FEATURING COMPLEX SHAPES AT UNIVERSITY OF RWANDA'S FACULTY OF ARCHITECTURE BUILDING

The new Faculty of Architecture building at the University of Rwanda's College of Science and Technology campus in Nyarugenge District is the result of a global site analysis. Its architecture is inspired by the territory and by colours and shapes found in nature. The four natural elements are represented in the conception of the building: Fire(orange colour), water (inner garden), air (circulation), and earth (lava rock and rammed earth).

Architects Patrick Schweitzer & Associate's created a design that focused on the client's need for simple technical solutions to build and to maintain. An example of this is the fact that there is no lift, but rather a large and comfortable ramp that allows people to proceed to the second floor.

Daylighting and orientation also played a role with a number of prerequisites being protection from excess solar exposure, adequate daylighting levels for all major spaces as a means of ensuring environmental sustainability, comfort of the spaces, and low energy operating costs. Furthermore, the project needed to ensure basic comfort










levels using 100% natural ventilation in all major spaces and was designed for the use of local materials so that students housed in the building could learn appropriate construction methods.

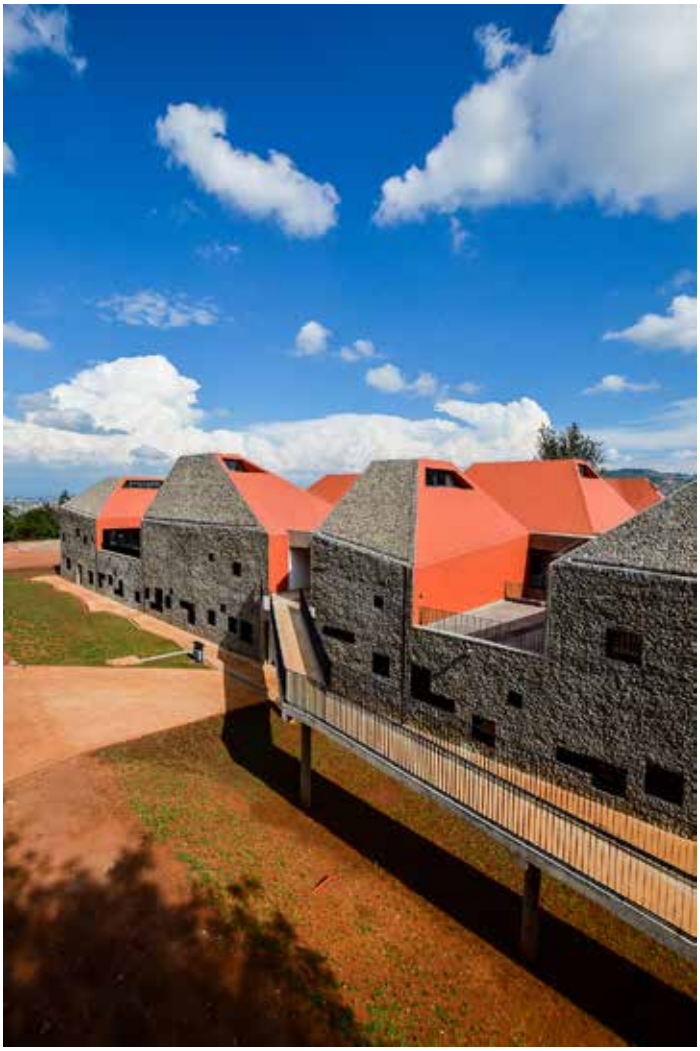
Construction on the 5 600m^2 building, which has the capacity to accommodate 600 students, began in early 2017 with completion taking place later that year. The ground floor includes logistic and school facilities: administration, laboratories, workshops, seminar rooms and auditorium. On the first floor, 13 prisms house architecture studios, classrooms and pin-up spaces. Each room has a distinct identity, reflected in its volume, colour and view.

Architect Patrick Schweitzer says: “We selected a strong design with complex shapes. The architecture of the project is based on the environment and has pedagogic aspirations. Halfway between traditional and contemporary architecture, the school is intended to promote self-study, interdisciplinary learning, and social interaction.”

He continues that the company created prisms inspired by the Rwanda landscape and topography. “We broke down their volume to create fault lines and canyons. A central fault line emerges: the outdoor living space. It opens the project to the KIST entrance, to the valley and to the city.”

Schweitzer says that they believe there are a significant features and elements which make the building noteworthy from a design perspective. Firstly, the carpentry and locksmith workshops were installed on the site. Ceilings and joineries are made of local wood, slabs were cast in situ and traditional removable formwork was also used, thus fostering local sectors. At peak, there were up to 400 people working on the building’s site.

An efficient natural ventilation system replaces the need for artificial heating and air-conditioning equipment, with the architecture itself used for regulating thermal atmospheres. Properly designed daylighting provides healthier and more pleasant conditions. The concrete walls are insulated, sealed and plastered from the outside with the aim of controlling the



solar heat gain. The building is also fitted with rainwater harvesting and storage units.

Landscape design is in conformance with the new KIST Master Plan. It considers the creation of exterior spaces and connection of various interior spaces to the landscape. The outdoor living space, which includes stands and benches, favours meetings, exchanges and performances. The two parts of the building are connected by several footbridges. On the one hand they allow a link between the different parts of the project and on the other hand they provide a dynamic visual identity.

Schweitzer points out that the project was not without challenges. "During the tendering stage, the master plan of the Kigali Institute of Science was under revision, so there was no defined location for the project. However, we proposed a specific building's siting, which facilitated both daylighting and connections with the city. We were also determined to build a project which is by itself a pedagogic tool. Indeed, the architecture shows the building process to the students. It is also fundamental for aspiring young architects to be encouraged to use local resources."

Photographs courtesy of Jules Toulet and Edwin Seda

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