

## WHAT IS SHARED ABOUT AFRICAN MODERNISM? WHAT IS AFRICAN ABOUT MODERN HERITAGE?

Immaculata Abba, Tubi Otitooluwa, Jonathan Kplorla Agbeh,  
Christine Matua, Timothy Latim, Justicia Caesaria Tegyeke Kiconco,  
Bola Oguntade, Emmanuella Ama Codjoe

**ABSTRACT:** The Shared Heritage Africa (SHA) project focused on the rediscovery of modern university campuses and seminal buildings in West and East Africa from the 1950s to the 1970s. The project involved nine research fellows from Ghana, Nigeria, and Uganda, who conducted heritage research, local writing and photography workshops, exhibitions, and published content to document Africa's built cultural heritage, eight of them are presented here. This initiative aimed to promote sustainable urban and social development, drawing on African and international efforts and targeting students and young professionals to foster social, cultural and political awareness.

With varying political, economic, and social scenes in sub-Saharan Africa during the mid-20th century, modernist buildings served as a representation of post-colonial progress and development for newly-independent countries. The emergence of modernist architecture in Africa during the 1950s led to a host of architectural legacies across the continent. Universities, as emphasized by Livsey (2017, 2), played a pivotal role during the process of decolonization. This significance was mirrored in the campus architecture of this period, reflecting the high aspirations of post-colonial societies to advance education and nurture the next generation of leaders.

During a time of ample financial support from colonial governments, international agencies, and later the new national governments, these modern university campuses were constructed using modern materials like concrete and glass, along with innovative construction techniques such as prefabrication (Uduku, 2003). Literature on 20th-century architecture in Sub-Saharan Africa is rather limited. However, the selection of university campuses allowed for convenient access for photographic documentation and archival research. Thus, photography emerged as a great tool for interpreting the architecture of these campus buildings.

The university campuses served as experimental grounds for expatriate architects, encouraging innovative approaches to architectural design tailored for the hot and humid conditions of the tropics. Modernist architecture, characterized by elements like spatial configuration, material choices, climate-responsiveness, and rectilinear forms, found a shared interpretation in these designs. Furthermore,

the design of campus masterplans typically followed an axial layout, with enclosed courtyards that housed most congregational spaces and landmarks of the respective universities. In West Africa, specifically in Ghana and Nigeria, several prominent architects were associated with the masterplan development of university campuses. Notable names include James Cubitt (University of Nigeria, University of Jos, Nigeria and Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana), Kenneth Scott (KNUST), Maxwell Fry and Jane Drew (University College Ibadan, Nigeria) or the Israeli architect Arie Sharon, who then partnered with the Nigerian architect Augustine Akhuesokhan Egbo (Obafemi Awolowo University (OAU) in Ife, Nigeria). In East Africa, architects such as Peatfield and Bodgner (Kyambogo University in Kampala, Uganda) and Blackburne Norburn and Partners (Makerere University in Kampala, Uganda) contributed significantly to the architectural landscape.

It has been interesting to observe Africa's participation in the global narrative of modern architecture, and not merely as consumers but also as innovators. In this documentation, African modern architecture has been broadly categorized into two schools of thought: the first encompasses buildings commissioned by colonial governments during their rule, while the second comprises buildings commissioned post-independence by African governments. Notably, the architecture from the latter demonstrates a more significant exchange of ideas, as African governments had the autonomy to select architects who aligned with their visions and aspirations. This shift in commissioning reflects a sense of agency and independence, allowing

African nations to shape their architectural landscape in alignment with their own cultural, social, and developmental goals. For example, Obafemi Awolowo University (OAU) in Ife, Nigeria, employs Yoruba motifs and symbolism, such as a replica of Oranmiyan's famous Opa (staff) framed by a tall half-cylindrical concrete obelisk which serves as a vertical accent to the library building.

In essence, the university campuses symbolize a shared heritage that speaks to our rich history, culture, and values. The modern buildings embody our collective aspirations and the sacrifices of the fore-fathers such as Nkrumah, Azikiwe, and Nyerere, who advocated for education and self-determination. The future major questions for architecture in Africa are: How can we conserve our architectural heritage? What lessons can we draw from the past to inform our new designs? In what ways can we further adapt modern buildings to our evolving environment, as well as social, aesthetic, cultural, political, and functional needs?

Another critical question grappled with during this fellowship was whether modern buildings in Africa should be considered heritage or not. For some, modern architecture cannot be classified as African heritage because it is often associated with the international Modern Movements originated in the West. The primary influencers of the movement are perceived to be primarily outside of Africa. However, for those who view modern architecture as African heritage, the key argument centers around the dynamic nature of culture, which is never fixed. In this line of conviction, culture is constantly evolving and transcending borders, finding new forms of ownership where it proves useful.

Seventy years later, these university campus buildings still function within the contemporary contexts to which they have adapted. They serve as a bridge connecting our past and present, forming the foundation upon which we build our collective aspirations for the future.

## USE AND MAINTENANCE | Immaculata Abba

For an architectural style that proliferated in the 1960s, when many African countries had very recently gained their independence, African modern architecture became an expression of the 'triumphs, contradictions and disappointments of decolonisation and independence' (Duerksen, 2018). As modern nation-building projects sought to create new cultures, these efforts manifested in the built environment. The university campus was one of the key sites of this manifestation as it was both the physical and conceptual cultivating

ground for new, postcolonial education policies, mindsets, and ways of problem-solving for the new nation.

The presented projects show some of the physical characteristics of early buildings at the University of Nigeria (Enugu campus) and the University of Ghana (Legon campus). Placed side by side, there is a marked difference in the maintenance state of these structures, which could point to the countries' different journeys through economic crises, political instability, and educational ambitions.

## THE WATER TOWER STRUCTURE, UNIVERSITY OF NIGERIA, ENUGU CAMPUS, NIGERIA

Built in the 1950s as one of the first constructions on campus, these twin structures survived the Nigerian Civil War (1967-1970). With unpolished and angular features, their style can be classified as a brutalist variant of Modernism. The water tower [FIGURE 01] is the higher building, while the water tank [FIGURE 01] is the longer building. Today, the twin structures [FIGURE 01] no longer serve their intended function (supplying water) due to lack of maintenance but have instead turned into an informal reading hub for students (Nnaemeka-Okeke et al., 2021).



01 The water tower and tank, University of Nigeria Nsukka (Enugu Campus), Enugu, Nigeria. © Ikedi Chukwuka, 2023.



02 The water tower and tank, University of Nigeria Nsukka (Enugu Campus), Enugu, Nigeria. © Ikedi Chukwuka, 2023.

### THE UNIVERSITY LIBRARY AND REGISTRAR'S OFFICE, UNIVERSITY OF NIGERIA, ENUGU CAMPUS, NIGERIA

As one of the first buildings constructed on campus, also in the 1950s, this building features the typical vertical and horizontal concrete screens used to protect the building and its users from the harsh weather [FIGURE 03]. It is still being used as intended but the faded paint, damp walls and missing letters on the 'Office of Registrar' plaque point to a lack of building maintenance.



03 The University Library and Registrar's Office, University of Nigeria Nsukka (Enugu Campus), Enugu, Nigeria. © Immaculata Abba, 2022.

### SCHOOL OF NURSING AND MIDWIFERY, UNIVERSITY OF GHANA, LEGON CAMPUS, GHANA

This building has the style of American late modern buildings, though we were not able to ascertain when exactly it was built. The tropical modern emphasis on natural ventilation is evident in its design, with bands of balconies on either side of the building [FIGURE 04]. It is still in use as it was designed for.



04 School of Nursing and Midwifery, University of Ghana, Legon, Ghana. © Immaculata Abba, 2022.

### LEGON HALL ANNEX 'A', UNIVERSITY OF GHANA, LEGON CAMPUS, GHANA

Legon Hall was built in 1952 as the first student accommodation built on the University of Ghana campus. This hostel was built in the classic British post-WWII modern style of social housing blocks that prioritised efficiency over customisation. Typical of this style, its ground level was originally dedicated to storage space, also making space for a pedestrian bypass. Like the School of Nursing and Midwifery building, this hostel building is also being used as it was intended to be used [FIGURE 05].



05 Legon Hall Annex 'A', University of Ghana, Legon, Ghana. © Immaculata Abba, 2022.

## PASSIVE DESIGN | Tubi Otitooluwa

In tropical climates, protecting pedestrians from the elements is important, especially during the heavy rainfall months. Lagos, being a coastal city, is majorly influenced by the SW Trade wind due to the dominance of the tropical maritime air mass from the South Atlantic (Uchechukwu et al., 2018). Using strategic orientation and engineering, indoor air constantly exchanges, hereby cooling building and regulating indoor comfort levels. A strategy, referred to by Hannah le Roux as "an architecture for all

seasons", which was inspired by the work of "several architects who had experimented with alternatives or additions to the sheer and well-glazed facades of modernism that although useful in the winter of western Europe, performed as a greenhouse in warmer conditions" (Le Roux, 2003). The architecture of the University of Lagos (UNILAG) campus provides many examples of implementing and facilitating pedestrian circulation, natural ventilation, as well as natural lighting and shading.



06 Bursary building showing a covered walkway, part of the connected main concourse covered walkways. ©Tubi Otitooluwa, 2022.

## PEDESTRIAN CIRCULATION

Many buildings use recessed or completely open ground floors of interconnected buildings, especially within faculty complexes and occasionally between clusters of buildings. These promenades create a network of circulation that facilitates movement between buildings without exposure to the elements, advertently creating social spaces for interaction and breaks. This is further emphasized in the architecture of the Main Concourse, which is a cluster of seven large buildings (council chambers, bursary building, main library, library extension, old cafeteria, and the subterranean dining hall). While these buildings are accessible through the plaza rooftop of the dining hall, they can also be accessed by connected promenades protected from the climatic and environmental elements. The Bursary building [FIGURE 06] features a sheltered walkway leading to the semi-basement dining hall, creating a covered path



07 Faculty of Engineering complex showing a semi-subterranean promenade connecting a cluster of buildings in the faculty. © Tubi Otitooluwa, 2022.

that provides protected access to other buildings in the Main Concourse. The Faculty of Engineering and the Faculty of Sciences complex [FIGURE 07] offer recessed accommodation on the ground floors to accommodate a continuous link of pedestrian circulation that connects different functions of the faculty without exposure to the outdoor elements. This solution enables the normal function of the facilities even in the most inclement weather situation.

### NATURAL VENTILATION

The two predominant air masses that impact the climate of Lagos are the trade winds: the North East Trade (between the end of November to mid-March), which heralds the Harmattan season, and the South West Trade wind (April to October), which brings the rainfall. The South-West Trade wind is dominant due to the tropical maritime air mass from the South Atlantic (Uchekukwu et al., 2018). This information is critical because the wind direction is a major factor in maximizing the passive ventilation capacity of the campus buildings. The Faculty of Arts building is an example of this orientation. It consists of two rectilinear buildings joined by connected vertical circulation and corridors with their shorter sides skewed slightly off west/east axis, exposing the longer sides to southwest and northeast



10 Faculty of Arts building, showing east-facing façade. © Tubi Otitooluwa, 2022.



08 Figure 03: Faculty of Arts building showing south-facing façade. © Tubi Otitooluwa, 2022.

winds [FIGURE 08]. The large fenestrations on the façades and open ground floors allow a constant airflow through the buildings. The open ground level plays a crucial role here as a central courtyard, framed by the connection between these two buildings. The Pilotis base architecture ensures a continuous flow of air by channeling it through the courtyard from the southwest during the wet seasons and from the northeast in dry seasons. The air is constantly replaced by fresh air, thereby keeping the internal temperature regulated [FIGURE 09]. The southern block (Block A) consists of faculty and administrative offices, while the northward block (Block B) has classrooms on each floor. The external façade of both blocks is finished with precast concrete overhang cells spanning from floor to floor in a 2.7 x 2.7m grid, providing shading for the internal spaces from incident sun. On the courtyard side of the office block, only clearstory windows have been provided as they are adequate for ventilation and satisfy the need for privacy [FIGURE 09]. At the classroom block, openings on the courtyard walls extend along the



11 Faculty of Arts building from the courtyard, showing louvered classroom opening with focus panels. © Tubi Otitooluwa, 2022.



09 Faculty of Arts building from the courtyard, showing the shaded balcony and corridor of the administration with the faculty offices in the distance. © Tubi Otitooluwa, 2022.

entire length, except at the levels where students are seated in the classroom. This design fulfills the requirement for substantial air exchange in areas with high occupancy, while also minimizing distractions to classroom activities. Classrooms feature louvered openings with focus panels [FIGURE 10, FIGURE 11].

### NATURAL LIGHT AND SHADING

The design of the Faculty of Engineering Lab building ensures multiple points of entry for both natural and ambient light, with deep overhangs keeping internal spaces dry during the heavy rain months. These labs serve a variety of purposes, including metalwork, concrete testing, and fabrication, among others. To achieve optimal lighting conditions for diverse activities, levels ranging from 100-250 Lux are maintained, depending on the specific task being done. The façade reveals an array of precast louvered concrete fenestrations that allows indirect lighting along the laboratory walls and a series of north-facing skylights on the roof of the lab building to filter in the natural light [FIGURE 12]. Unfortunately, both the north-facing skylights and the concrete roof have been covered with corrugated aluminum roofing sheets. This modification was necessary due to the concrete's inability to maintain a watertight seal.



12 Faculty of Engineering Lab Building showing concrete louvered wall fenestration and north light roof. © Tubi Otitooluwa, 2022.

During the 1960s, many African countries had recently gained independence and started establishing new universities to train the next generation of leaders locally. The campus architecture of this period reflected the high aspirations of post-colonial societies, emphasizing the advancement of education. This resulted in a harmonious blend of modern and traditional elements, with designs focusing on functionality and climate-responsiveness, acknowledging the importance of creating buildings that catered to the practical needs of educational institutions while considering the local climate conditions. Here, three buildings located on three different university campuses are presented, highlighting their common features. These buildings exhibit distinct physical characteristics such as cubical forms, extensive use of concrete, prefabricated shading devices, clean lines, just to mention a few. These characteristics run through most of the campus buildings in

Sub-Saharan post-colonial Africa and altogether, showcases the pursuit of a forward-looking vision for education and modernization that defined the architectural landscape of the time.

**THE SENIOR STAFF CLUB, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KNUST), KUMASI, GHANA**

The clubhouse was designed in 1964 by Niksa Ciko and John Owusu-Addo, the latter being one of Ghana's earliest and finest modern architects. It serves as a social center for senior academic staff and is nestled in the lush senior staff residential zone of the campus. It possesses an interesting form, making it resemble a floating cuboid [FIGURE 13].

**DEPARTMENT OF NUTRITION AND FOOD SCIENCE, UNIVERSITY OF GHANA, LEGON, GHANA**

The distinct cubical building makes heavy use of concrete which gives it a bold presence, while effectively

minimizing the ingress of sunlight. At the entrance, visitors are greeted by a towering structure that serves as a defining architectural element. The façade is characterised by a perforated concrete shading screen and recessed windows, allowing for natural light to filter in while maintaining a pleasant indoor atmosphere [FIGURE 14].

**FACULTY OF AGRICULTURE, OBAFEMI AWOLOWO UNIVERSITY (OAU), ILÉ-IFÈ, NIGERIA**

Designed in 1962 by Israeli architect Arie Sharon, the faculty building was the first to be put up on the current OAU site. The building's strong cubical form is complemented by its flat roof which aids rainwater harvesting, and an 'eggshell' concrete screen. The 'eggshell' is an intersection of prefabricated vertical and horizontal elements, creating a visually striking, rhythmically-spaced pattern that efficiently shades the building. The distinctive form and design have solidified the faculty building's status as a landmark on the evergreen campus.

The three buildings, all predominantly cubical/cuboidal in forms, are extensively shielded by sunscreens and are seamlessly integrated with nature. This broader perspective underlines the shared architectural heritage of the three different cities of Kumasi, Accra, and Ilé-Ife. It emphasizes that architecture communicates more than mere brick and mortar; it characterizes and captures the way of life of a people while accommodating their climatic conditions [FIGURE 15].



13 Senior Staff Clubhouse, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. © Jonathan Kplorla Agbeh, 2022.



14 Department of Nutrition and Food Science, University of Ghana, Legon, Ghana © Jonathan Kplorla Agbeh, 2022.



15 Faculty of Agriculture, Obafemi Awolowo University (OAU), Ife, Nigeria. © Jonathan Kplorla Agbeh, 2022.

## NON-INCLUSIVE ACCESS POINTS | Christine Matua

The documentation of modern structures highlights a disconcerting trend toward a lack of accessibility for individuals with disabilities. Some of the most exquisitely designed staircases can be found in modern buildings; many of these staircases take on a life of their own and articulate the grandeur of the places they connect. One could critique the modern architects working in Africa for being aware that the likelihood of lifts or escalators was unrealistic, and by only providing inaccessible stairs, etc., access for those with disabilities was pretty challenging.

Many contemporary structures share this characteristic. The question is whether everyone can enter, and the answer is no, not at all. What can be done, then, to ensure the accessibility of these buildings? How would one go about making these structures more accommodating? What can be done without destroying the building's historic significance? Do we replace the stairs with a ramp? Ramps are infamously heavy. They cannot be hidden like a delicate curtain rod, for instance. Do we affix the lift? What other options do we have?

The challenge is that numerous heritage buildings are under threat of demolition. While many of them sit on prime property, they can only accommodate a limited number of people, as they were designed for a time when populations were less dense. The lack of inclusivity in heritage structures benefits those who might seek to demolish them in favor of more contemporary construction. So, the issue of inclusivity must be resolved as quickly as feasible to justify the preservation of modern structures. Again, the question is how. Given that the world is trying to become more equitable, how can we adapt these structures to align with contemporary concerns? According to modern conviction, no individual should be excluded from experiences due to their physical environment.

### THE MAIN HALL WEST END, KYAMBOGO UNIVERSITY, KAMPALA, UGANDA

The main entryway of this structure is magnificent. Its entrance with two stepped stairways is like the legendary stairway to heaven in that it heightens one's anticipation for the play or show that will be presented in the hall. A

physically fit person can enjoy this experience as intended by the architects, but it will look different to someone who uses a wheelchair [FIGURE 16].

### COMPUTING SYSTEMS, UNIVERSITY OF GHANA, ACCRA, GHANA

This building [FIGURE 17] houses infrastructure and personnel that provides IT services and systems support to the university. The sturdy balustrade and cantilevered concrete staircase are intriguing modern features. These details and elements raise questions about the potential for more inclusive access points that could accentuate the building with the same grandeur.

### STUDENT ACCOMMODATION BLOCK, LEGON HALL ANNEX 'B', UNIVERSITY OF GHANA, LEGON, GHANA

The student housing complex was constructed in 1956 [FIGURE 18]. Its design is identical to around six other housing complexes nearby at the University of Ghana's Legon campus, reflecting a common theme prevalent in modern campus buildings.



16 Entrance at Main Hall West End Kyambogo University, Kampala, Uganda. © Christine Matua, 2022.



17 Staircase at the Computing Systems Building, University of Ghana, Legon, Ghana. © Christine Matua, 2022.



18 Accommodation block, University of Ghana, Legon, Ghana. © Christine Matua, 2022.

## IN BETWEEN BUILDINGS | Timothy Latim

Indigenous architecture in Uganda has long adapted to the climate and the needs of its people. The climate allows for year-round outdoor activities, and as a result, many dwellings—related functions could be placed outside the building. Everyday activities conducted outdoors were equally important as those indoors. The varying dry and rain seasons account for the most significant weather changes. The architecture responded through form, locally available materials, and the incorporation of intermediate spaces between the built fabric. Inextricably linking the architecture to the context.

With the advent of colonization came several new administrative requirements, building types, and functions, leading to the modernist architecture in Uganda. Modern architecture introduced new materials, technologies, building methodologies, and larger scale buildings. With the change in building size came a change in the landscape and an adaption of the relationship between the outdoor and indoor environment.

As indigenous architecture carefully merged the indoor and outdoor, some modern buildings were designed with careful consideration for this relationship. This photo documentation looks into the development of the space in between buildings in three different projects: The Barclays Library, the Faculty of Industrial Fine Arts, and the Faculty of Education in Kampala, the central region of Uganda.

The buildings reflect three different approaches to the creation of space in between buildings. These spaces are primarily occupied throughout the day. The concept behind this creation shows an attempt to restrict the building size to allow for passive climate control year-round. Although the topography was not always respected as in the case of the School of Fine Art and Industrial Design, the courtyard still plays an important role in the use of the building. The buildings

are also characterized by different levels and types of prefabrication, from screen walls to wall and roof structures, which are key features of the design.

### THE BARCLAYS LIBRARY, KYAMBOGO UNIVERSITY, KAMPALA, UGANDA

The Barclays Library is located on the western side of Kyambogo University. The buildings were completed in 1965. The complex comprises two buildings parallel to each other and an ablution building on the eastern edge. The courtyard is formed by all three buildings and a hollow block wall on the western edge [FIGURE 19 - FIGURE 21].



19 Courtyard view of the Barclays Library, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



20 The Barclays Library, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



21 Façade detail of the Barclays Library, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.

### SCHOOL OF FINE ART AND INDUSTRIAL DESIGN, KYAMBOGO UNIVERSITY, KAMPALA, UGANDA

The School of Industrial Fine Art is located on the west side of the university. It consists of two semi-circular buildings designed concentrically. It features a circular courtyard actively used by students [FIGURE 22 - FIGURE 24].



22 Total view of the School of Fine Art and Industrial Design, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



23 Main entrance of the School of Fine Art and Industrial Design, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



25 Main entrance of the Faculty of Education designed by Peatfield and Bodgener in 1988, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



24 Roof details of the School of Fine Art and Industrial Design, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



26 Aerial view of the Faculty of Education, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.



27 Courtyard of the Faculty of Education, Kyambogo University, Kampala, Uganda. © Timothy Latim, 2022.

## FACULTY OF EDUCATION, KYAMBOGO UNIVERSITY, KAMPALA, UGANDA

The Faculty of Education includes a small courtyard on the interior and a backyard. The faculty comprises of three buildings that form a U-shape. It was designed in 1988 by Peatfield and Bodgener [FIGURE 25 - FIGURE 27].

## SHIFTING BOUNDARIES | Justica Caesaria Tegyeke Kiconco

The Belgian school, École Belge, established in 1965, was one of the oldest elite schools in Kigali and an educational pillar of the country. Initially built by Belgian settlers, the history of the school is linked to the first expansions of Kigali, after it was declared the new capital in 1962. École Belge, which was transformed and repurposed by MASS Design Group into a start-up co-working space campus, is now known as The Norrskén Kigali House, part of the Swedish Norrskén Foundation. This transformation demonstrates the harmonious coexistence of conservation

and redevelopment through mixed-use development; at the same time, it illustrates how Kigali is part of a global network, reflected in the global nature of its architecture and design.

Norrskén, a Swedish nonprofit that provides collaborative coworking spaces for entrepreneurs, sought to establish its startup hub in a historic building. The choice to preserve and adapt the former École Belge was significant, as it can serve as a model for future projects, given the limited number of historical structures remaining in central Kigali. The adaptive reuse was made

possible by the school's initial design rooted in modern principles. Notably, the financing for this project came from the Swedish company, highlighting the global nature of the design. Well-designed buildings, like the École Belge, often possess an enduring relevance and usefulness beyond their original purpose, which is an attribute of tropical modern architecture. By adhering to timeless design principles that transcend specific trends, the campus' aesthetic appeal and significance endure even as architectural styles evolve.

The Norrskén Kigali House, opened in January 2022, represents and reveals spaces characterized by the shifting and





From left to right, up and down.

- 28 New design of buildings and landscape for Norrsken Kigali House, Kigali, Rwanda. © Justicia Caesaria Tegyeke Kiconco, 2023.
- 29 Corridors of Ecole Belge, Kigali, Rwanda. © Justicia Caesaria Tegyeke Kiconco, 2018.
- 30 Corridors of Norrsken Kigali House, Kigali, Rwanda. © Justicia Caesaria Tegyeke Kiconco, 2023.
- 31 Connected outdoor spaces at Norrsken Kigali House, Kigali, Rwanda. © Justicia Caesaria Tegyeke Kiconco, 2023.

blurring of boundaries, as imagined in the interplay of the landscape, buildings, and urban context. The masterplan involves repurposing existing classroom blocks and allowing for the creation of an inviting, transparent, and engaging new frontage. The campus comprises four buildings, including three renovated École Belge classroom blocks, and the newly constructed main Norrsken House. The old school's architecture was based on landscaped design to improve opportunities for natural ventilation [FIGURE 28, FIGURE 29]. The strategic positioning of plant species adjacent to classrooms reduced glare and overheating. Similarly, the new campus design by MASS prioritized the school's existing architecture and landscape whilst providing a new paradigm for

how restoration can be accomplished. The design demonstrates nature as an asset to embrace aspects of balance and harmony to the built-up space while considering the landscape, terrain, and surroundings [FIGURE 28]. In order to create an intimacy that complements the repurposed classroom blocks, the design has niches for seating areas and large openings on the façade to encourage collaboration and interaction within and outside of the site on an urban scale. These thresholds are a key design element of the campus, creating spaces within spaces. Features from the original school [FIGURE 29] have been modified to suit the urban connection by using new materials [FIGURE 30]. The use of new natural materials is successful because of the

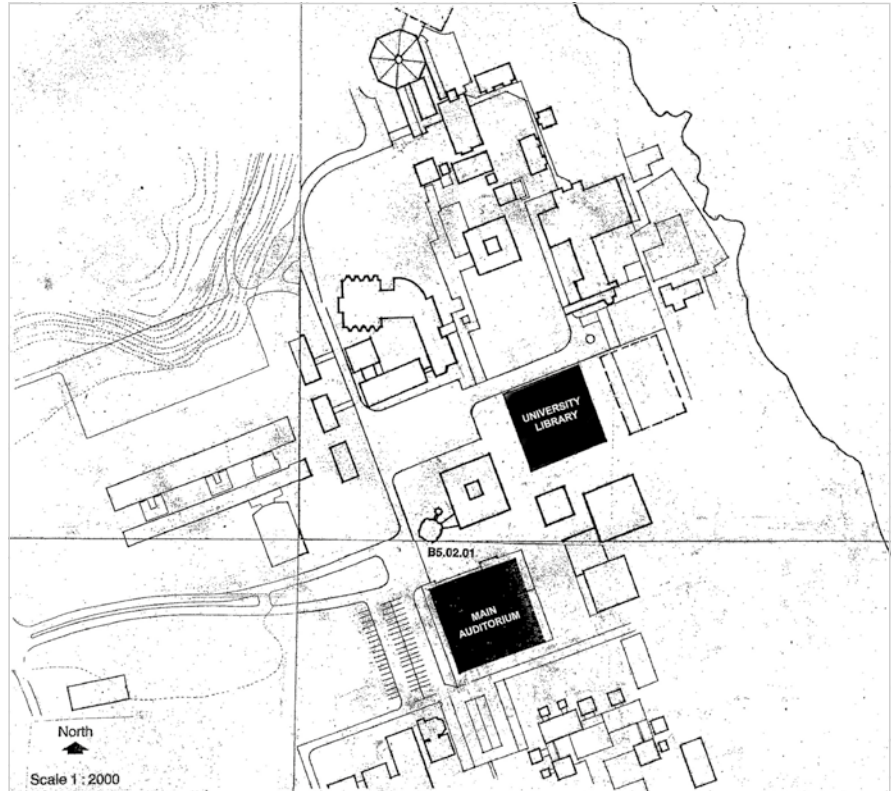
tactile nature and richness in texture and color, which complements the contemporary space with steel, solar panels, large glazed openings, and clay tiles on the corridor façades [FIGURE 31]. The façades provide a direct connection between the indoors and lush outdoors.

This conversion of a school into a start-up campus is a good example of how the spatial experience attached to knowledge acquisition and learning has changed over time. The Norrsken Kigali House echoes the historical features still seen on other old buildings from the early 1960s. The innovative use of construction materials like glazing and steel, coupled with the restored connection between indoors and outdoors [FIGURE 31], exemplifies an excellent approach to conserving heritage buildings while introducing contemporary skills.

## EXAMINING THE BRUTALIST TWINS | Bola Oguntade

African Modernism, as opined by Manuel Herz, is the 'architecture of independence'. In an elaborate work of research that spanned five African countries, Herz demonstrated that many young African nations expressed their national identity principally through modernist buildings and sites like parliament buildings, central banks, universities, etc. These buildings feature daring and heroic designs that mirror the ambitions and aspirations of the former colonies between the late 1950s and late 1970s. The political independence of African countries was championed by visionaries who used rhetoric as well as grand architectural pieces to announce and project the essence of the newfound freedom. It, therefore, became a new habit to name institutions and buildings after such individuals, for example, Kwame Nkrumah University of Science and Technology (KNUST) after the first Prime Minister of Ghana. Similarly, in Nigeria, Obafemi Awolowo University (OAU), formerly University of Ilé-Ife, was named after the first premier of the Western Region of Nigeria. But, the case of the Mary Stuart Hall at Makerere University in Kampala, Uganda, reveals alternative narratives about the history and nomination of university buildings (Adengo, 2018).

The University of Lagos (UNILAG) was founded in 1962 as a public university. Before the construction of the Senate House in 1985, the main auditorium, now renamed J.F. Ade Ajayi Auditorium, at the Central Court and administrative



32 Map of the Central Court of the University of Lagos (UNILAG) from 1970s. The Central Court serves both as a node and the administrative district of the institution. © UNILAG, Department of Works, n.d.

district was the primary landmark at the University of Lagos [FIGURE 32]. This structure, one of the venues for the 1977 Fringe FESTAC (Second Festival of Black Arts and Culture), shares a multi-level and vast concourse with the University's Main Library. Unlike the other structures on the Central Court, the main library and main auditorium share an uncanny resemblance. Both buildings have a simple block-like form yet are very functional, with massive use of precast concrete evidenced in the external finishes like the fair-faced concrete columns, fair-faced concrete fascia (a

massive overhang), and fair-faced concrete wall elements [FIGURE 34].

The significant difference in terms of building function is expressed with the inclusion of sun breakers at the Main Library, intended to reduce the intense tropical heat, while in the Main Auditorium, light access significantly controlled with a concrete façade embellished with gold and yellow mosaic tiles filling the openings between the cruciform columns [FIGURE 34].



33 Left: The University of Lagos Main Library. Right: The Main Auditorium (J.F. Ade Ajayi Auditorium). © Bola Oguntade, 2022.



34 Synthesized picture of the main library and main auditorium, showing the similarities in structure and external finishes of both buildings. © Bola Oguntade, 2022.



35 The main auditorium, University of Lagos, at night © Bola Oguntade, 2018.

## SHADING THE TROPICS | Emmanuella Ama Codjoe

Tropical architecture is a term given to modern architecture that emerged in the tropics during the 1950s (Le Roux, 2003a). It was spearheaded by a group of expatriate architects who drew inspiration from the Modern Movement. Through experimentation, these architects developed innovative approaches to climate-responsive architecture suitable for hot and humid conditions (Le Roux, 2003b). One of the invented solutions devised to block direct sunlight and keep the exterior walls of a building shaded, is the use of sun-shading devices or sun-breakers. Indigenous solutions to climate control encouraged colonial architects to create inventive environmental solutions. This

aided the development of the Modern 'Tropical' Architecture Movement and its embodiment of environmental design in a tropical setting.

There is an increasing awareness of the importance of enhancing comfort conditions in tropical buildings (Godwin, 2003). These buildings often require external shading by the use of large overhangs and other devices for protection against intense sunlight and driving rain. The provision of appropriate sun-shading devices is crucial in ensuring thermal comfort within these buildings. The orientation, design, and effectiveness of shading devices affect the level of solar penetration at different times of the day through the interplay

of sunlight and shadows (Fry & Drew, 1964). These shading devices serve not only as functional elements that improve comfort conditions in tropical buildings but also create aesthetically pleasing facades.

Both buildings depend on electric power to function effectively. Although the main library benefits from the generous supply of diffused light, it remains insufficient. The main auditorium relies on electricity for both ventilation and lighting, and the temperature is maintained via a central air conditioning system, while the special lighting system is in place that supports functions like lectures, musical performances, plays, convocation ceremonies, etc..

The grids of the cruciform columns elevate the large concrete roof overhangs above the buildings' volumes; expressing a strong sense of order, permanence and monumentality. The building forms reflect heavy use of reinforced concrete in its raw form. The surface of the concrete is generally unadorned for both buildings except in the Main Auditorium, where the use of gold and brown mosaic tiles with sodium vapour lights accentuate the cruciform columns and repetitive wall panels in a manner that produces a visual outcome that is striking and arresting (particularly when viewed at night [FIGURE 35]).

In this context, three buildings with distinct shading devices chosen from modern university campuses found in Ghana, Nigeria, and Uganda are presented.

### THE HUMAN RESOURCE DIRECTORATE, UNIVERSITY OF GHANA, LEGON, GHANA

The Human Resource Directorate building employs a brise-soleil on its eastern façade to prevent direct sun rays from hitting its exterior surface. This arrangement of sun-shading elements, formed by shorter horizontal panels

joining longer vertical fins, is known as an 'egg crate' (Ogunyemi et al., 2015). In effect, when light rays hit the egg crate, pockets of shadows are formed that augment the building's thermal comfort [FIGURE 36].

### THE FACULTY OF ENGINEERING, UNIVERSITY OF LAGOS, NIGERIA

The Faculty of Engineering is characterized by a brise-soleil, made up of slanted horizontal louvres and vertical fins, which is the most dominant feature of the building. These slanted horizontal louvres wrap around the upper half of the building with openings at specific intervals to allow free airflow. The pronounced depth of the louvres

minimizes the sun's angle of incidence on the building, reducing solar heat gain within the space [FIGURE 37].

### THE SCHOOL OF INDUSTRIAL ARTS, KYAMBOGO UNIVERSITY, KAMPALA, UGANDA

Unlike the above-mentioned buildings which have brise-soleils or sun-breakers attached to their facades, this building has generous roof overhangs which provide adequate shading and prevent internal heat gain from direct solar radiation. It has a circular shape with a width-to-length ratio of 1:1 approximately; this is considered the optimum shape and ratio for minimizing the total solar insolation [FIGURE 38].



36 Human Resource Directorate, University of Ghana, Legon, Ghana. © Emmanuella Ama Codjoe, 2022.



37 Faculty of Engineering, University of Lagos, Nigeria. © Jonathan Kplorla Agbeh, 2022.



38 School of Industrial Arts and Design, Kyambogo University, Kampala, Uganda. © Emmanuella Ama Codjoe, 2023.

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**Immaculata Abba** is a researcher, writer, and photographer exploring how we can improve our social and economic living standards in both public and domestic spheres. She has written for publications like *Le Temps* (Switzerland), *The Republic* (NG), and *African Arguments*. Her visual work has been published widely, and her long-term photography project 'Dusty Hill Drive' documents the built environment in southeast Nigeria. She has an academic background in history, literature, and cultural theory and degrees from Queen Mary University of London and the University of Oxford. She was a 2022 writer-in-residence at the Library of Africa and the African Diaspora.

**Tubi Otitooluwa** is an Associate Director at James Cubitt Architect, where he leads Digital Innovation in Design and Construction. He implements and manages BIM strategy across all projects, coordinates professional development training of technical team members, and is also responsible for the design of some of the firm's buildings. He holds a Diploma in Architectural Technology, a Bachelor's degree in Architecture, and a Master's degree in Environmental Design. He has a keen interest in understanding our evolving interaction with the built environment and the impact of technology on those human experiences. He is a volunteer with AOTF on the Osun Osogbo UNESCO site restoration and a restoration committee member at Legacy 1995.

**Jonathan Kplorla Agbeh** works as a research and teaching assistant with the School of Architecture and Design (SADe), Central University, Ghana. He is also a managing partner at Inspo7 Studios, an architecture firm in Accra. His budding career in architecture and research is committed to the history of architecture and the development of sustainable and energy-efficient architecture. Jonathan focuses on historical innovations in the architectural space, attempting to thread it through the present and into the future. His current research under SHA looks at the multiple eras of physical development of the Kwame Nkrumah University of Science and Technology, Kumasi.

**Christine Matua** is an assistant lecturer at the Faculty of the Built Environment, Uganda Martyrs University. She holds a Bachelor of Architecture (Hons.) from Makerere University and is currently pursuing a Master's degree in Architecture from the same. Currently serves on the board of the Uganda Society of Architects as Graduate Representative; a role that involves advocacy for emerging architects as well as organizing continuous professional development talks for the group. She is passionate about documenting architecture and is proud of having been head of the pioneer media team and editor of the journal *Architecture Uganda* for the society of architects.

**Timothy Latim** is an independent photographer and architect at Flexi Home, based in Kampala. His work explores the interplay of architecture, people, and the environment in which they sit. Looking at the contemporary Ugandan context, Timothy is also fascinated by the mountains and the outdoor life and has served on the committees of Mountain Slayers Uganda and Mountain Club of Uganda.

**Justicia Caesaria Tegyeke Kiconco** is an architectural researcher at MASS Design Group in Kigali, where she is involved in design, strategy, and research. She is keen on research in architecture and the bridge between architecture practice and academia on the topics of architectural history, health, and education. Particularly, her research role focuses on issues of design method, visual representation, textual analysis, and strategies for action. Prior to joining MASS, Justicia was a graduate architect at FBW Architects and Engineers in Uganda and a lecturer at History of Architecture at Uganda Martyrs University. She holds a Bachelor of Environmental Design and a Master of Architecture (Professional) from Uganda Martyrs University.

**Bola Oguntade** is an urban planner with over a decade of experience in photography, communication design, and print management. Documenting the physical changes in Lagos has opened his mind to the need to curate and understand the urban processes, devise ways to maintain the environment in a pristine condition through research, and explore how urban photography can be enhanced. He is the co-founder of Top Rank Images Limited, a media outfit that works with organizations to develop top-notch content and images for academic, industrial, and social consumption. He is also a winner of the German Academic Exchange Service (DAAD) Bilateral SDG Graduate Scholarship (2021-2023).

**Emmanuella Ama Codjoe** is a graduate of the School of Architecture and Design at Central University, Ghana, where she currently works as a research assistant. She has a keen interest in history, public space, and urban design. Her previous research explored the issue of social infrastructure in the context of the industrial city of Tema. Specifically, she investigated the current state of public spaces and their historical relevance in enhancing social interaction. Her current work with SHA builds on this previous research and explores the history, current position, and future possibilities for modernist standardized schools built in the 1960s.