Davos
Baukultur
Alliance

INNOVATIVE
PRACTICE
CASE STUDY

The Hikma Community Complex

The Hikma Community Complex is a cultural and educational hub in Dandaji, Niger, that combines the adaptive re-use of a historic mosque with new built additions to support community development, education, and environmental and social sustainability.

GEOLOCATION	Dandaji, Niger
TIMEFRAME	Completed May 2018
PRESENTED BY	Mariam Issoufou Architects
COST	$544,300

HIGHLIGHTS FROM THE DAVOS BAUKULTUR QUALITY SYSTEM

Definitions

GOVERNANCE	DIVERSITY
FUNCTIONALITY	CONTEXT
ENVIRONMENT	SENSE OF PLACE
ECONOMY	BEAUTY

Located in Dandaji, a village in western Niger, the complex serves as a space where secular and religious activities coexist to facilitate education and social cohesion. The village, with a population of 3,000, faces challenges such as low literacy rates and economic vulnerability. To address these needs, the project renovated and adapted the existing mosque, designed by internationally recognized local architect El Hadji Falké Barmouan,[1] into a library with study spaces, classrooms and workshops. A new, larger mosque was built to accommodate the growing needs of the village, and a children's play area and landscaped gardens unite the two buildings.

Designed by Mariam Issoufou Architects and Studio Chahar, the complex uses locally sourced materials and building practices, integrating cultural heritage with modern needs to create a sustainable structure suited to the region's arid climate and the growing community's needs. This was in direct response to the local community initially considering demolishing the old mosque in favour of a concrete replacement. This combination of adaptive re-use and contemporary design offers a model for community-driven, sustainable and culturally rooted architecture in rural settings.

Key outcomes

GOVERNANCE The Hikma Community Complex showcases strong governance by involving local stakeholders. The project was commissioned by the village of Dandaji, led by village leaders and involved extensive consultation with the community to ensure the design met their needs. This collaborative approach has cultivated a sense of ownership and pride within the community, contributing to the project's long-term success.

ENVIRONMENT The complex prioritizes environmental sustainability through the careful selection of materials and design strategies. Most of the construction materials were sourced from within a 5 km radius of the site, reducing transport costs and minimizing environmental impact. Concrete was used sparingly, limited to essential structural elements such as columns and lintels.

A key feature of the project is the use of compressed earth bricks (CEBs) made from laterite soil found on-site. These bricks offer thermal benefits similar to adobe, with lower maintenance requirements. By harnessing the thermal mass of the earth and incorporating natural ventilation through strategically designed taller spaces that draw hot air away from occupied areas, the building minimizes the need for mechanical cooling, enhancing energy efficiency in the region's harsh climate. Local artisans produced the CEBs, supporting local craftsmanship. Additionally, the project employed local knowledge of techniques and properties of natural materials. For example, salt and Arabic gum were added to the interior finish to repel termites, and shea butter was used on the external earth to enhance waterproofing properties.

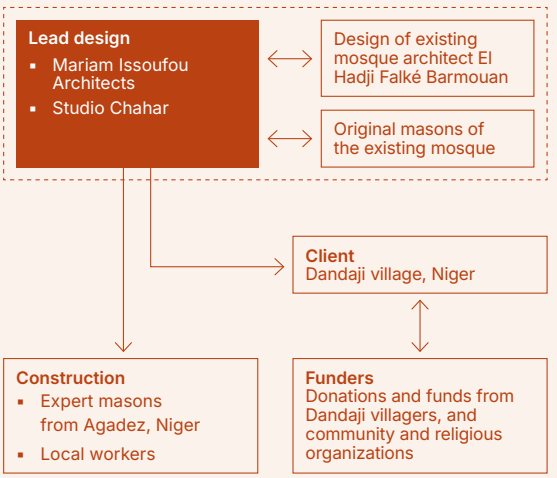
ECONOMY The Hikma Community Complex has generated economic benefits for the local community by creating employment opportunities during the construction phase, particularly for masons and other skilled labourers. In addition to construction jobs, the project has facilitated long-term economic growth by providing educational programmes such as literacy classes, sewing courses and computer skills training. These initiatives empower community members, especially women and youth, by enhancing their skills and economic opportunities. Furthermore, the use of locally sourced materials and labour has contributed

to a more resilient local economy, ensuring that financial benefits remain within the community.

CONTEXT The design of the Hikma Community Complex responds thoughtfully to the existing context of Dandaji. The adaptive re-use of the mosque not only preserves a key cultural and historical landmark but also integrates it into the new functions of the building. The expansion of the mosque into a larger structure meets the growing needs of the village while maintaining a strong connection to the site's historical and cultural context. The overall architectural language respects the vernacular style of the region while introducing contemporary elements that enhance the functionality of the space, ensuring the design complements both the built and natural environment. This was facilitated by the involvement of local traditional masons in the construction process. The project team intentionally invited these masons to contribute their skills, ensuring that traditional construction methods were integrated into the design, and promoting local knowledge and craftsmanship. Notably, the original masons who had worked on the existing mosque were invited to join the project team, ensuring continuity of knowledge and skills in the adaptive re-use of the mosque.

SENSE OF PLACE The mosque historically served as a central gathering place for the village and surrounding communities, located near the only middle school in the area, which draws students from nearby villages. However, due to its small size, the mosque had become a male-dominated space, limiting access for women and children. The Hikma Community Complex expands and adapts the mosque to create a more inclusive community hub, integrating both religious and secular functions. This transformation strengthens social ties and ensures that all members of the community – regardless of age or gender – have a space for gathering, learning and participation in civic life.

Stakeholders



Adaptability and lessons learned

Adaptable aspects

- **Local knowledge**: Lead designers involved local craftsmen, including acutely local and historical knowledge through the original mason's involvement. This directly contributed to ensuring the structure's longevity through the integration of enhancing additives and waterproof erosion protection techniques.
- **Locally rooted traditional and contemporary construction**: The blending of traditional local material knowledge with new construction techniques (such as CEBs), both of which used local materials, allowed for a strong, technically and socially sustainable building.
- **Integration of religious and secular spaces**: The Hikma Community Complex successfully combines religious and secular functions within a single site, promoting social cohesion and inclusivity. This approach

demonstrates how carefully planned designs based on strong community dialogue can facilitate the coexistence of diverse community activities.

Lessons learned

- **Key role of client dialogue to promote sustainable approaches**: Dialogue with the community and its leaders played a key role in facilitating the path to adaptive re-use, moving away from the community's original preference of a new concrete structure. This engagement continued throughout the process to shape the design and deliver the construction through the local workforce, building ownership and the project's long-term success.

- **Passive cooling for hot and dry climates**: By employing locally sourced materials and traditional construction techniques, the complex serves as a model for sustainable architecture in arid climates. Learning from the historic design, the new spaces minimize environmental impact while providing comfortable, passive cooling without relying on mechanical systems.

- **Preservation of cultural heritage**: Engaging the community to preserve and adapt existing structures, like the historic mosque, can honour cultural heritage while meeting contemporary needs. This approach creates a sense of identity and continuity. The project's considered and striking blend of traditional and modern design has garnered international acclaim, earning the Gold Lafarge Holcim Award for Middle East Africa in 2017 and the Global Silver Lafarge Holcim Award in 2018.

Challenges

- **Structural deterioration**: The original adobe mosque had suffered significant erosion due to water damage from seasonal downpours and neglect. This deterioration posed a substantial challenge in preserving and repurposing the structure into a library. The project team addressed this by inviting the original masons to join the restoration efforts, using their expertise to repair and enhance the building's integrity.

- **Material limitations**: The scarcity of traditional materials, such as wood, led to the use of alternatives like metal for interior elements. These were carefully designed to complement and respect the historic structure while integrating contemporary additions in a cohesive manner.

Next steps

The Hikma Community Complex has significantly influenced the Dandaji community, leading to several tangible outcomes:

- **Educational and vocational programmes**: The library has become a hub for various educational initiatives, including literacy classes, sewing courses and computer skills training. These programmes empower community members, particularly women and youth, enhancing their personal development and economic opportunities.

- **Community engagement**: Beyond its educational role, the complex serves as a venue for social and cultural activities. Local non-governmental organizations (NGOs) use the facilities for training sessions, promoting a sense of community and collective growth.

Read more

Explore more studies in the full publication:
From Principles to Practice

Read the Eight criteria for a high-quality Baukultur:
The Davos Baukultur Quality System

Keep up to date with the alliance:
davosalliance.org

WORLD ECONOMIC FORUM

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Culture FOC

Endnotes and sources

1. El Hadji Falké Barmou won an Aga Khan Award for Architecture in 1986 for a similar mosque in Yamaa.

Mariam Issoufou Architects. (n.d.). *Hikma Community Complex*. https://www.mariamissoufou.com/hikma.

infrahub.africa. (n.d.). *Home*. https://www.infrahub.africa/.

Ecogradia. (n.d.). *Home*. https://www.ecogradia.com/.

Holcim Foundation. (n.d.). *Home*. https://www.holcimfoundation.org/.

Cover image: Mariam Issoufou Architects