CHAPTER 8

Technical Development

CHAPTER 8: Technical Development

8.1 Introduction - Area for further investigation

After the final master plan was developed, the area most suitable for technical development was chosen as the sketch plan area (as illustrated in Fig. 164 with the blue outline).

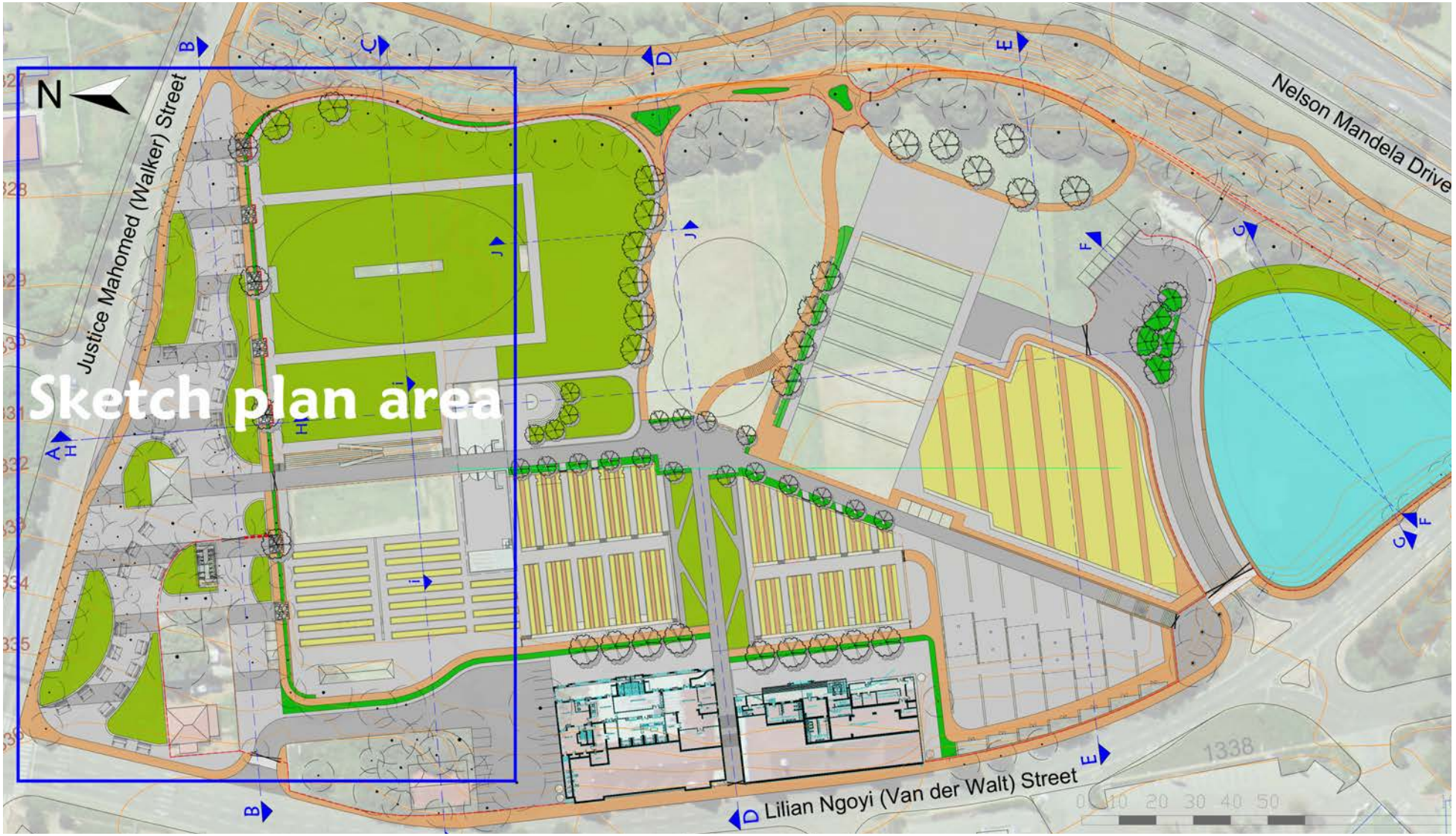


Fig. 164: Landscape master plan indicating Sketch plan area (Author, 2013)

8.2 Sketch plan development

Steps were proposed next to the information centre as well as public toilets (Refer to Fig. 165). All the trees were preserved and the existing buildings were restored and given new functions. Waste recycling bins are provided for pedestrians to drop off waste and market stalls were proposed along the lawn strips. The entrance building will function as a gardening shop with demonstration gardens and community-based agriculture next to the building. Storage will also be provided for vegetables and gardening tools.

Fig. 165: Sketch Plan development 1 (Author, 2012)

The steps were removed in Figs. 166 and 167 to improve wheelchair accessibility; planters were added to the lawn strips to provide seating and the market stalls were placed according to the location of the existing trees. Wheelchair parking was proposed, but because provision for wheelchair parking will be made in the staff parking area it was deemed as unnecessary.

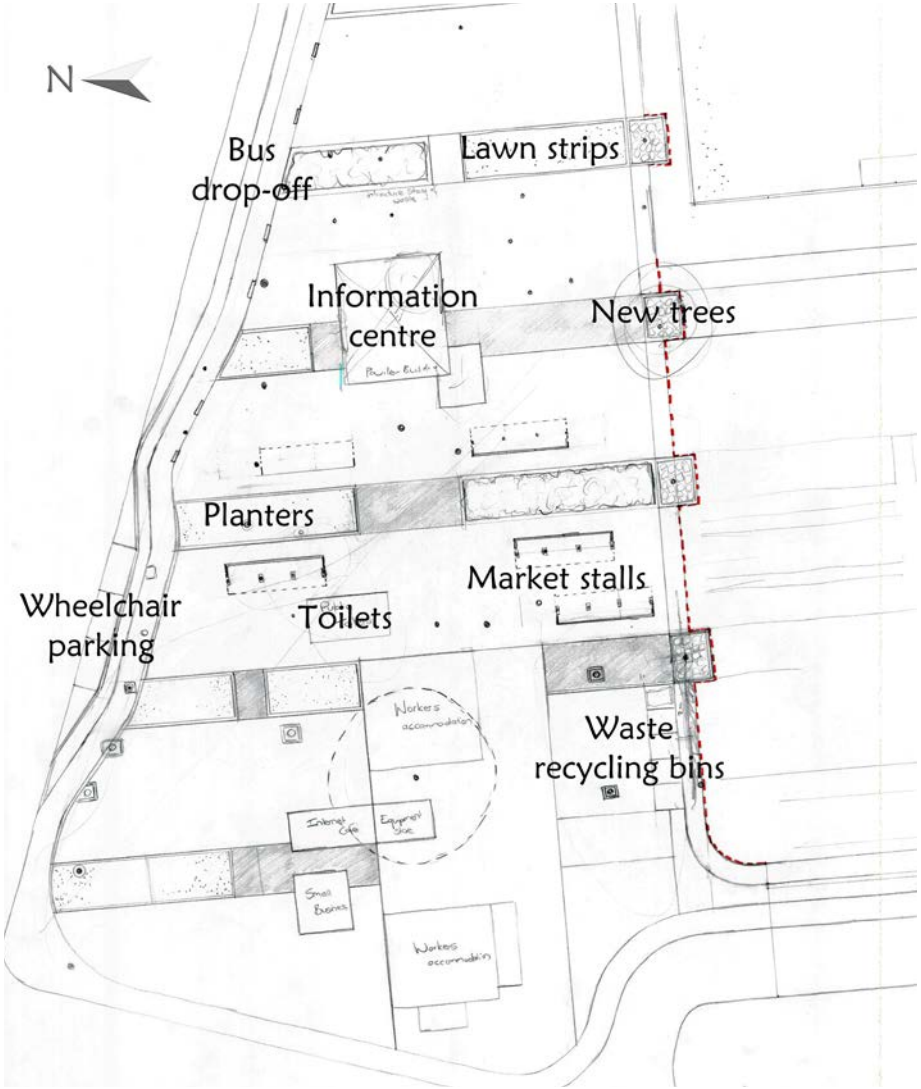


Fig. 166: Sketch Plan development 2 (Author, 2012)

Fig. 167: Sketch Plan development 3 (Author, 2012)

The wheelchair parking was removed and proposed in the staff parking area. The market stalls were moved to a more sensible location (next to the service road), opening up towards the market area and hiding the service road at the same time. The proposed fence is hidden by planting and new trees (Refer to Fig. 168).

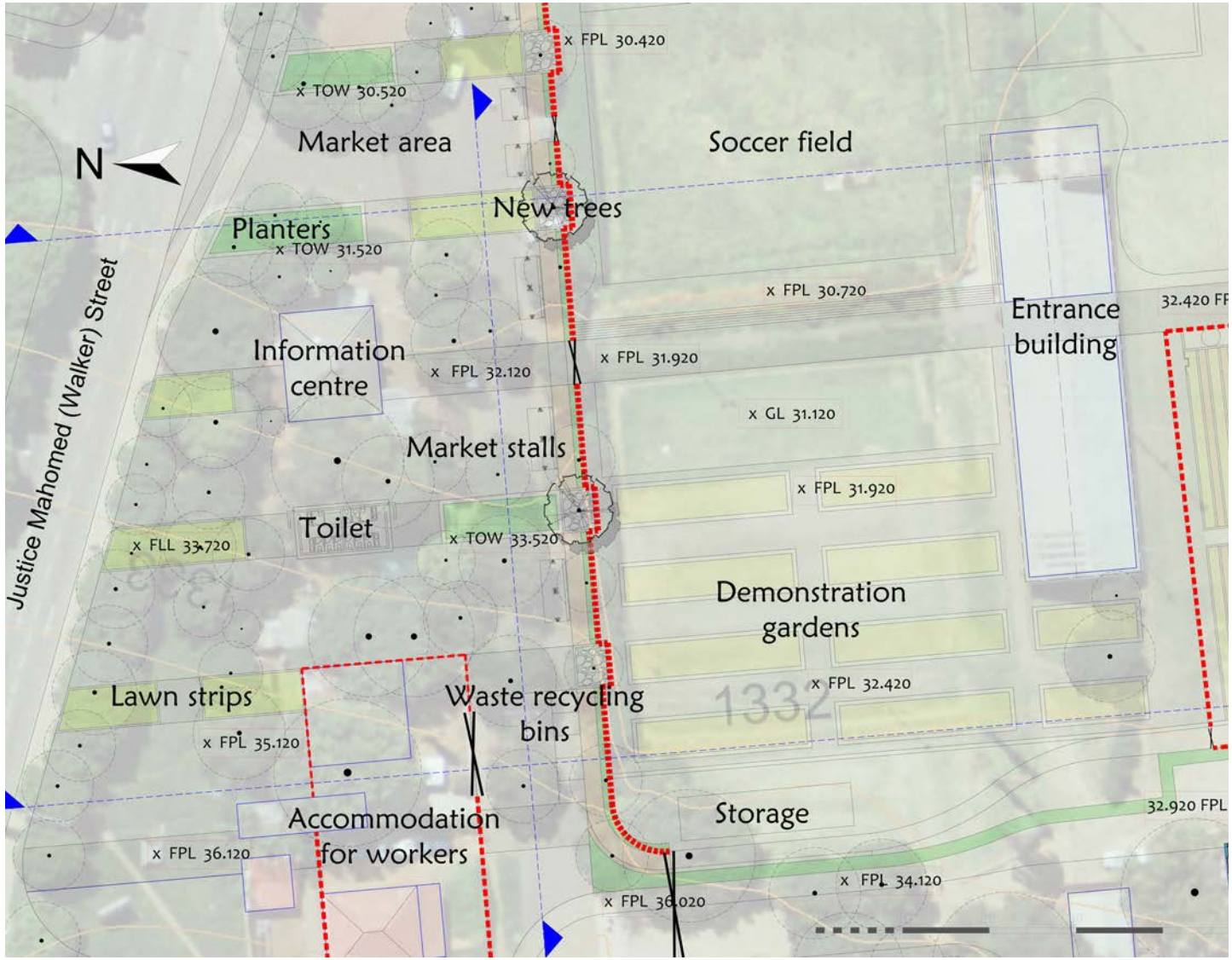


Fig. 168: Sketch Plan development 4 (Author, 2012)

The rectangular grass patches were given a more organic form, imitating the movement patterns (Refer to Fig. 169).

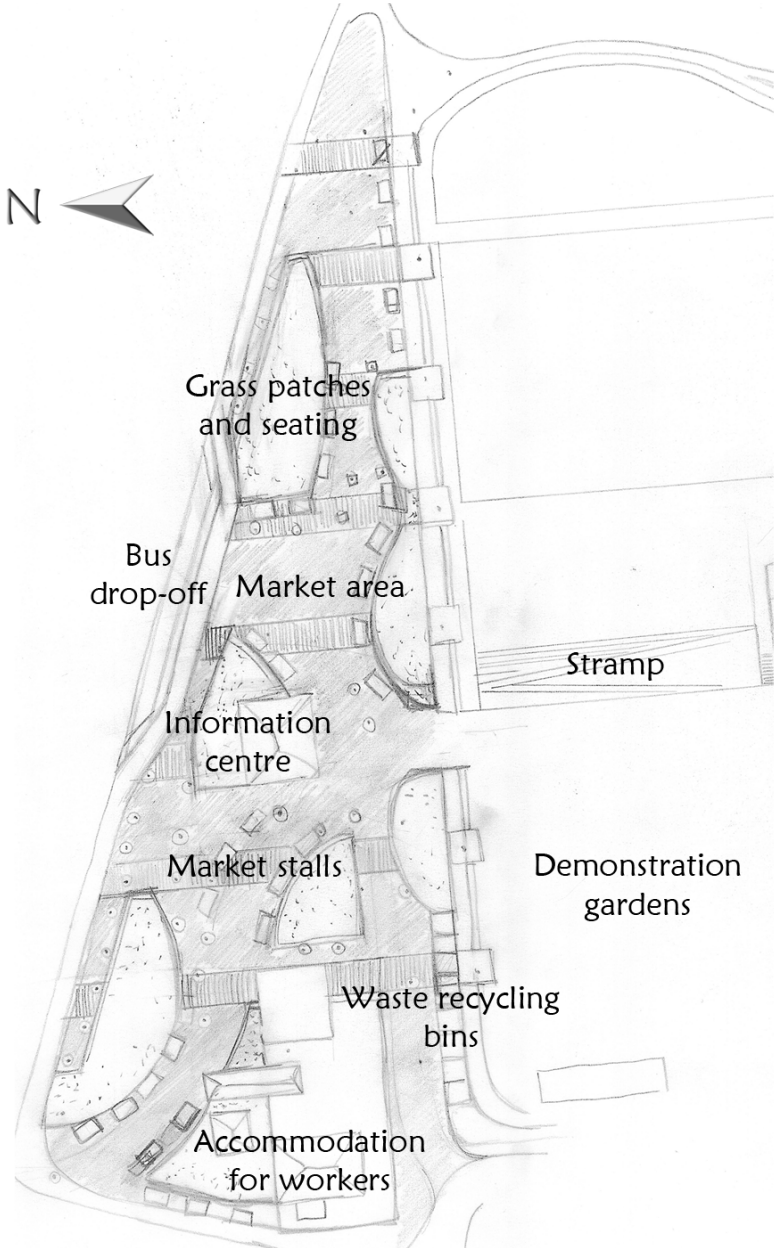


Fig. 169: Sketch Plan development 5 (Author, 2013)

8.3 Final sketch plan

The final sketch plan (Refer to Fig. 170) proposes smaller market stalls strategically placed in the market area according to the movement patterns of the locals and visitors moving through the market area and entering the site. Grass patches were provided for seating, some of the grass areas are on ground level and others are raised to seating height. The proposed toilets are fenced-off together with the accommodation for workers. The entrance building will function as a gardening shop that sells tools, compost and books about gardening with demonstration gardens next to the building where visitors will be educated on how to grow their own vegetables through demonstrations. The wetland will collect the runoff from the demonstration gardens and pump it to a storage dam. A lawn area for informal soccer, a marquee tent for functions or performances and a stramp to get to this area (recreation area) are proposed. The steps provide seating for parents to watch over their kids playing or for a performance.

LEGEND

- Existing trees
- New trees
  Dombeya rotundifolia
- *Rhus lancea*
- *Pennisetum clandestinum*
- Hedge planting
  Carissa macrocarpa
- Hedge planting
  Tecomaria capensis
- Agriculture
- Roof garden
- Concrete with recycled glass aggregate
- Concrete slabs

Fig. 170: Sketch plan (Author, 2013)

8.4 Lighting and material strategy

Regent lighting solutions were chosen because "Regent uses only recycled aluminium. Runners and flaring cut off during the manufacturing process are all remelted, nothing is wasted. As most of the products that Regent manufactures are lights for outdoor installation, aluminium is the ideal metal to use" (Regent, 2013).

Lighting were strategically placed to ensure optimal security at night (Refer to Figs. 171 and 172).

Refer to Fig. 173 for planting and paving material selection.

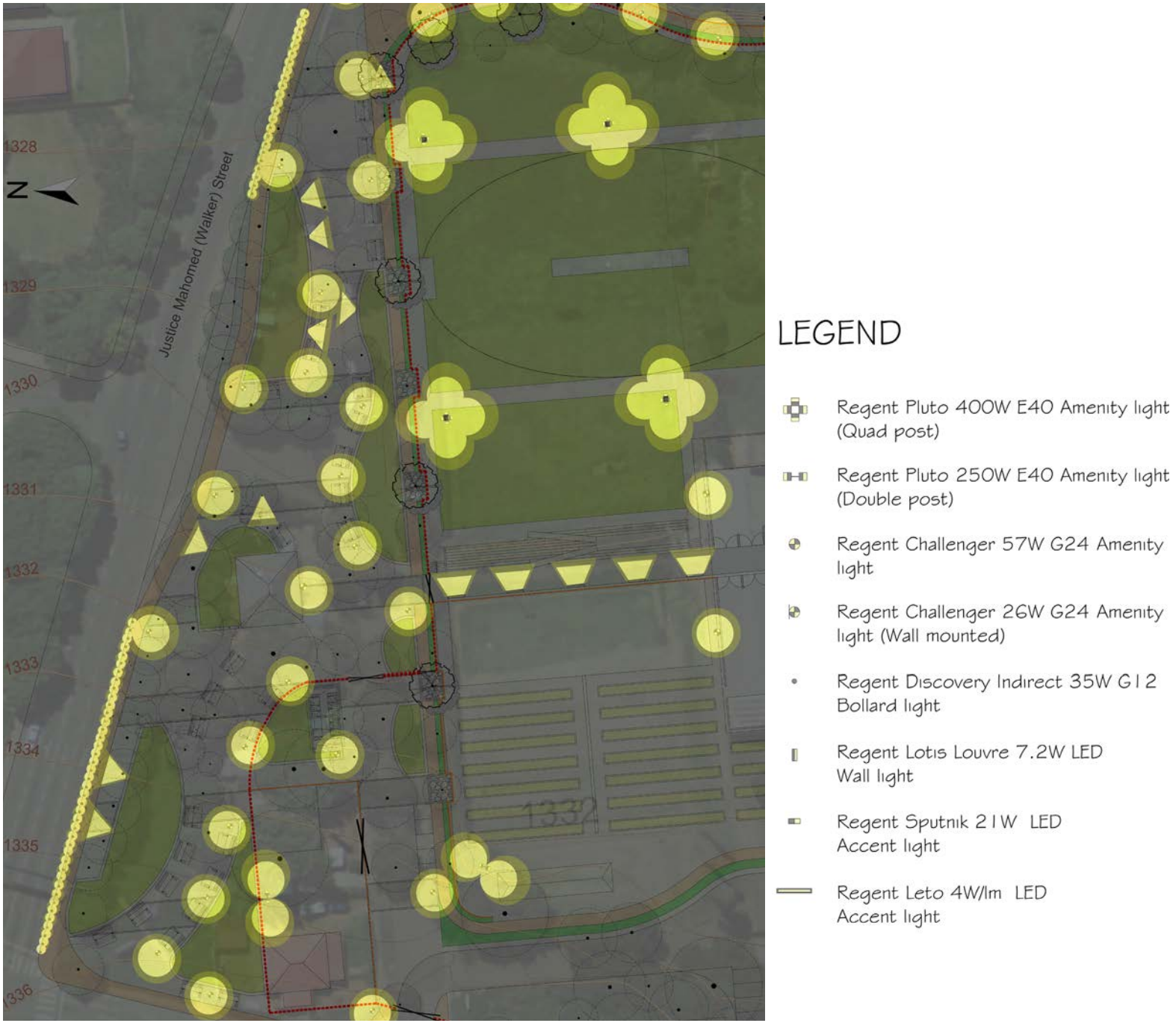


Fig. 171: Lighting Strategy (Author, 2013)

Regent Pluto Double post
250W E40 Amenity Lighting

Regent Pluto Quad post
400W E40 Amenity Lighting

Regent Challenger
57W G24 Amenity Lighting

Regent Challenger
Wall mounted
26W G24 Amenity Lighting

Regent Discovery Indirect
35W G12 Bollard Light

Regent Lotis Louvre
7.2W LED Wall light

Regent Sputnik
21W LED Accent light

Regent Leto
4W/lm LED Accent light

Fig. 172: Lighting materials (Regent Lighting solutions, 2013)

Planting materials

Trees

Dombeya rotundifolia

Market area
Accent/ focal tree
Non-aggressive root system

Rhus lancea

Recreation area
Excellent shade tree
No thorns

Dovyalis caffra

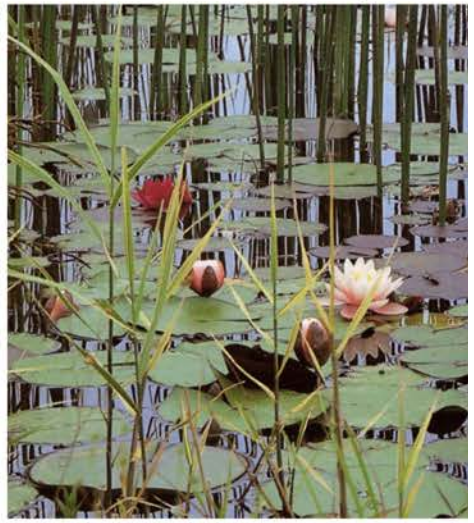
Front of Buildings
Non-aggressive root system
Deciduous, evergreen under favourable conditions

Euclea crispa

Along pathways
Small, structural tree
Non-aggressive root system

Wetland plants

Zantedeschia aethiopica



Nymphaea nouchali

Celtis africana

Remaining areas
Already existing tree
Shade tree

Combretum erythrophyllum

Wet areas
Water-loving tree
Shade tree

Shrubs

Carissa macrocarpa

Hedge planting to hide fence
Attractive ornamental
Strong, stiff spines

Tecomaria capensis

Hedge planting front of buildings
Already existing
Attract birds and insects

Fig. 173: Material Palette (Author, 2013)

Paving materials

Cyperus papyrus

Typha capensis

Rocks and rubble from site

Recycled glass as aggregates

Reuse concrete slabs removed on site

Reuse granite kerbs removed on site

8.5 Storm water strategy and details

The paving in the market area is slightly sloped towards a central line, forming a shallow 'channel' to transport the water through a series of catchpits. All the catchpits are connected with a 450 diameter concrete pipe (Refer to Fig. 174).

The concrete pipe then sends the water to the sub-surface detention basin and back to the storage dam (Refer to Figs. 175 - 178 for details).

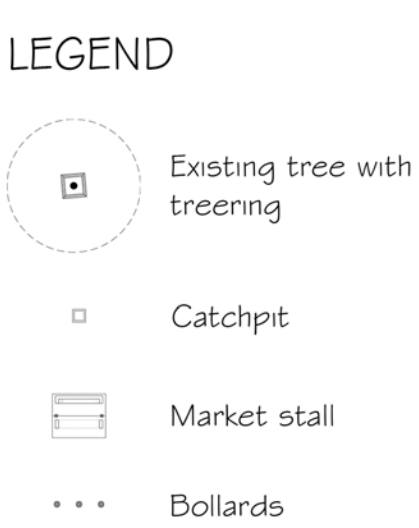


Fig. 174: Storm water Strategy (Author, 2013)

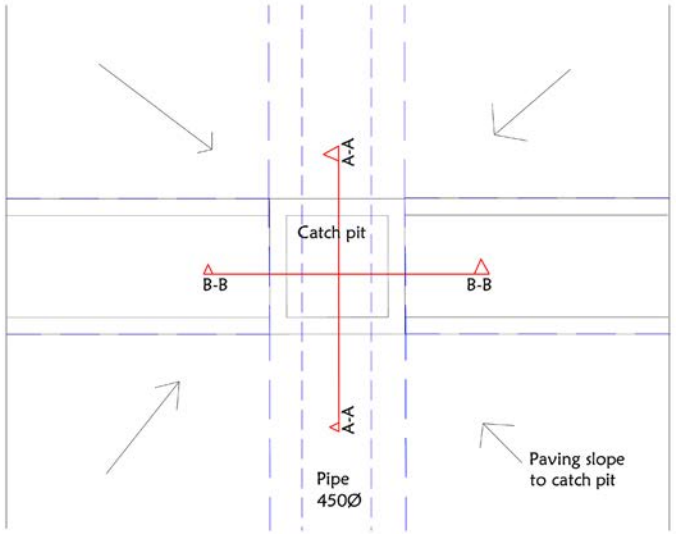
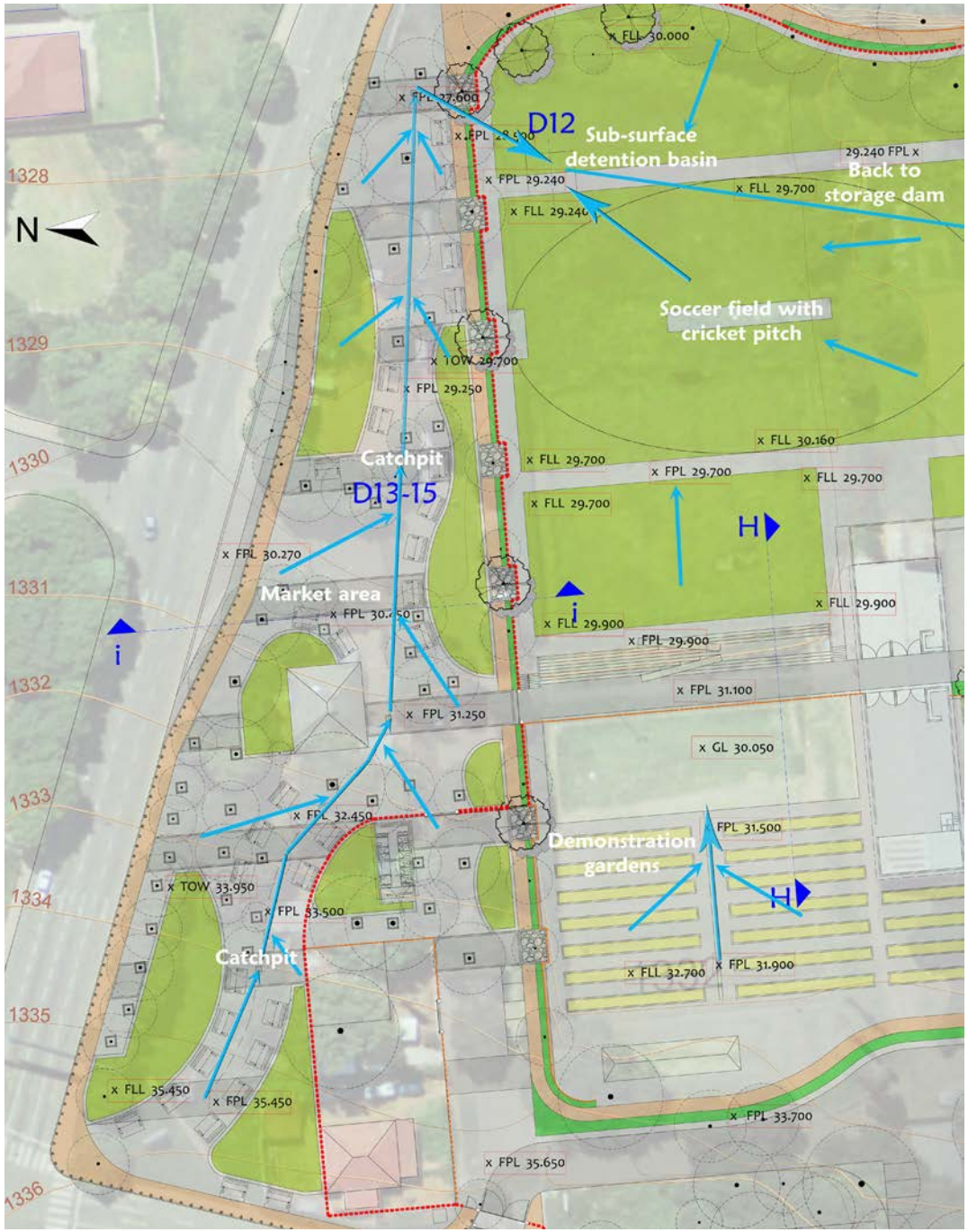


Fig. 175: Catchpit plan (Author, 2013)



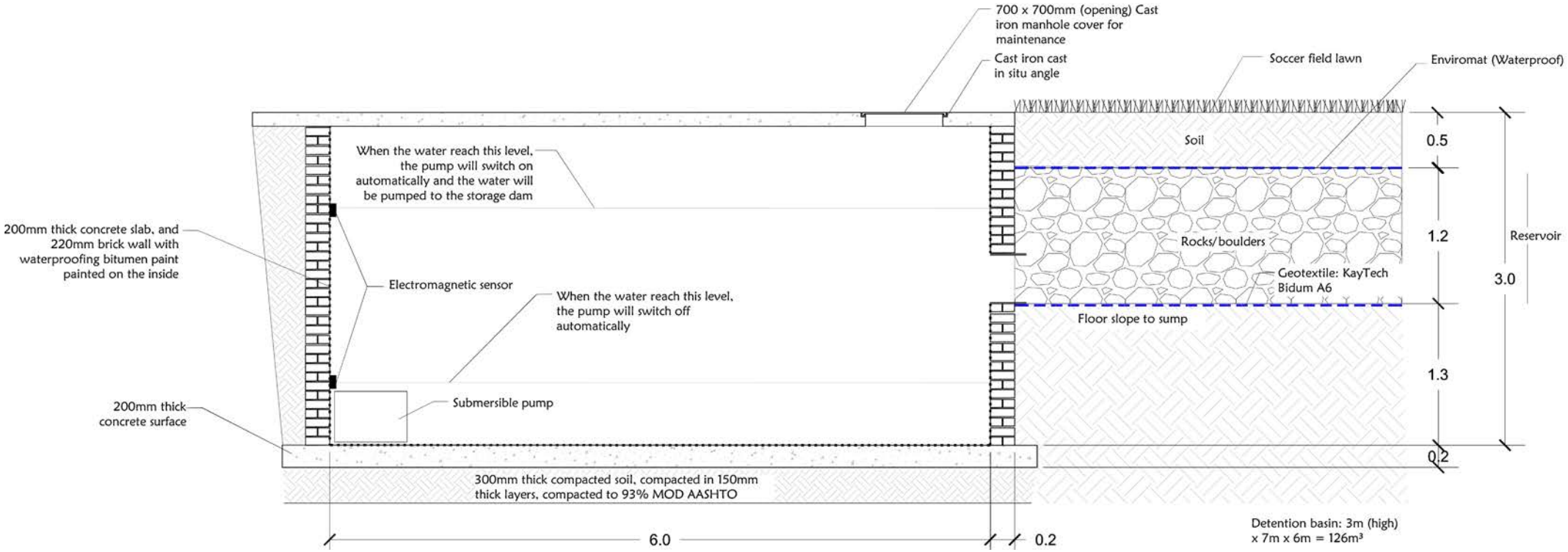


Fig. 176: Sub-surface detention basin (Author, 2013)

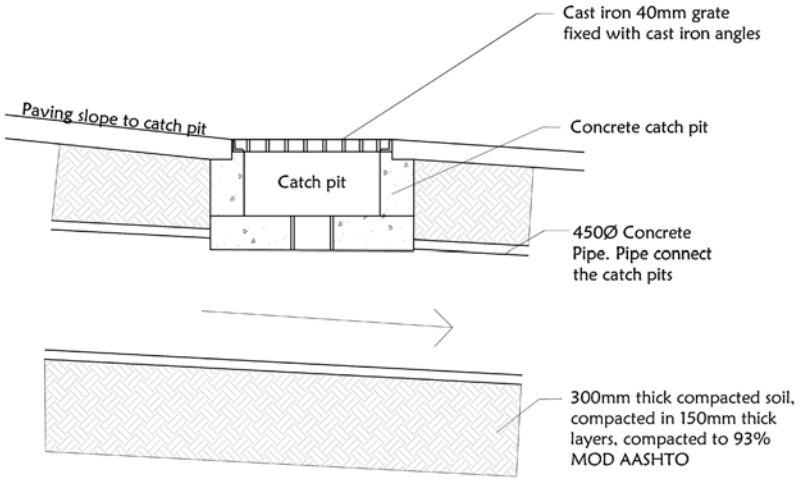


Fig. 177: Catchpit Section A-A (Author, 2013)

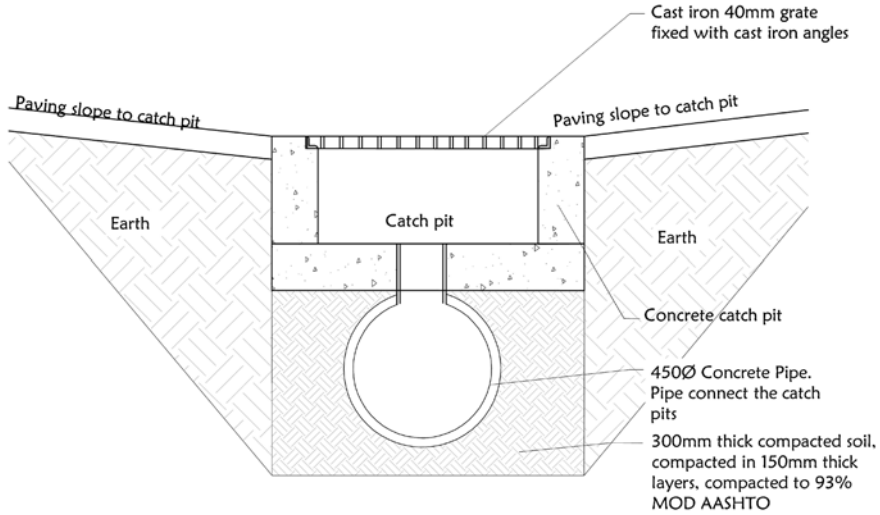


Fig. 178: Catchpit Section B-B (Author, 2013)

8.6 Sections

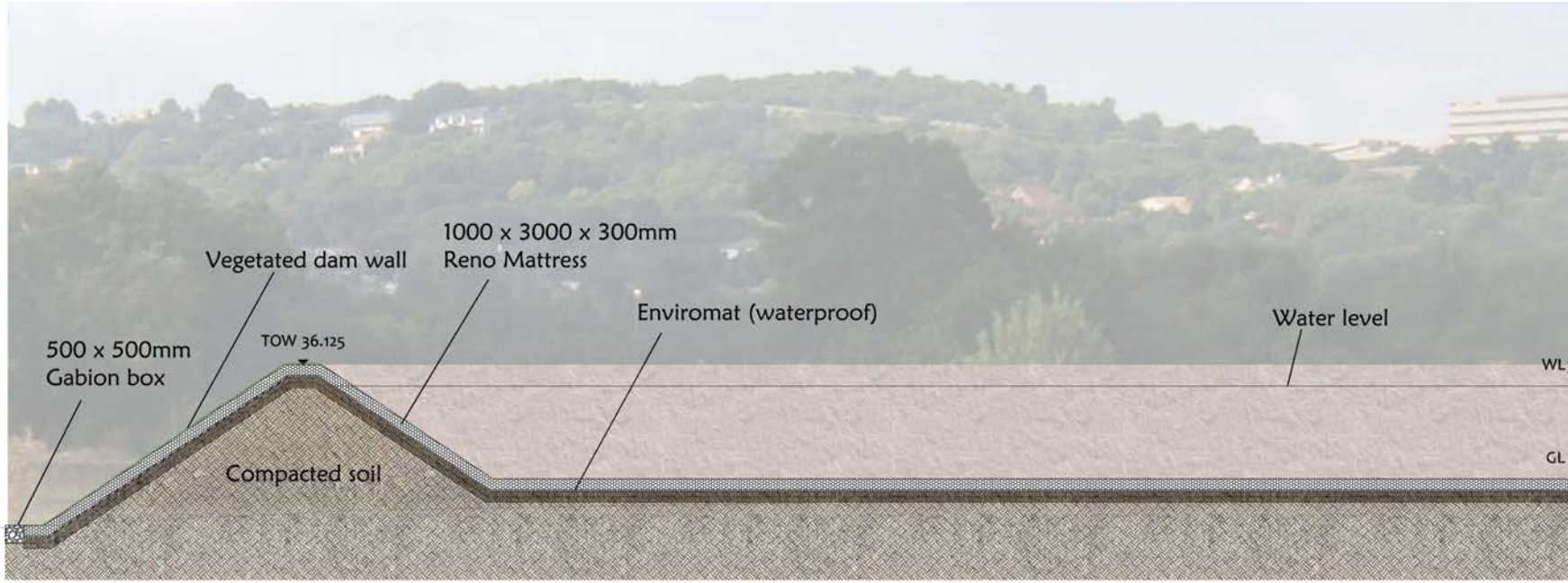


Fig. 179: Section F-F: Storage dam (Author, 2013)

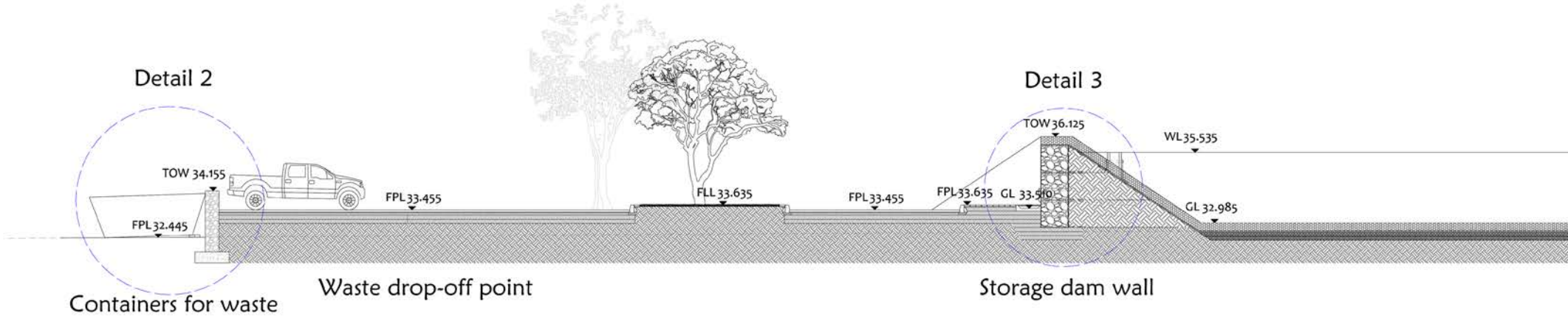
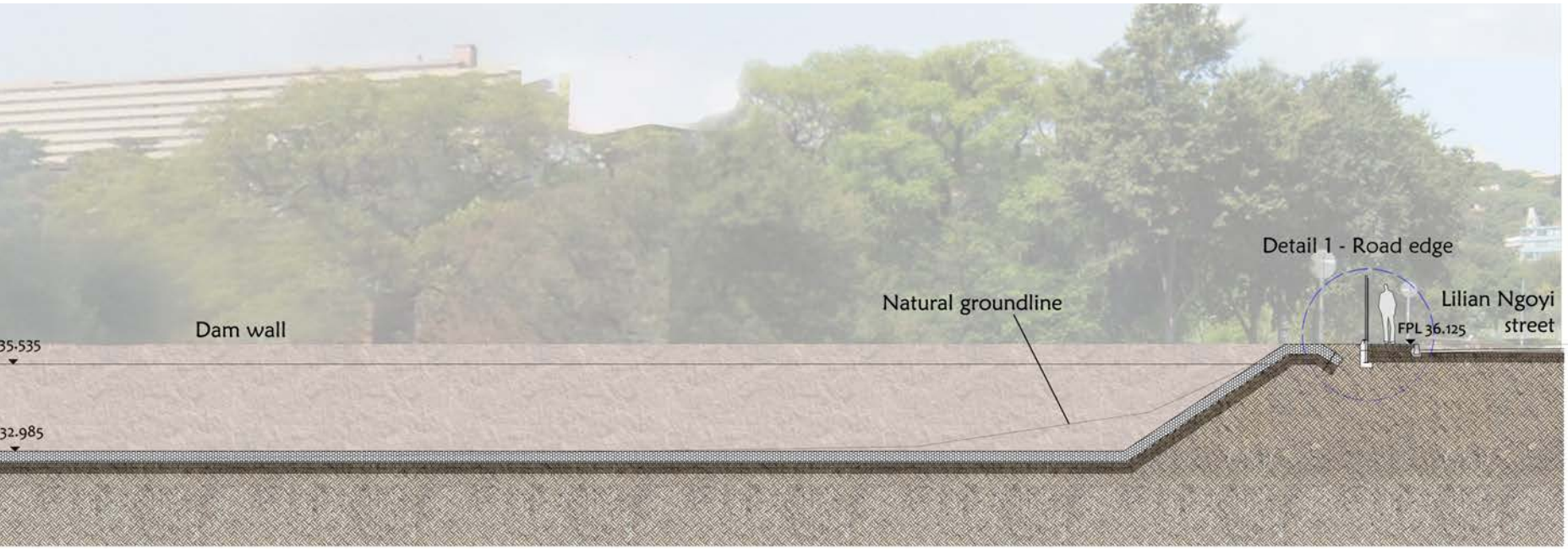
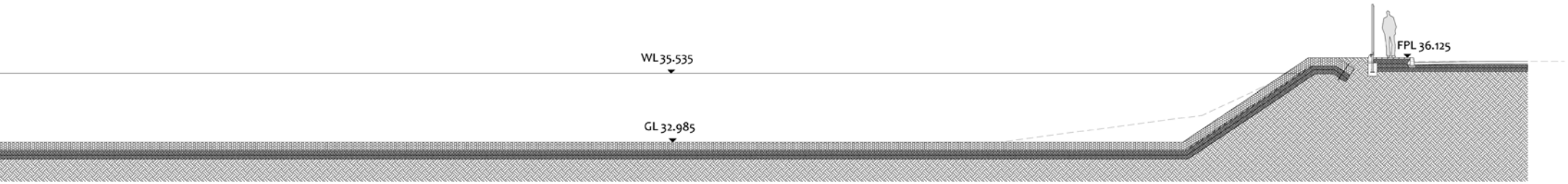


Fig. 180: Section G-G: Waste drop-off and storage dam (Author, 2013)





Storage dam

Road edge

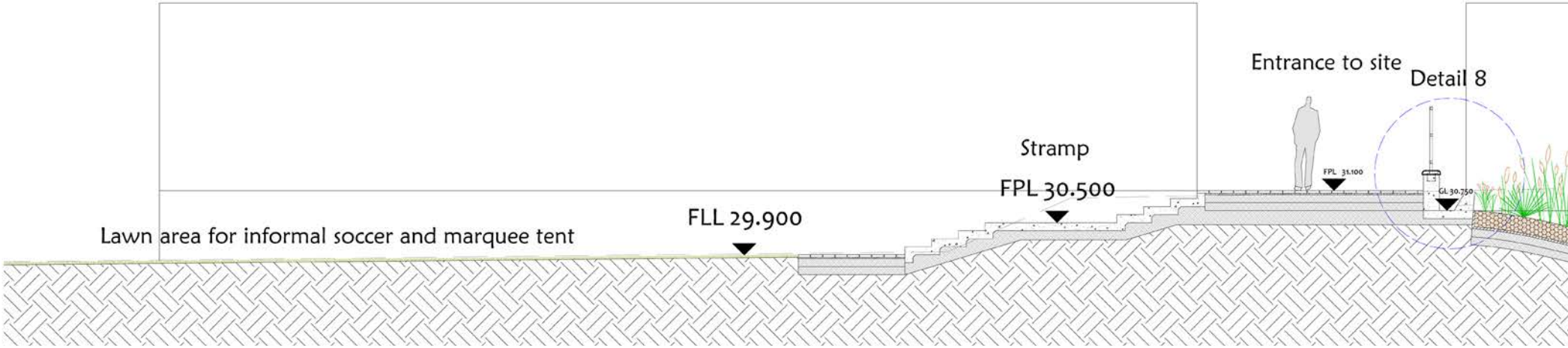


Fig. 181: Section H-H (Author, 2013)

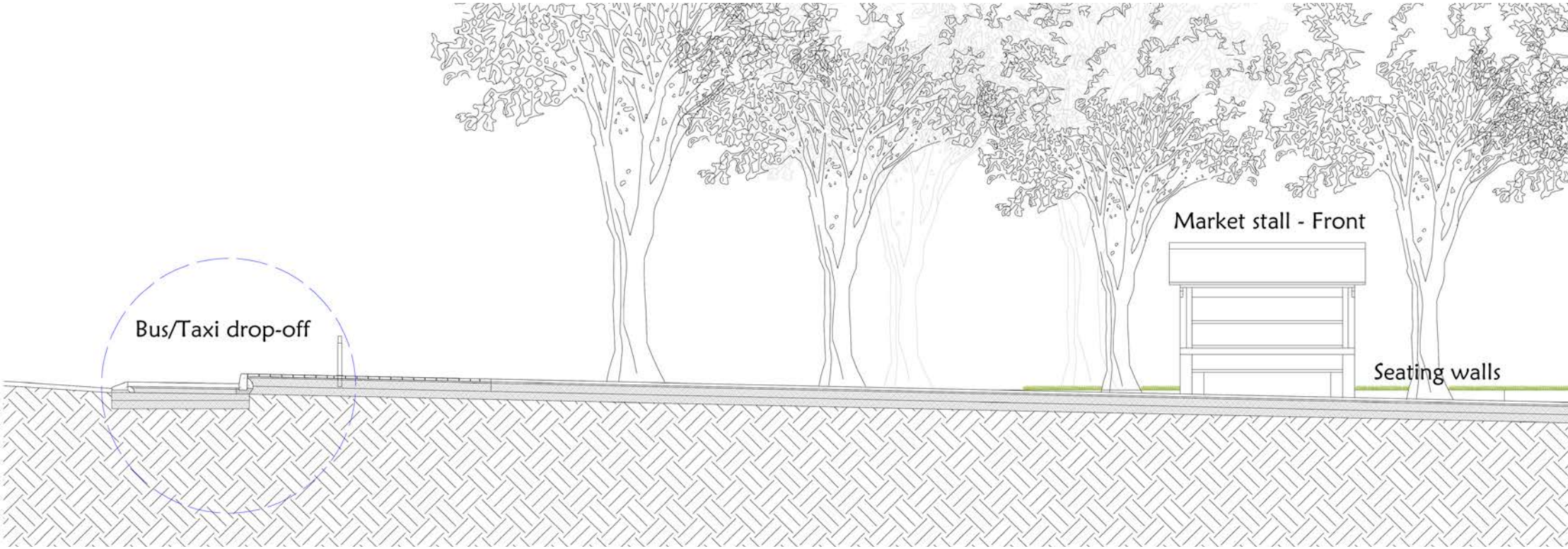
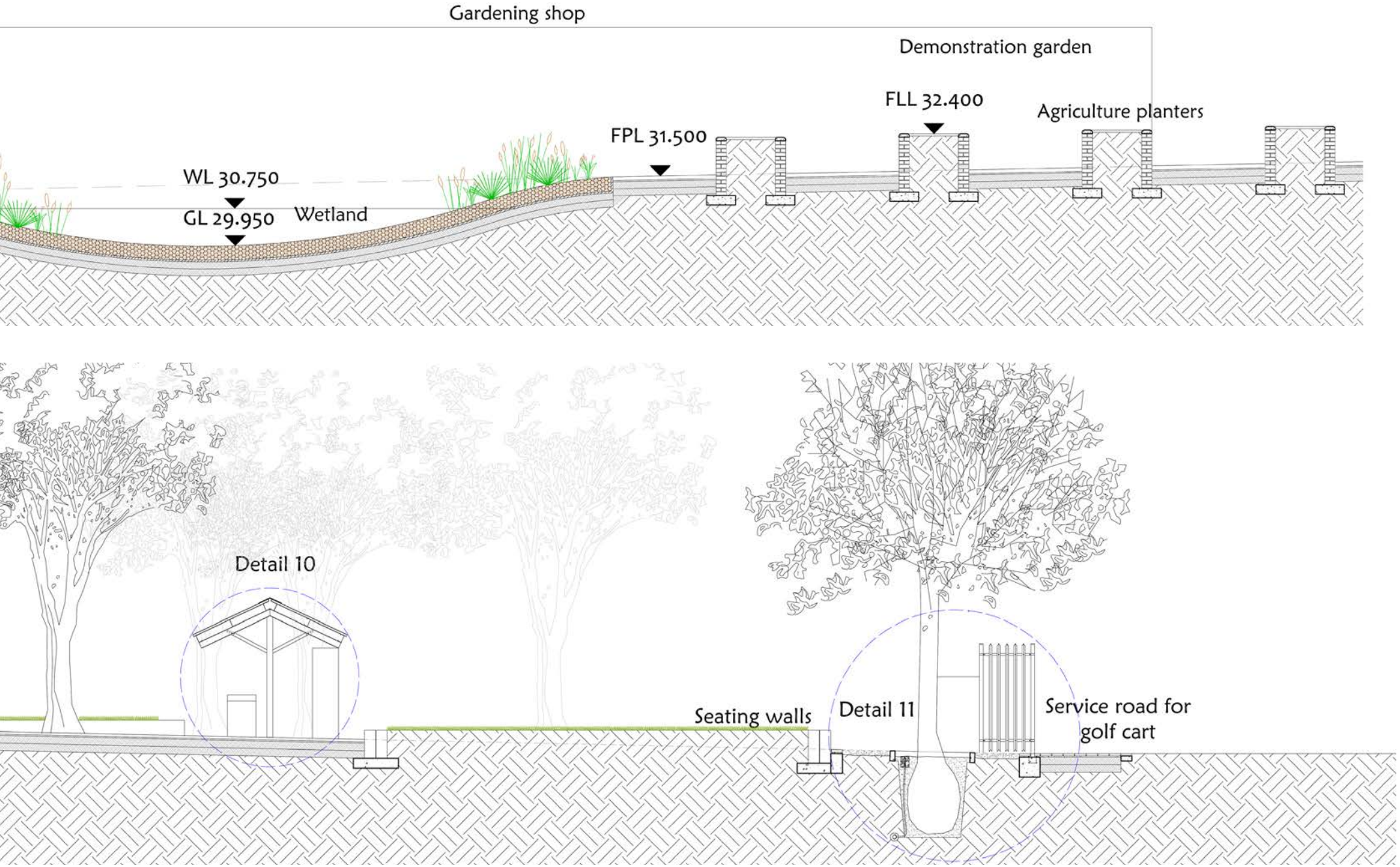


Fig. 182: Section i-i: Market area (Author, 2013)


Gardening shop
Demonstration garden
FLL 32.400
Agriculture planters
FPL 31.500
WL 30.750
GL 29.950
Wetland
Detail 10
Seating walls
Detail 11
Service road for
golf cart

8.7 Details

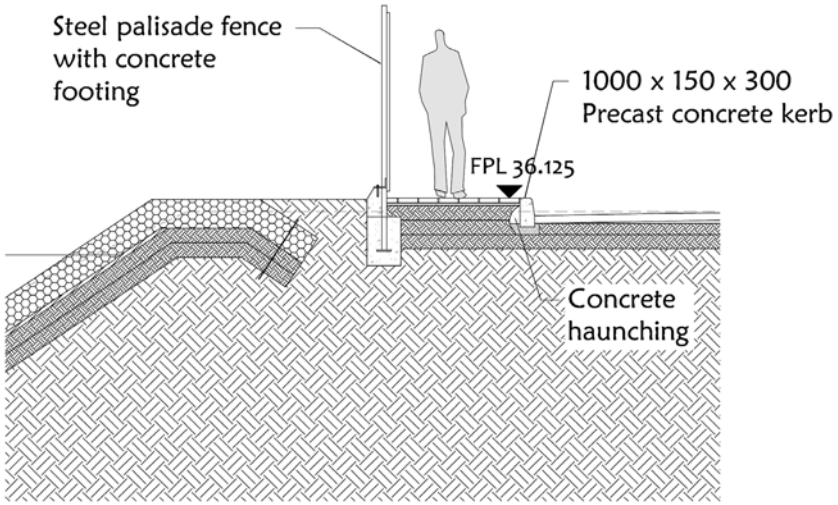


Fig. 183: Detail 1 - Road edge (Author, 2013)

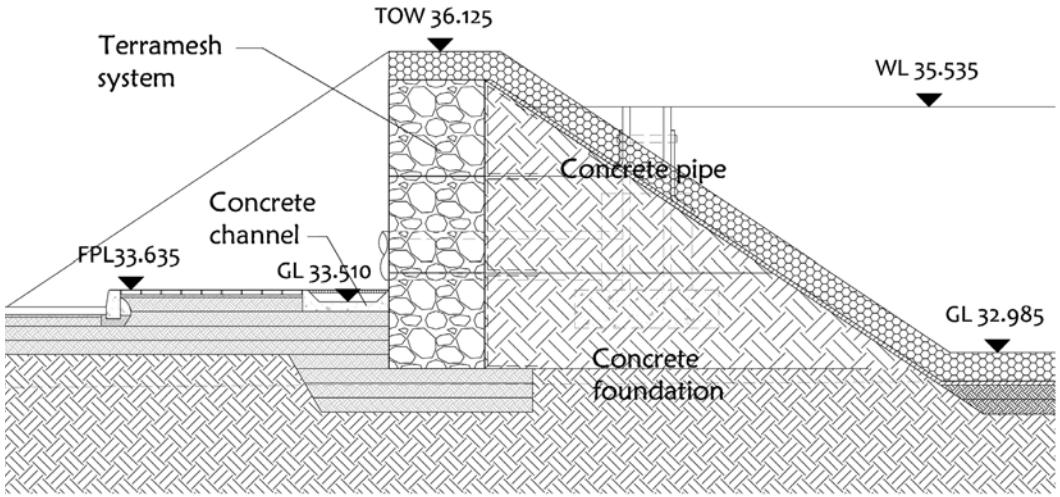


Fig. 185: Detail 3 - Overflow and channel (Author, 2013)

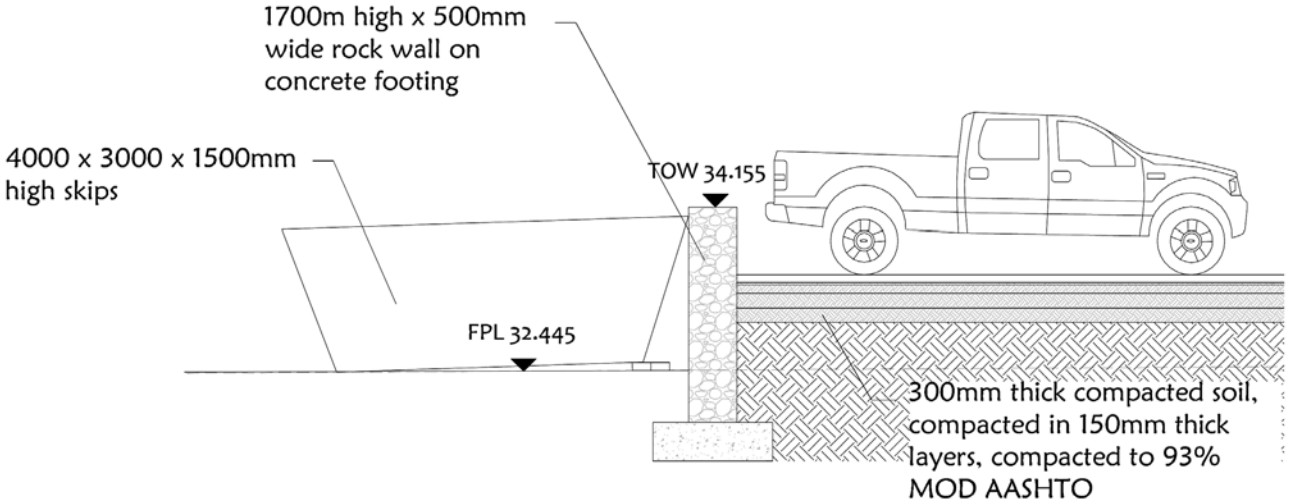


Fig. 184: Detail 2 - Waste drop-off (Author, 2013)

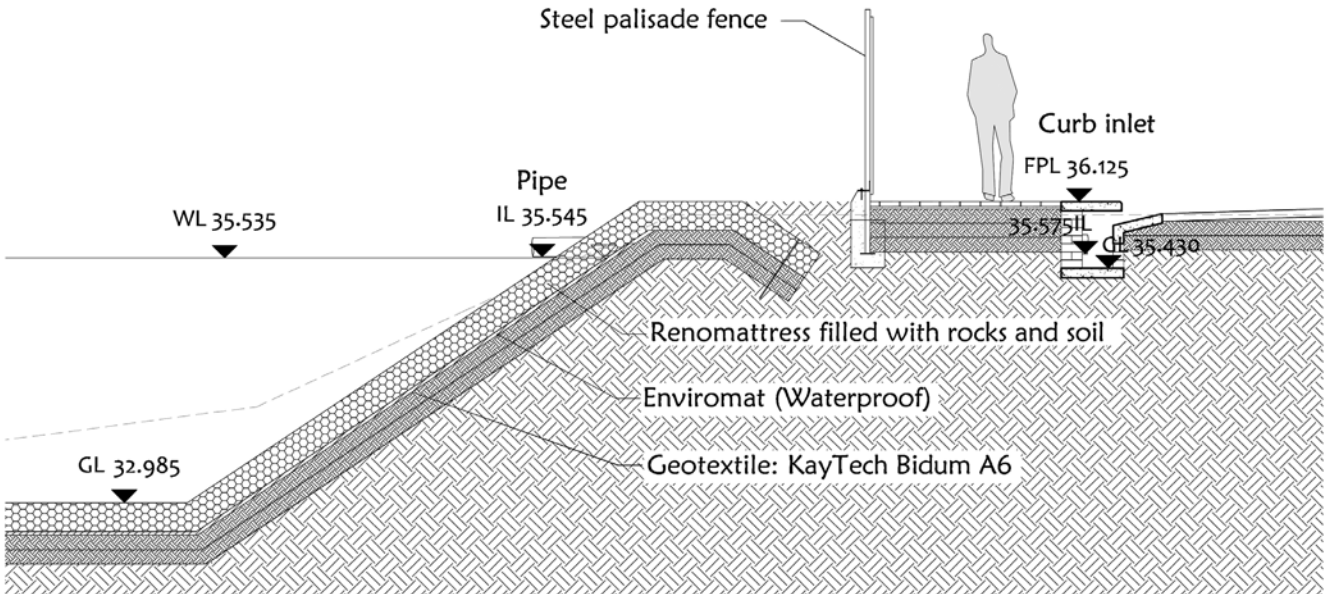


Fig. 186: Detail 4 - Curb inlet (Author, 2013)

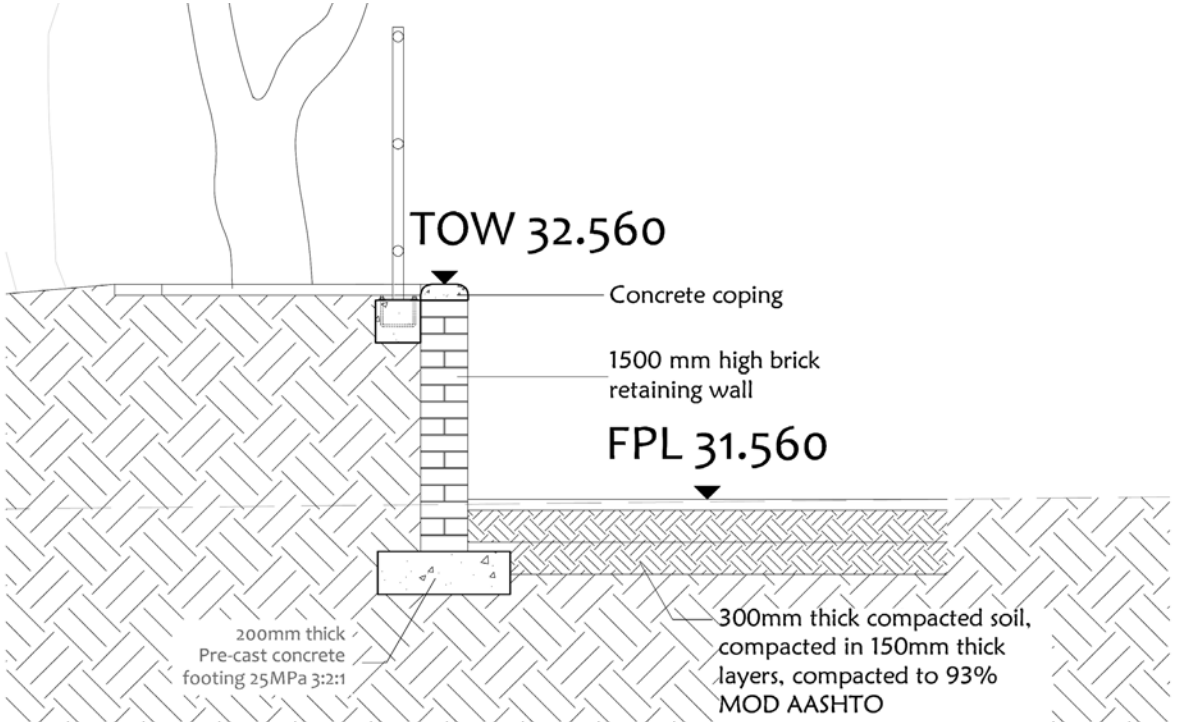


Fig. 187: Detail 5 - Retaining wall (Author, 2013)

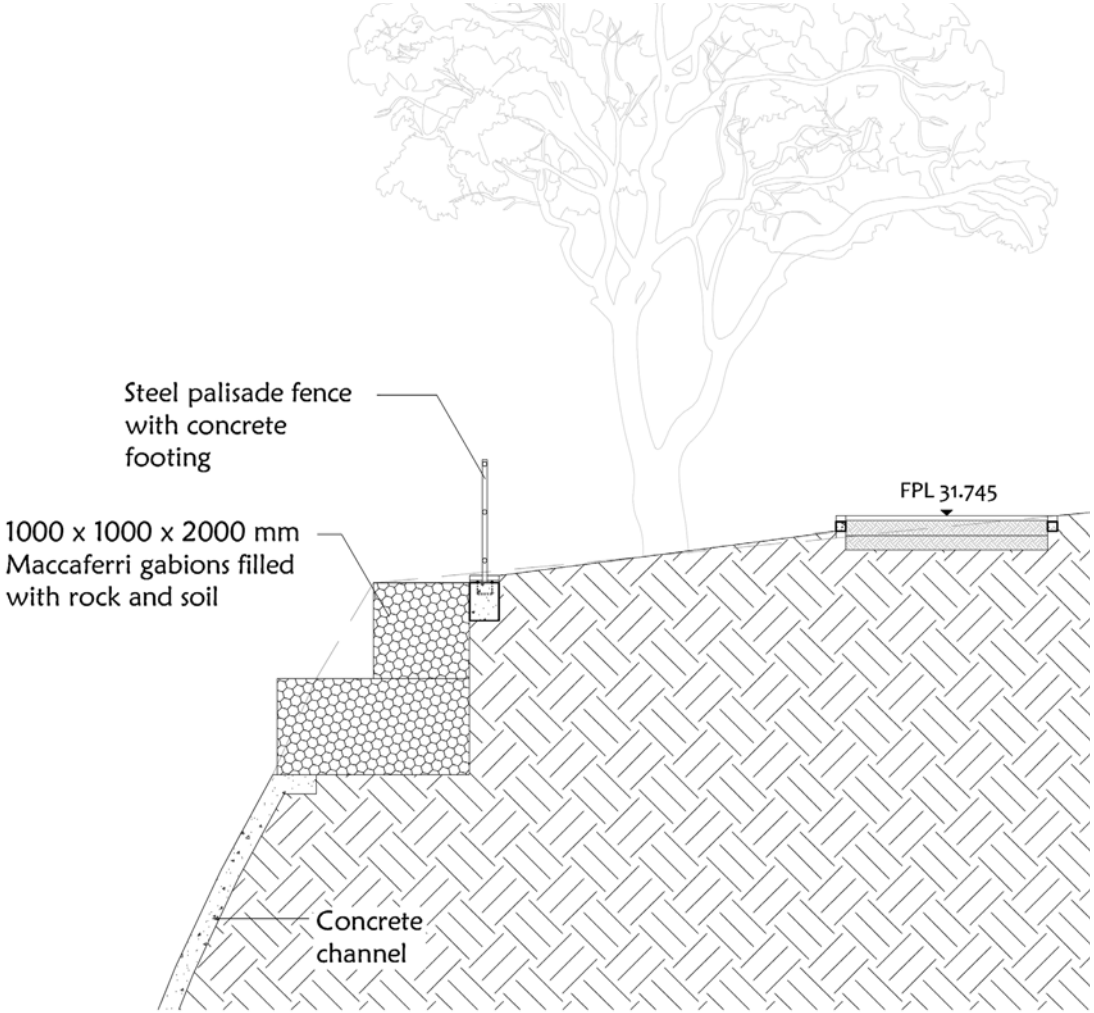


Fig. 188: Detail 6 - River edge E (Author, 2013)

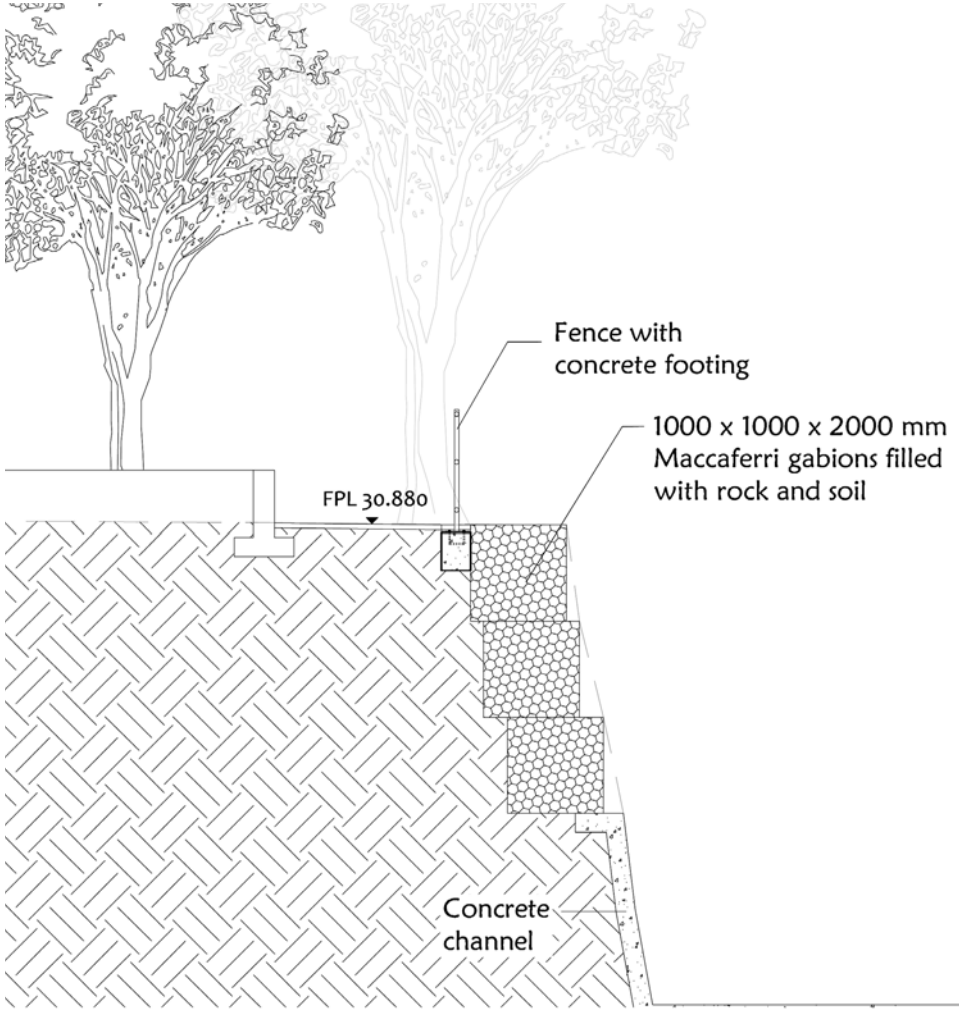


Fig. 189: Detail 7 - River edge D (Author, 2013)

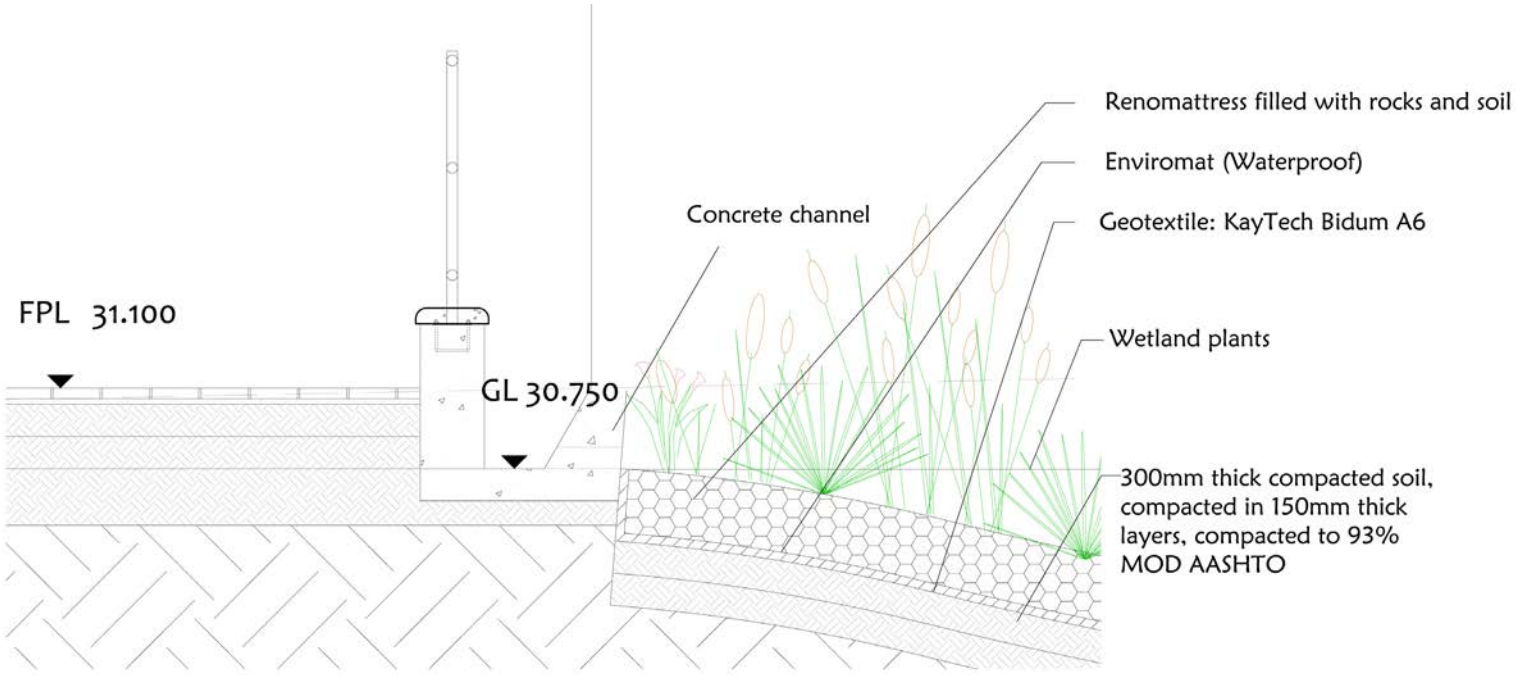


Fig. 190: Detail 8 - Channel and fence next to wetland (Author, 2013)

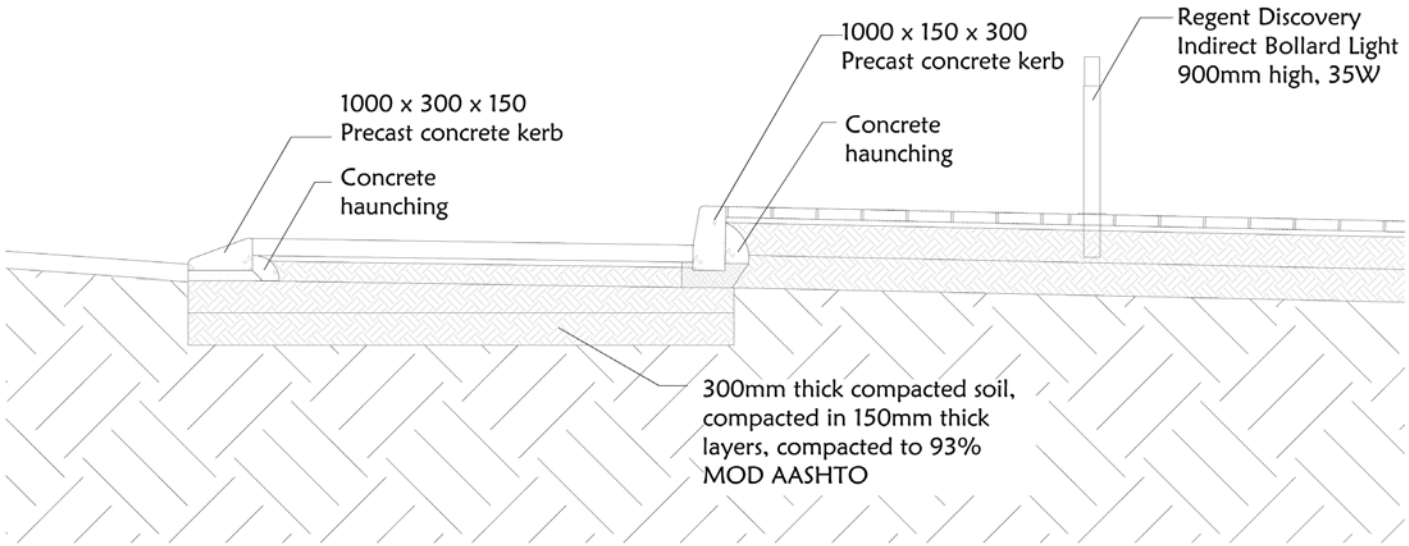


Fig. 191: Detail 9 - Road edge (Bus drop-off) (Author, 2013)

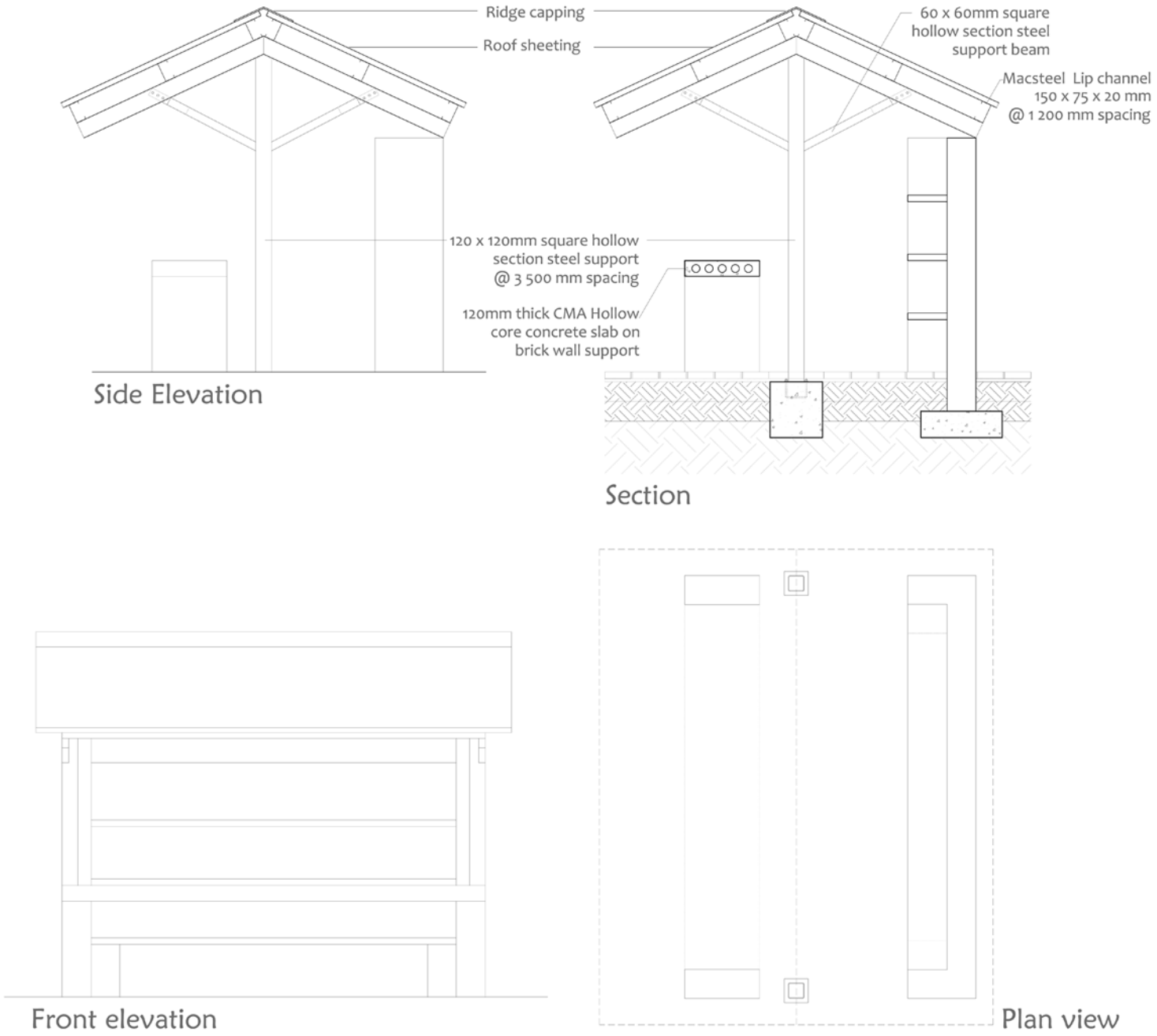


Fig. 192: Detail 10 - Market stalls (Author, 2013)

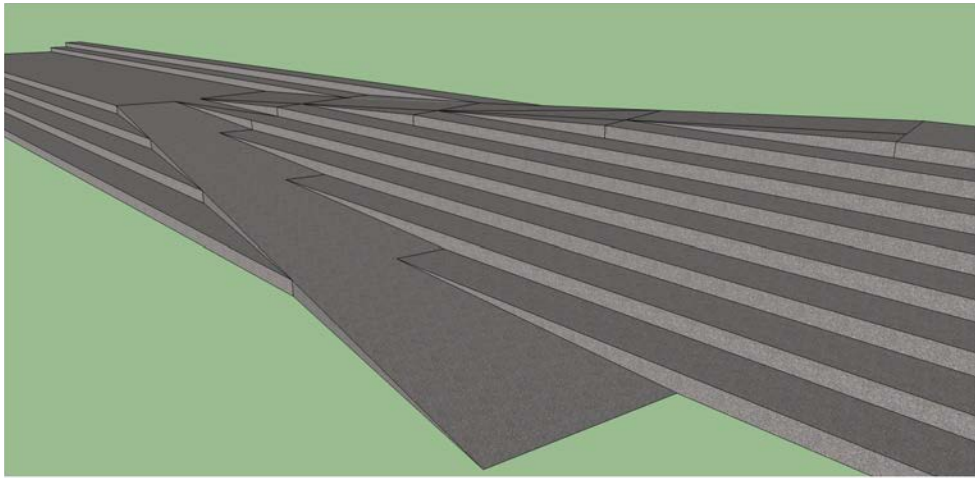


Fig. 193: Stramp 3D (Author, 2013)

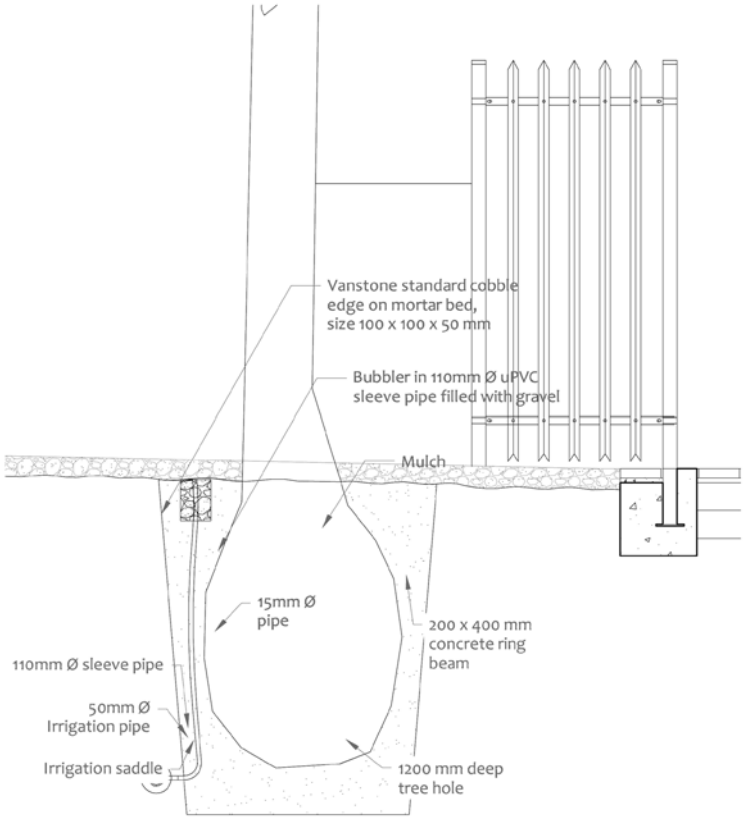


Fig. 194: Detail 11 - Tree planting and palisade fence (Author, 2013)