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 design

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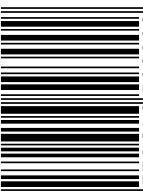
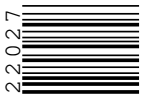
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d-school
Afrika

UCT's new school of design
thinking by KHM Architects



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R39,90 (incl.VAT)

Design thinking

The new Hasso Plattner d-school Afrika building at the University of Cape Town, designed by KMH Architects, will provide an environment in which collaboration and new ideas can flourish.

PHOTOGRAPHY: PARIS BRUMMER AND TERRY FEBRUARY



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The Hasso Plattner d-school Afrika at the University of Cape Town is the third Design Thinking institute in the world. Originally founded by the German SAP philanthropist Hasso Plattner, with its first iteration at Stanford University in the US, the d-school offers programmes in design thinking – the mindset and practice of design-led innovation and

creative problem solving – to undergraduates and post-graduate students at the university, as well as to external organisations.

Until taking occupation of their new premises, the d-school Afrika, which was established in 2015, was temporarily located at the University of Cape Town Graduate School of Business V&A Waterfront campus. The Plattner Foundation recognised the need for

the school to expand, and committed to fund a new, dedicated d-school facility, which would be located on the Middle Campus precinct of UCT.

The aspirations for the new building were progressive and visionary. KMH Architects – who were awarded the commission through an invited competition in 2018 – proposed a collaborative design process, which involved developing the

brief and building design with d-school and UCT stakeholders through a co-creation process that paired design thinking and architectural design.

Key concepts included:

- The building should integrate with the contextual fabric of the university but also externally reflect its unique function and distinctive teaching platform

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- The building should communicate a feeling that it is an environment to test, fail, think and act differently
- Students should see collaboration and co-making happening in flexible and configurable teaching and learning spaces
- The building should support communal working, cocreation, the use of vertical surfaces, outside teaching activities and gatherings.

Importantly, democratic common space was also required to open the d-school to the broader university and welcome the student community in. This objective manifested in the concept of a centralised roofed 'town square', where the roof structure both encloses an atrium and reaches out, providing shelter over an external courtyard located midway along the existing footpath across the site.

Significant spatial flexibility was required for the teaching and learning

studios to allow the school to easily repurpose these spaces in the future as the d-school and its programmes evolve. To achieve this, careful consideration was given to the location of permanent structural elements.

The small site on which the d-school is built is triangular, with a curved hypotenuse shaped by an existing road lined with an avenue of beautiful cork oaks. The building's service spine tracks this radius, forming the southern side

of the triangular building. The large-span orthogonal studios are provided to the north and west, forming the other two sides of the triangle. This planning approach pushes all the geometrical complexity of the site into the centre of the triangle encompassing the atrium and courtyard.

This configuration was resolved architecturally and structurally through a singular free-form lattice shell glass and steel roof. The form of the lattice shell was derived by abstracting the

geometry and topography of the site and encompassing the existing footpath, which follows the avenue of cork oaks. Along the southern boundary, where the d-school address the UCT campus, this translates into a seamless experience of landscape and building.

When viewed from Rhodes Drive, the d-school presents as a modest two-storey structure above ground. However, the building section was developed to make maximum use of the 8.5-meter fall across the site

to provide four storeys, all entered off grade from the southern circulation spine.

From the outset, the building targeted a GBCSA 6-Star Green Star Public & Education Building certification. In addition to comprehensive strategies to maximise energy and water efficiency, and optimise ventilation and indoor air quality, the building includes innovative design features like the use of Thermo-Active Building Systems (TABS).

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This solution employs heated or cooled water that is run through pipes cast into the concrete slabs, harnessing the power of the building's thermal mass and radiant temperatures to achieve user thermal comfort.

The atrium uses fritted glass in the lattice shell roof to reduce the solar heat and glare while still allowing comfortable daylight levels. The façades utilise solar performance glass in conjunction with carefully positioned passive shading elements externally. The d-school is one of the first buildings on the UCT campus to implement a PV system on its roof. While this does not make the building self-sufficient, it greatly reduces its reliance on grid power.

The building itself is envisioned to be a learning experience for users by showcasing its sustainability features and telling its environmental story through informational signage and digital displays of its energy and water usage. The principle of being a 'Teaching Building' ensures that the d-school

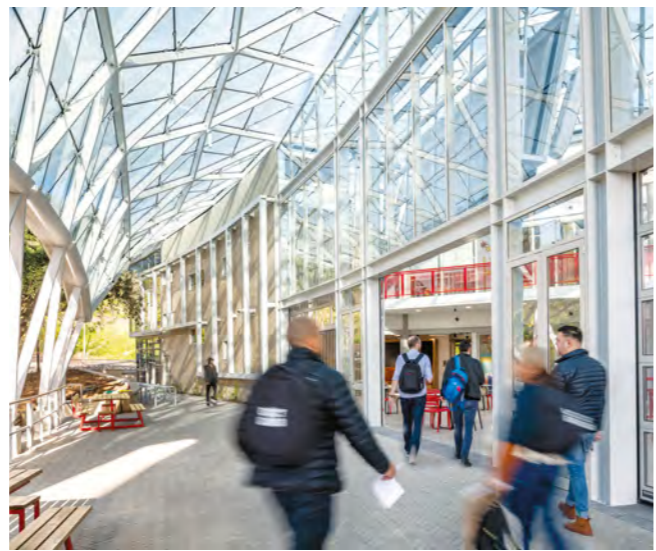
can be a vehicle to visualise sustainability, involve users in the performance of the building, draft new behavioural norms, and underline the profound story buildings tell about using the earth's resources and the ecosystems that sustain us.

The detailing of the interior architecture consistently and deliberately exposes and celebrates building services, junctions and connections and materials, what things are made of, how they are made and connected to each other.

The resultant aesthetic communicates a feeling that one has entered a different type of learning space with a palpable sense of the possible.

Professional Team

Client: University of Cape Town
 Architect: KMH Architects
 Project Managers: Fluid Projects
 Quantity Surveyor: RLB Pentad Structural & Civil Engineer: Welby-Solomon
 Electrical Engineer: Ifindo
 Mechanical Engineers: WSP Group
 Landscape Architects: TKLA Sustainability Consultant: PJ Carew
 Acoustic Consultant: SRL SA
 Fire Engineer: De Villiers & Moore
 Free Form Roof Engineers and Installer: Leaf Structures



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