Aga Khan Award for Architecture

2019

Winning Projects

Alioune Diop University Teaching and Research Unit
Bambey, Senegal

Architect: IDOM, Bilbao, Spain
Client: ACBEP, Ministry of Urbanism & Ministry of Higher Education, Dakar, Senegal

Project description

Alioune Diop University was founded in 2007 as part of the Senegalese government’s efforts to decentralise higher-education provision, seeking both to encourage youth to stay in rural areas and to provide educational programmes appropriate to these contexts. By 2012 it was functioning beyond capacity, so an extension project was launched, of which this building formed the major part.

The structure comprises a 500-seat lecture hall, five 50-student classrooms, eight 100-student classrooms, three laboratories, ten lecturers’ offices and two meeting rooms. It was the architects’ choice to combine all of these into a single mass with an identity and presence worthy of its university status – unlike the campus’s pre-existing small, scattered blocks. Although single storey, its slanting roof soars to almost 10m on the north side. Its south side is distinguished by a lattice screen running the full 203m of its length, made of perforated breezeblocks manufactured on site by local masons. At the east end, a sweeping entrance ramp and outdoor stair create a connection with the rest of the campus.

The lattice wall – echoing similar, smaller features on local buildings – is one of the strategies for passive cooling in a location where temperatures can exceed 40°C. A broad corridor separates this from the accommodation behind, which is arranged into five sub-units with staircases in the voids between them. Their standard post-and-beam concrete construction is organised on a 3.6m structural grid, facilitating on-site prefabrication. Each sub-unit has an insulated roof; while the heat-reflective metal outer roof runs the whole length of the building mass and extends out to form a giant loggia to the north, drawing hot air up and away. This loggia is supported by thin metal columns of a varying three-branched form, recalling the solitary trees in whose shade locals commonly gather. Other ecologically minded measures include a series of stone-lined basins filled with gravel and vegetation, where both rainwater from the roof and filtered wastewater are directed.

By employing locally familiar construction techniques and following sustainability principles, the project succeeded in keeping costs and maintenance demands to a minimum, while still making a bold architectural
Jury Citation

As buildings have a direct impact on climate change and the environment, the Alioune Diop University Lecture Building represents a commendable example of how fundamental principles of sustainability and energy efficiency are translated into a well-integrated and elegant design that also has a low impact on its surroundings.

These principles, which were utilized early in the concept’s development, were guided by information about specific climate data needed to optimize the skin of the building. They also included energy use, material depletion and water pollution. Layering, water management and the use of construction technology and materials were also incorporated in the design.

The organization of the building is structured around a generous shaded space on the north side of the building, allowing for social interaction and a well-organized linear circulation. Building elements have multiple functions. For example, the breezeblocks allow ventilation and reflect direct sunlight.

Comfort, energy use and the building’s overall environmental legacy are well represented in this project. The building demonstrated how good design that integrates environmental principles can result in quality spaces that allow a building to be bound by local environmental and site-specific conditions.

The construction technology also allowed for repetition and possible use in other buildings. The sustainability principles and processes utilized have the potential to serve as model for implementing environmentally conscious design.

Project data

Clients
Ministry of Urbanism, Senegal
Ministry of Higher Education, Senegal
Agence de Construction des Bâtiments et Édifices Publics (ACBEP), Dakar, Senegal
  Socé Diop Dione, director
  Moussa Sarr, project manager
Gorgui Gueye, secretary-general
Ministère de l’Enseignement Supérieur et de la Recherche (MESR), Dakar, Senegal
Mary Teuw Niane, former Minister of Higher Education
Maguette Kebe Doumbouya, project director
Université Alioune Diop de Bambey (UADB), Bambey, Senegal
Lamine Gueye, rector
Matar Mour Seck, Abdoullah Cissé, former rectors
Papa Ibrahima Faye, Senghane Mbodji, vice-rectors
Sidy Camara, environmental manager
Omar Diouf, domain manager
Abdoulaye Mbow, former domain manager
Banque Mondiale (BM) / World Bank (WB), Dakar, Senegal
Atou Seck, resident representative in Djibouti
Sémou Diouf, architect
Mbaye Faye Mbengue, environmental expert

Architects
IDOM, Bilbao, Spain:
    Federico Pardos Auber, partner, project director and director of IDOM Senegal
    Javier Pérez Uribarri, partner and project director
    Beatriz San Salvador, partner and project architect
    Blas Beristain, sustainability architect manager
    Ana Robles, main cost engineer
    Iñaki Zabala, draughtsman manager
    Joseba Andoni, cost engineer
    Arturo Cabo, services engineer
    Francisco-José Sanchez, services engineer manager
    Fernando Lopez, Miguel Angel Corcuera, structural engineers
    Mario Torices, acoustic engineer
    Ignacio Olague, geologist
    Juan-Carlos Gomez, planning engineer
    Roberto Fernandez, Alfonso Alvares, 3D designers
    Clarisse-Manuela Guiraud, administration management

IDOM SENEGAL SA, Dakar, Senegal
    Fally Diop, Papa Djibril Kane, engineers and project supervisors
Consultants
Cabinet d’Architecture Alioune Sow (CAAS), Dakar, Senegal
   Alioune Sow, architect
Optima Ingénierie, Dakar, Senegal
   Tandakha Ndiaye, services engineer

Building Inspector
Alpages, Dakar, Senegal
   Bruno d’Erneville, Charles Sambou Antoine, technical inspectors and managers
   Nourou Gueye, Sylla Mansour, technical inspectors and on-site supervisors
   Mounirou Fall, Baye Faye Sam, technical inspectors and engineers
   Jean François Faye, Boubacar Keita, geologists
   Ndéné Ndiaye, head of the supervision of technical construction
   Maley Han, Lamine Diouf, technicians

Contractor
Compagnie Sahélienne d’Entreprises (CSE), Dakar, Senegal
   Samba Diop, technical construction director
   Mamadou Gaye, construction manager
   Moustapha Keindé, Abdoulaye Kane, Abdou Ndiaye, builders
Abdoulaye Kane, construction site overall director
   Abdou Ndiaye, construction work lead

Project Data
Site area: 11,500 m²
Built area: 6,895 m²
Outdoor landscape (basins and rainwater canals): 4,316 m²
Cost: 6,700,000 USD
Commission: November 2012
Design: February 2013 – September 2013
Construction: May 2015 – December 2017
Occupancy: December 2017

IDOM
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A multi-disciplinary team allows IDOM to cover all the specialisms that the practice of architecture entails today. They are able to take on all work – whether big or small, and no matter how complex the situation – in a truly holistic manner, providing solutions suited to the reality of the context they are building in. The team spirit is enriching and sets new challenges every day, while at the same time inviting each member to find their own place and to develop a true personal trajectory.

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