

08

DESIGN DEVELOPMENT



Introduction

This chapter deals with the design conclusion for the proposed building. Aspects concerning contextual, formal, technological and functional responses will be discussed to explain design outcomes. Design process drawings and models are not illustrated in this chapter, but are included as addenda.



Conceptual development

Development of the concept of bridging a urban divide is illustrated in figures 8.01 to 8.05.

In figure 8.01 the natural gradient of the site is shown in a sectional diagram. This shows Lynnwood Road carving through the landscape and creating a boundary which separates Main campus from South campus.

Figure 8.02 shows the construction of embankments on either side of Lynnwood Road. These create platforms which facilitate movement across the road without disrupting normal vehicular traffic. These embankments will make up the stereotomic component of the proposed building and house all facilities which require little or no natural light.

Figure 8.03 illustrates the bridging element which is supported by the stereotomic 'embankments'. The bridge forms the first tectonic

component of the proposed building.

Since this is an element with its own functional and structural integrity, it is separated from the other elements rather than 'growing' out of them. Figure 8.04 illustrates elements which 'hold' the bridge on either side and facilitate movement from it and onto it. For the bridge to keep its integrity both these elements are conceptually separated from the bridge. The stramp on the southern side acts as a stereotomic 'anchor' which holds the bridge to the ground whilst tectonic building elements on the northern side straddle the bridge.

Figure 8.05 illustrates columns / pilotis holding building elements off the ground thus separating stereotomic and tectonic allowing each of the parts to stand as an element on its own and with its own integrity.



fig. 8.01_Cross section through site and Lynnwood Road



fig. 8.02_Cross section through site showing proposed embankments



fig. 8.03_Sectional diagram showing proposed bridge on embankments



fig. 8.04_Proposed building elements supporting bridge



fig. 8.05_Columns separating tectonic and stereotomic elements



Contextual responses

Contextual responses are discussed in terms of formal and spatial responses. The location of the proposed buildings puts it in close proximity to buildings of architectural merit and although formal responses cannot be translated literally, some elements are used to give reference to existing buildings.

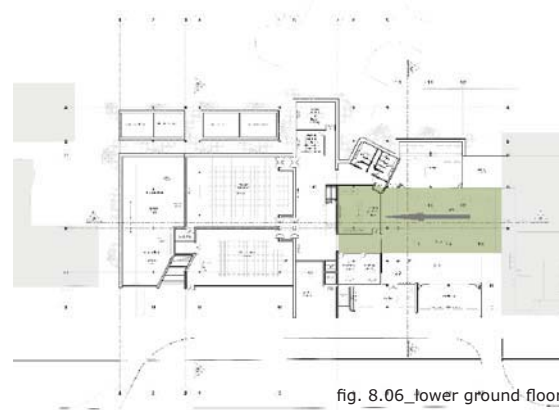


fig. 8.06_lower ground floor

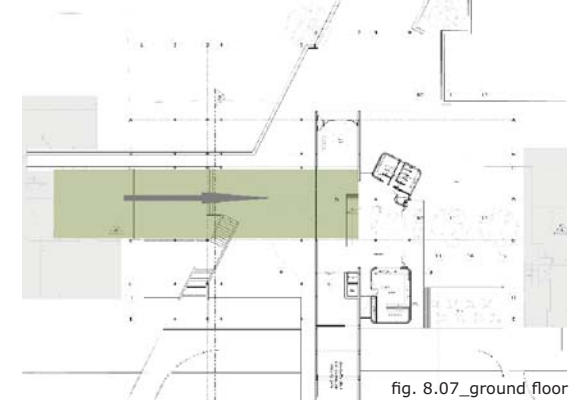


fig. 8.07_ground floor

The greatest responses made however, are responses to spatial characteristics of neighbouring buildings. Figure 8.06 - 8.08 shows **spatial responses** in the proposed building.

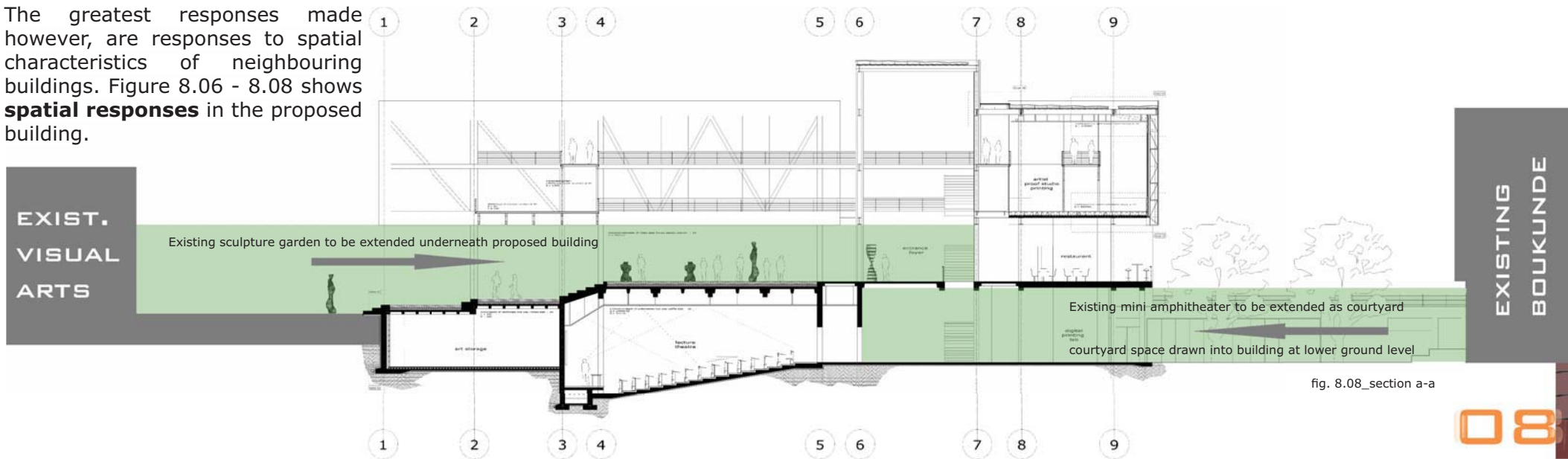


fig. 8.08_section a-a

08

Formal responses

As previously discussed formal responses have been limited in order to allow the building to be contemporary and represent the year 2008 rather than trying to copy existing buildings and follow a stylistic approach in decorating the proposed building.

Some elements have however been translated to show responses to existing structures. This is discussed through the series of pictures and drawings to follow.



fig. 8.09_existing boukunde building



fig. 8.10_view of ablution with horizontal punctures in external envelope for solar penetration and ventilation

Responses to proposed building elements

The proposed building has a very strong linear orientation. This leads to the arrangement of elements around these linear elements to strengthen the overall form of the building. The accommodated bridge serves as a guiding element in the placement of other amenities.

Separating other building elements from the proposed bridge structure serves to give prominence to its strong linear form.

The linearity of the bridge is echoed in upper levels with the separation of elements happening between the main structure and adjoining amenities.

Filleted corners in the ablution facilities and restaurant kitchen is a direct formal response to the neighbouring Boukunde and Visual Arts buildings. This also makes these facilities read as separate entities to the bridge.

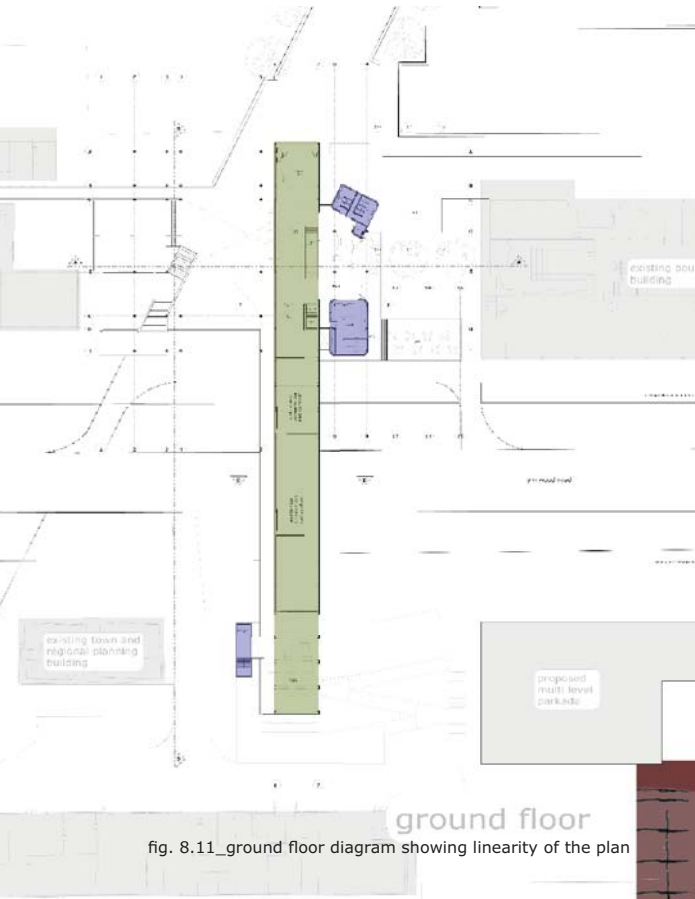


fig. 8.11_ground floor diagram showing linearity of the plan

08

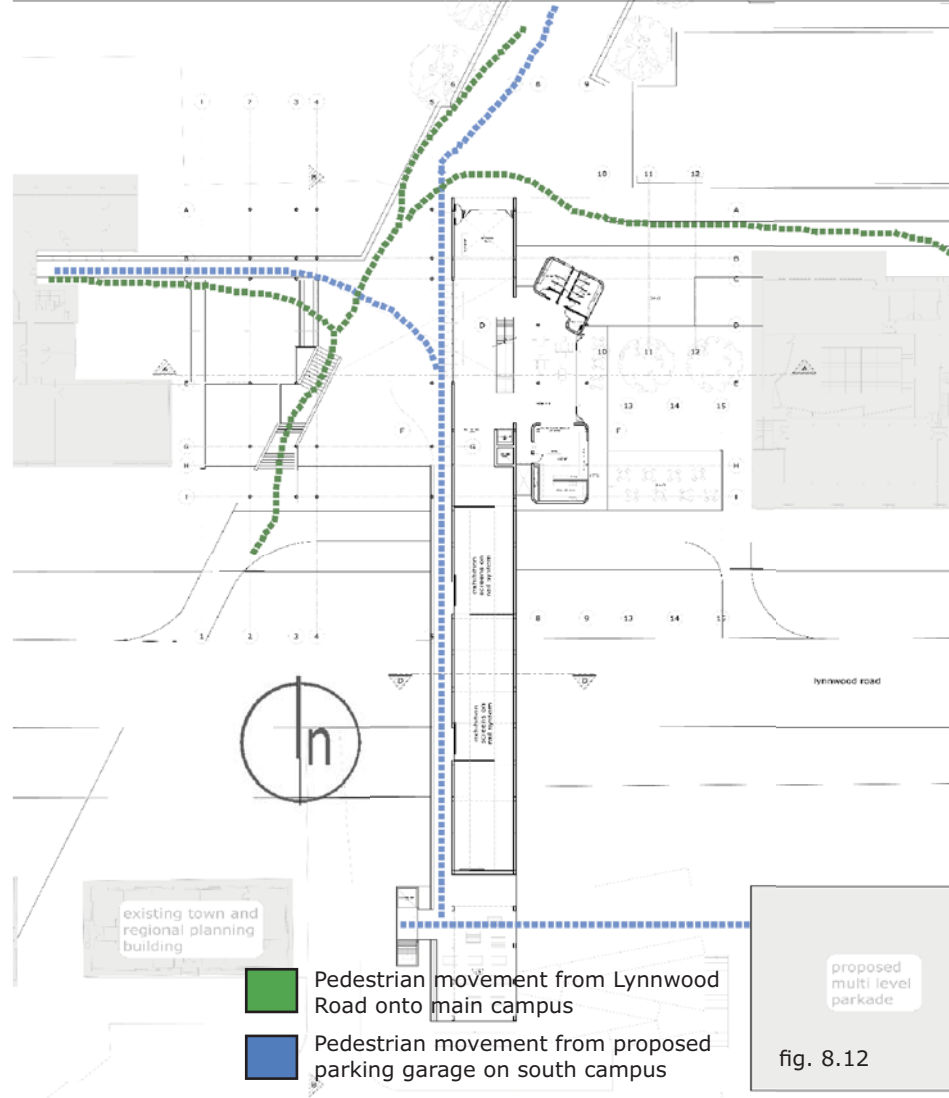
Circulation

Circulation is one of the most important guiding elements in the design conclusion of the proposed building. Before considering any of the programmatic issues the circulation of pedestrians, vehicles and services had to be sorted out. Since Tukkielaan acts as one of the main pedestrian entrances to the university, pedestrian movement was the first priority.

Pedestrian movement

Pedestrian movement is divided into categories relating to users of the building and pedestrian movement passing through the site but not entering the proposed building.

Pedestrian movement passing by the building consists of the following categories. People using the proposed parking garage and crossing the proposed bridge to get to the main campus and pedestrians who use the pedestrian entrance from Lynnwood Road.



The proposed building has facilities which cater for a wide variety of users. Building users can be divided into the following categories:

- UP Students,
- students visiting APS,
- staff,
- visitors to corporate exhibitions,
- visitors to periodical gallery exhibitions,
- restaurant customers and service contractors
-

Figures 8.13 to 8.16 illustrate the movement of the various building users. These diagrams also show how the building is divided into public and more private areas. More private functions like offices boardrooms and critrooms are located on the northern side of the proposed building. More public functions, like galleries and exhibition spaces are located on the southern side. Since south light is a prerequisite for galleries it makes sense to locate these spaces at the southern end.

08

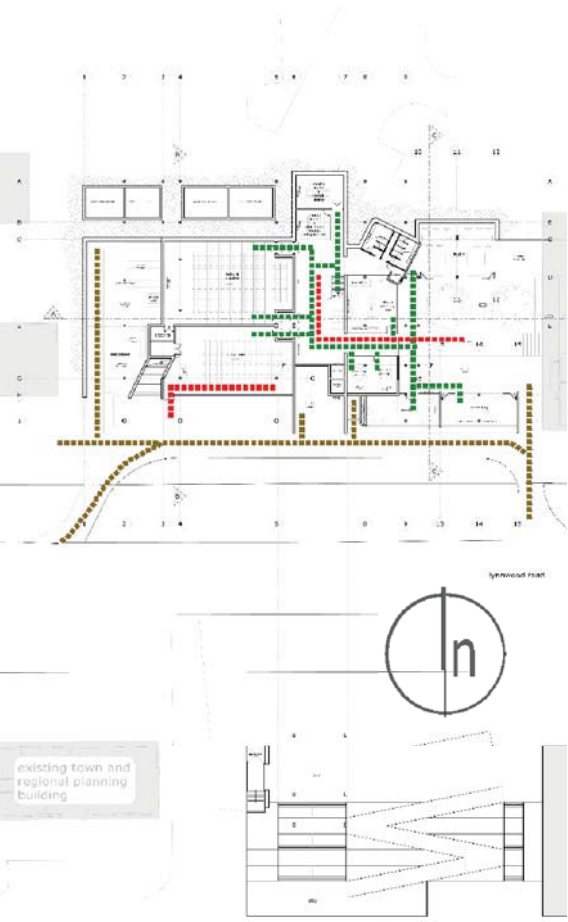


fig. 8.13

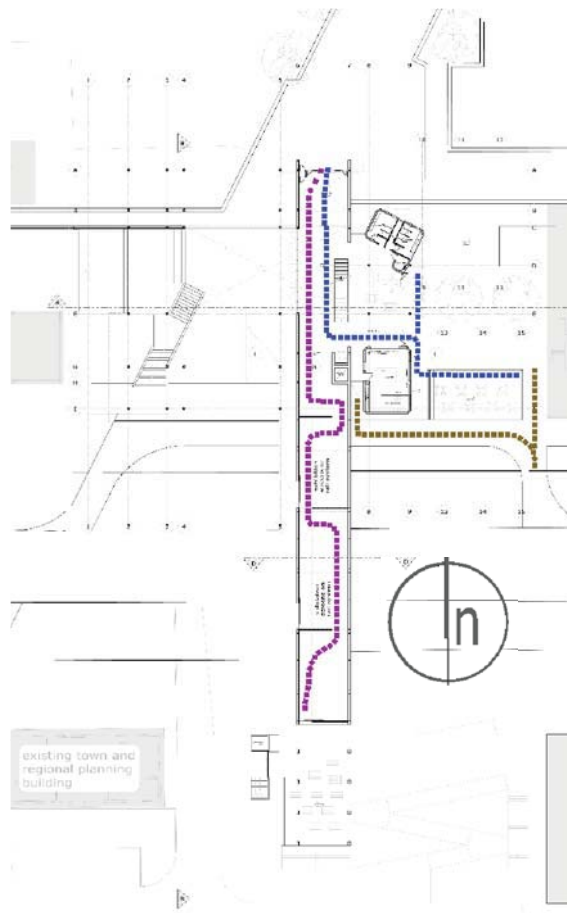


fig. 8.14

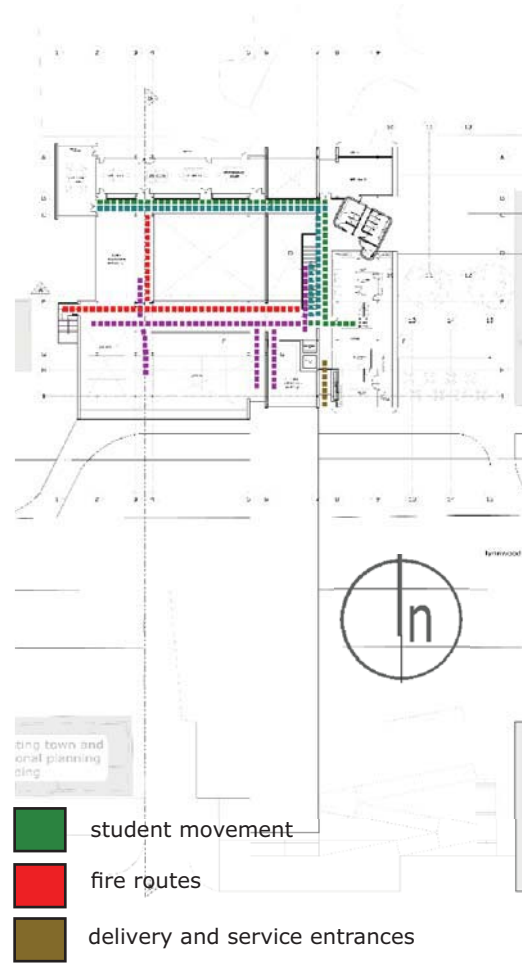


fig. 8.15

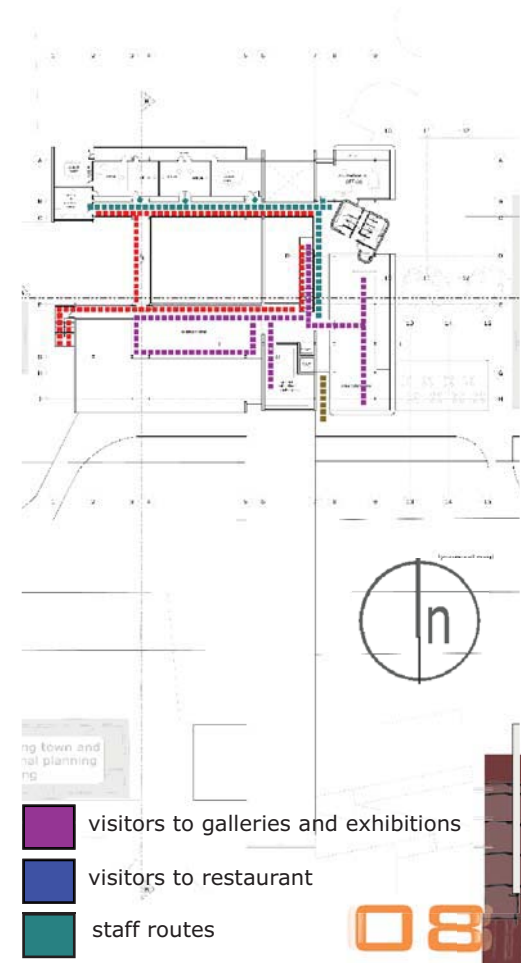


fig. 8.16

- student movement
- fire routes
- delivery and service entrances
- visitors to galleries and exhibitions
- visitors to restaurant
- staff routes



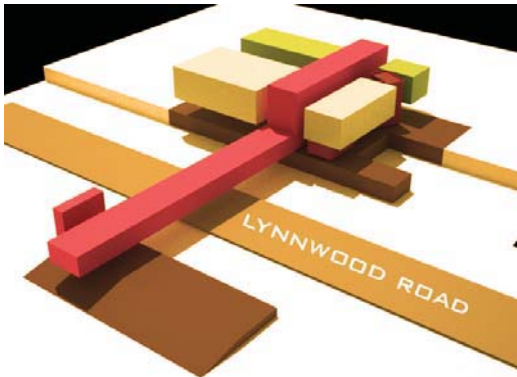


fig. 8.17_south-east perspective view

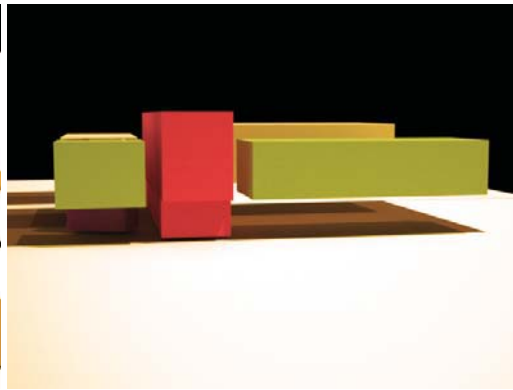


fig. 8.18_north perspective elevation

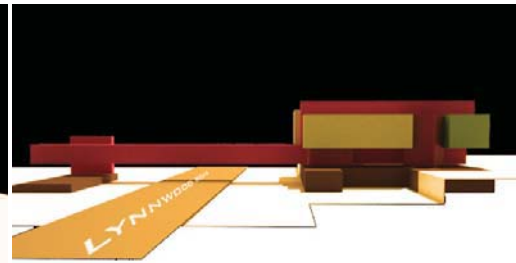


fig. 8.19_east perspective view

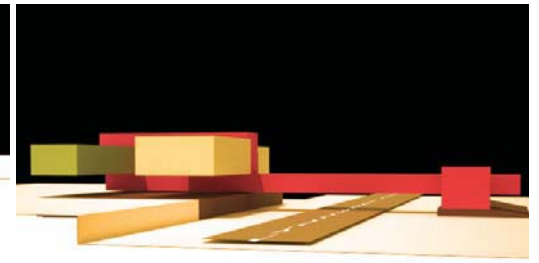


fig. 8.20_west perspective view

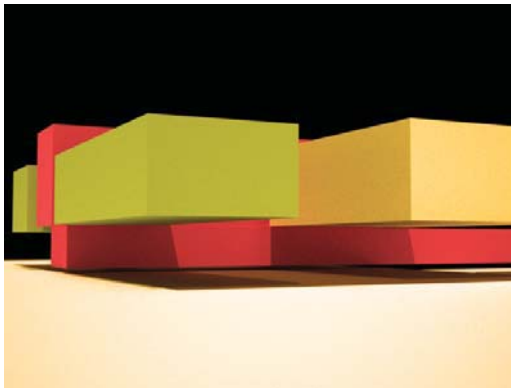


fig. 8.21_western perspective of office and gallery blocks

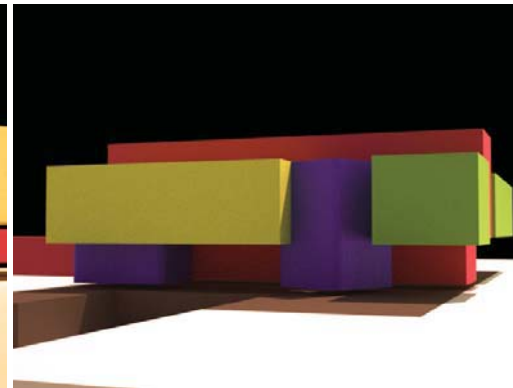


fig. 8.22_western perspective showing abluion and kitchen blocks



fig. 8.23_roof plan diagram

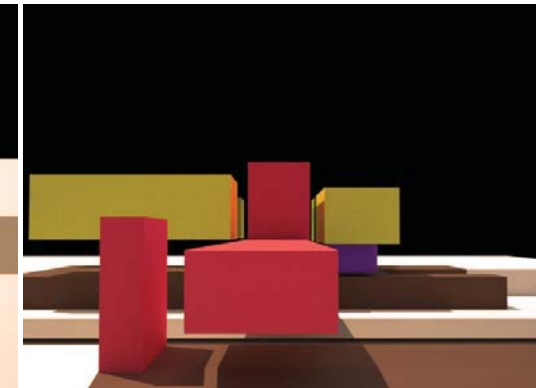


fig. 8.24_south elevational perspective

Massing models showing built mass in relation to each other and Lynnwood Road

Vegetation

External courtyards are very important elements in the design of the proposed building. By extending the adjacent sculpture garden and amphitheatre into and underneath the building, a very strong inside outside relationship is created. It is therefore important to select appropriate types of vegetation to occupy these spaces.

The existing sculpture garden on the western side of the proposed building is extended eastward at ground level. (fig. 8.25) It is proposed that 'Bermuda grass' (*Cynodon dactylon*) (fig. 8.26) also known as 'Kweekgras' be planted on vegetated lower ground floor roofs. The introduction of vegetation into the proposed courtyard should create a more inviting space.

Cynodon dactylon is a highly fertile grass and consumes less water than alien species commonly used in South Africa. Although watering

is required in winter it is a hardy plant and dry roots will produce new shoots during the beginning of spring.

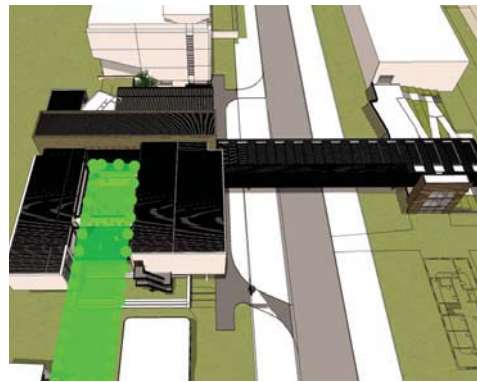


fig 8.25



fig 8.26_ *Cynodon dactylon* (www.plantzafrica.co.za)

It is proposed that the existing amphitheatre on the eastern side of the proposed building be demolished. A new courtyard is proposed in its place and indigenous vegetation introduced. (fig. 8.27 and 8.28)

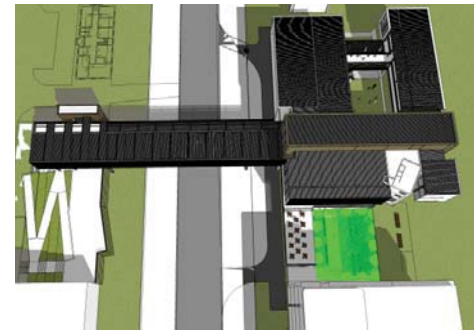


fig 8.27



fig 8.28

Bermuda grass is used for grass surfaces and Coral trees (*Erythrina lysistemon*) are introduced in the proposed courtyard.

Coral trees are deciduous and allows winter sun to penetrate studios and workshops during winter months. It is medium sized, hardy tree with a spreading crown and brilliant red flowers. (www.plantzafrica.co.za)



fig 8.29_ *Erythrina lysistemon* (www.plantzafrica.co.za)

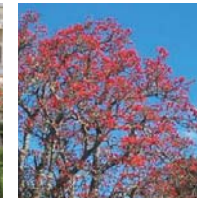


fig 8.30_ *Erythrina lysistemon* (www.plantzafrica.co.za)

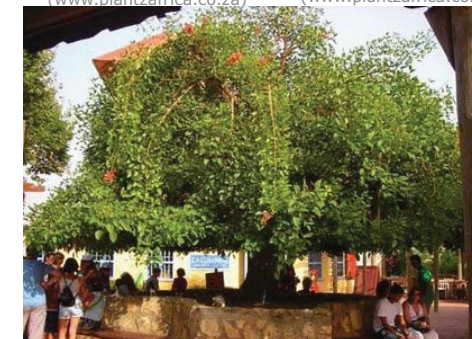


fig 8.31_ *Erythrina lysistemon* (www.plantzafrica.co.za)



fig 8.34



fig 8.32



fig 8.33

diagrams illustrating the building user's relationship to external spaces



south east perspective



76

fig 8.34



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



fig 8.35

south elevation

08

77





eastern courtyard perspective

78

fig 8.36





fig 8.37

western courtyard perspective





fig 8.38

south west perspective