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Fingerprints of nature: an Ecological Discovery Centre magnifying and mediating human-nature interactions along the border of the Kruger National Park

King, Bronwyn

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Bronwyn King 360930

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ABSTRACT:

"Architecture embodies humanity's relationship with the earth"
(Hoosey, L. 2012. Pg. 118)

There are many threats facing South Africa's wildlife including the spread of diseases, increased poaching and habitat loss. As a result the Kruger National Park is one of South Africa's most prized treasures and has become a wildlife recreation, resource and research hub attracting tourists and researchers from around the globe. However, despite the number of visitors to the area, there is an increasing number of local communities specifically on the Southern border of the park, experiencing high levels of unemployment and poverty. As a result, community members are often involved in the harvesting and trade of natural resources through activities such as subsistence poaching and farming. These practices are gradually destroying the natural landscape on the periphery thus posing a significant threat to the park's biodiversity.

In a contest between resource consumption and resource conservation architecture has the opportunity to mediate between the user groups of the region, sparking conversation about conservation. This thesis seeks to provide a building complex which will become the interface between land users and land uses and in so doing become a catalyst in the rehabilitation of the natural landscape. It will provide a platform for an exchange of conservation-based resources, information and skills intended to enhance the experience and understanding of nature.

The complex includes a seed bank facility to store and grow a variety of indigenous botanical species to rehabilitate the landscape and support the harvesting of sustainable natural resources. The seed bank is directly linked to the research facility which is dedicated to the investigation and understanding of human-nature interactions along the park's border. These conservation processes and findings are captured and revealed in the narrative of the ecological museum which forms a large component of the education spaces provided within the project.

The three primary programs are consolidated within the design to create a constructed journey through the site. This enables the architecture to become the tour guide that enhances the visitor's experience through man-made and ecological encounters along the way. In so doing a layering of public/private spaces is established using thresholds to create transition zones which blur the boundaries between inside and outside whilst maintaining a hierarchy of space.

As with the building's program the design is sensitive to its context. The project explores the typologies of the local community, farm structures and botanical nurseries to create an appropriate hybrid between the manufactured and hand crafted. This aesthetic is achieved through the use of locally sourced materials and labour in an attempt to reintroduce the disappearing vernacular building techniques to the region. This exploration is realised in the structural concept of articulating and combining elements of mass, skeleton and skin. In so doing, the architecture becomes a living organism which is climate responsive and houses both people and nature within its form. The structure is designed using the 'eave' to create an edge condition that modifies the micro climate of the interior and exterior spaces. It is through these edge conditions that the aesthetic of the building is transformed as species inhabit the structure to establish new ecosystems.

This thesis does not attempt to provide a solution to the many threats facing this conservancy, but rather to focus on an area dealing with such challenges and allow architecture to house the means to empower, educate and expose users to the fragility of the natural landscape of the region. It is essential that wildlife conservation is extensively studied and implemented in order for nature to sustainably benefit the communities living off it; tourists travelling to it and conservationists working for it.