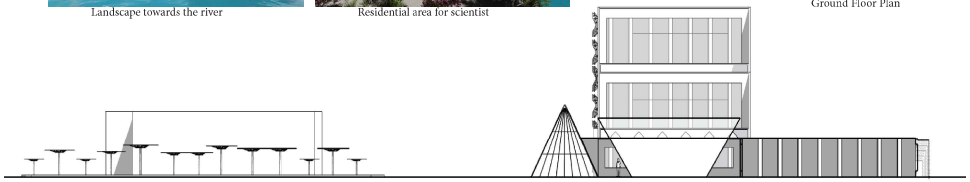


In collaboration with engineers, a zero net energy living laboratory building was conceptualized at Maryland where the scientist was visualized to live and work in a sustainable environment. First, the passive solar strategies were applied such as orientation, vertical and horizontal shadings, adaptive openings and a green roof. The operable window in the shape of the butterfly was conceptualized in the west wall whereas the atrium space with glazed ceiling was also operable where heat could be trapped in winter and released to the connecting rooms through the mechanical vents. After the passive solar design, the strategies were tested through simulation and necessary changes were made. Designing and simulating back and forth the final design was done for which the energy was generated through the solar panels in the parking lot and geothermal energy.

Ground Floor Plan

Landscape towards the river

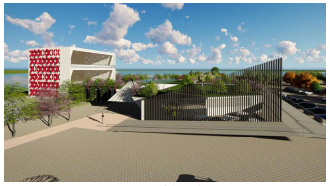
Residential area for scientist



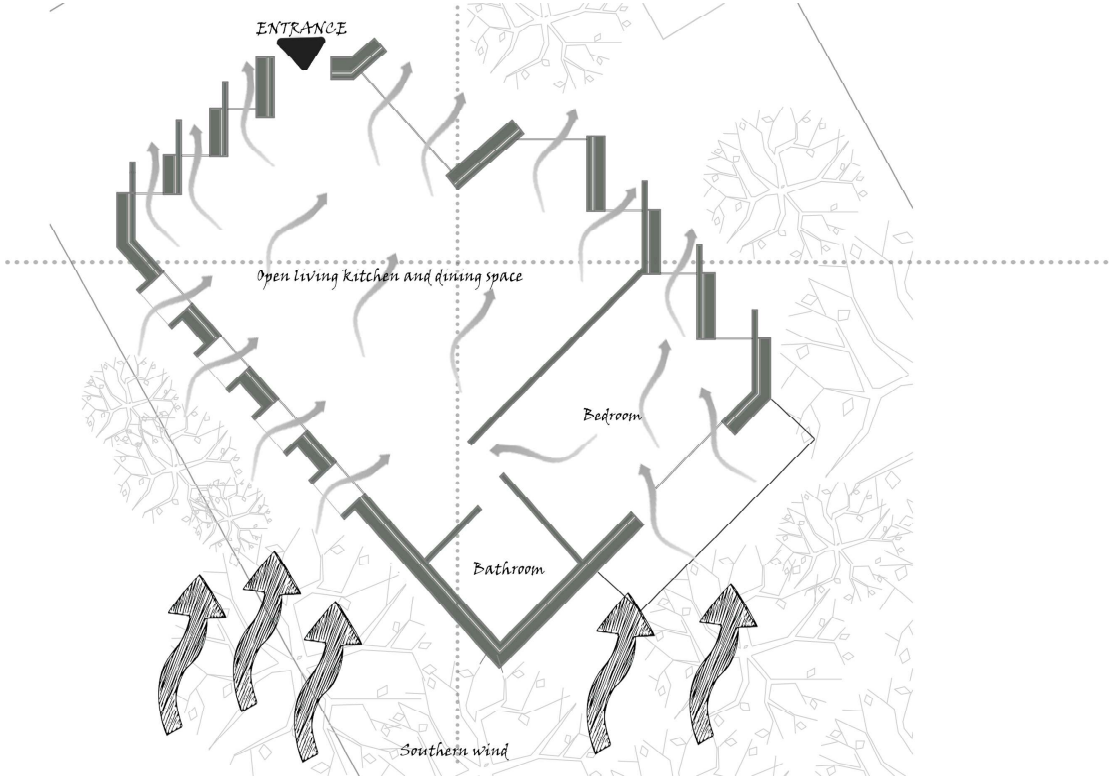
Section through out the site

Overall View of the Lab with operable window

East view of the Laboratory



Entrance view of the Laboratory

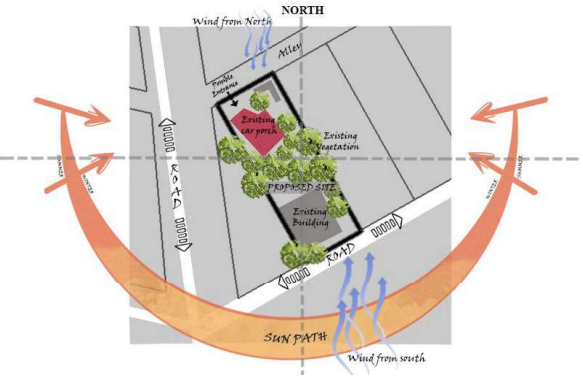


Accessory Dwelling Unit

Fall 2017 | Regenerative Architecture | UTSOA
Instructors: Prof. Michael Garrison

Project Partner: Carol Fraser

The research on how architecture has been adapted to a variety of climates throughout the world in a way that reduces or eliminates the need for mechanical or active heating and cooling systems while ensuring maximum human thermal comfort was done. With that knowledge, combined with an understanding of the climate of Austin, Texas, to design an accessory dwelling unit (ADU) on a lot of a single family home in East Austin. The design takes into consideration lessons learned about building in climates like Austin's, especially aspects of site design, building orientation, configuration, envelope, and shading.



Site Analysis

Building Configuration

One storied rectangular building
Open living, kitchen and dining in north side and bedroom and bathroom on south side
Building is raised above the ground
High ceiling height is provided
Architecture elements like verandas and projecting roofs are provided for shading

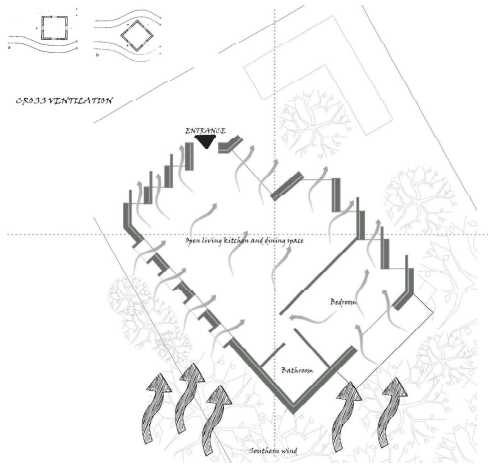
Building Envelope

Wall Design
Double wall with a cavity
Inclined east and west wall which act as a vertical shading device
Lightweight and high thermal resistance building material

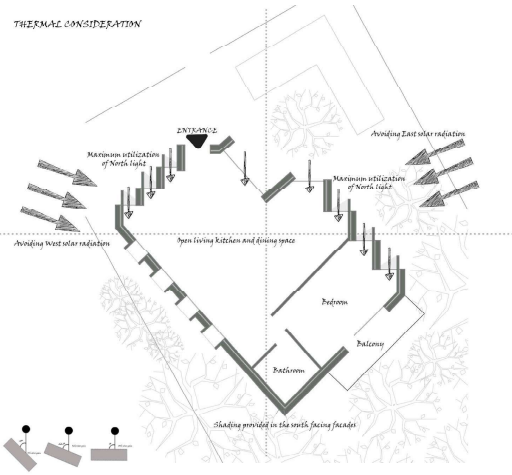
Roof Design
Two-way slope roof
The double ceiling in between creating a clerestory window for living and bedroom through which hot air is ventilated.

Fenestration Design
Large openable windows
In both windward and leeward direction for cross ventilation
Shading is provided in each window

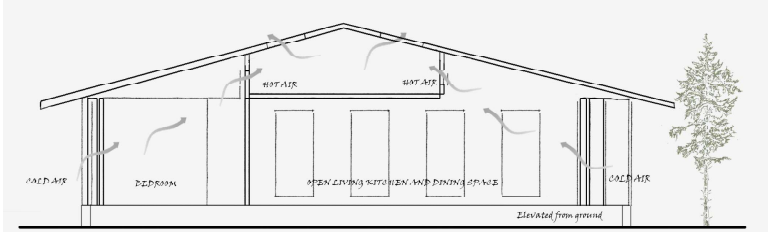
Concept Development and Strategies learned from research



Cross Ventilation



Thermal Consideration



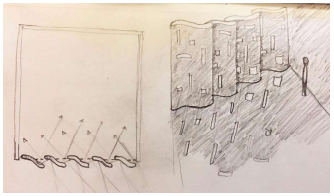
Section though the building

Temporal Diffusion Plane

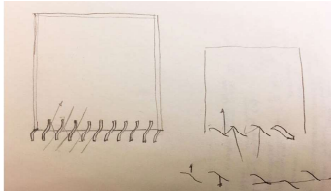
Fall 2017 | Light and Sustainable Design| UTSOA
Instructors: Prof. Matt Fajkus

Project Partner: Rob Manion, Elijah Montez, Shani Saul

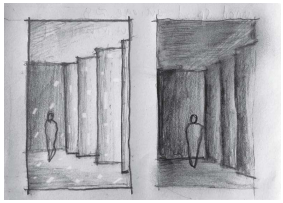
Perforations on the building envelope are designed to reflect the changing seasons and subsequently the changing quality and angle of natural light. Made of Ductal high-performance concrete the façade is either fully open to allow full light into space or punctured in a pattern that creates an interesting and dynamic light that moves as time passes.
Light historically has governed our days. Long before the existence of "artificial" light, the sun was the driving force behind all human activity. Today, daylight affords numerous biological, emotional, and perceptual advantages to the human body that are unmatched by artificial lighting mechanisms. Architecturally, natural light has the ability to connect us with the present moment and encourage an increased awareness of our environment. It reminds us of the passage of time by infusing the material world with that of the ephemeral, and in doing so, harmonizes the user with the natural world. As light is redefined through the passage of time, the experiential quality and use of its respective spaces shifts as well. A sustainable built environment will focus on harvesting and honoring the ephemeral quality of natural light to reengage the human body and mind.



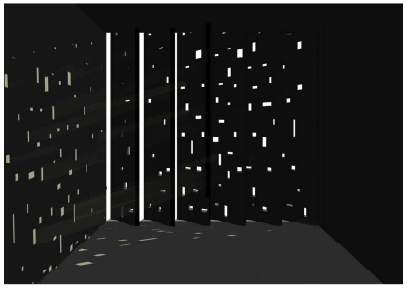
Concept Development



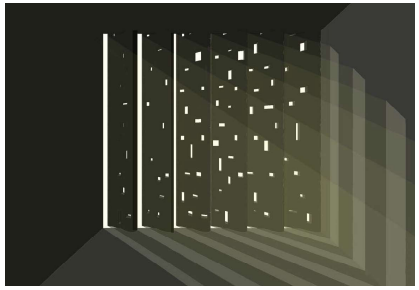
Concept Development



Conceptual Sketch



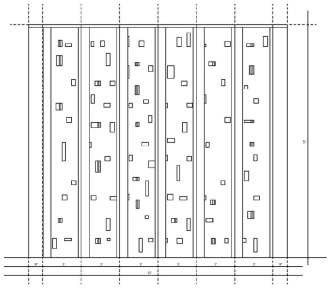
Evening Rendering



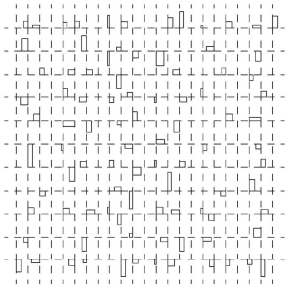
Morning Rendering

The curve surface of the wall is imagined to allow soft diffused light inside the room. The shadow inside the room are imagined to be different during morning and evening due to the curve structure and perforations of the building envelope.

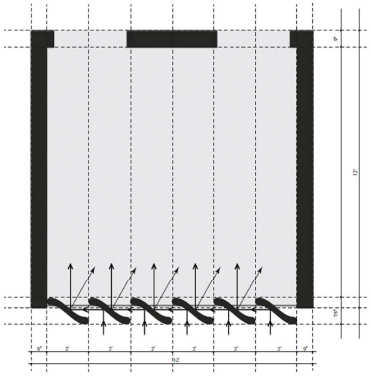
During morning, the diffused lights are conceptualized to be cast inside the room in vertical patterns whereas during evening the diffused light are conceptualized to pass through the perforations on the building envelope with the interesting designed pattern.



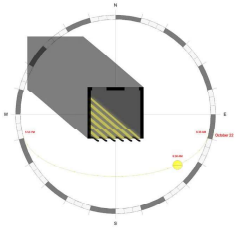
Elevation



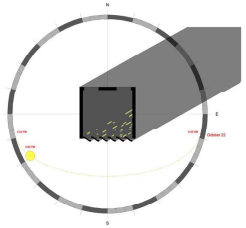
Perforation Design



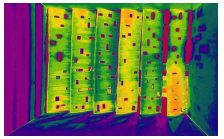
Plan



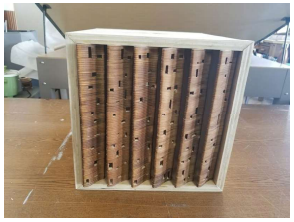
Morning Rendering



Evening Rendering



False Color



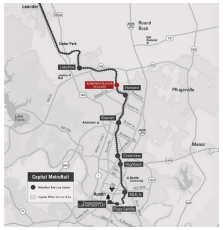
Robinson Ranch Station | Building for the Future of Austin

Spring 2018 | Transit Oriented Development | UTSOA
Instructors: Prof. Ming Zhang

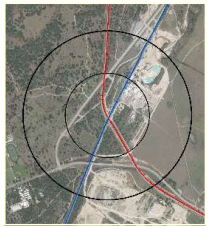
Sustainable Design

Project Partner: Sagnika Das, Olivia Posner, and Emma Patton

Imagine Austin's growth map foresees 'Robinson Ranch Station' as one of three regional centers in Northwest Austin. The intersection of Austin's red line and the Union Pacific Railroad provides an opportunity for a future transit hub including high-speed rail. The Robinson Ranch development is connected to the local community, and the area around the station is a place for residents to live, work, and play. The high density near the station accommodates future employees who will work in Austin's Downtown 2.0.

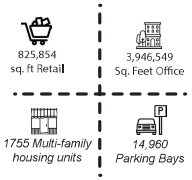


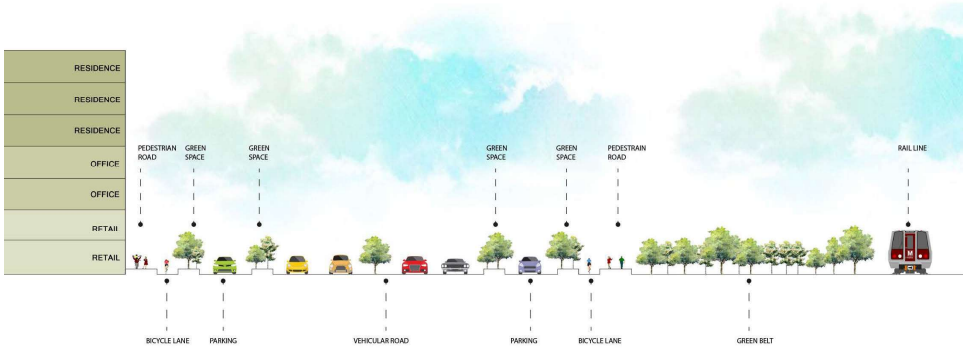
Location of the proposed station



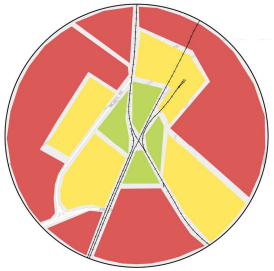
Two rail line passing through site

Proposed 3D view of the station



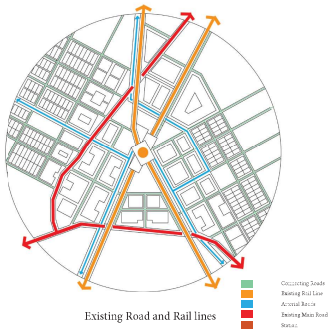


Section through proposed Road Development

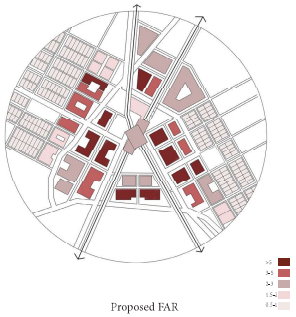


Gateway Map

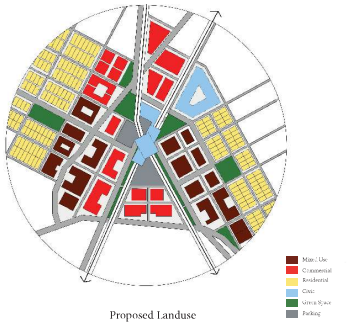
Green space Map



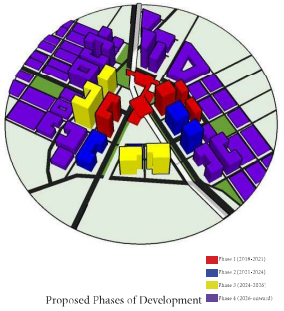
Existing Road and Rail lines



Proposed FAR



Proposed Landuse

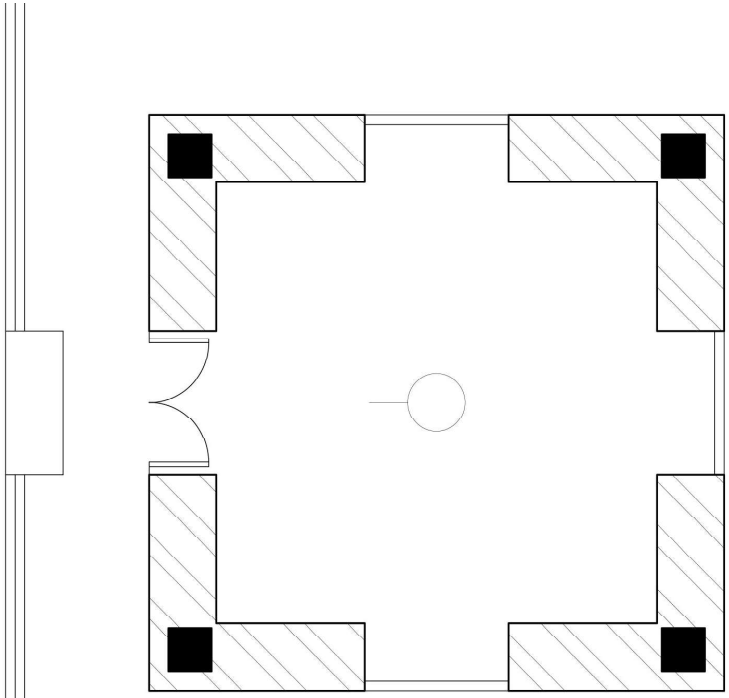


Proposed Phases of Development

Top six students from the university were selected to participate in a program held by Aussie Action Abroad. We constructed the steel frame stone structure at Lamjung, Nepal. Along with building, the roof of the community building was repaired and an awareness program about sanitary pad was also conducted where I played the role of project coordinator between Australian and local people.

Aussie Action Abroad

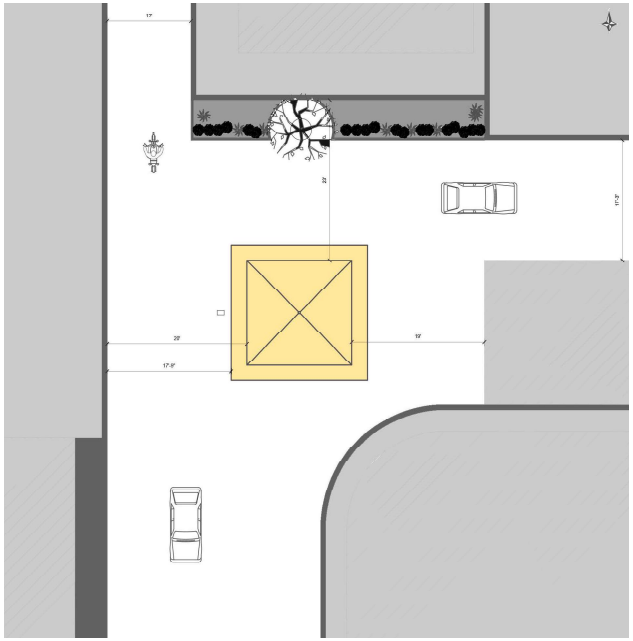
2014 | Volunteering



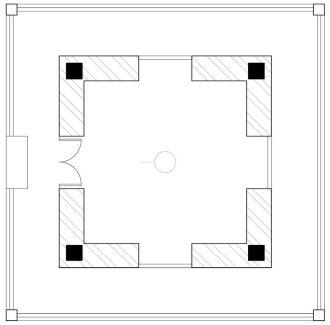
Mandir

2016 | Volunteering

The temple of the community where I used to live was old and in need of the reconstruction. So the whole community decided to build a new building as a temple in which I contributed as a designer and did the design and drawing of the temple building. Since different temples have their own unique design, I did the research on the particular 'Shiva Mandir' (temple for God Shiva) and did four different conceptual designs following all the criteria.

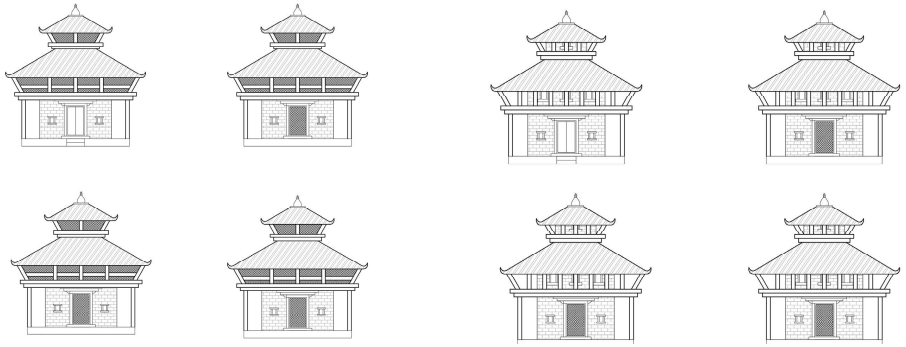


Site Development



Plan

Four different elevation options



Elevation One

Elevation Two

Elevation Three

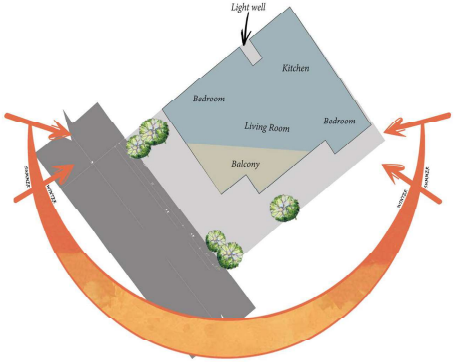
Elevation Four

Residential Building

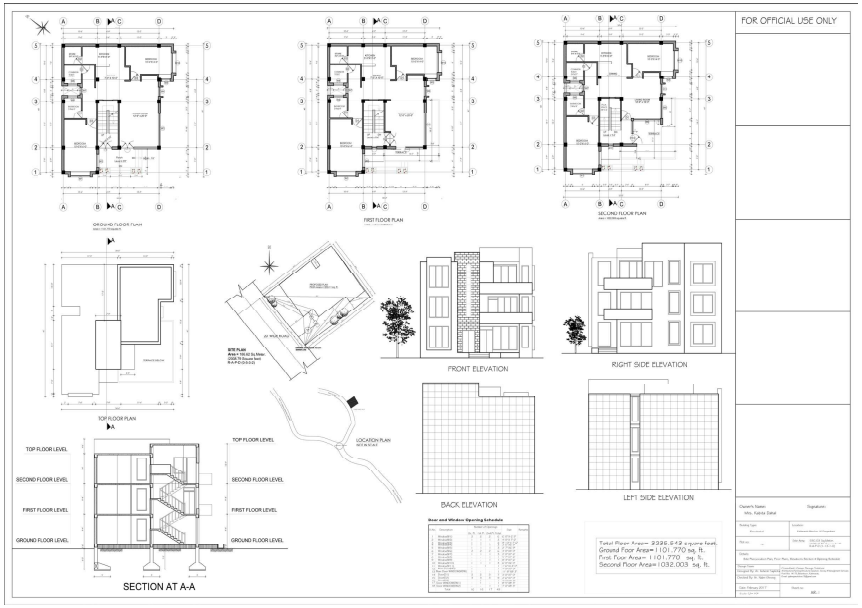
Professional Practice | Freelancer

Three and a half stories residential building for a family of three members was designed and constructed at Kathmandu, Nepal. Rcc structure with ground and first floor as a rentable space were conceptualized taking solar exposure into considerable. Kathmandu with a monsoon climate has four different seasons: Winter, Summer, Rainy, and Spring. So the building is designed in such a way that it has the highest solar exposure during winter while during summer the building is well shaded. Moreover, shading from the rain is also taken into consideration. The architecture style of the Kathmandu valley is studied and the building is conceptualized which shows respect towards the surrounding contemporary style.

Conceptual 3D



Site Development



Municipal Drawings

Photos during Construction