noero architects
email: info@noeroarchitects.com tel: 021-424 5508
unit 9b, 6 pepper street, cape town, 8001

WEST COAST FOSSIL PARK INTERPRETIVE CENTRE

1. ACCOMMODATION SCHEDULE

The accommodation has been grouped into four separate buildings comprising VISITORS CENTRE AND ADMINSISTRATION, RESTAURANT, INTERPRETIVE CENTRE and MULTI PURPOSE/EDUCATION CENTRE.

2. BUILDING MASS STRATEGY

The buildings are linked together by a pedestrian street which is 5 meters in width and is covered with a planted timber pergola for most of its length. In this way the building mass creates an intimate village scale which is appropriate for the site.

3. SITE STRATEGY

The pedestrian street is located on the 38 meter contour on the west facing slope of the site. This contour sits midway between the top contour of 46 meters and the bottom contour of 31m. The buildings are strung along this contour as long, thin buildings with their longest elevations always orientated towards the fossil dig site. This reinforces the importance of the dig site and offers considerable views from all the buildings towards the dig site. This strategy learns from that which was used by the architect Solomons when he designed the site for the University of Cape Town at the turn of the Twentieth Century. It is hoped that the effect will be similar albeit the buildings are much smaller and more modest in the case of the Fossil Park.

The 38 meter contour is at the level of the street and is the level at which entry is made to all four buildings. It is also the mid-point between the top of the mound and its base. At this level the buildings do not break the continuity of the top line of the mound. This strategy works in line with that of Frank Lloyd Wright who declared that when one builds on the slopes of a mountain the architecture should never breach the continuity of the brow of the mountain. In this way architecture gives over prominence to the importance of nature over the man-made.

The geotechnical investigation done proposes that the buildings be founded using either Pile foundations or a dynamic impact compaction system. At this stage, the preferred founding solution is pile foundation which proves to cause the least amount of soil disturbance. However, further investigation will be carried out at the detail design stage.

4. MOVEMENT STRATEGY AND RELATIONSHIP TO LANDSCAPE

The sequence of movement has taken into account the importance of having access to different viewpoints that connect the visitors to the landscape and the dig site, and occurs in the following way: From the car park one moves along a man-made cut in the mound

and emerges into a circular orientation space which provides one with the first glimpse of the fossil dig site. To the north of this entry point is the multi-purpose centre and to the south along the pedestrian street lies the visitors' centre and administration. One moves through the visitors' centre, pays for one's ticket, secures whatever provisions are needed and visits the ablutions, if required. From here one can either enter the site through an open plaza, with views towards the mining basin, and proceed to the dig site or continue southwards past the restaurant towards the interpretive centre. To get to the entrance, one moves through a tropical garden designed to mimic the landscape of 5 million years ago.

On entry into the interpretive centre one circulates horizontally through a set of spaces which tell the story of the site. A large glass on the west side showcases the landscape as an interpretive tool and a timeline located on the opposite wall to the large glass window helps to tell the history of the site. After this experience one descends to the lower level which contains the main exhibition spaces via a set of stairs and a small lift. Once the visit to the interpretive centre is completed one exits at the lower level onto a circular platform which orientates one towards the dig site, which is the next part of the visit.

5. MATERIALS

The materials are drawn from the site. Different kinds of plaster will be employed externally to represent the horizontal layering of the buildings as elements of the landscape. This is important given the nature of the site as a site of disruption scarred by the diggings of the mining operations.

The base of the building below the street will be made of a very roughly textured plaster which will be colored darker than the existing calcrete sand on the site. The exposed wall surfaces above this datum level will be finished in an unpainted plaster which is wood floated and colored to match the calcrete sand on the site.
All exposed roofing materials will be white colomet "s" ribbed sheeting chosen for its reflective qualities.
All doors, windows, general openings etc. will be timber.
This street will also concentrate all the services into one main distribution trench for easy accessibility and flexibility.

6. SERVICES

The buildings will be serviced along the pedestrian street via golf carts or similar. This will include deliveries of all supplies as well as refuse removal. The street will also concentrate all the services into one main distribution trench for easy accessibility.

7. FIRE AND EMERGNENCY SERVICES

This will occur along the street in a similar manner to the way in which these services generally operate along and through city streets.

8. BUILDING PERFORMANCE

NATURAL LIGHT AND VENTILATION

The buildings are articulated along the contour line of the site running on a north-south axis as a result of its site strategy. The choice to break down the program into smaller buildings, rather than a big mass promotes the use passive systems such as natural light and cross ventilation. The main facades, facing east and west, will allow the buildings to receive early morning and late afternoon sun which will naturally heat up the buildings in winter. The fact that the buildings are long and narrow allows for natural light and ventilation to travel deep into the buildings, reducing the need to use artificial light and ventilation.

In the interpretive centre, a large rectangular translucent roof is designed to perform two main tasks:

1. To allow natural light into the exhibition spaces, reducing the need to use a great amount of artificial lighting;

2. To naturally ventilate the building using the 'Venturi Effect'. A series of air extractors placed in the roof will help to reduce the power required for air circulation and to provide a more comfortable indoor environment during the day. At night the same system will help to cool down the building whilst the heat stored during the day is irradiated to the interior of the building.

SHADE

A carefully placed breeze block screen will avoid excessive direct heat gain from the west facade during summer and still provide the visitors with views over the dig site. This screen is detached from the west facade allowing any heat transfer to be dissipated through natural ventilation.

In the Visitors Centre and Administration, a courtyard planted with deciduous tress is introduced which separates the visitors activities from the administrative activities. The courtyard, which faces east, will shade the Administrative building in summer and will allow early sun through in winter.

STORM WATER COLLECTION AND STORAGE

The roof of the buildings will collect storm water and store it in underground water tanks located below the Interpretive centre. This water will be use for irrigation of the tropical plants exhibition located at the same building.

SEWAGE

The buildings will use an oxidation pond located on the east side of the mount away from the fossil rich areas of the site. The oxidation pond will recycle all of the wastewater produced in the buildings to be used for irrigation around the precinct.

SOLAR POWER
The buildings will incorporate solar powered geysers for the ablutions, showers and the restaurant. Daylight sensors and compact fluorescent lamps together with the previously stated strategy for natural light will ensure that the building achieves lower energy consumption. Alternative sources of energy to power the buildings will continue to be studied and incorporated, if feasible, under the detail design stage.

DIG SITE

1. BUILDING MASS STRATEGY
The position of the existing covers of the Dig will be maintained except that the enclosure will be made approximately 50% larger as per request from the client to allow future digging to occur under the new cover. Also the vaulted form of the existing structures will be maintained.

2. SITE STRATEGY
The supports for the new roof covers to the dig site will sit on top of the existing ground level and will not penetrate that surface. It is proposed that a gabion system be used which will be filled with stone and recycled crushed concrete collected from the site. The gabions will form the anchor onto which the new lightweight roof structure will be placed.

3. MOVEMENT STRATEGY
The public will move through the two covered spaces on suspended timber decks and will connect via a suspended timber walkway back to the entrance.

4. MATERIALS
The supports for the roof covers will comprise stone filled gabions. The roof will be arched and will be made from lightweight galvanized steel sections. The roof covering will be a translucent polycarbonate sheeting system specially designed for the project.

4. BUILDING PERFORMANCE.
The dig site cover will be translucent to allow uniform natural light – it will create a dust free environment and will need to be mechanically ventilated with systems to de-humidify the environment and to reduce heat build up.