Architecture Identity
Center for Community Empowerment

A Casptone Design Proposal
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INTRODUCTION

COLONIZATION IMPACT ON IDENTITY

Colonized in 1894 by France, Burkina Faso went under a resistance period to prevent imperialism and preserve the self-love and identity of the country. Burkina Faso became independent in 1960, but colonization has left its marks. In the pre-colonial era (1100 - 1886), vernacular architecture was the only architecture style used for housing construction. Local artisans built buildings with no academic training, and the design responded to the needs of the communities and respected the local traditions and lifestyle. The primary material used for construction was local, and the typical housing forms were circular to provide passive protection against the harmattan winds.

Colonization brought the western influence that impacted the architecture and lifestyle of communities; buildings are progressively losing their cultural meaning and features.

"Identity is used to describe the way individuals and groups define themselves and are defined by others on the basis of race, ethnicity, religion, language and culture."

( Deng 1995, 1 )
NEW FORM OF IDENTITY

- Change of urban fabric
- Construction is no longer a cultural activity
- Design and construction is now done by professionals in the postcolonial era (in most urban areas)
- No preservation of cultural identity and values

Precolonial Era Architecture:
- Use of Local materials: adobe, earth, baug, Thach, and straw
- Conic Thatched roof
- Flat earth roof
- Gurunsi Wall decoration done by women
- Construction was done by men
- Compounds were one to two levels

Post-Colonial Era Architecture:
- Trained professionals
- Low use of non local materials
- Significant use of industrial materials
- Flat and Hip Roof
- Concrete Walls
- Building have multiple levels

"Many things contribute to identity. It’s not just a language, clothing, and food. It is also about urban surroundings."
- Claudina de Gyves
  Architect, Oaxaca, Mexico

PreColonial Era City Block Pattern

Post - Colonial Era Restructuring of Nonssin District, Ouagadougou, 1982

Typical Mossi Structure

Post-Colonial Structure

Ouagadougou 1930
Ouagadougou 2016
PROBLEM SPACE

MACRO LEVEL

COLONIZATION / NEOCOLONIALISM

WESTERN ARCHITECTURE

CLIMATE CHANGE

MICRO LEVEL

POVERTY

SECURITY

SOLUTION

LACK OF FUNDAMENTAL RESOURCES
(Water, sanitations, food)

LOW LITERACY RATE

CHILD LABOR

TRANSMODERNITY

EDUCATION

JOBS CREATION

LACK OF MENTAL RESOURCES

( Water, sanitations, food )
SYNOPSIS

Project Type: Civic and Cultural
Proposed Site: Ziniaré, Burkina Faso

Brief: This project aims to provide the Burkinabé communities with a center to educate and empower them through cultural and profitable activities. This center would also foster tourists’ and visitors’ cultural awareness through community engagement activities.

INTER-TROPICAL CONVERGENCE ZONE
HARMATTAN WIND (TRADE/CONTINENTAL EASTERLY)
MARINE EASTERLIES

Harmattan Winds Flowing From the Saharan Desert to the Sahel Region (Meningitis Belt) from January to March

Share of the Population Living in Extreme Poverty (household living per capita below 1.90 international dollars per day), 2017 (by %)

Legend

Burkina Faso
Sahel Region (Semiarid belt)
Extreme Poverty household living per capita below 1.90 dollars per day, 2017 (by %)
Harmattan Wind Flow (January to March)
Inter-Tropical Convergence Zone
Harmattan Wind (Trade/Continental Easterly)
Marine Easterlies

Map of Africa

THESIS

Project Statement

During the colonization period (1887 - 1959), colons introduced a modern architecture style that failed to respond to the country’s communities’ realities, cultural identity, and environmental conditions. The imposed architectural style leads to a progressive change of identity; in cities, the architectural style is contemporary with little to no local materials. The vernacular architecture style is still dominant in rural areas but lacks innovative techniques to adapt to the evolution of society and climate change. Besides, the vernacular architecture structures existing in most rural areas are just replica of existing prototypes that did not necessarily respond to the environmental issues, although it uses local materials. This project aims to foster the cultural identity of Burkina Faso through its innovative contemporary vernacular design and environmental control strategies that make it adaptive to change and provides a solution for societal and environmental issues.

AGENDA

Architectural Intent

This project will be a catalyst for community empowerment, equity, and environmental justice through its sustainable features and community programs (community garden, cultural activities, promotion of vocational training in the school curricula). Using local material and providing sanitation, water storage systems (water tower, water ponds) for rainwater collection and supply, and community garden, this project aims to be economical and profitable to the local communities as it reduces the cost of transportation of materials, solves the issues related to the precarity of fundamental resources (water, food, sanitation) and creates job opportunity for the local communities.

This project creates an adaptive architecture structure to the tropical climate, uses design to create an inclusive society, provides a network of public gathering spaces to create an inclusive society.

Ziniare is a neighborhood located in Burkina Faso, which has a tropical climate; the design will promote natural ventilation through the perforation of brick walls and roof to ensure indoor comfort during the dry season. The roof structure also provides shading and creates a canopy that protects from sun rays and rain.
ARCHETYPE

Ecological Integrity
- Satisfaction of basic human needs
- Use of technology to respond to climate change
- Protection and enhancement of local and regional ecosystems
- Conservation of natural resources such as water

Sustainable natural and built environment

Sustainable Community Development

Social
- Community engagement and empowerment (equity, leadership, and responsibility)

Sustainable economic development

Economic
- Employment Opportunities
- Provision of formal and vocational education

Equitable Social Environment

- Satisfaction of basic human needs
- Use of technology to respond to climate change
- Protection and enhancement of local and regional ecosystems
- Conservation of natural resources such as water

Sustainable economic development

- Employment Opportunities
- Provision of formal and vocational education

Equitable Social Environment

- Community engagement and empowerment (equity, leadership, and responsibility)
ARCHITECTURAL CHALLENGES

The architectural challenges range from societal to ecological dimensions. The postcolonial architectural style is not inclusive and does not preserve the cultural heritage, contributing to a new form of identity and lifestyle, which creates a marginalization of communities living in rural areas. The average temperature in Ziniare is 84 Fahrenheit. The air temperature quality is terrible during the significant part of the year, and the humidity is high, which does not promote comfort. The average precipitation is low (29.7 in), which causes soil erosion and low productivity of crops. Besides, the site is dry, has little vegetation, which does not promote green living. The site’s emplacement makes it hidden from the street view; the neighborhood does not have an affordable canteen where students can buy food and accessible community places that bring people together and allow social interactions.

Social and Environmental Issues:

- Soil erosion (low precipitation and lack of vegetation)
- Scarcity of fundamental resource: food, water, sanitations
- Lack of education
- Child Labor
## Stakeholder Analysis Map

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Objectives</th>
<th>Causes</th>
<th>Needs</th>
<th>Interests</th>
<th>Design Strategies</th>
<th>Architectural Solutions</th>
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<tr>
<td>Visitors</td>
<td>Create a Consistent Communication.</td>
<td>Facilitate Social Development.</td>
<td>Fundamentals and resources:</td>
<td>Sports</td>
<td>Empower communities</td>
<td>Workshop area for cultural awareness programs</td>
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<tr>
<td>Administrator</td>
<td>Care for students.</td>
<td>Exposure to ultraviolet rays from the sun.</td>
<td>Cultural Attractions and Activities</td>
<td>Social Events</td>
<td>Provide Education facilities</td>
<td>Empower communities.</td>
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<tr>
<td></td>
<td>Create an equitable environment.</td>
<td>Exposed to farm chemicals.</td>
<td>Parking</td>
<td>Community Engagement Programs</td>
<td>Provide Education facilities</td>
<td>Exhibition Hall to showcase and sell artworks</td>
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<tr>
<td></td>
<td>Have Interactions with Citizens.</td>
<td>Stress from drought, financial concerns</td>
<td>Playing Field</td>
<td></td>
<td>Provide Education facilities</td>
<td>Community Engagement Programs</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Community Development Programs</td>
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<tr>
<td>Parents</td>
<td>Secure the school Materials. Clean the environment.</td>
<td>Facilitate Social Development.</td>
<td>Good Communication</td>
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<td>Community Garden Market Area</td>
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<tr>
<td>Janitors</td>
<td>Clean the environment.</td>
<td>Prevention of Threats</td>
<td>Partnership</td>
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<td>Sanitation Areas accessible to the community members</td>
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<td>Traditional Authorities</td>
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<td>Better Learning Environment.</td>
<td>Performance space</td>
<td></td>
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<td>Performance hall for traditional activities</td>
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<td>Traditional Artists</td>
<td></td>
<td>Better Parent Involvement with school</td>
<td>Conference Room</td>
<td></td>
<td></td>
<td>Use of Local Materials to foster identity and support local businesses</td>
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<td>Volunteering</td>
<td></td>
<td>Promote Cultural Awareness.</td>
<td>Storage Space</td>
<td></td>
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<td>Organization (Teebo)</td>
<td></td>
<td>Provide Classroom supplies.</td>
<td></td>
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<tr>
<td>Local Authority</td>
<td></td>
<td>Facilitate Networking between schools</td>
<td></td>
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<td>Local Schools</td>
<td></td>
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<td></td>
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<tr>
<td>Community Members</td>
<td></td>
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DEMOGRAPHICS of ZINIARE

Total Population Number: 88,299

Gender:
- Women: 51.7%
- Men: 48.3%

Age Group:
- 0 - 14 years: 49.6%
- 15 - 64 years: 46%
- 65 + years: 4.4%

Urbanization:
- Urban: 62.3%
- Rural: 37.7%

PROGRAM

Activity Zones

The educational core consists of classrooms and administrative areas. The visitors’ hall consists of a performance hall, exhibition hall, and a residential room (for artists). The community hall is composed of the marketplace and community garden, and sports field. There are public facilities such as sanitary, water tower, and a leisure park accessible to the users and the public. The community garden aims to provide a sustainable food source and economic activity to the local community. The education core offers formal and vocational learning facilities that ensure that students engage in profitable business while going to school (classrooms and community garden). Cultural activities such as traditional dancing and sketches, and cultural awareness lectures will be held in the performing hall. The site of this project is 100,000 sf.

Programmatic Elements
SITE DOCUMENTATION

Location & Proximity

The site is located in a rural area within a dominantly residential neighborhood in Ziniaré, a town located in the province of Oubritenga in Burkina Faso, Burkina Faso. It is closed to important touristic sites such as the wildlife Park of Ziniare, the sculpture on the granite of Laongo. The neighborhood is also composed of commercial buildings, religious buildings. The site’s climate is arid steppe and hot, the average temperature is 28 degrees, and the average precipitation is 61 - 80 mm, and the major wind comes from the south. There are 81 - 100 people person / km2. The site is aligned with a regional corridor that connects the site to the capital city and neighborhood countries, making it accessible for tourism.

Site

Site Arial
Dry Season Wind Rose

Wind Speed mph

2 - 5
5 - 7
7 - 10
10 - 15
15 - 20

Rainy Season Wind Rose

Wind Speed mph

2 - 5
5 - 7
7 - 10
10 - 15
15 - 20
PROJECT PARAMETERS

Allowable Area and Heights

The site is located in a semi-urban area within a dominantly residential neighborhood in Ziniaré, a town situated in the province of Oubritenga in Burkina Faso. The code of urbanism of Burkina Faso does not impose height limitations on buildings outside of the zone of project Zaca in Ouagadougou and the airport’s neighborhood. The site is 171,990 sf including the residential buildings’ square footage, but the allowable area is 100,000 ft².

Constraints and Opportunities

The site is an infill site with existing residential buildings and a former bus station facing the north side. The existing residential buildings are constraints but, at the same time, opportunities to enable users’ interactions with locals. The current residential building on the site will not be demolished.

Limitations / Codes of urbanization

The codes of urbanism of Burkina Faso (Art33. and Art.34.) do not require any setback for non-residential buildings but require that administrative, school or public buildings accommodate disabled people.
**PRECEDENTS**

**Lycee Schorge Secondary School**

Location: Koudougou, Burkina Faso  
Architect: Francis Kéré  
Client: Stern Stewart Institute  
Area: 1660 m²  
Date completed: 2016

Kéré’s design integrated sustainable features to adapt to the tropical climate. The design configuration also provides more shading. Each classroom module is 72.4 square meters. The design is composed of two wings. The first wing of the design is composed of the administration and dental clinic located between the library and a classroom, and the second wing is composed of six classrooms. There is a central courtyard that is accessible from the northwest and the south.

Source: https://www.archdaily.com/885677/lycee-schorge-secondary-school-kere-architecture/5a3865dcb22e3885f9000031-lycee-schorge-secondary-school-kere-architecture-photo?next_project=no
Thread Artist Residency & Cultural Centre

Location: Sinthian, Senegal
Architect: Toshiko Mori
Client: Josef and Anni Albers Foundation
Area: 11,285 sq. feet
Date completed: 2014

The cultural center provides a marketplace, education areas, performances, and meetings, as well as artists’ bedroom areas. The center aims to provide for the local community and the resident artist cultural hub that will encourage the interaction of artists and locals. The building is constructed using local materials such as bamboo, brick, and thatch. Mori design integrated traditional techniques with design innovations. The pitched roof is inverted and used as a rainwater collector (the collected rainwater is used for about 40% of the villagers’ domestic water).
Katiou Library

Location: Komsilga Department, Burkina Faso
Architect: Albert Faus
Client: Josef and Anni Albers Foundation
Area: 122 sqm + terrace 25 sqm
Date completed: 2014

Faus's design provides strategies to adapt to the climatic conditions of the region. This library is composed of a single building; its interior space is composed of bookshelves "pushed to the room's perimeter." The bookshelves increase the exterior wall thickness and provide better interior cooling. The pitched roof is raised from the exterior walls to prevent direct solar radiation and drain the rainwater. There is a space between the raised pitched roof and the ceiling to allow wind to provide better interior cooling. Faus placed the windows on the north and south facades. The insulated and translucent windows prevent direct sunlight from getting into the library.

Source: https://www.archdaily.com/637153/katiou-library-albert-faus
Traditional Compounds are arranged in a circular layout, and they are mainly circular. There is the main courtyard in a family compound where people gather together. The traditional compound is composed of a principal compound and two or three secondary compounds connected together with low enclosure walls. Each compound has its own courtyard, which provides privacy to each family’s activities.

Circular Structure provide resistance to wind pressure.

Analysis of Mossi Granary

Traditional Compound Concept

Traditional Analysis
CONCEPT

UNIFY: Bring people together
SECURE: provide stability
CONNECT: provide access

Traditional Structure
Proposed Structure
Reverse Conical Roof System
PROCESS

Grid Diagram

- Community Hall / Courtyard
- Education Core / Courtyard
- Visitors Hall / Courtyard
- Gathering Space
- Central Courtyard

Rainwater Storage System (Ponds and Water Tower)

Circulation Diagram
Site Plan Scale: 1" = 60"

- Cemetery
- Existing High School Football Field
- 15-25 min walk to National Wildlife Park
Legend
1 - Exhibition Hall
2 - Performance Hall
3 - Canteen
4 - Library
5 - Artist Residence
6 - Community Garden and Water Tower
7 - Basketball Court
8 - Sanitation
9 - Classrooms
10 - Administration
11 - Parking

Level 1  Scale: 1’=60”
Exhibition Area: Local artist work display (artifacts from Burkina Faso)

Performance Hall

Canteen

Library

Artist Residence: Bedrooms and meeting area

Administration Area: Offices, and a conference room (community awareness program)

Gathering Space

Classroom

Composting Toilets

Community garden

Basket Ball Court

Informal Soccer field

Site Arial without Context
Site Arial with Roof Steel Framing Structure supported by reinforced concrete beam
Site Arial with Roofing System: Polycarbonate Roof
**BIOCLIMATIC**

**Rainwater Harvesting**: The conic roof slopes down which allows the water to flow from the roof to the water retention ponds.

**Solar Protection**: The double skin roof provides heating protection.

**Insulation**: The terracotta walls provide cooling and UV resistance which allows good indoor thermal condition.

**Natural Ventilation**: The use of cross ventilation system (louver windows and wall perforations) allows the return and supply of air.
Longitudinal Section

Scale: 1’=20”
Perspective Views

View of the Center from the Regional Road
View from the Parking
View from Exhibition Hall
View of the Performance Hall
View from Canteen
View of the Community Gathering Space
View from Classroom Area
View Of Classroom
View of the Community Garden
**View from the Sport Field**