

CHAPTER VI.

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06 detail design

6.1 Apies River Plaza – Detail Design

The detail design covers the plaza area across the Pretoria North Train Station. In the master plan this area is set out to become a major transport node. The design takes in account the entire urban infrastructure set out by the master plan.

The plaza becomes an important node in the master plan development. This is a very good point to kick-start the new development in this area. It becomes the heart that pumps energy into this node.

The plaza also becomes the interface between the natural systems associated with the Apies River Corridor and the urban structure.



fig.6.1: Indicates position of the Apies River Plaza

6.1.2 Apies River Plaza Detail design plan

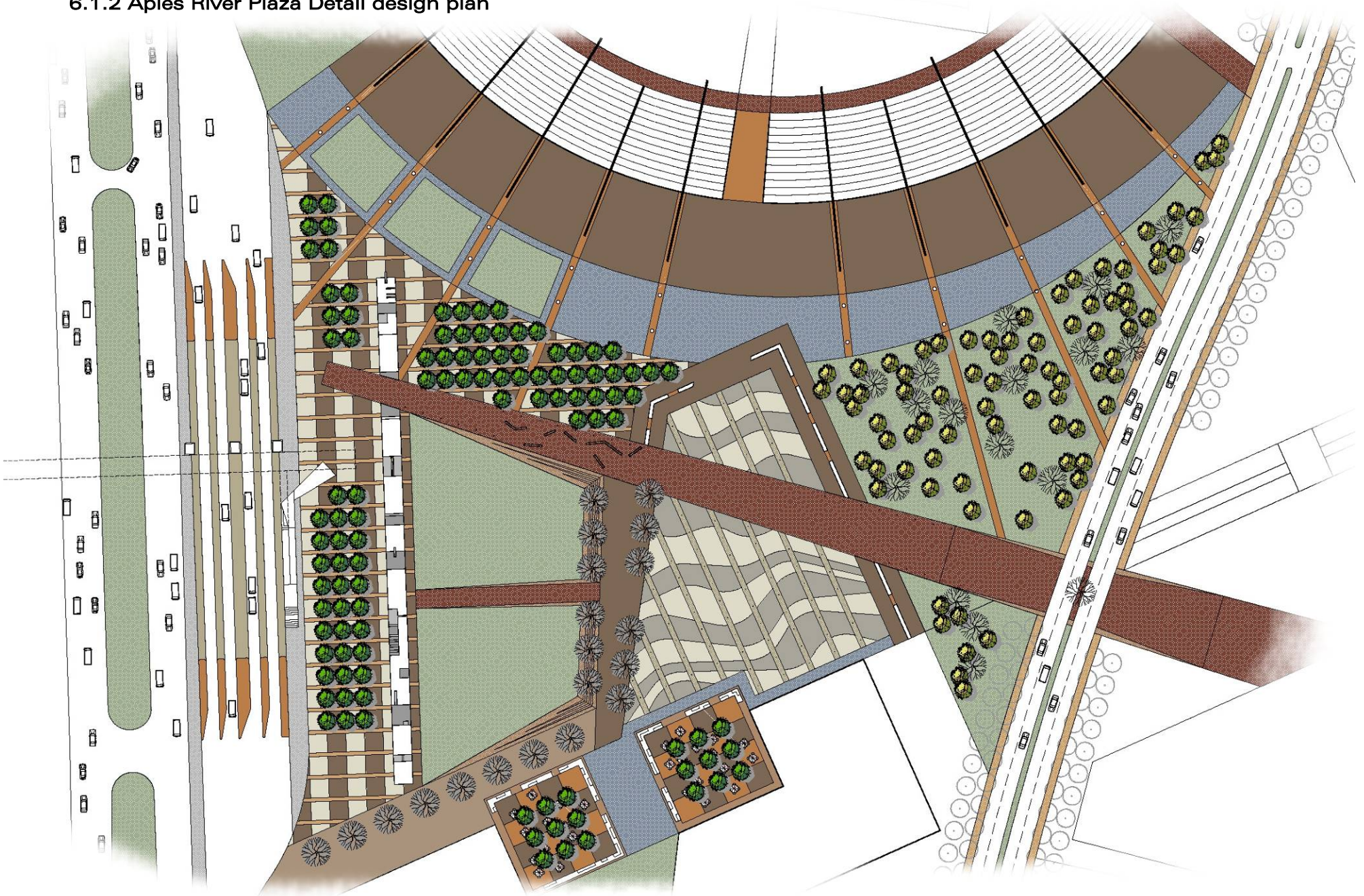


fig.6.2: Apies River Plaza

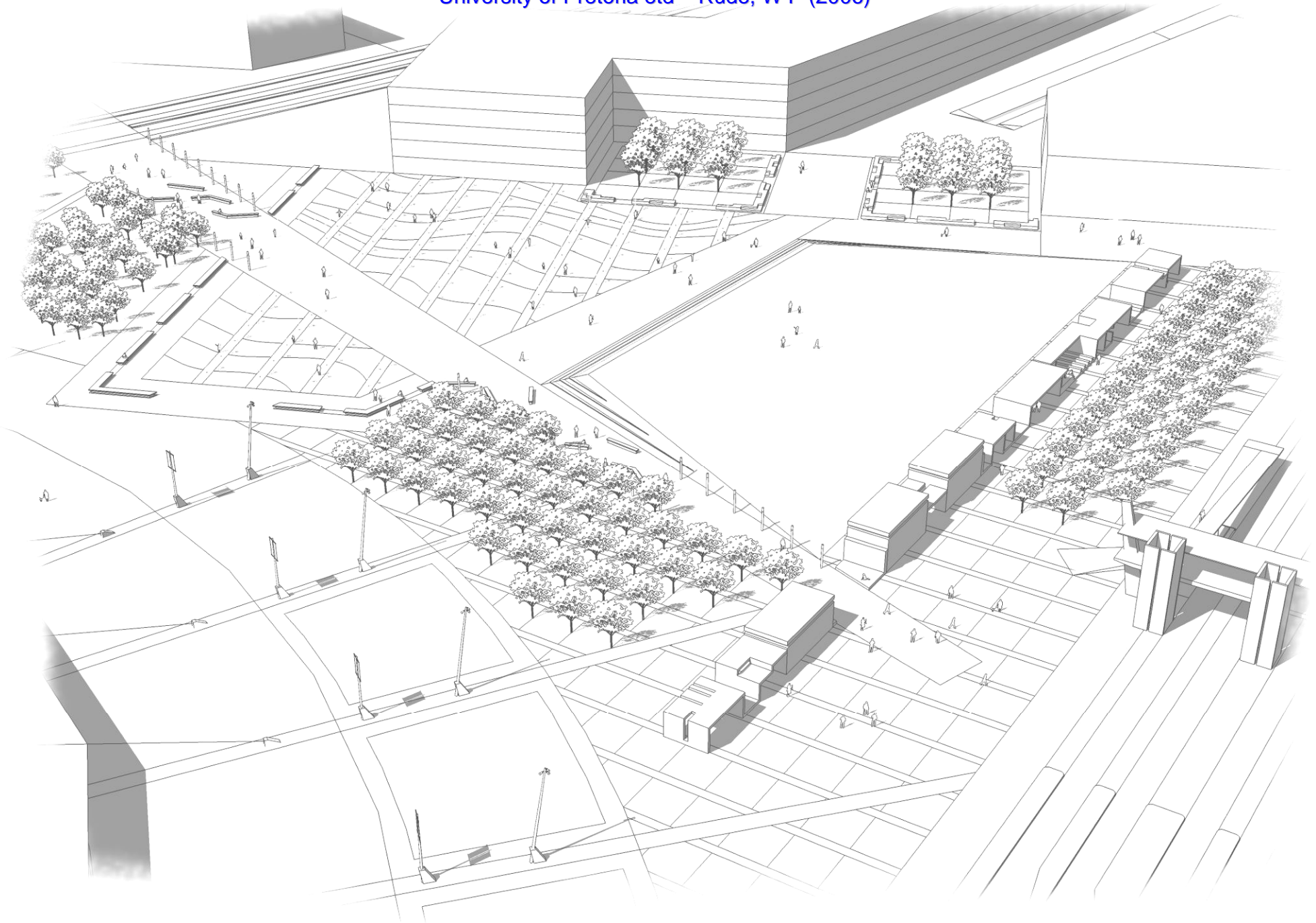


fig.6.3: Apies River Plaza

6.2 Design Breakdown

6.2.3 The Transportation Zone

This area is the entrance to the square from the western side. On the one side Lavender Road (R513) forms a strong barrier that can not easily be crossed by pedestrians. A pedestrian bridge should be build that connects Pretoria North Station and the new taxi stop to improve the safety of the pedestrians. The bridge ends in a ramp that gives you two options. The one ramp leads you into the square and the other to the front of the taxi stop.

The taxi area will be typical to the other taxi ranks around Pretoria. What makes this taxi rank different is that this one will give the taxis the opportunity to change lanes in-between the entrance and the exit.



fig.6.4: typical taxi stop

Roof structures can be added in time, but taxis should be discouraged from parking in this area overnight.

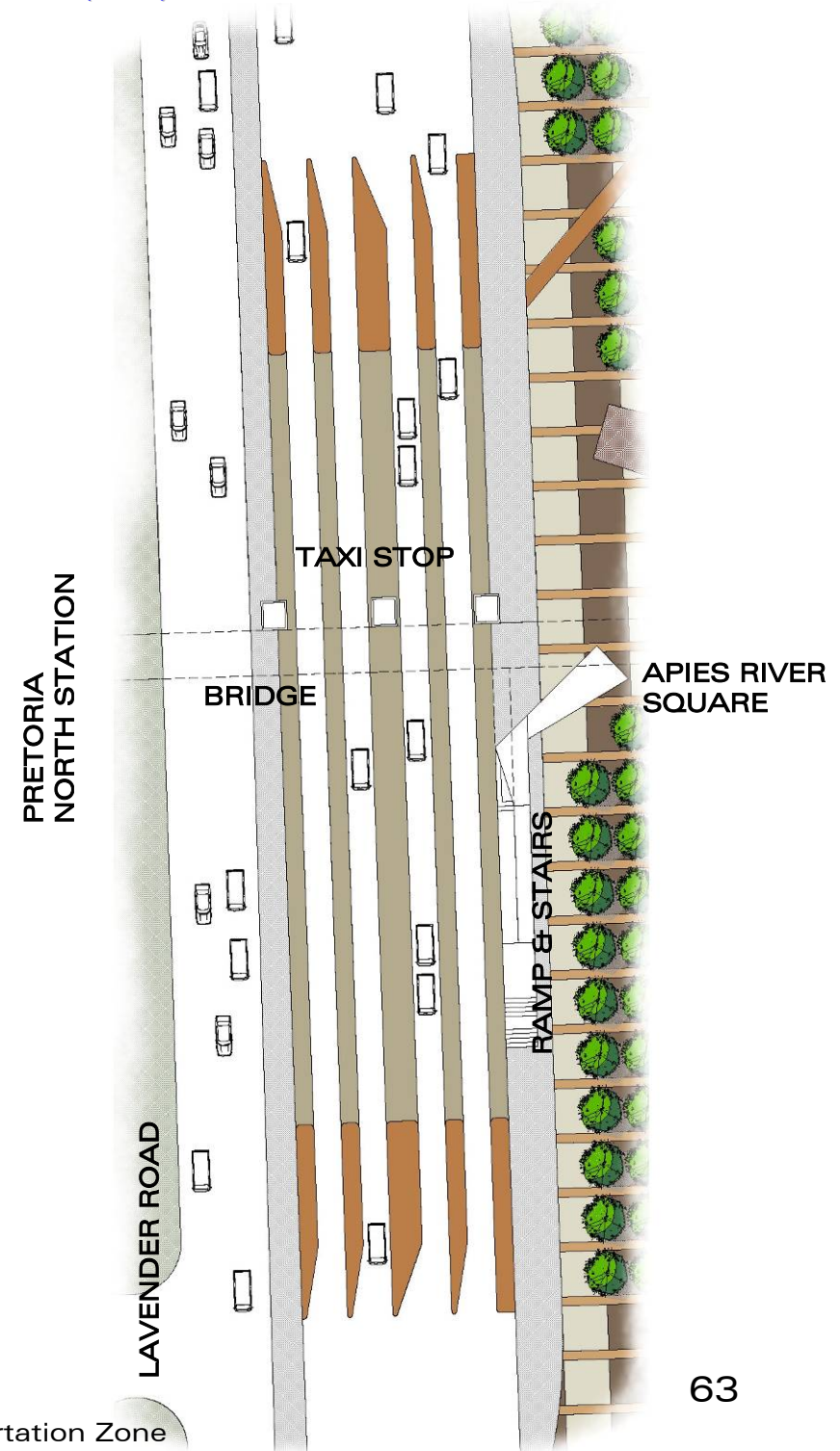


fig.6.5: Transportation Zone

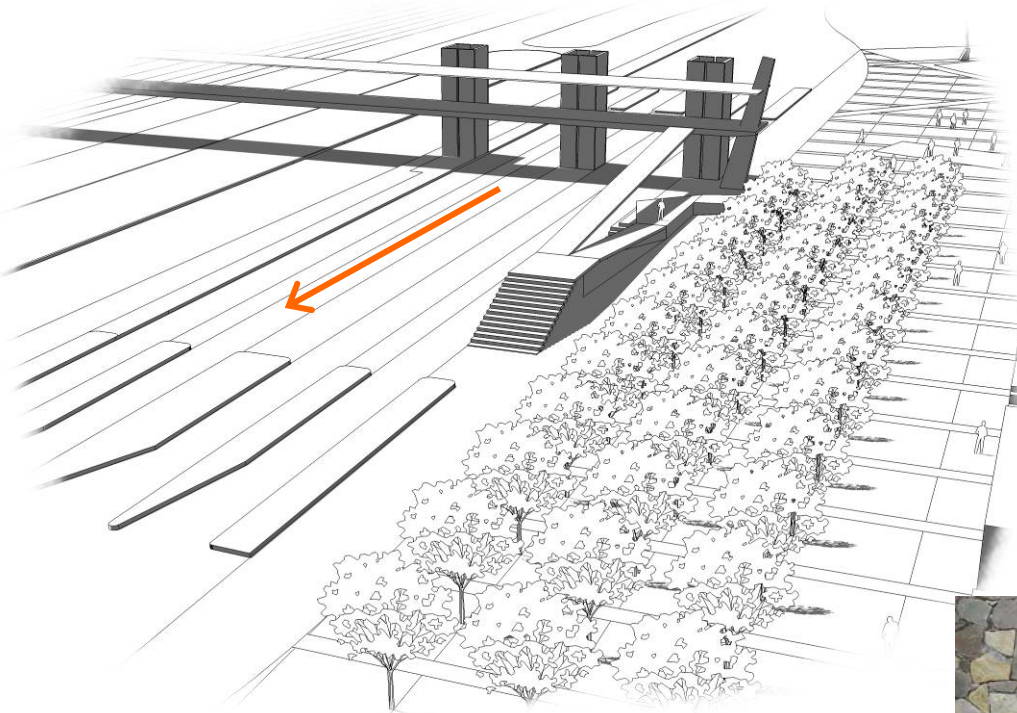


fig.6.6: Exit from taxi stop

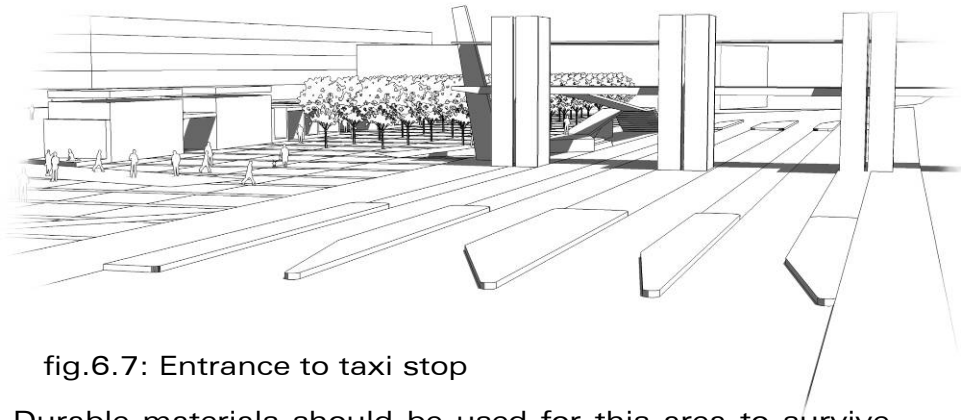


fig.6.7: Entrance to taxi stop

Durable materials should be used for this area to survive the high quantity of pedestrian and vehicular movement. Only the paving at the entrance and exit that divide the lanes should have a non mountable kerb to guide traffic into and out of the taxi stop.



fig.6.8: durable materials

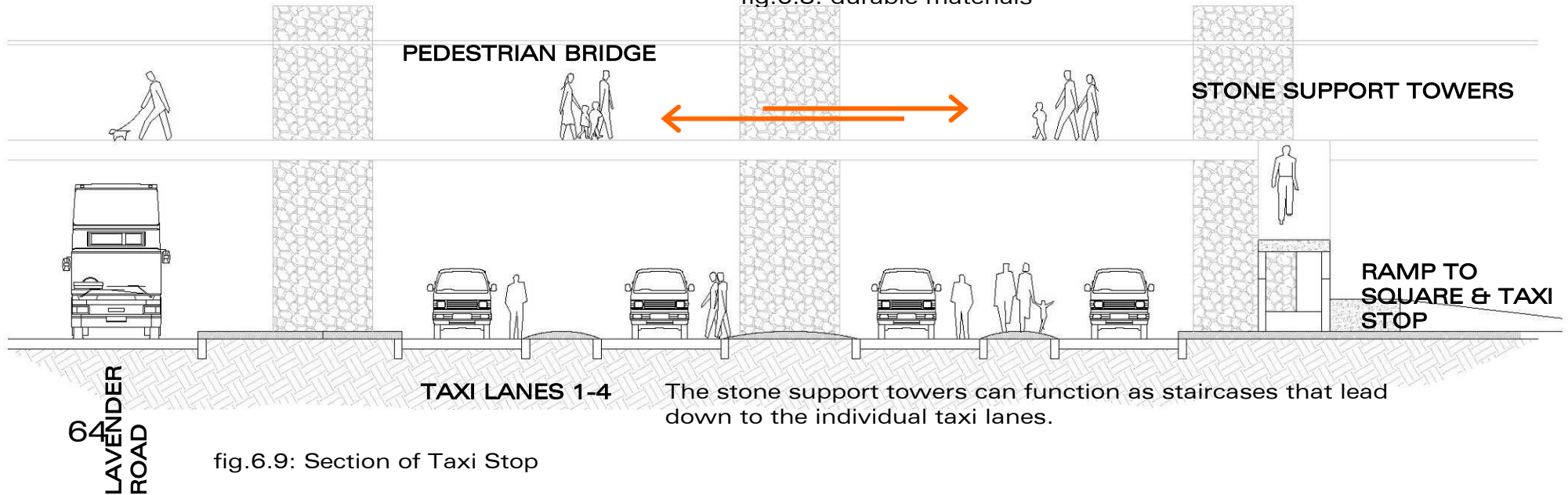


fig.6.9: Section of Taxi Stop

The stone support towers can function as staircases that lead down to the individual taxi lanes.

6.2.4 The Arrival Square

The arrival square serves as a buffer between the plaza and the Taxi stop. The arrival square is a good area for informal market due to the fact that many people will pass through this area in a day. The market structure at the back of the arrival square will prevent the informal market from spreading into the rest of the plaza. The market structure also provides shelter against the sun and other bad weather conditions. This area is also covered with trees to add shelter for vendors and keep out some of the noise and visual pollution.

The market structure also incorporates ablution blocks for the vendors and a large store room where some vendors can keep their goods safe overnight.

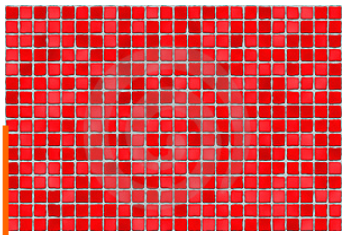
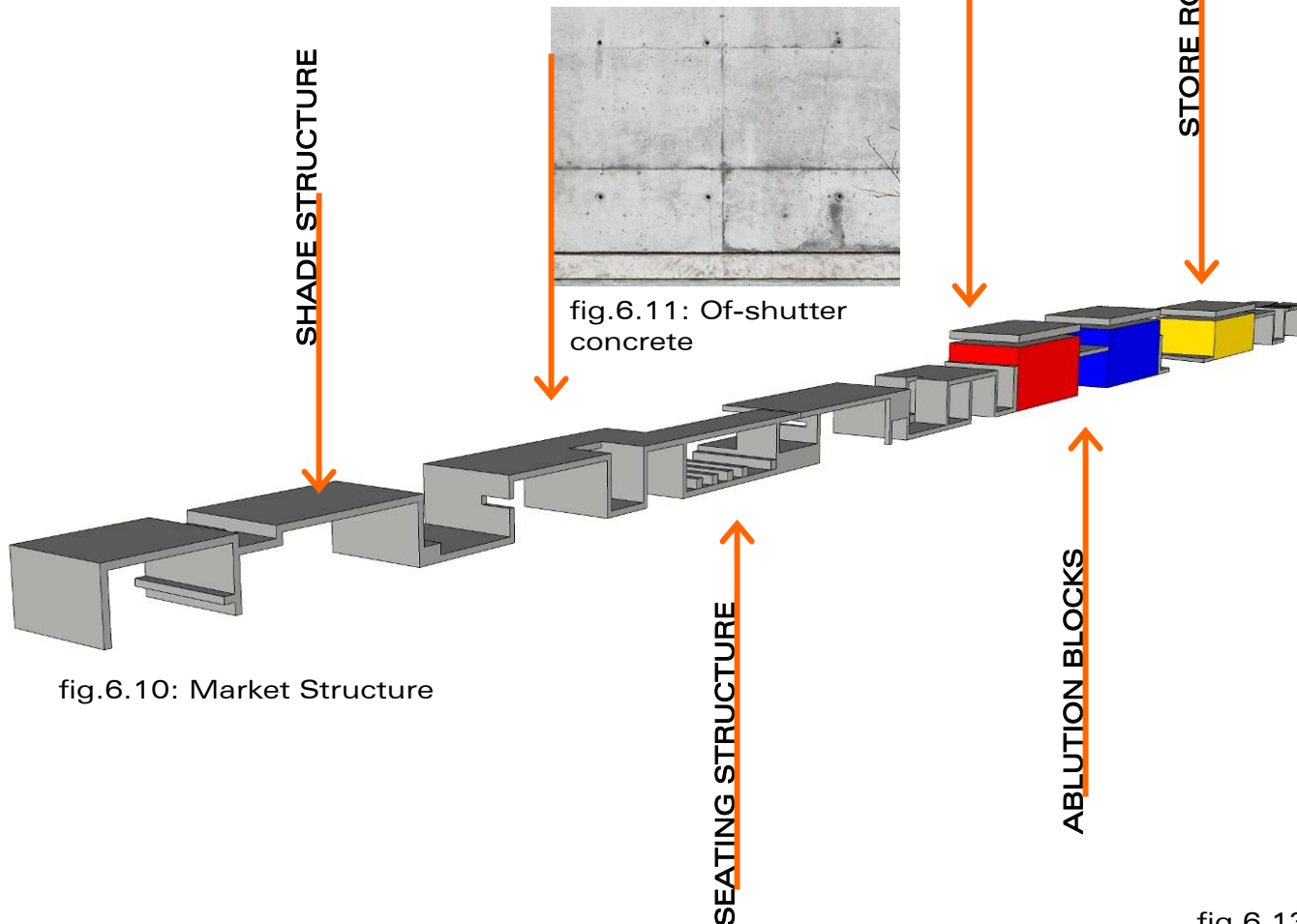


fig.6.12: Bright coloured tiles

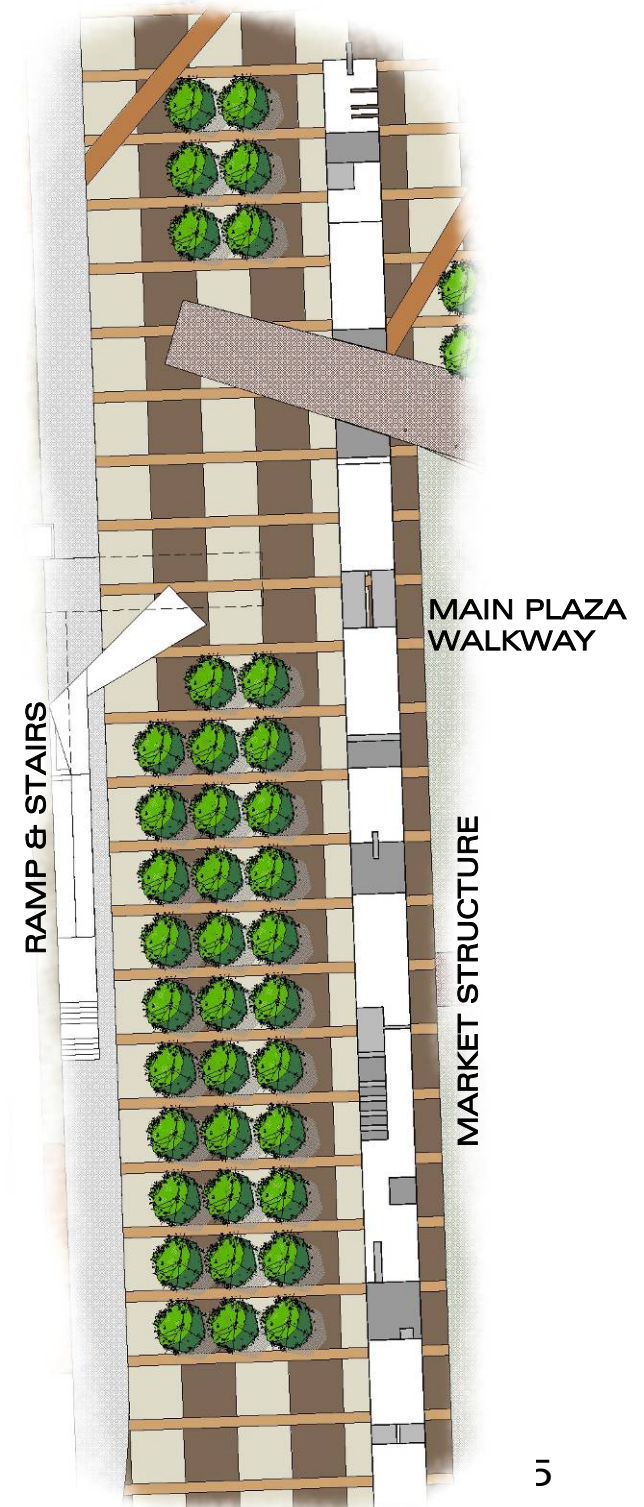


fig.6.13: The Arrival Square

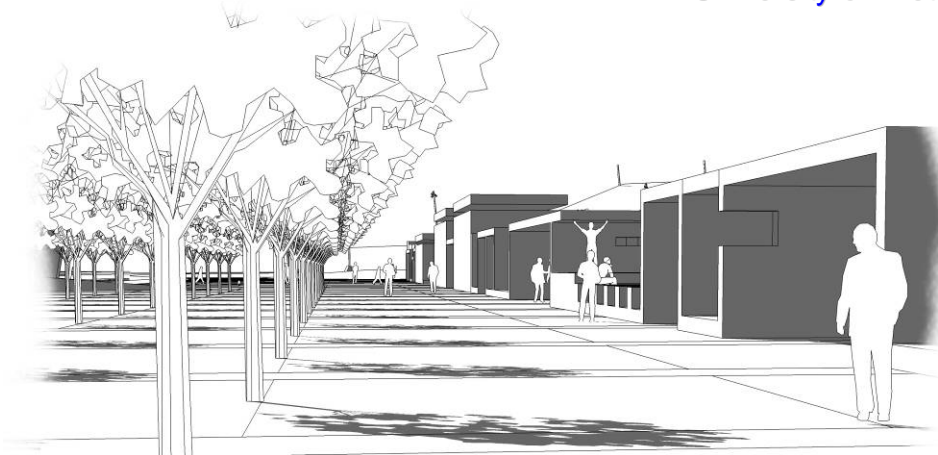


fig.6.14: View of Tree Canopy and Market Structure

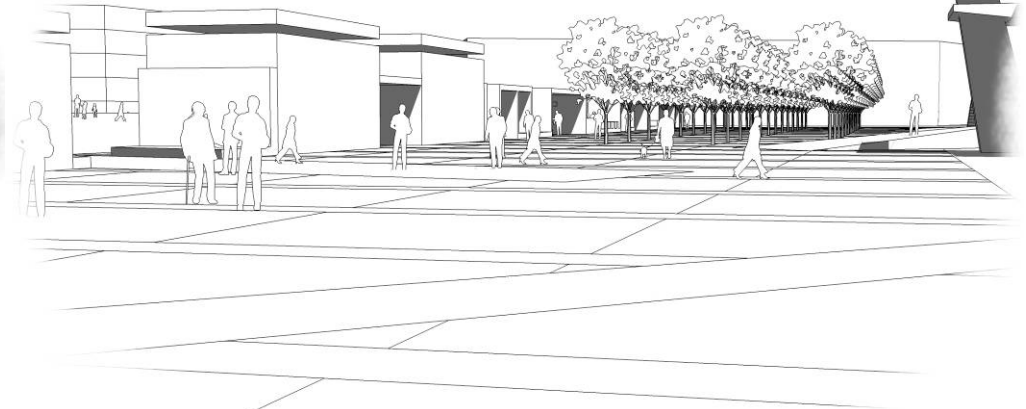


fig.6.15: Entrance to Plaza

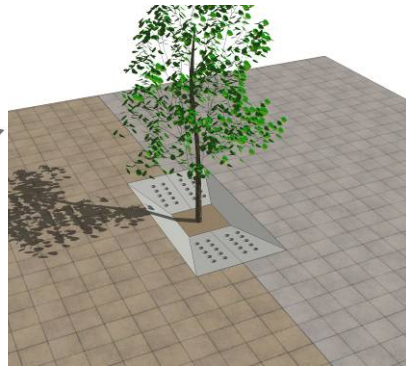
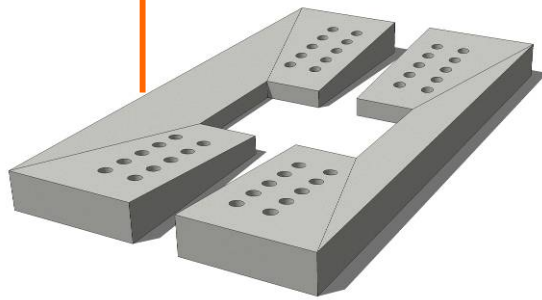
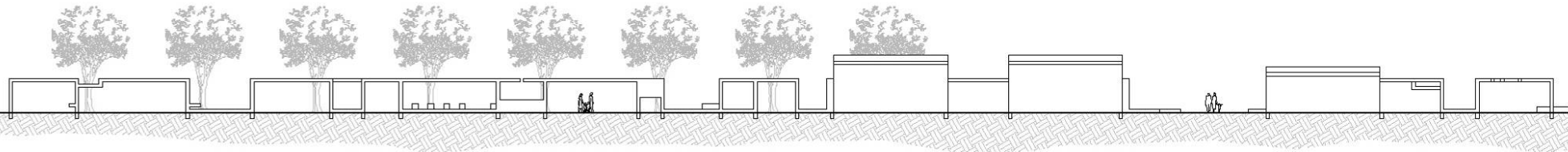
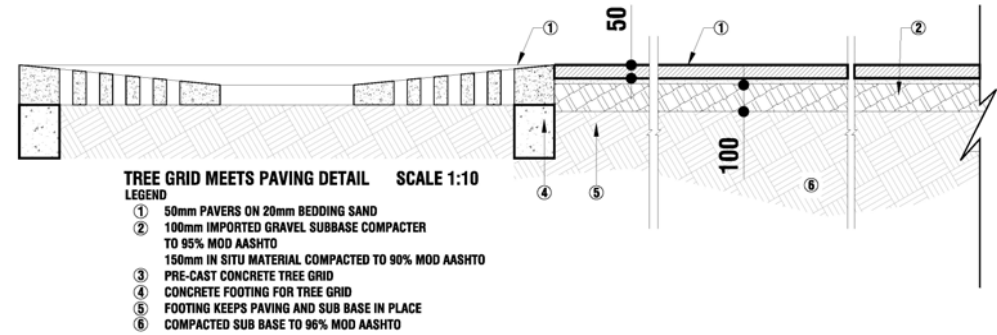


fig.6.16: pre-cast concrete tree grids in arrival square



Section

fig.6.17: Section & Plan of Market Structure

6.2.5 The Earth Mounds

The function of the earth mounds is firstly to provide bigger open space within the plaza that has a soft vegetated surface for children to play. Secondly it helps with drainage of water in case of big storms.

On the front side (west side) the embankment are clad in stone with long concrete seats that look over the water square. There's a walkway that cuts through the middle of the earth mounds. It is situated in this position to prevent pedestrian traffic over the lawn area and it leads plaza visitors to the water square.



fig.6.18: Front view of Earth Mounds



fig.6.19: Earth Mounds

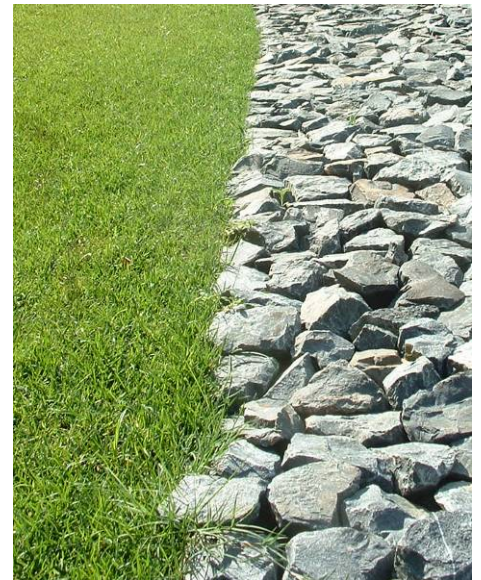
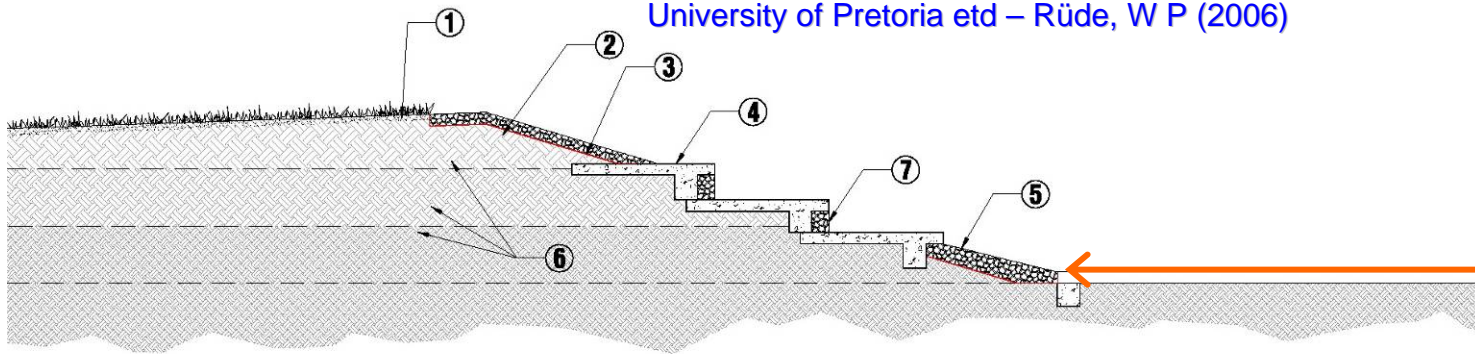


fig.6.20: Section through Earth Mounds

LEGEND

- ① **Manicured lawn**
- ② **Prepare sub base to 96% MOD AASHTO**
- ③ **0.1mm DPM (UPVC) on sub base**
- ④ **In situ concrete bench / step**
- ⑤ **Neatly Packed rock, first layer of rock on step to be fixed in concrete**
- ⑥ **Existing and new earth to be compacted in layers of max 500mm, site rubble can also be used**
- ⑦ **Stone infill to continue stone look from bottom to top**

fig.6.22: Rock cladding on Earth Mound



fig.6.23: Example of an Earth Mound (Asensio)

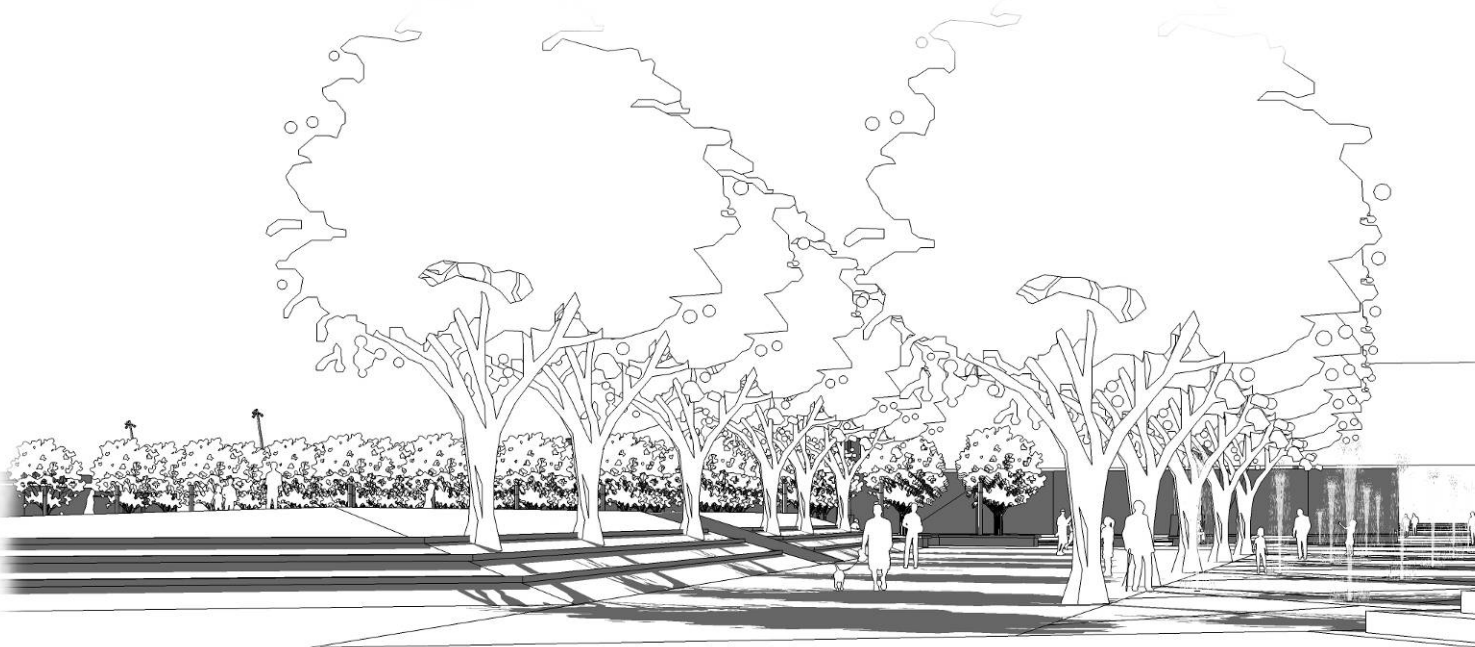


fig.6.21: View to the large trees in front of Earth Mounds

6.2.6 The Water Square

The water square symbolizes the arrival of the water channels to the square. The water feature will be programmed to shoot water into the air in different patterns and volumes. The large area of water activity will have an evaporative cooling effect in the plaza.

Spouts are situated far apart to provide dry movement through the water square. A seating area are situated around the water square Plaza visitors can enjoy the evaporative cooling the spouts or just sit and relax while watching the children play in the water. The water square can be switched of to serve as a dry hard open space for gatherings or functions.

If the system is switched of completely, all the water will run in sub surface channels to one large reservoir. While the system is running the water will continuously run through this reservoir to be filtered before returning to the Water Square. All spouts will be installed behind a grid to prevent people from tampering with the spouts.

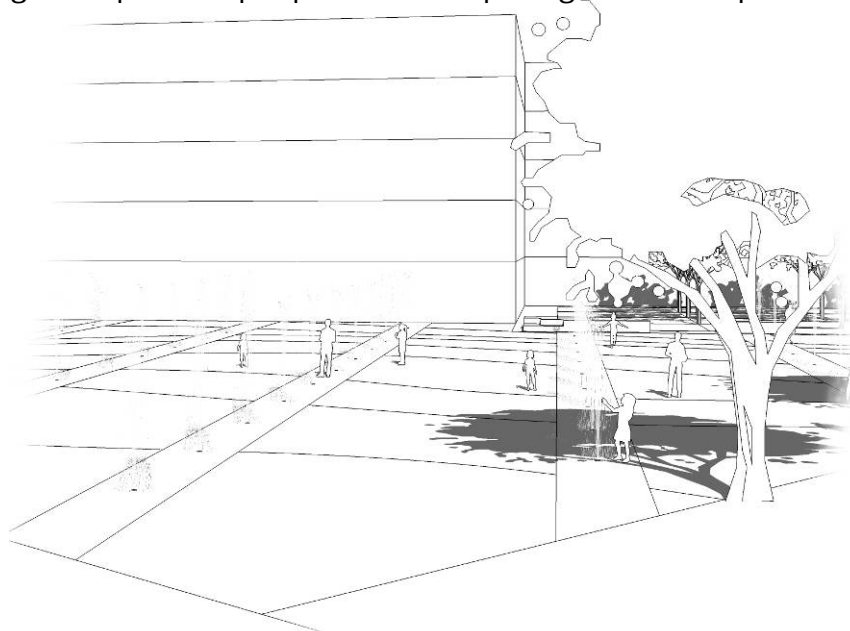


fig.6.24: View of Water Square

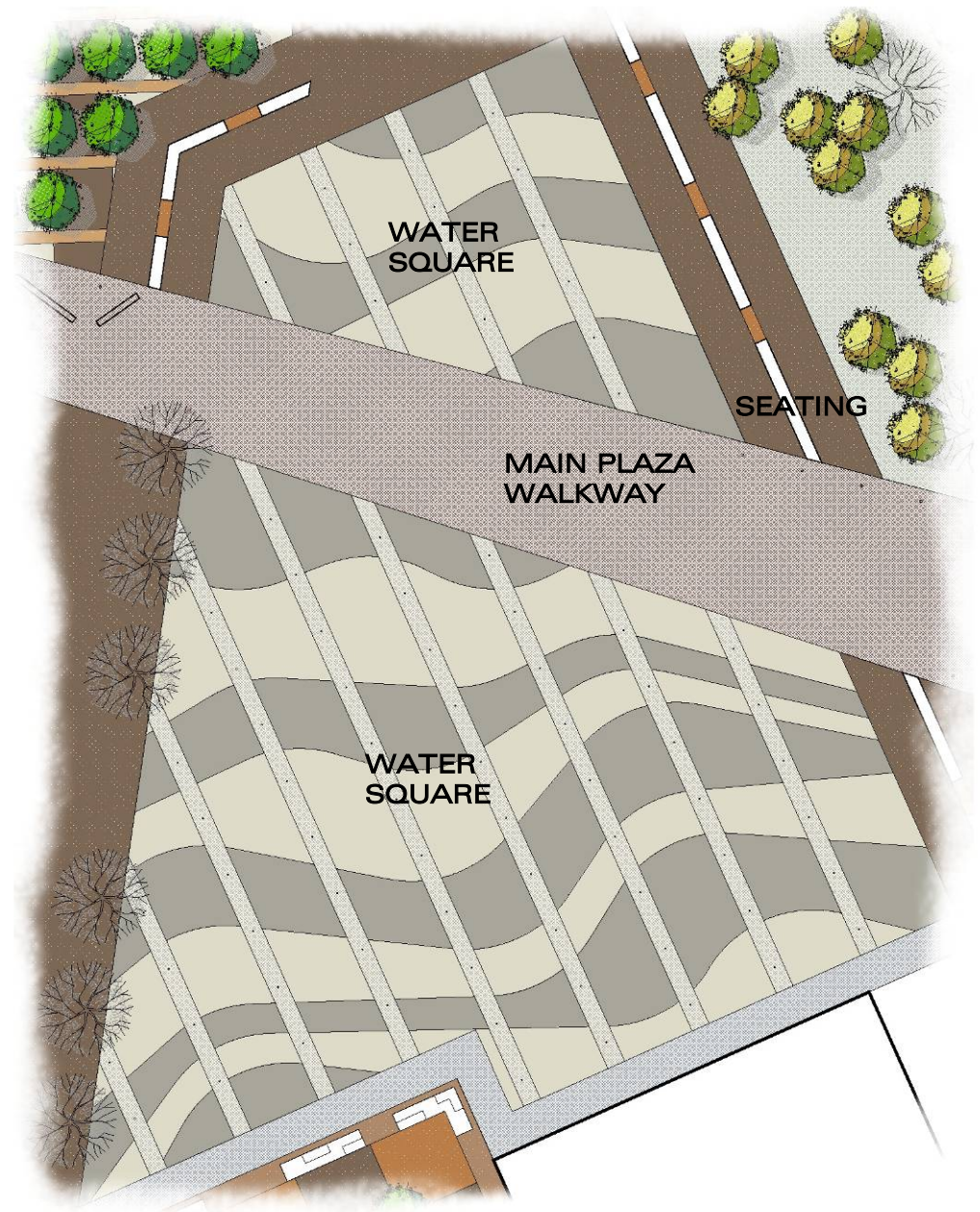


fig.6.25: Water Square



fig.6.26: Spouts at night (Asensio)

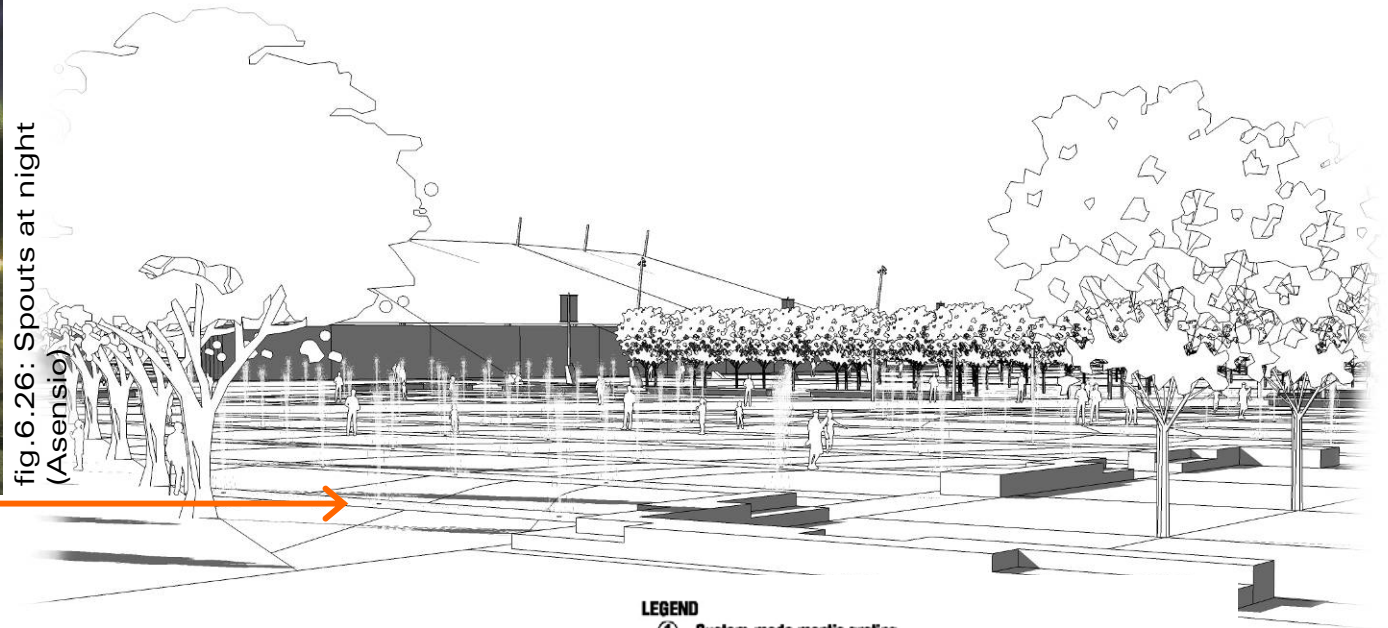
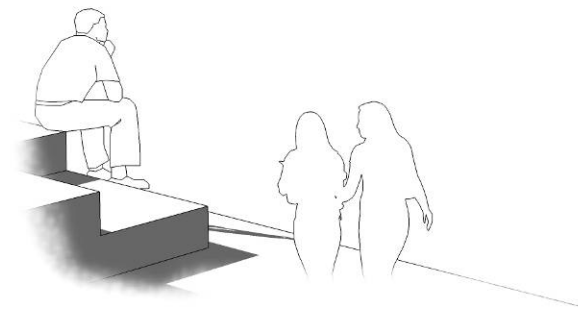


fig.6.27: Possible Tar & tile surface (Asensio)



LEGEND

- ① Custom-made mentis grating
- ② Tile and asphalt finish to match pattern on plan, tiling to be done before asphalt is burned / bind to waterproofing
- ③ 3m Min.stainless steel jet nozzle with LED lighting. Mentis grid over outlet.
- ④ Torch-on Waterproofing layer on concrete slab
- ⑤ Insitu concrete slab laid to 1:40 fall from centre of feature towards perimeter trough
- ⑥ Delivery pipe
- ⑦ Existing soil to be compacted
- ⑧ Insitu concrete catchment trough

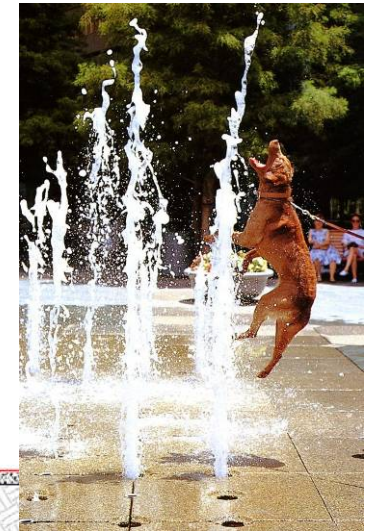


fig.6.29: Interactive spouts (Asensio)

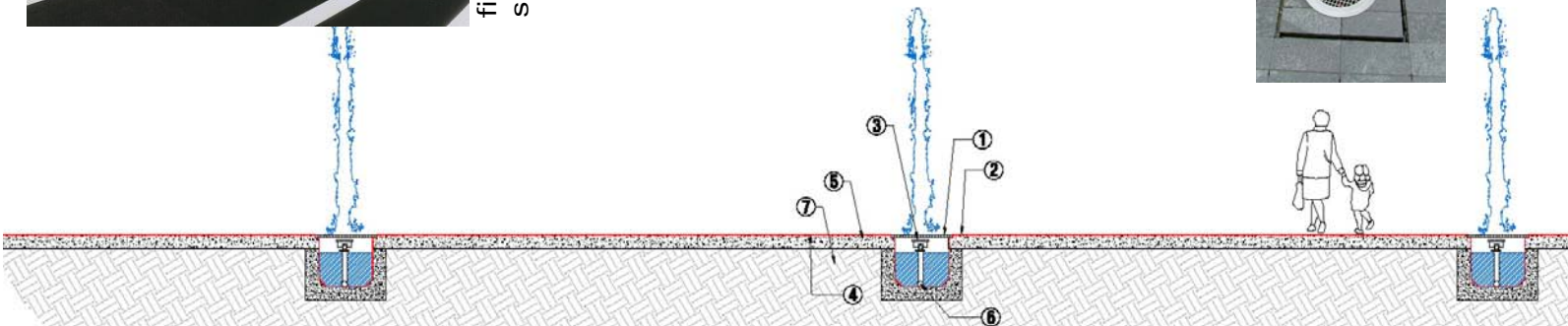


fig.6.28: Section through Water Square

6.2.7 Restaurant & Caf square

This area is situated in front of two large office buildings. There are restaurants and cafs situated on the ground floor of each building and this area will serve as their outdoor dinning area. This area is surrounded by long seating walls with gaps at specific points. This gives the space a boundary and encloses any activities within this space.

The area is covered by trees to form a large green canopy that will protect the users from the sun. The trees should preferably be deciduous to give the space a seasonal change and let through sun for the cold winter months.

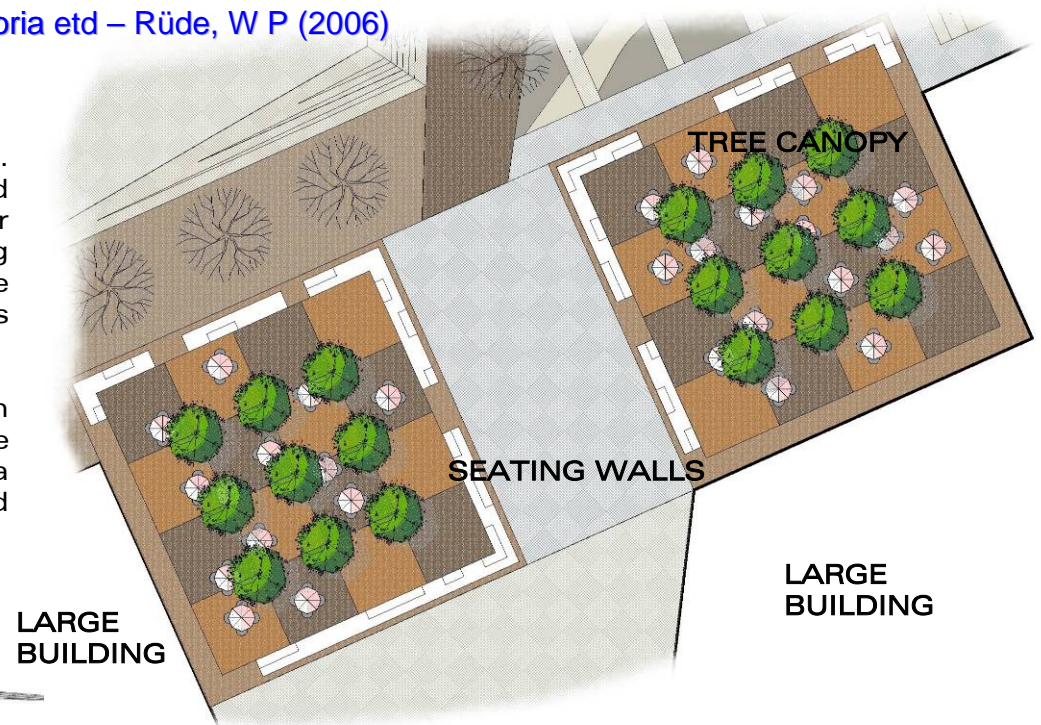


fig.6.31: Restaurant & Caf square

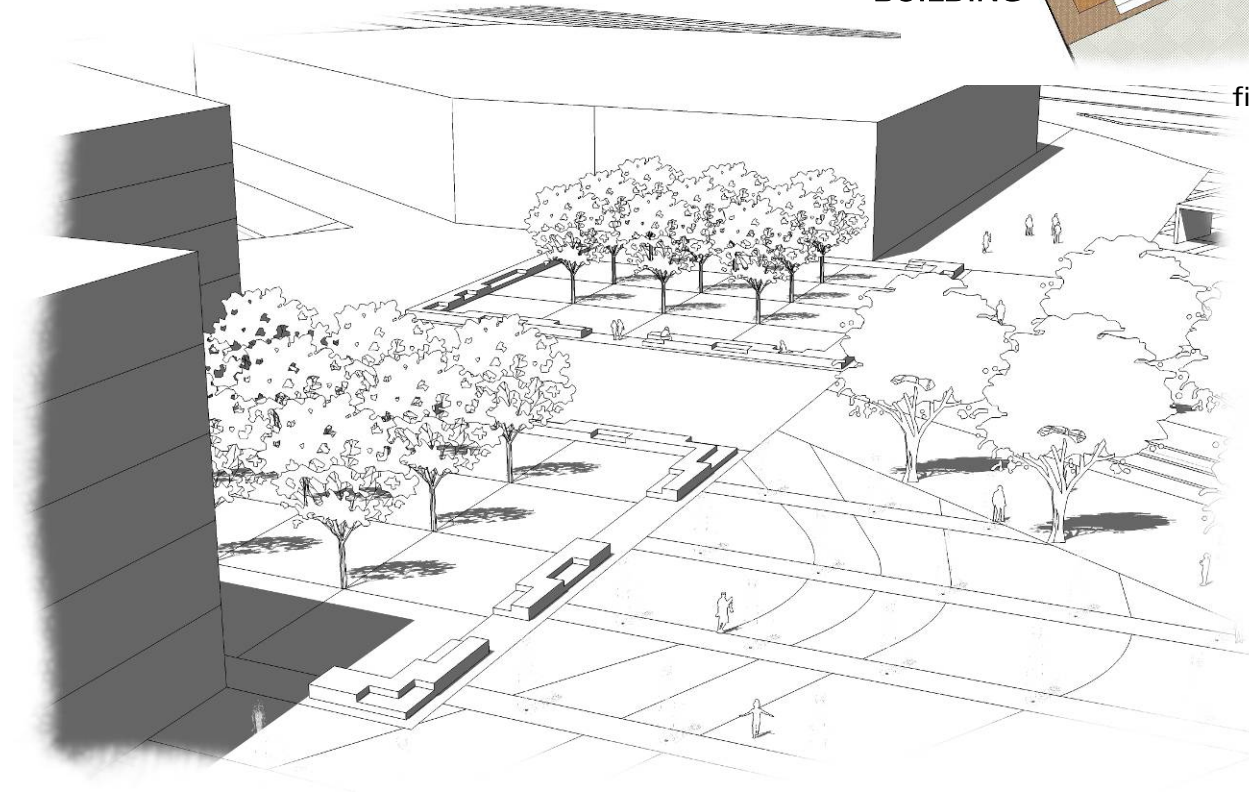


fig.6.30: View of Restaurant & Caf square

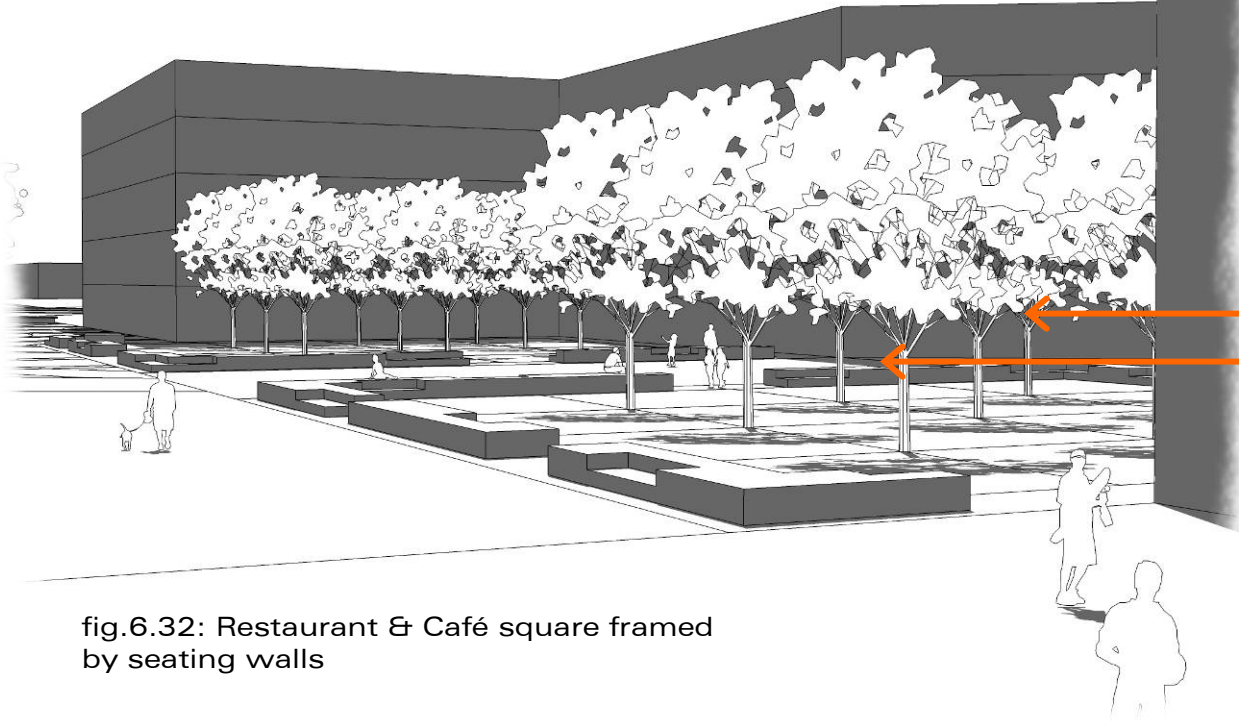


fig.6.32: Restaurant & Caf square framed by seating walls



fig.6.34: Green canopy over seating area



fig.6.35: Example of seating walls

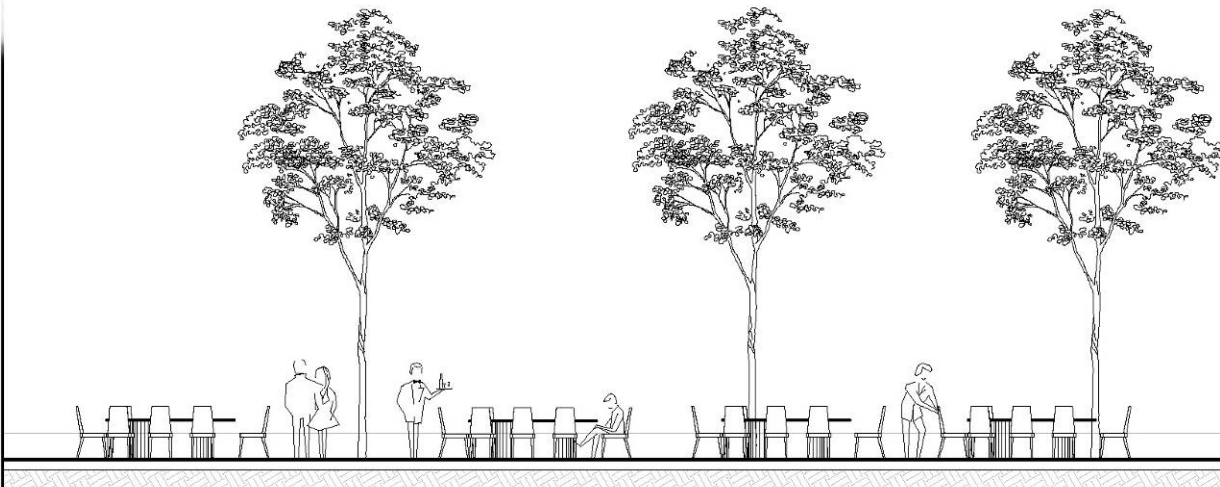


fig.6.33: Section through Restaurant & Caf square

6.2.8 The Plaza Park

This large green park like open space in the plaza prevents the plaza from being one big mass of hard surfaces. It has all the functions of a park, like large shading trees big lawn areas for children to play. This large green area s also situated at the entrance of the sporting facility to help accommodate large crowds and gatherings of people.

The other functions of the park so to help drain storm water away in case of a large storm. The park should be equipped with sufficient subsurface drains to prevent the plaza from flooding.

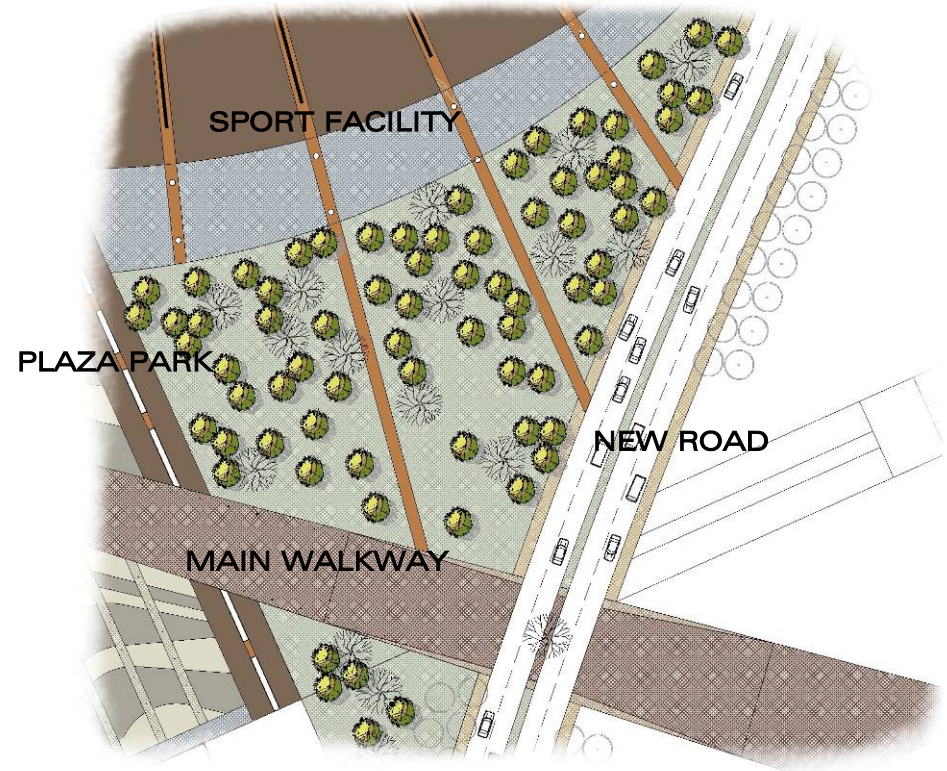


fig.6.37: The Plaza Park

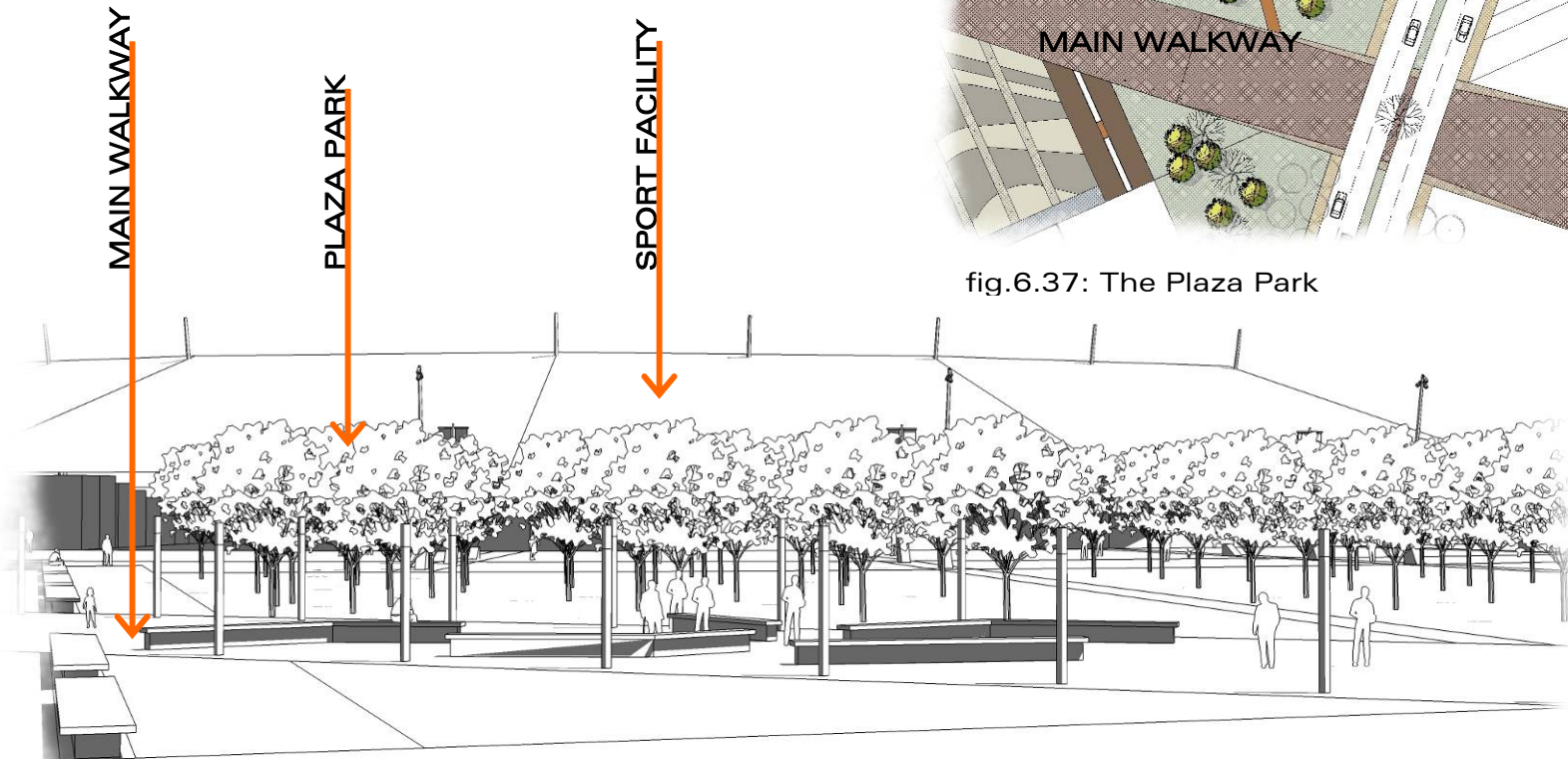


fig.6.36: View to Plaza Park



fig.6.38: Park activities

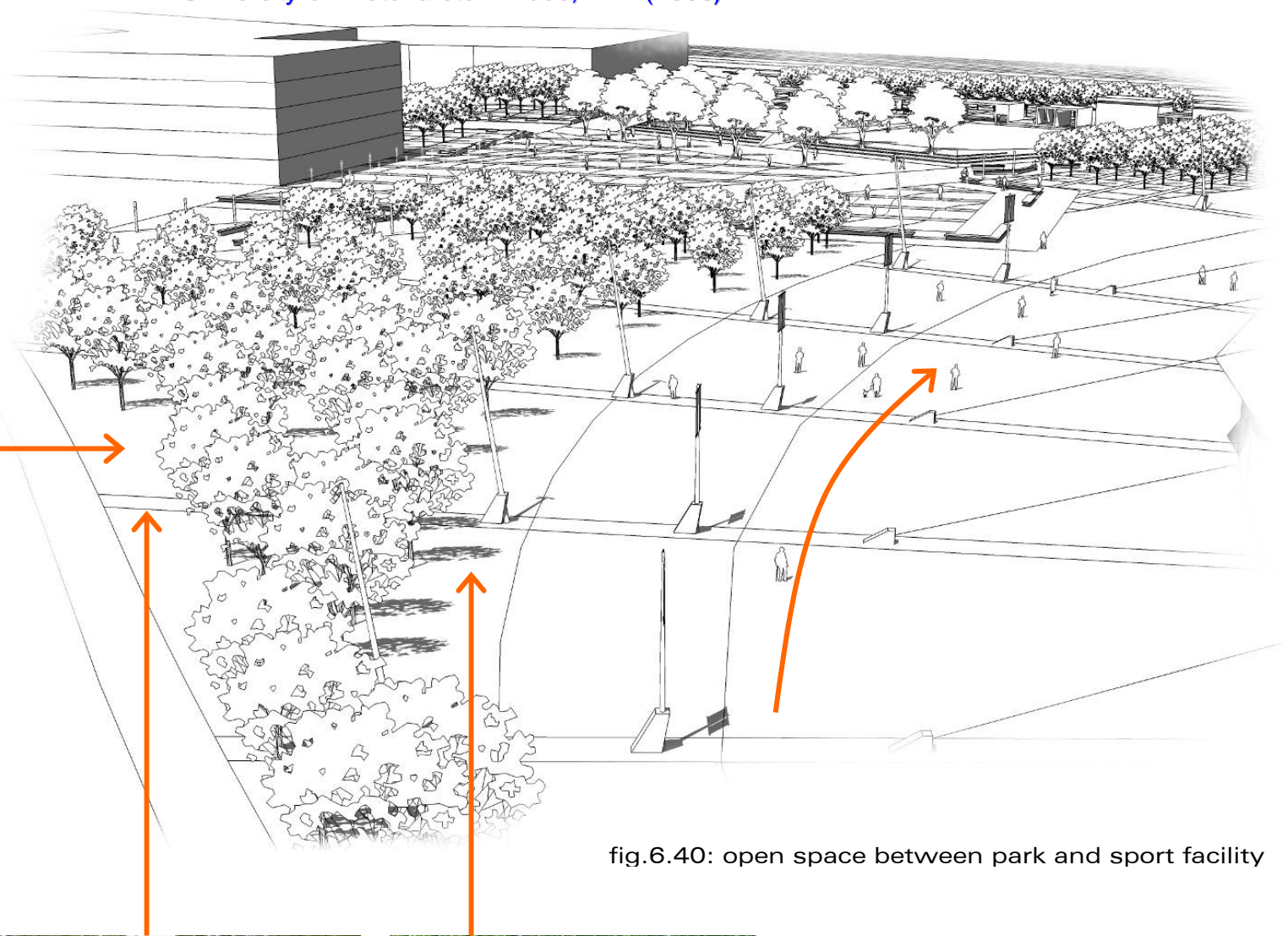


fig.6.40: open space between park and sport facility



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fig.6.39: Walkways through park

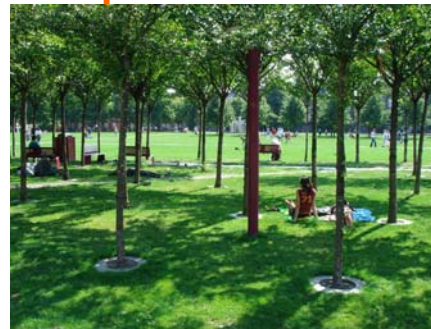


fig.6.41: Tree canopy in park

The function of the open space between the Plaza Park and sporting facility is to accommodate large crowds of people that will attend games at the Sport facility. This area can also be used as a market for arts and crafts.

6.2.9 Main walkway – road underpass

The main walkway has to cross four lanes of traffic in order to get to the retail area neighbouring the plaza. Due to the high quantity of vehicular movement on this road, it is impossible to let the people cross the road by means of traffic lights. The walkway will pass underneath the four lanes to improve the safety of the pedestrians and keep the traffic from stopping every few minutes.

The underpass will have a large opening to accommodate for large quantities of people. The large opening will also help keep safety and visibility through the underpass to a maximum. The walkway that leads to underpass has a slope of 1:12 to accommodate wheelchairs and disabled people

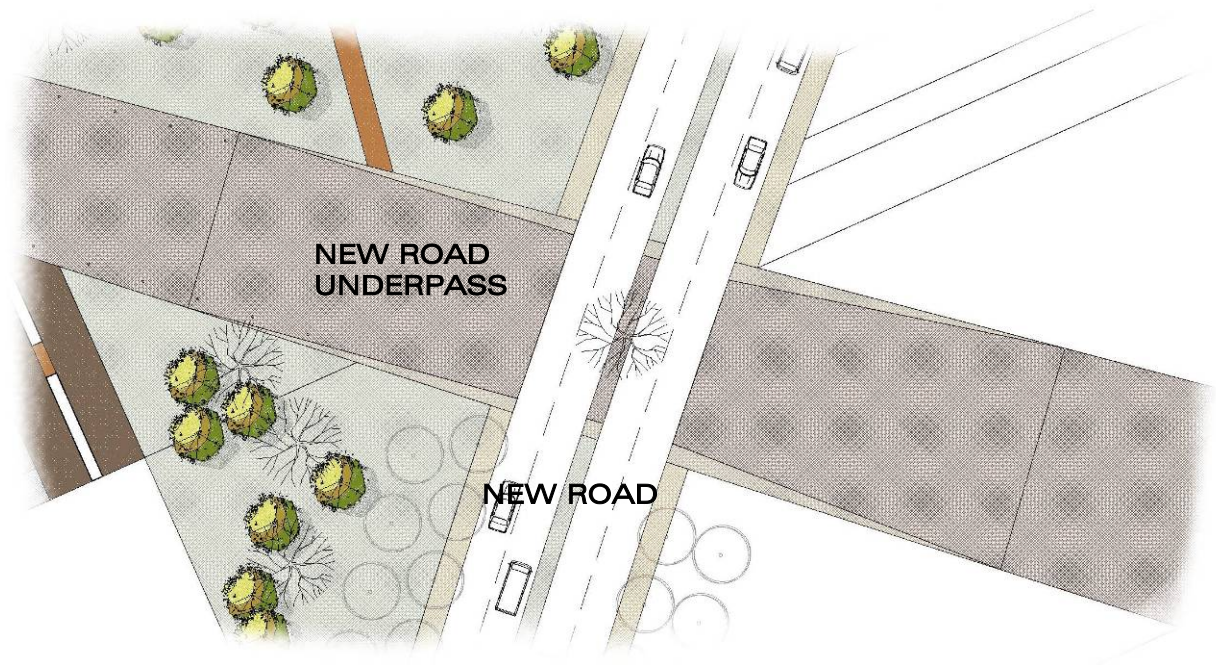


fig.6.43: Main walkway underpass

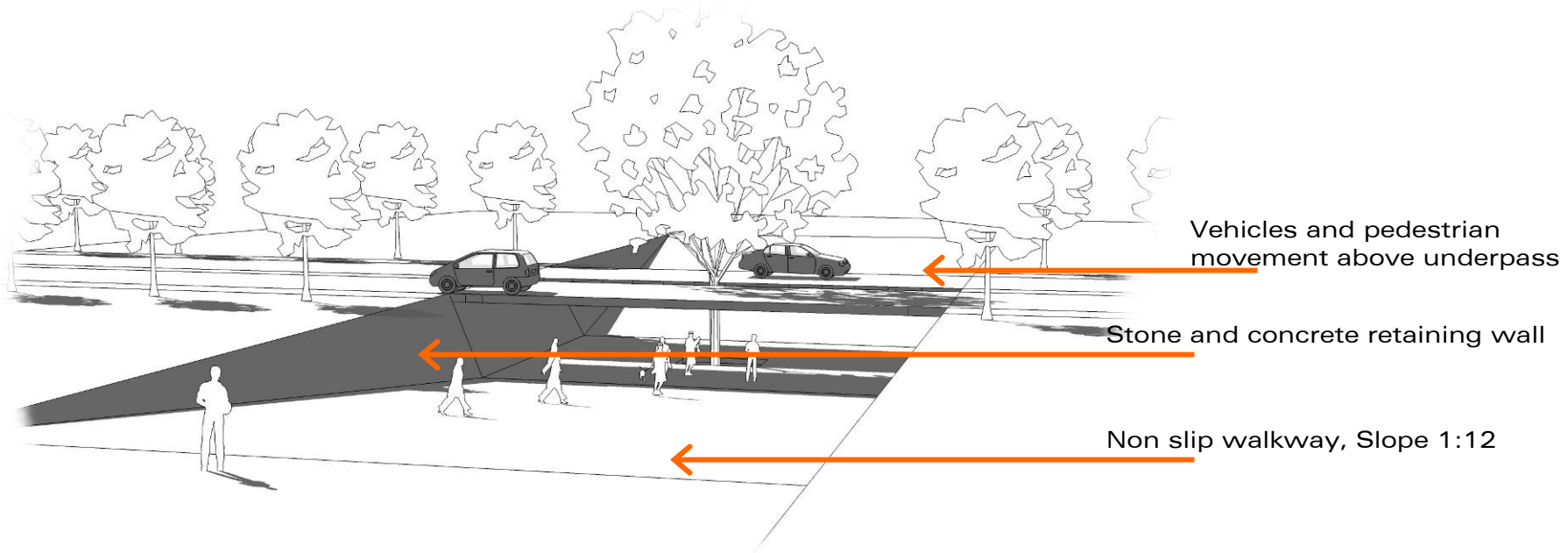


fig.6.42: View from walkway to underpass

The walkway that leads to underpass has a slope of 1:



fig.6.44: Wall treatment in underpass

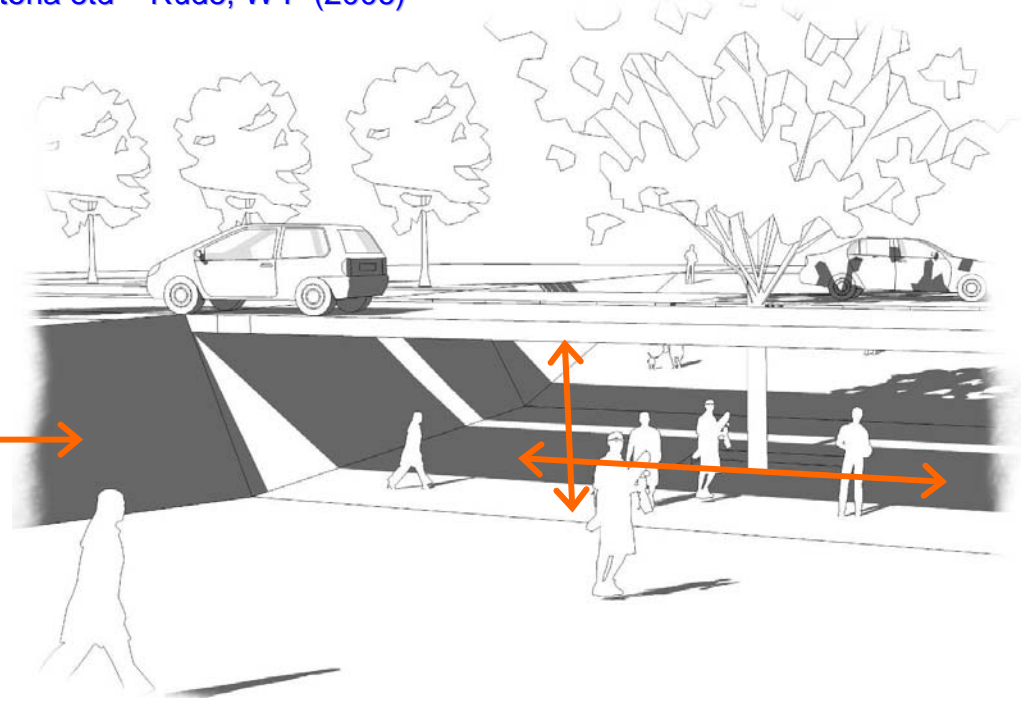


fig.6.47: Large opening in underpass



fig.6.45: Anti slip studs in pavement



Vehicles and pedestrian movement above underpass



fig.6.46: Section trough underpass

Conclusion

In this last stretch of the Apies River we have the opportunity to create an urban environment that interacts and embraces the river. Along the entire stretch of the Apies River the urban fabric turns its back to the river and by doing so the river becomes an unsafe and inaccessible place. The master plan that was developed shows how to approach this problem and will guide future development in order to prevent mismanagement.

There is a great need to uplift the image of Northern precincts. The Apies River Plaza is just one location where new development can be kick-started. It will work best if there are a couple of these locations where the government and/or private sector invest capital to spark new exciting river front development.

The result of new development alongside the Apies River can have a huge impact on the river itself and the rest of the system downstream. It is thus important for each new part of the development to take the river and its character in consideration. New development must always protect and enhance natural features for wildlife habitat, water quality and scenic amenity. They must provide recreational access to the corridor through appropriately located and developed facilities. It is important to identify and secure preservation for lands crucial for habitat and recreation linkages and always promote awareness and preservation of historic, cultural, and ecological resources along the corridor through education and interpretation.

