

THE BUILT & NATURAL ENVIRONMENTS

HELDERBERG NATURE RESERVE ENVIRONMENTAL CENTRE

URBAN PLANNING & DESIGN BRANCHES INVOLVED

Architecture, Urban Design Branch, Urban Sustainability Unit, Urban Development Implementation

LEAD CONSULTANTS

EBESA Architects

LEAD CONTRACTORS

The Construction Co.

PROJECT YEAR

Constructed in 2019

The construction industry and its supply chain is the largest contributor to global warming. This is a major concern for the work done by the UPD department. Together with Environmental Management (EM), our sister department in the Spatial Planning and Environment Directorate we are practicing more environmentally sustainable approach with the work done in and around our nature reserves. The idea is to lead by example and demonstrate environmentally responsible material selection and sustainable design thinking.

Together EM and the appointed consultants we identified key themes for the reserves and sustainable lessons we wanted to include in the design of the facilities as places for environmental education and recreation. This gives each reserve an element of uniqueness just like their different biomes. The result is natural environment is taught in the buildings and the same time the buildings are educational demonstration tools for the built environment. A key theme for the Helderberg Nature Reserve's

Environmental Centre (below) was materiality. Many of the conventional materials and methods used in the construction industry use lots energy, water to make them and produce lots of waste and pollution. So to demonstrate environmentally responsible material selection and product specification we looked at how we could reuse waste in the foundations and wall construction in stead of using new materials.

The inner curved wall & foundations are constructed from rammed earth & repurposed building rubble. The outer curved retaining wall is constructed from repurposed used tyres. The internal walls are constructed from Ecobricks – plastic bottles filled with plastic. Ecobricks are a solution to reusing single use plastics until we are able to move away from them completely.

The three wall types showcase the principle of carbon burying. The materials that would otherwise become a burden in a landfill is reused & repurposed and given a new life in the building.

SUSTAINABLE BUILT ENVIRONMENT



VIEWS OF THE EDUCATION CENTRE - The sliding doors of the hall open up towards the lawn and concert stage with hooks above for a clip-on canopy



A NEW POND - excess water from the black water treatment system & rainwater harvesting allowed the team to create a wetland pond next to the facility. This allows for more accessible of environmental education about those biomes



AERIAL IMAGE OF THE ENVIRONMENTAL CENTRE - It sits between the existing visitors centre, stage and ablutions on a previously disturbed piece of land. The green roof of the centre is accessible to the public. The water treatment system and storage tanks are on the right.



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