

New operations centre for Ethekewini Electricity

Durban, KwaZulu-Natal

Architects: City Architecture Department, Ethekewini Municipality in association with Lees & Short Associated Architects
 Project Team: Andile Ncapai, Louis du Plessis
 Civil Engineers: City Architecture Department
 Structural Engineers: City Architecture Department
 Mechanical Engineers: Mahesh Khoosal & Associates
 Electrical Engineers: City Architecture Department, SNA Consulting Electrical Engineers
 Sustainability: ARUP
 Landscaping: City Architecture Department
 Quantity Surveyor: City Architecture Department, Dick Hathorn Associates
 Main Contractor: C&R KwaZulu Contractors
 Landscape Contractor: Leitch Landscapes
 Electrical & Electronic Contractor: Bobcon
 Photographer: Angela Shaw
 Text: Andile Ncapai

eThekewini Municipality's growth from a population of 2,5 million in 2000 to 3,5 million in 2014 has placed strain on the municipality's service delivery to citizens, especially in the urban periphery, a region historically lacking amenities. The ability to roll out equitable services is critical to the city's goal of developing the 'most caring and liveable city in Africa' by 2030. eThekewini Electricity's brief was to create a new operational facility central to the metro area to improve proactive and reactive services.

The client supported an early decision to adopt a sustainable design approach for the new centre. Planning was dictated by the footprint of an existing building on the site, an obsolete substation, so as to retain and salvage as much of its materials as possible. In the extrusion of the planning, the conceptual process was 'form follows function', and the internal spaces were externally depicted by materiality. The forms are also sensitive to the residential context while communicating a civic scale.

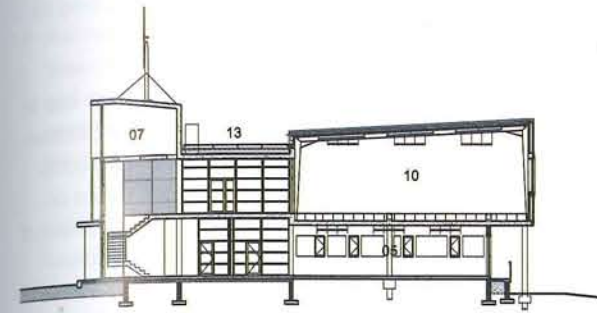
Four aspects were tested in the selection and application of building materials: durability, recyclability, manageability and disassembly, with focus on the embodied potential of each material. A palette of masonry, concrete, steel and glass was selected as these materials performed well when tested. Lastly, landscaping features prominently, embracing

the building to temper the crispness of other materials.

Site ecology is not limited to the ground surface. Vertically planted surfaces and roof gardens allow all planes of the building and its energy to connect to and resonate with the surrounding natural ecology. Planted building surfaces reduce internal heat loads and lessen consumption to cool the spaces, which is very important in Durban's subtropical climate. Peak energy demand is reduced through solar panels and a wind turbine, making the most of the natural energy opportunities of the location.

The site provided the opportunity to connect the facility with the rest of the city via non-motorised and public transport modes. Bicycle racks and shelters reduce private car parking and shower and change-room facilities ensure that non-motorised transport is supported.

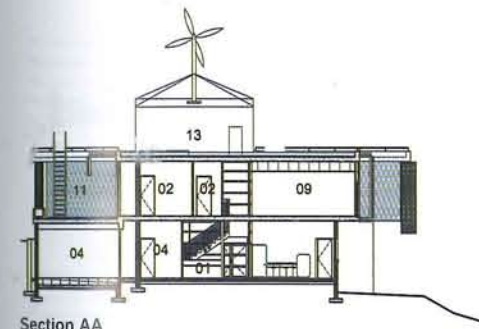
The primary success of the facility lies in its function of meeting the brief to provide centralised operations for a power supplier with a growing customer base. Secondary successes involve prompting more sustainable building practices, not just by the City Architecture Department of eThekewini Municipality but also by citizens who will be getting a first-hand look at a more caring and liveable built environment.



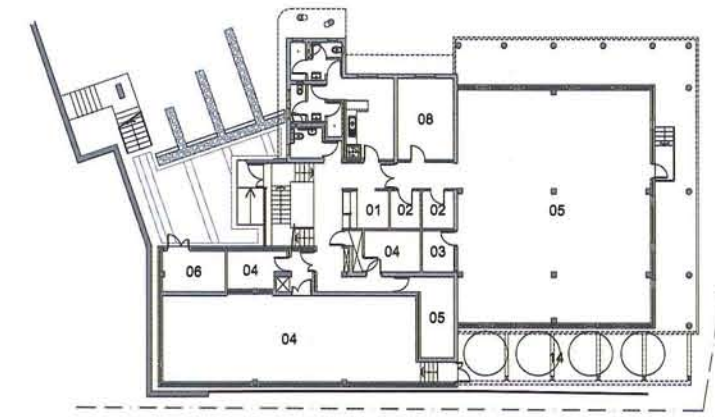
Section BB

Legend

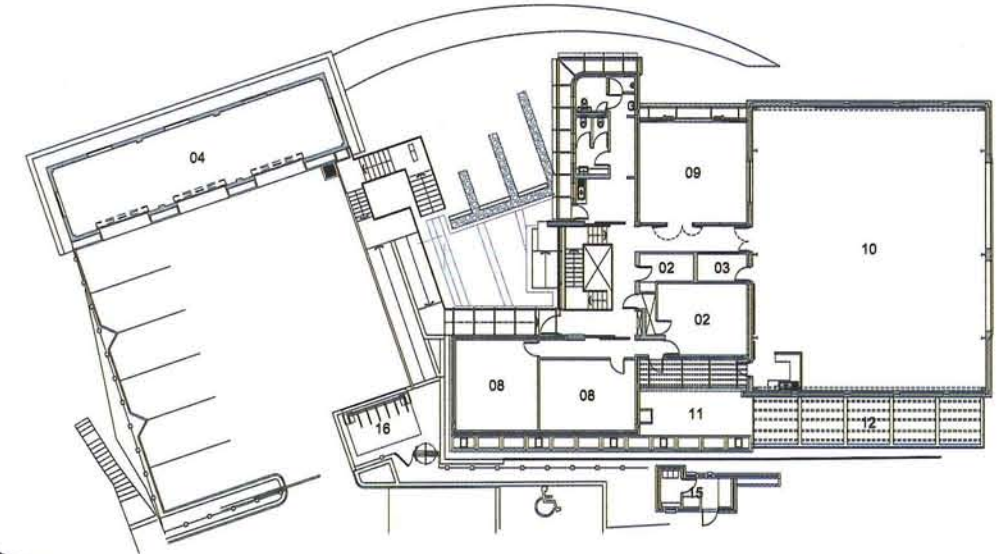
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|-----------------------|---------------------|
| 01 Reception | 09 Boardroom |
| 02 Store | 10 Control workroom |
| 03 Printing room | 11 Exterior terrace |
| 04 Service room | 12 Service deck |
| 05 Open-plan office | 13 Planted roof |
| 06 Waste-sorting room | 14 Rainwater tanks |
| 07 Plant room | 15 Guardhouse |
| 08 Office | 16 Bicycle shelter |



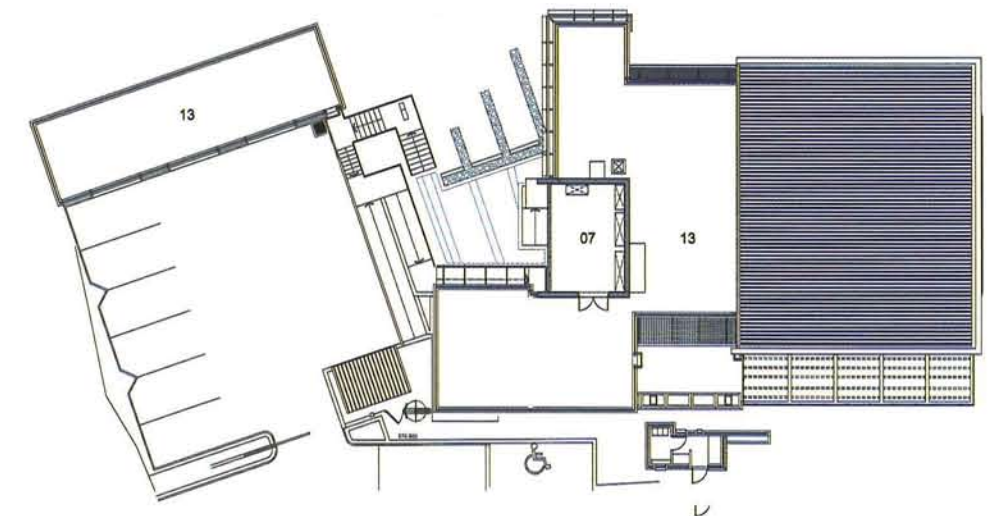
Section AA



Ground floor plan



First floor plan



Roof plan

