

As stated previously, there are three different types of spaces that will encourage empowerment. These spaces become places where people can escape from everyday life; where they are encouraged to dream. These are:

Reflective spaces where one can be calm, collect one's thoughts and be at one with oneself. In places like Mamelodi, many people live very over-crowded, hectic, hard lives that leave little or no space for peace and reflection. Time is a precious commodity, so these reflective spaces need to be easily accessible and well known.

Spaces where people feel connected to others in similar situations, where they feel like they are part of a larger community, as well as part of the larger natural system. This is important in a place like Mamelodi where people face hardships on a daily basis, and need to feel that they are not alone.

Fun, stimulatory, inspirational spaces where one can relax, play, be free and leave all worries behind. A place where the imagination comes alive...

Some of the 'tools' that can be used to create these spaces are:

- Elements with an ephemeral nature
- Art (especially that which involves the community)
- Sensory stimulation
- Specific spatial arrangements
- Gesture, hardening and flattening of surface and seriality

The following design will attempt to empower the residents of Mamelodi by creating the spaces mentioned above on a more detailed level.

Part 1: Introduction



Figure 202: Circulation in and around the University (Author, 2008).



Figure 203: Square will be used by young and old alike (Author, 2008).

Why detail this section - opportunities, advantages, needs and constraints?

All circulation patterns in and around the University start or terminate in this square. It therefore becomes an important node within the University precinct.

It is public, and therefore cannot be closed at night and become dead space.

The public library acts as the intermediary link between the University and the public. It will be used by young and old alike - it is the perfect interface.

The space is located in the middle of three significant zones, namely, institutional, busy retail and everyday life (food gardens, residences, apprenticeships, and so forth.) It needs to interact with all of these facets and therefore provides an exciting challenge.

The square can become an exhibition space for the types of skills being taught in the apprenticeship workshops adjacent to it.

Figure 204: Ordinary everyday life (Author, 2008).



Part 2: Plan development and process

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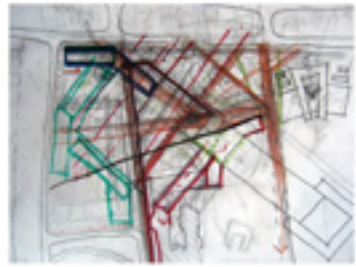


Figure 205 : Attempt to reconcile grid systems present on site (Author, 2008)



Figure 206 : Incorporation of food gardens and apprenticeship workshops (Author, 2008)



Figure 207 : Incorporation of water, aquaduct and raised spaces (Author, 2008)



Figure 208 : Model showing progression of green, water and raised areas (Author, 2008)

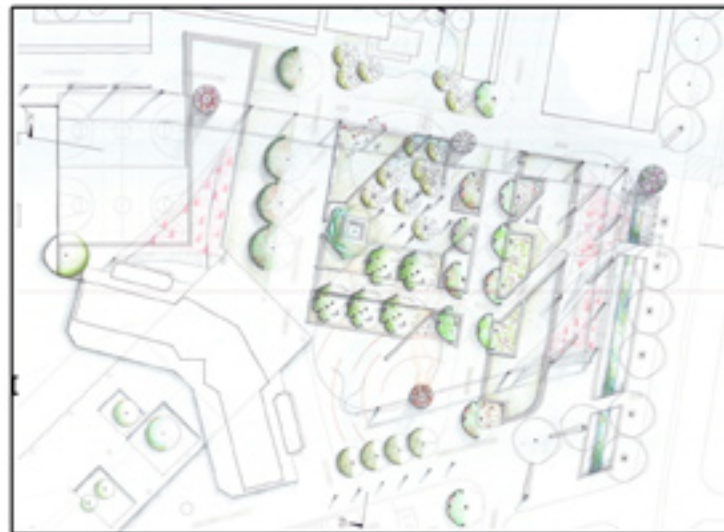


Figure 209 : Almost there - central section around figs still too rigid and static (Author, 2008)

Informal market Area

Density - people - passive surveillance

Environmental education & appreciation

Play spaces

Sensory planting

Reduce, Reuse & Recycle

Sustainable water use

Specified circulation routes

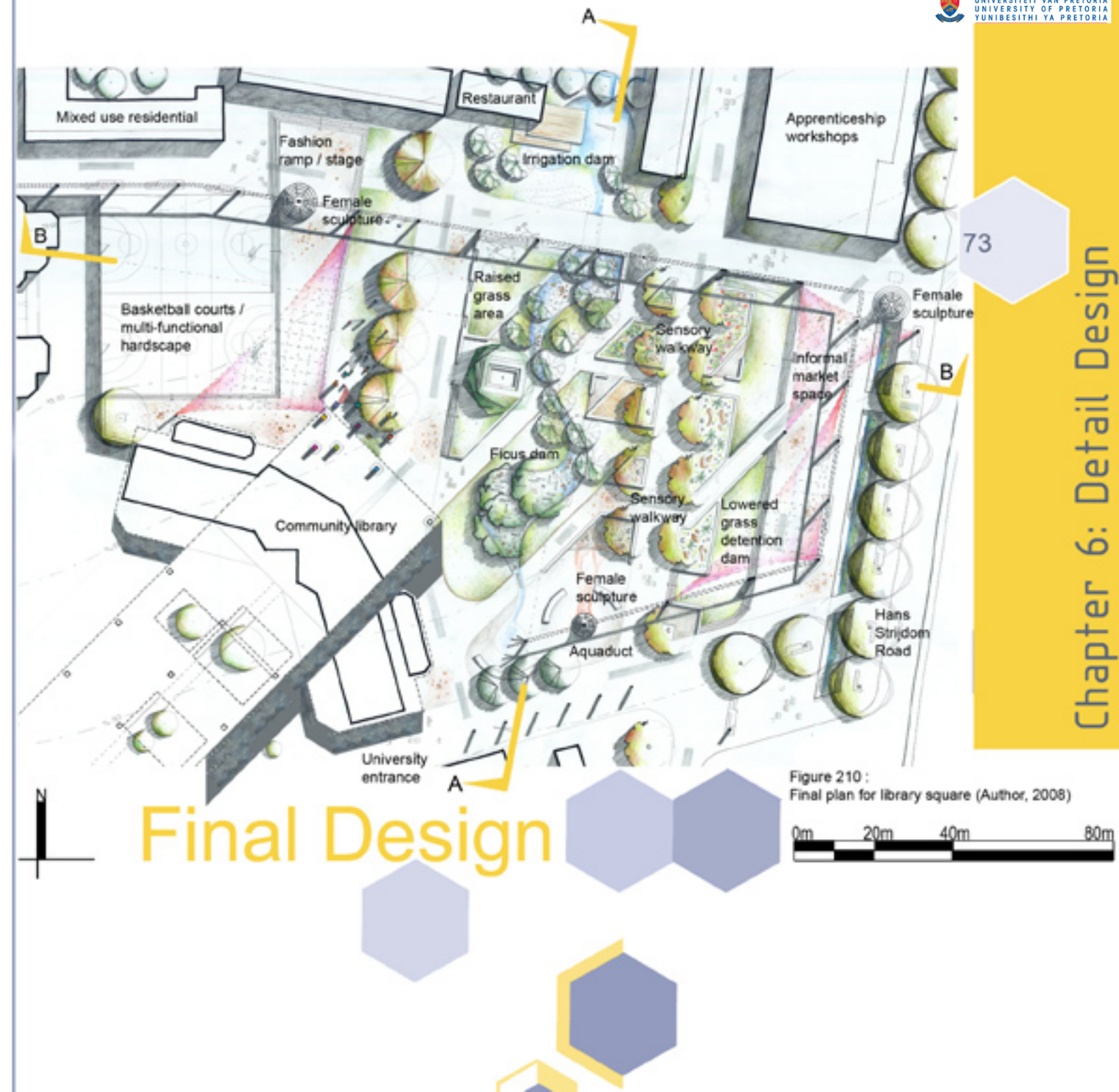
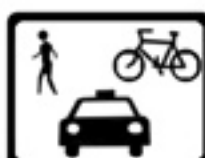
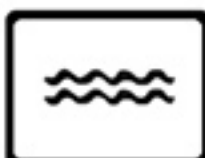
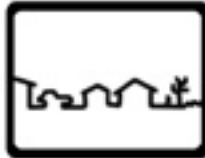


Figure 210 : Final plan for library square (Author, 2008)

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Part 3: Design Principles

There are eight design principles that, in the author's opinion, must be adhered to in order to successfully create the previously mentioned spaces, and thereby, empower the people of Mamelodi. These principles are:

1 The creation of **multi-functional, simple, robust** elements and spaces.



Figure 211: Basketball today (Author, 2008)

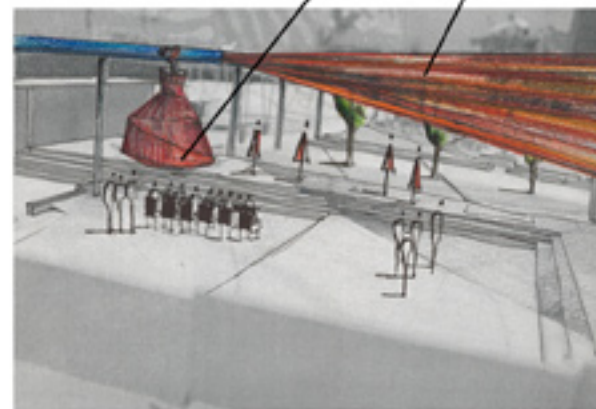


Figure 212: Gathering space tomorrow (Author, 2008)

The above hardscape space, for example, is able to be used as a sports 'field' (netball / basketball) with seating provided on steps all the way around the courts, as well as providing a perfect surface on which to unpack chairs for a concert to be held on the multi-functional ramp / stage adjacent to the courts.

2 **Community involvement and participation.** This will be achieved with the large female sculptures, concrete walkway narratives, the mural on the basketball wall, locally made shading structures, mosaic work, and so on.

3 **Greenery and natural elements increase towards the food gardens,** and decrease towards the busier, more dense areas, i.e. Hans Strydom Road. The movement of water over the site also achieves this. It begins in a very rigid, hard container and subsequently moves into a pebble-lined, organic, planted swale...



Figure 213: Vegetation and softer elements increase towards the residential and food garden areas (Author, 2008)

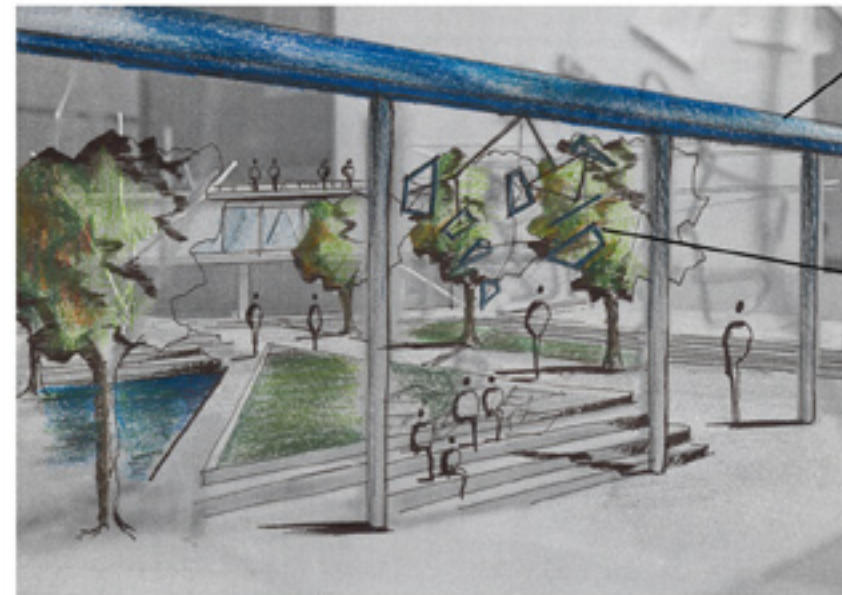


Figure 214: Wind mobiles throw changing patterns on the ground and frame changing vistas (Author, 2008)



Figure 216: Plaza de Dali, Spain (Mangado, 1996)

Multifunctional spaces - Parterre-type elements: Manipulation of the landscape to create level changes in an attempt to reconcile the different grids and geometries on the site, as well as to break the monotony of a flat site. This brings elements closer to eye level thereby allowing people a different experience of that element and inviting them in to touch it, sit under it, and so on.

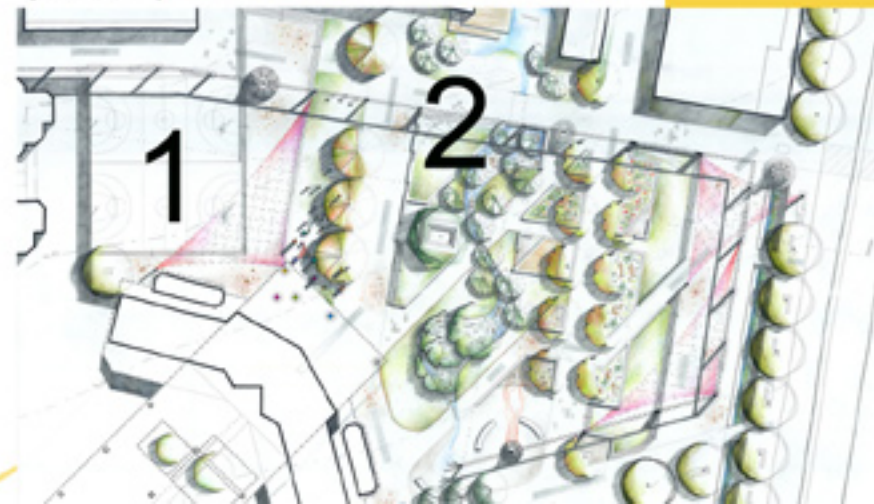
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The use of **vertical elements to define main circulation routes.** This is accomplished through the positioning of aquaduct supports and tall trees.

4 Make use of **ephemeral elements**, like vegetation, wind mobiles, musical sculptures, rust patterns on paving, and so on.



Figure 215: Changes in levels - space creation (Author, 2008)



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The **stimulation of the senses** through the use of tactile and textured materials, aromatic vegetation, shadow play, musical sculpture, and so on.



Figure 217: Sensory stimulation - Vodacom advert (Wallpaper Magazine, 2006)

Stick to the **colour scheme**



Figure 220: Colour scheme (Author, 2008)

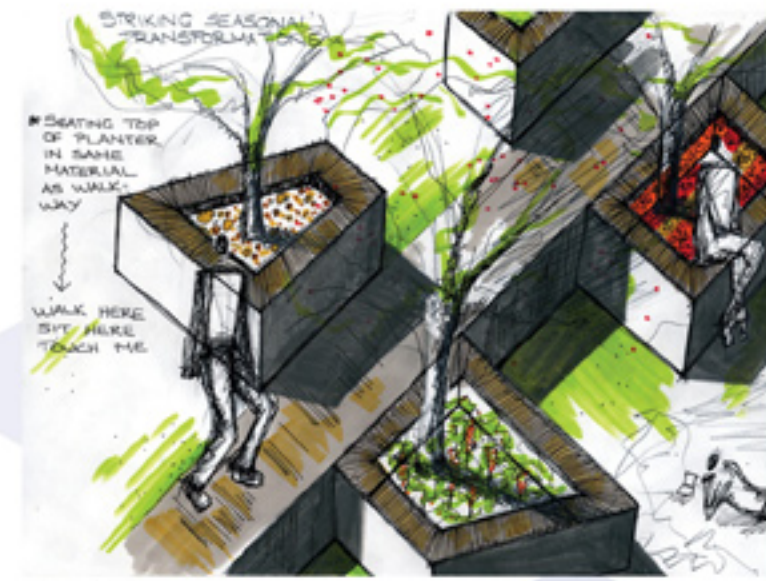


Figure 218: Sensory walkway at different levels (Author, 2008)



Figure 219: Examples of tactile, visual and aromatic elements found in planters along sensory walkway (Author, 2008)

3



Figure 221: Platforms for play (Opie, 1994:16)



Figure 222: Build forts, create secret spaces, stimulate the imagination (Coppard, 2003)



Figure 223: Looking out from the library (Author, 2008)

4

Create **play areas**, especially for children; places where the **imagination** can run wild...

"Playgrounds that deny the child; that offer no chance of involvement, participation or manipulation; that are devoid of choice, complexity and interaction will be empty of children" (Friedberg, 1970:29)

What we need are places of imaginative play and learning. We need to broaden the definition of a playground. They should be places where children can make up their own games and create new patterns of play.

"Children thrive in play situations where they can be architects and builders and are given materials (rocks, logs, pipes, sand, water) to do so. Children fed a steady diet of static equipment for muscle exercise don't get to exercise their imaginations and creative powers" (Sticks, Stones, Water and Leaves by Dannenmaier, 2006:61).

Columns create a colourful focal point, as well as providing the structure upon which to build forts and construct magical lands.










4

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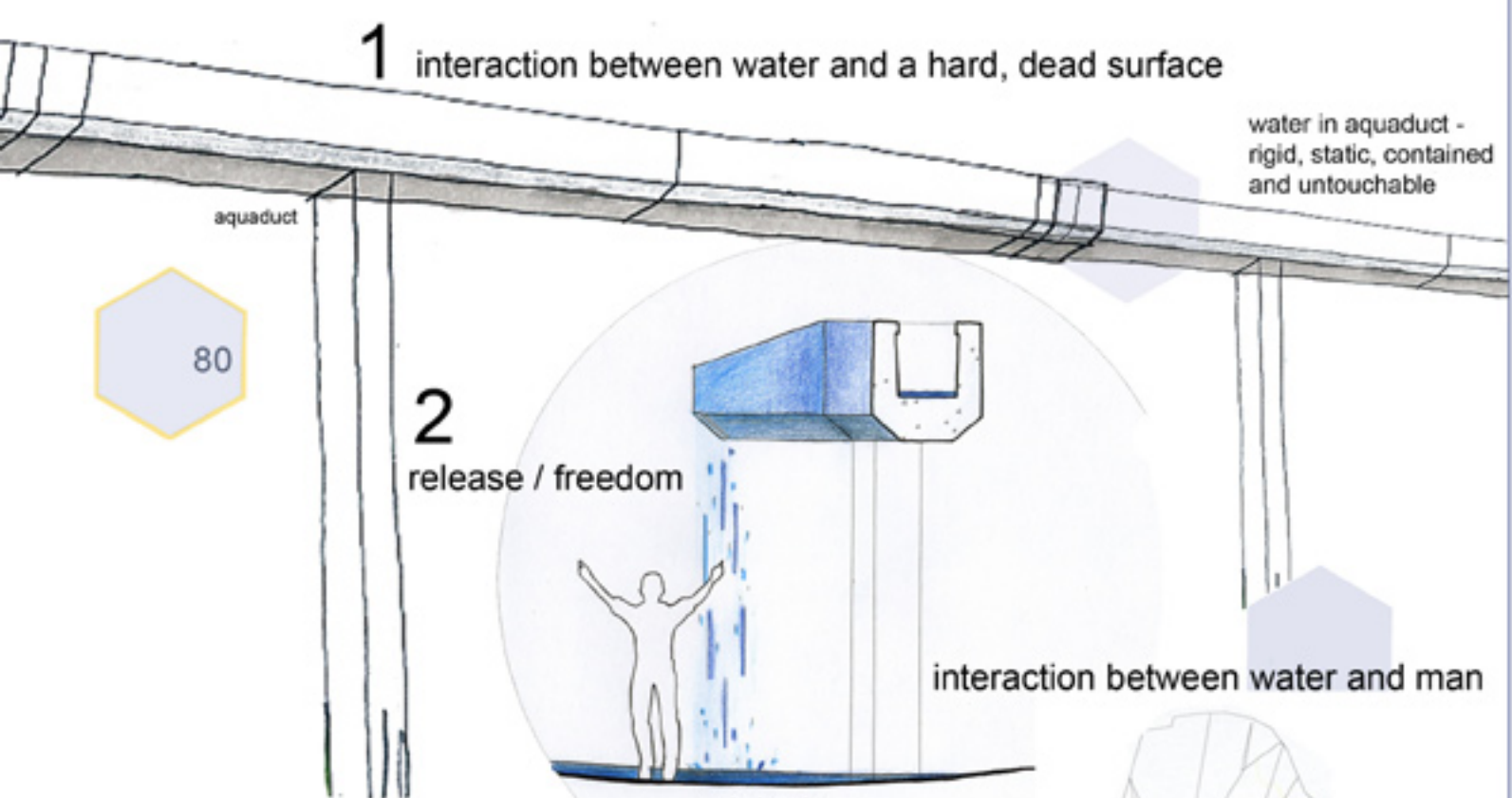
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Key to trees used

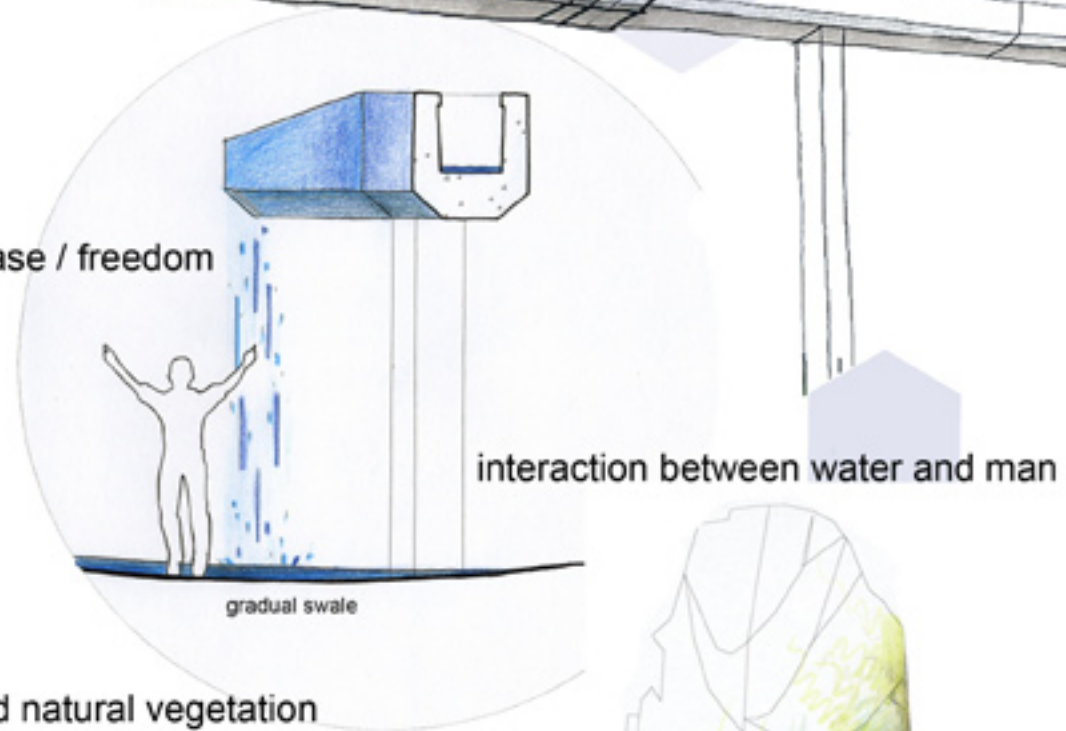
	<i>Ficus sycomorus</i> subsp. <i>sycomorus</i> (Sycamore fig)	Large focal tree with plank roots upon which to sit and play
	<i>Celtis africana</i> (White stinkwood) / <i>Combretum apiculatum</i> subsp. <i>apiculatum</i> (Red bush-willow)	Street trees with non-aggressive root systems. Do not produce large messy fruits.
	<i>Bolusanthus speciosus</i> (Tree wisteria) / <i>Dombeya rotundifolia</i> (Wild pear) / <i>Erythrina</i> <i>lystemon</i> (Common coral tree) / <i>Schotia</i> <i>brachypetala</i> (Weeping boer-bean)	Plant along the sensory walkway - flowers and pronounced seasonal change
	<i>Acacia sieberiana</i> var. <i>woodii</i> (Paper-barked thorn)	Focal tree - flat top and peeling, papery bark
	<i>Harpephyllum caffrum</i> (Wild plum)	Shade tree + reddish, spiral-type leaves
	<i>Combretum erythrophyllum</i> (River bush-willow) / <i>Acacia xanthophloea</i> (Fever tree) / <i>Syzigium cordatum</i> (Water-berry)	Trees to be planted in and around water points - like wet feet. Appropriate colours
	<i>Heteropyxis natalensis</i> (Lavender tree)	Attractive bark and red & purple autumn colours
	<i>Catha edulis</i> (Bushman's tea)	Slender, upright canopy, non-aggressive root system

*Schotia brachypetala*
(Weeping boer-bean)*Combretum erythrophyllum*
(River bush-willow)*Erythrina lysistemon*
(Common Coral tree)White stinkwood
(*Celtis africana*)*Ficus sycomorus* subsp
(Sycamore fig)*Syzigium cordatum*
(Water Berry)*Acacia xanthophloea*
(Fever Tree)*Bolusanthus speciosus*
(Tree Wisteria)

1 interaction between water and a hard, dead surface



2 release / freedom



3 interaction between water and natural vegetation

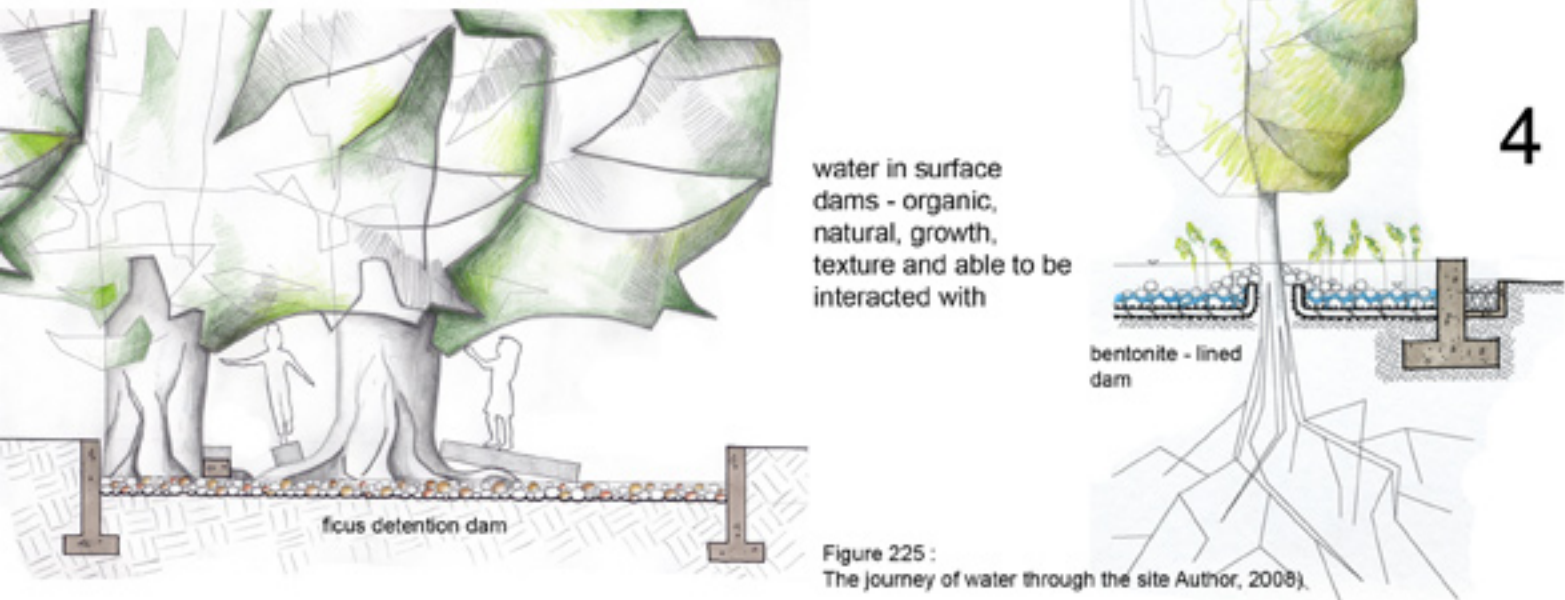
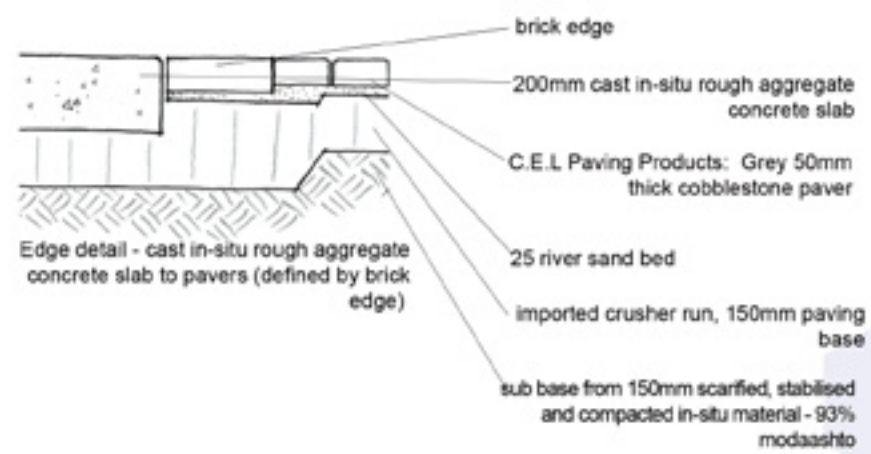
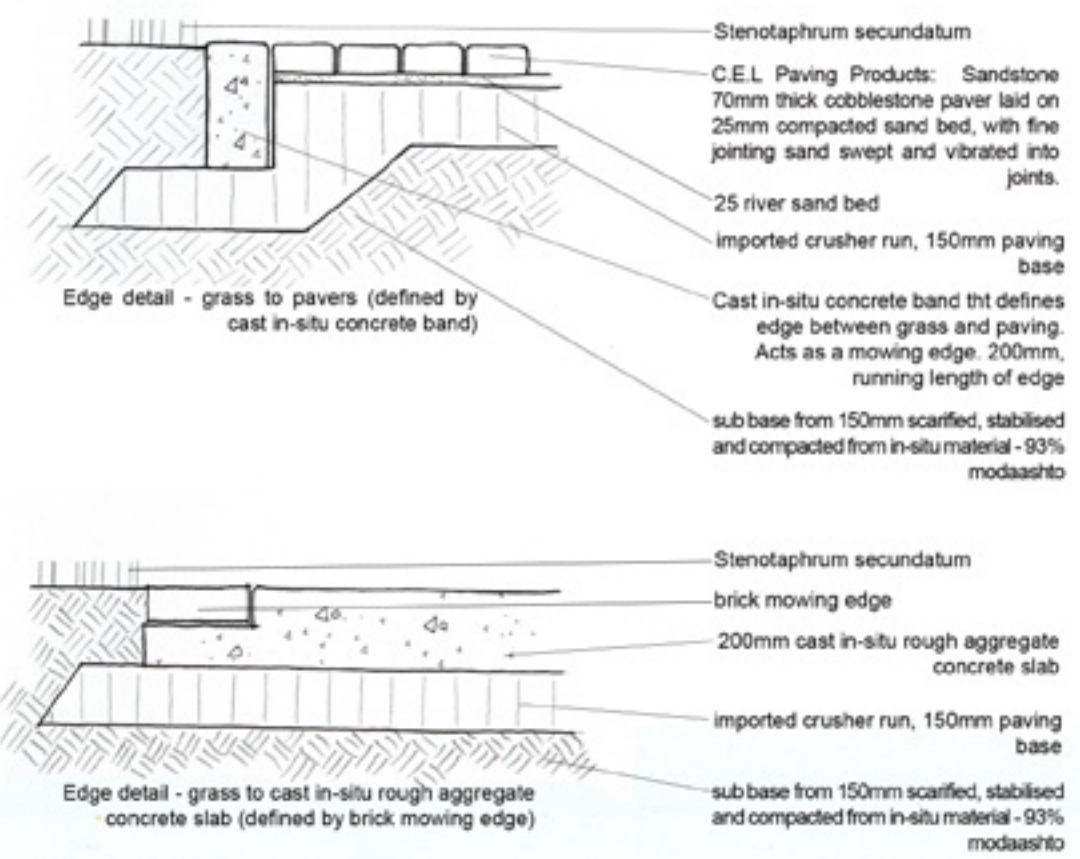
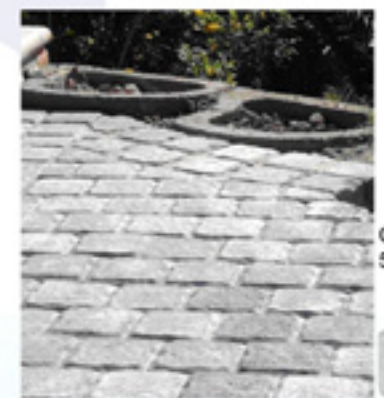


Figure 225 : The journey of water through the site Author, 2008).



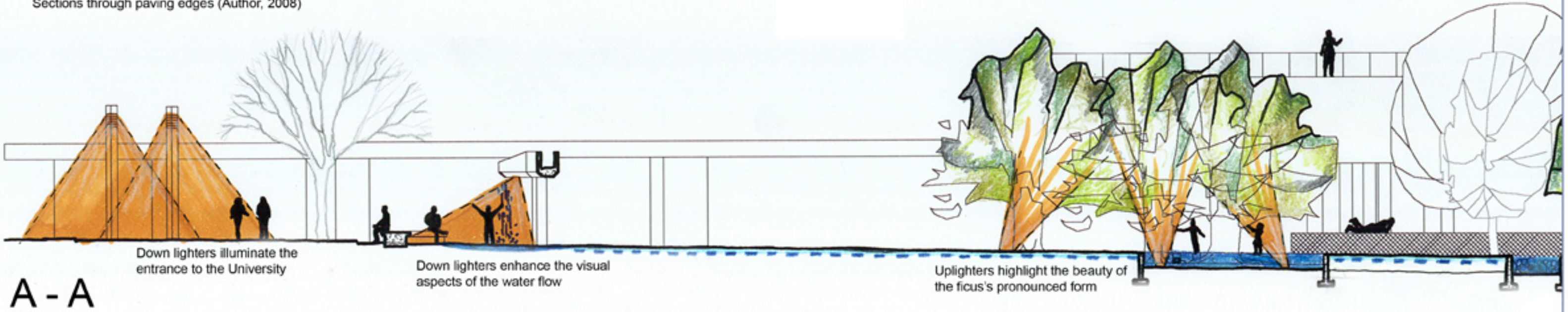
C.E.L. Paving Products: Sandstone 70mm thick cobblestone paver laid on 25mm compacted sand bed, with fine jointing sand swept and vibrated into joints.



C.E.L. Paving Products: Grey 50mm thick cobblestone paver



Figure 226: Sections through paving edges (Author, 2008)



150 x 150 x 10 equal leg mild steel angle
spanning approximately 6000

Galvanised mild steel lock bolt with washer to
prevent the bolt from slipping into oversized hole
which allows for expansion

100 cast in-situ exposed aggregate concrete slab

150 crusher run paving base

Sub-base from 150 scarified,
stabilised and compacted in-situ
material

50,80 diameter galvanised mild steel round hollow
section, 3 thick forming handrail

31,80 diameter galvanised mild steel round hollow
section forming balustrade

30 thick cast in-situ concrete screed containing
mesh to prevent cracking

120 thick precast echo slab with hole drilled
into it to provide space for bolt

120 x 10 galvanised mild steel bearing plate with
graphite grease between it and the angle to allow
for expansion

Galvanised mild steel threaded j-bolt cast into
concrete

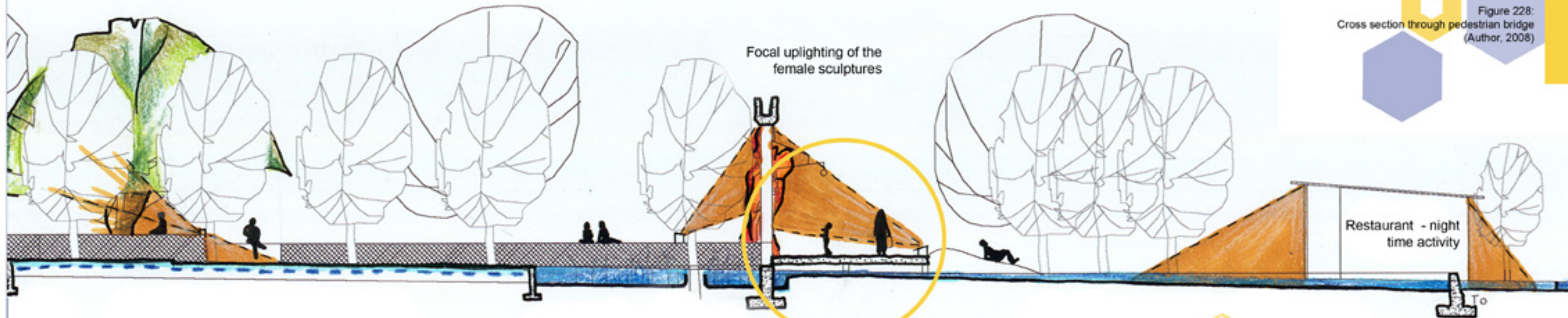
Cast in-situ concrete foundation wall

Galvanised mild steel cross brace

150 x 150 x 10 equal leg mild steel angle

Figure 227:
Longitudinal section through pedestrian bridge (Author, 2008)

Figure 228:
Cross section through pedestrian bridge
(Author, 2008)



Trees which like wet feet.
This is because the bentonite liner forms a surface upon which condensation will occur keeping the area around the roots continuously moist and warm

Indigenous wetland plants, e.g. Typha capensis and Cyperus textilis

200 layer of gravel which breaks any capillary action and protects against erosion as well as providing an aesthetic visual barrier

Maximum water level 94.70

Non-woven, needle-punched geotextile

100 thick Sodium Bentonite liner

Non-woven, needle-punched geotextile

Sub-grade prepared and compacted to engineers specifications

Cast in-situ concrete channel with waterproofing

99.91

Wind mobile hangs from a stainless steel eyelet cast into the underside of the channel - consists of wooden frames which portray a constantly changing view of the sky / horizon, depending on where a person views the mobile from.

400 x 400 cast in-situ fairface concrete column supporting the aquaduct at 10m centres and varying heights

Pedestrian bridge over water channel

Gravel-filled energy breaker with geotextile

Cast in-situ concrete channel running the length of the weir, 100 thick, 400 deep

Cast in-situ concrete weir with 400 thick footing

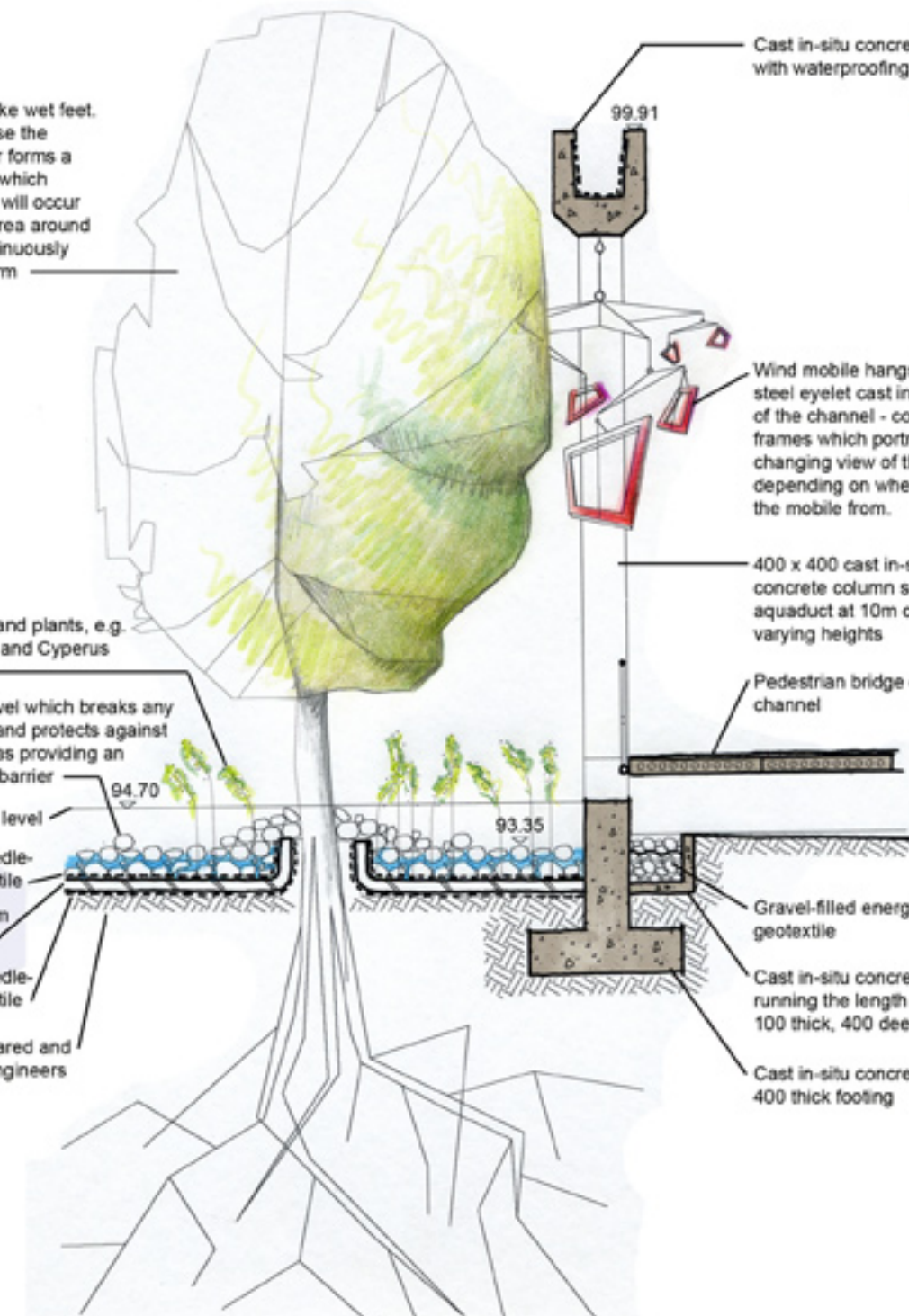


Figure 229: Blown up detail of section through bentonite - lined dam (Author, 2008)

community participation

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- learn new skills and teach one another things, thus empowering oneself and others, and creating a sense of ownership at the same time.
- reawakens a spirit of community and encourages bonds between different people, between people and their environment, and between people and themselves.
- liberates feelings of self-worth, self-fulfilment and pride, in both the place, and in the people themselves and their achievements.

Principles of community participation strive to build a community that holds the capacity to initiate its own changes, and to continue developing and transforming itself.

Figure 230:
Chalk on board - local children - community artwork
(Author, 2008)



Figure 231:
Members of the community and students at the
University (Author, 2008)



Community participation and interaction with the landscape through elements that can be altered and built by the community, thus creating not only a space but also a place.

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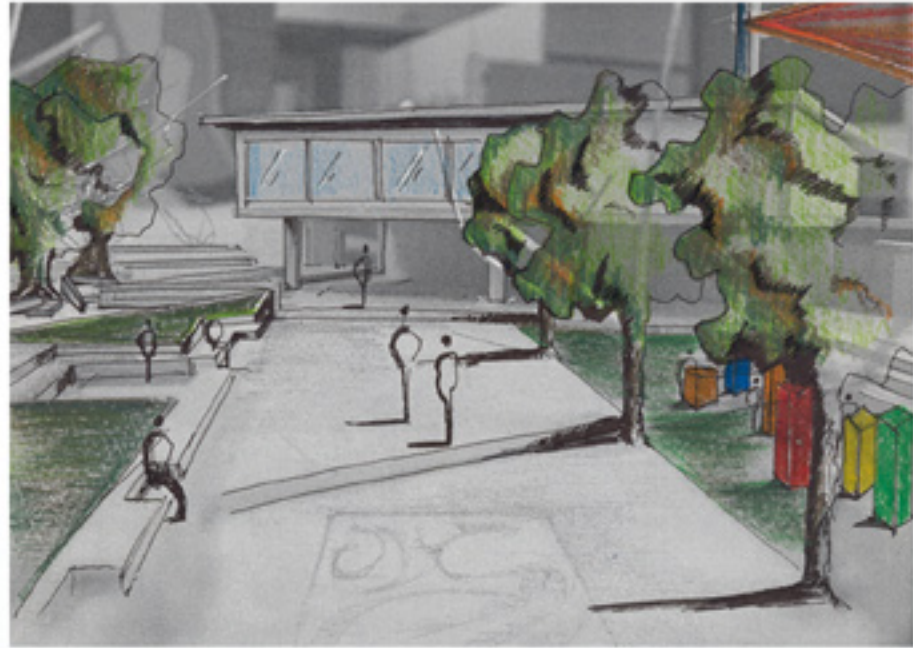
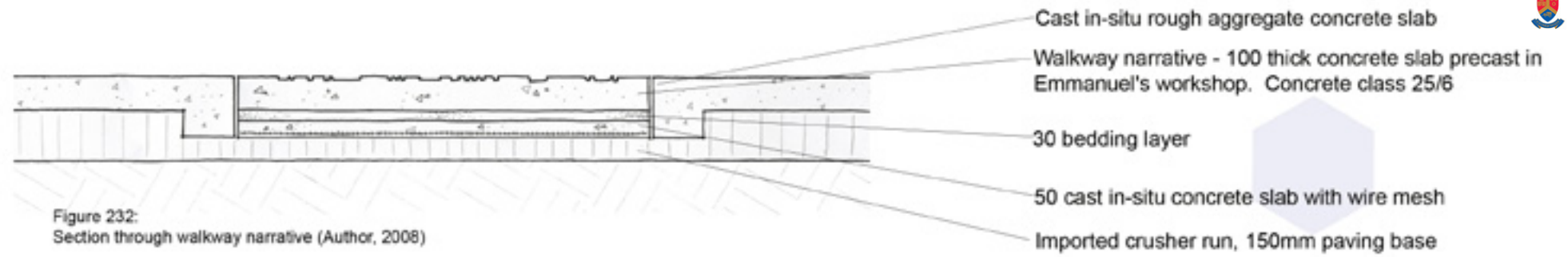


Figure 233:
Narrative strip in concrete leads one towards the library (Author, 2008)



Figure 234:
Wind mobile - ephemeral shadows (Author, 2008)

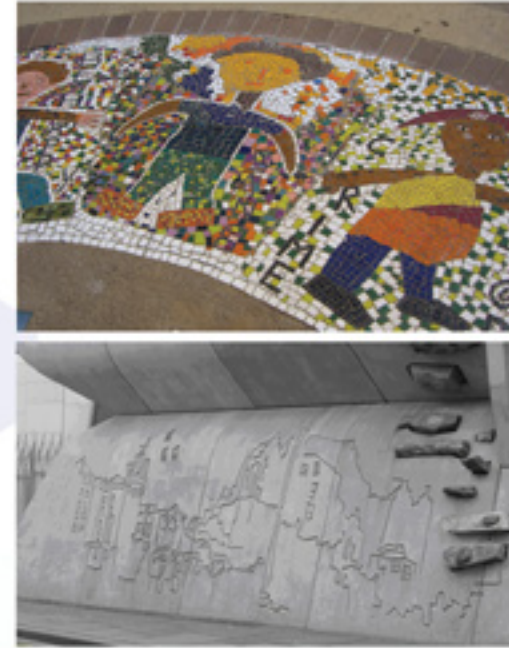
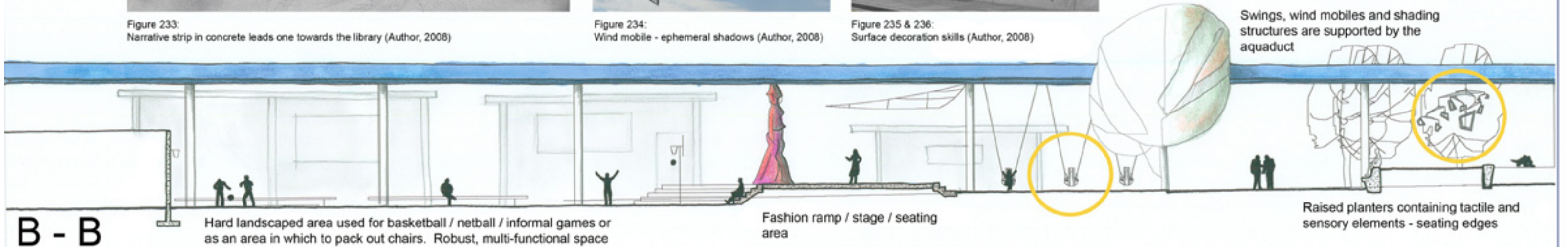
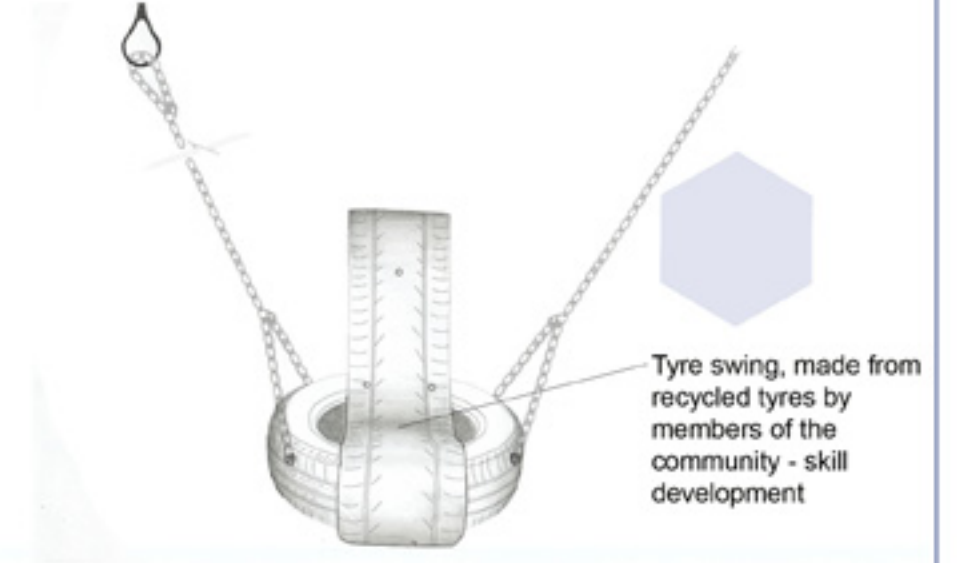


Figure 235 & 236:
Surface decoration skills (Author, 2008)



Generating music through play...

As the wind moves through the strings it causes them to vibrate producing an enchanting, ethereal, almost haunting sound. All strings are tuned to the same pitch but have different tensions, lengths, densities and diameters. The wind will therefore play one harmonic on one string and a different harmonic on another, depending on the intensity of the wind. This produces an unpredictable, volatile composition of sound that changes with every gust of wind

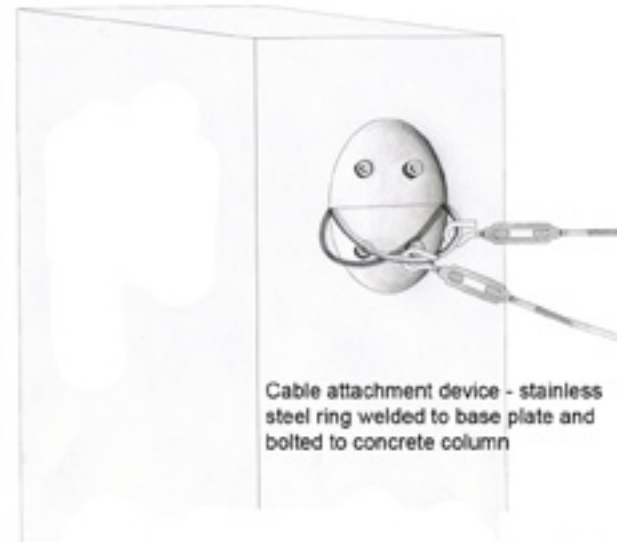


Figure 237: Aeolian harp (Nieheimer Kunstpfad, 2000)

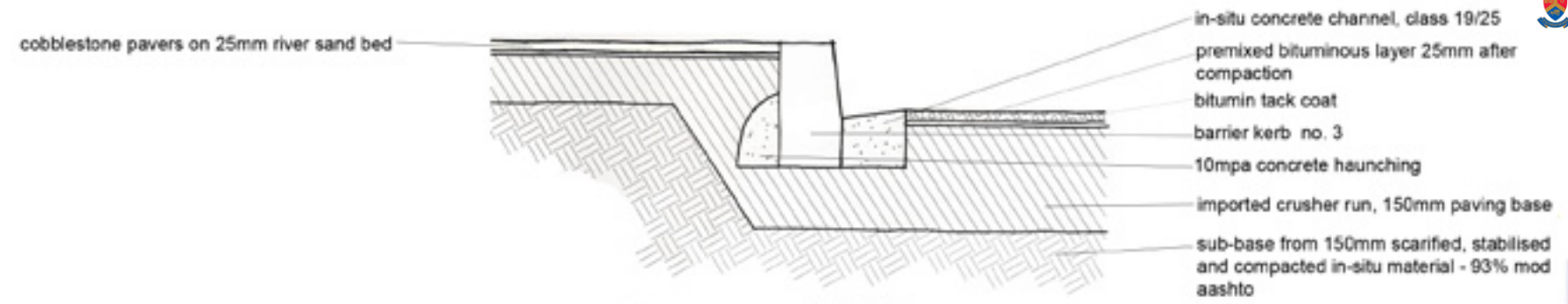


Figure 238: Section through road edge (Author, 2008)

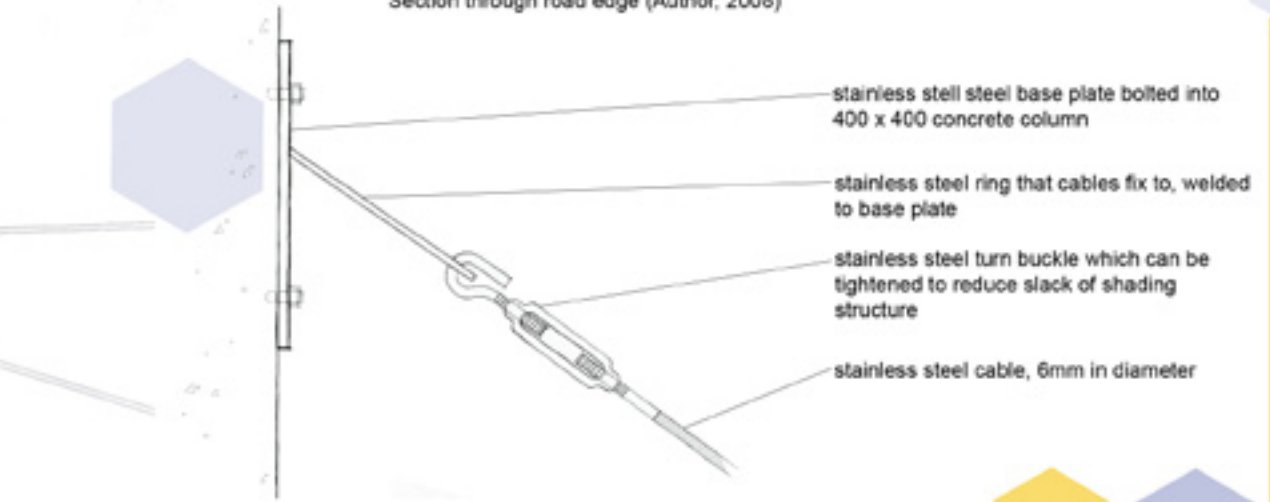
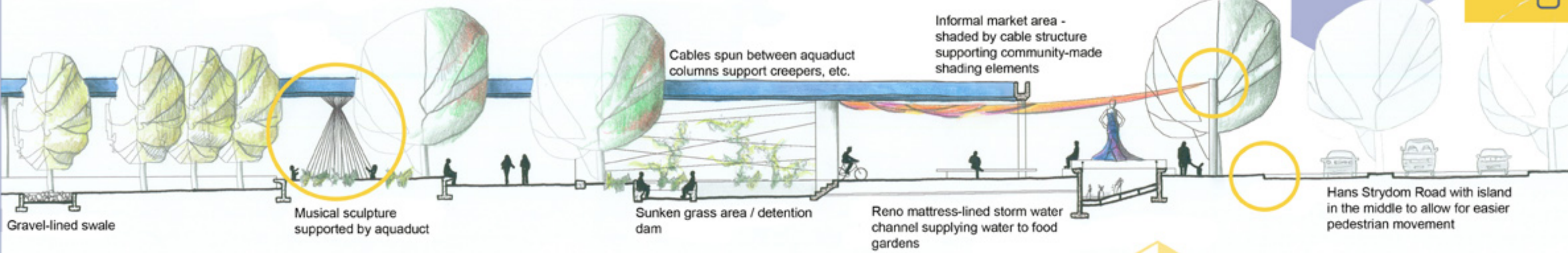


Figure 239: Connection of cable to column (Author, 2008)



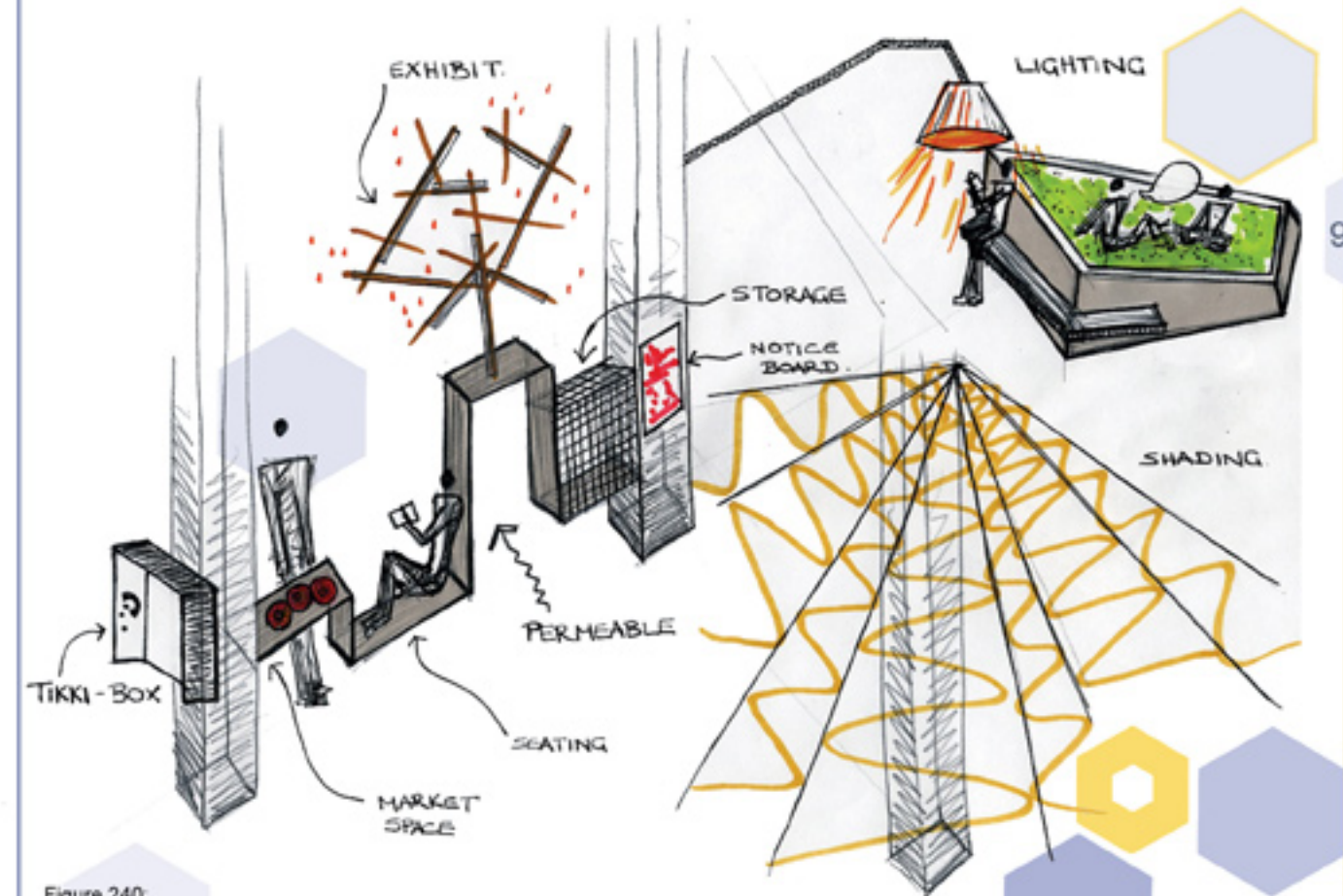


Figure 240:
Conceptual ideas - market spaces, relaxation places and exhibition areas (Author, 2008)

Shading structures comprise squares of woven material (recycled plastic bags, reused PVC vinyl, woven rope, a patchwork quilt of old clothes, and so on). Made by community members they provide local identity and encourage pride and ownership. A changeable community artwork that builds local spirit and teaches new skills.

Figure 241:
Shading structure (Unknown, [S.a.])



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Community-made shading structure creates a shady, robust space where an informal market could take place

Cables spun between columns supporting aqueduct. Fixed to stainless steel eyelets cast into the concrete columns. These cables support the vegetative creepers growing in the 500 high raised planter between the 2 columns

Two 450 high seating platforms made of cast in-situ concrete upon which stand a steel-frame female figure clad in a dress woven from recycled and reused materials. Made by community members as an exhibition of community art and skill creation

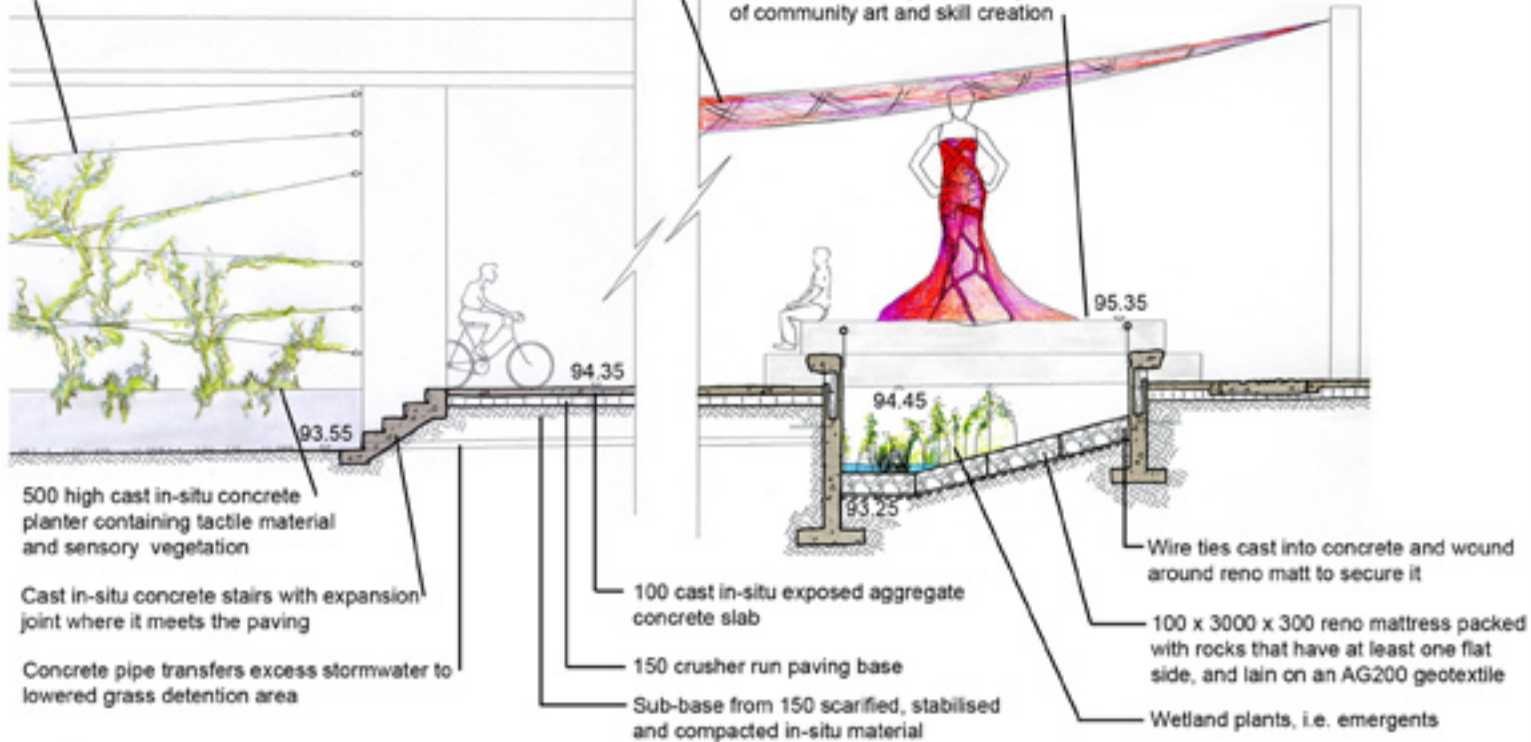


Figure 242:
Blown-up section through stormwater channel (Author, 2008)

Stimulate senses, interactive elements & community participation such as changing female outfits and mobile shadow play elements... Both encouraging a relationship with the space through community involvement.

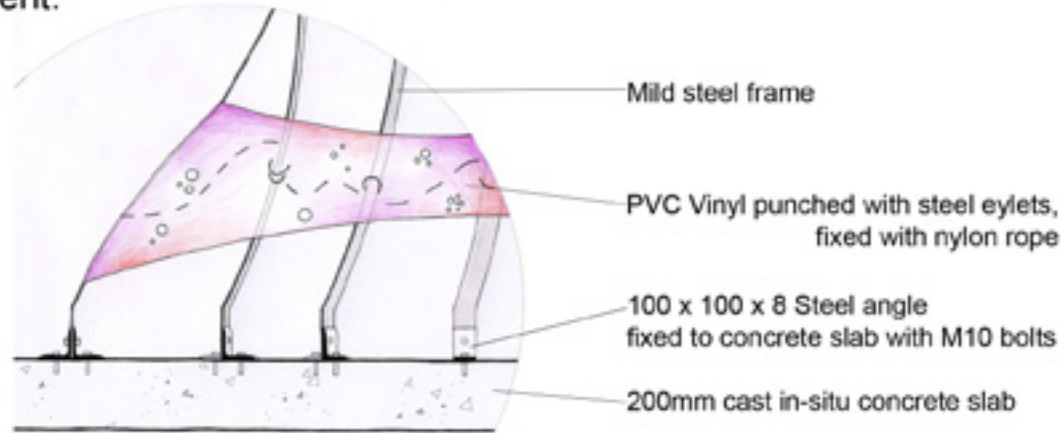
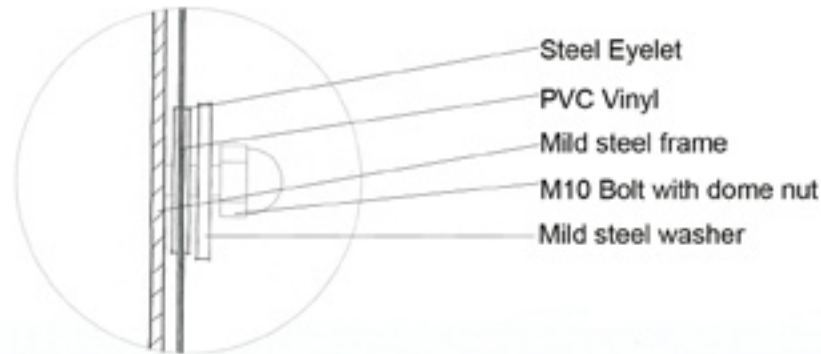


Figure 243 & 244: Sectional exploration into constructing and fixing the sculptures (Author, 2008)



PVC Vinyl (reused billboard material) is stitched onto the mild steel frame using nylon rope - forms part of the decorative element on the dress. The Vinyl has holes cut into it which are then protected by steel eyelets. This allows wind movement through the sculpture, as well as forming part of the aesthetics. The Vinyl dress is also bolted onto the steel frame at intervals.

Figure 235: Plastic bag dress (mygreenchicago.com, 2007)

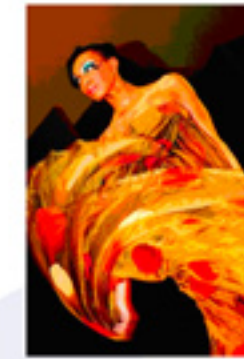


Figure 239 & 240: Nstee, Haute Magazine, FashionAfrica.com [S.a]



Figure 236: Exploration into construction and clothing of female sculpture (Author, 2008)

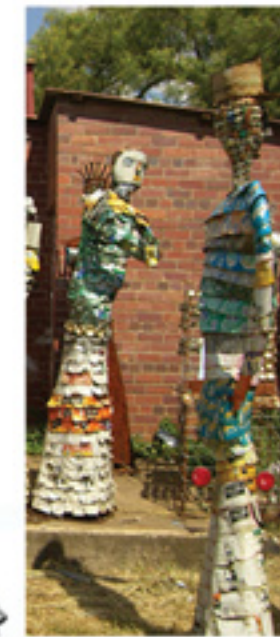


Figure 237: Metal figures - Cullinan (Author, 2007)



Figure 238: Steel frame figure - CSIR - Gianfanelli (Author, 2007)

Wind mobile provides changing shadows at night due to down lighter on underside of aquaduct

Basketball courts are lit by a spotlight located next to the library building

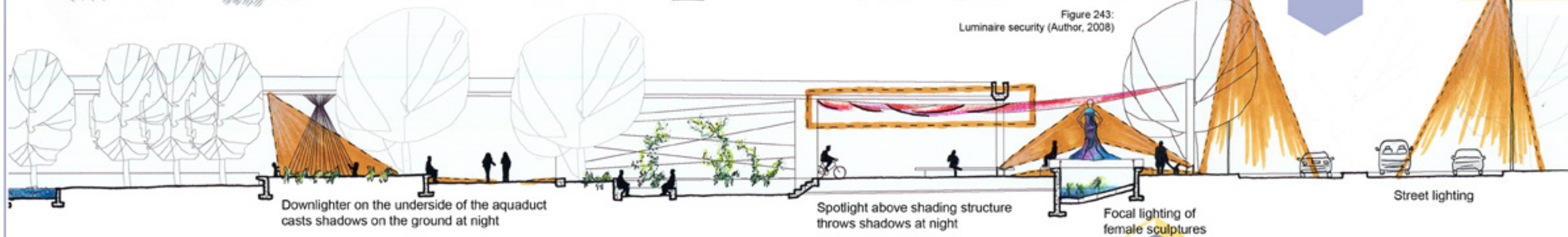
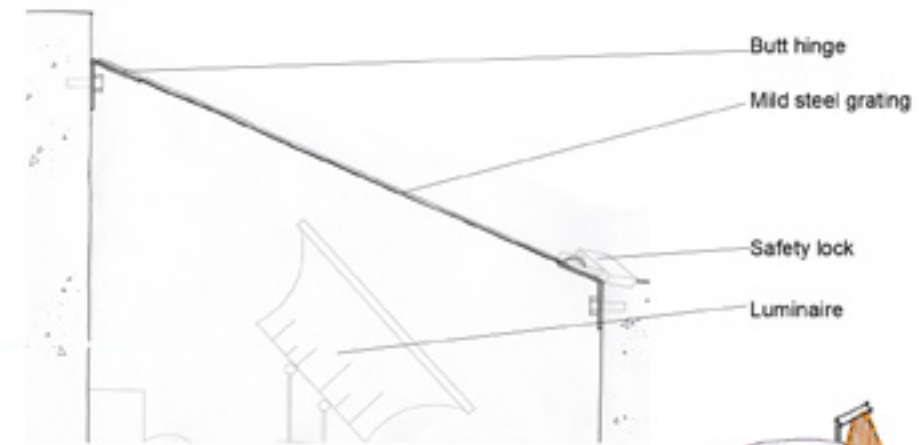
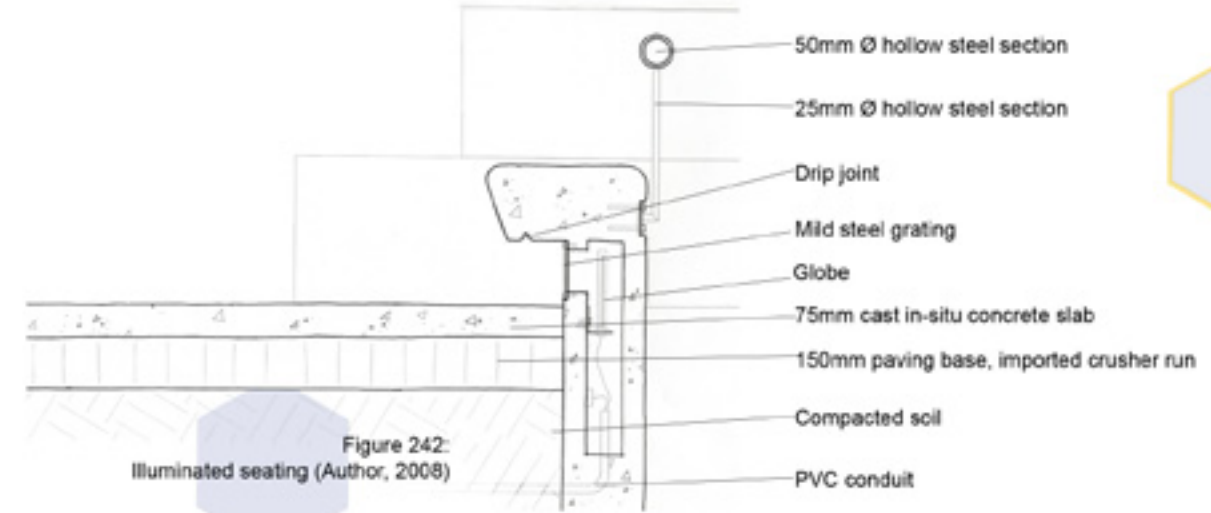
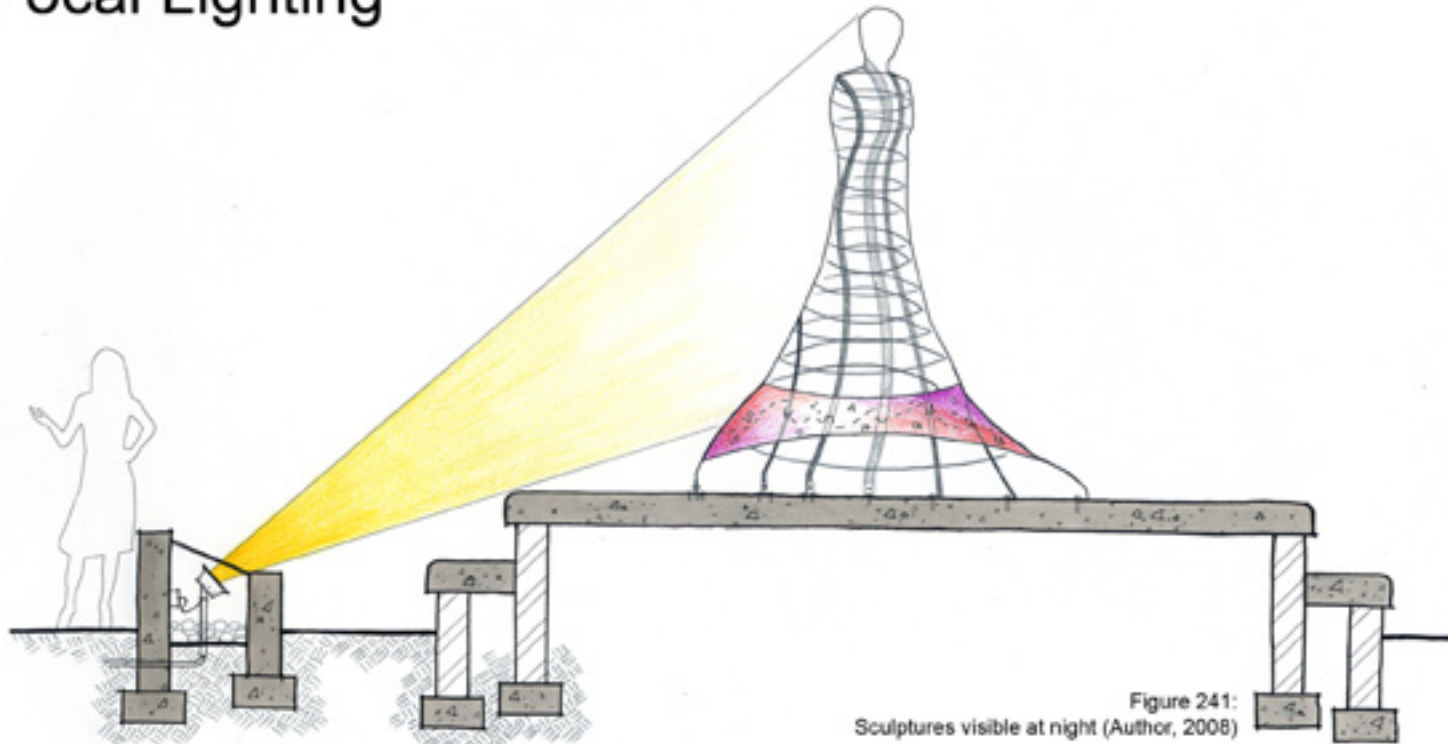


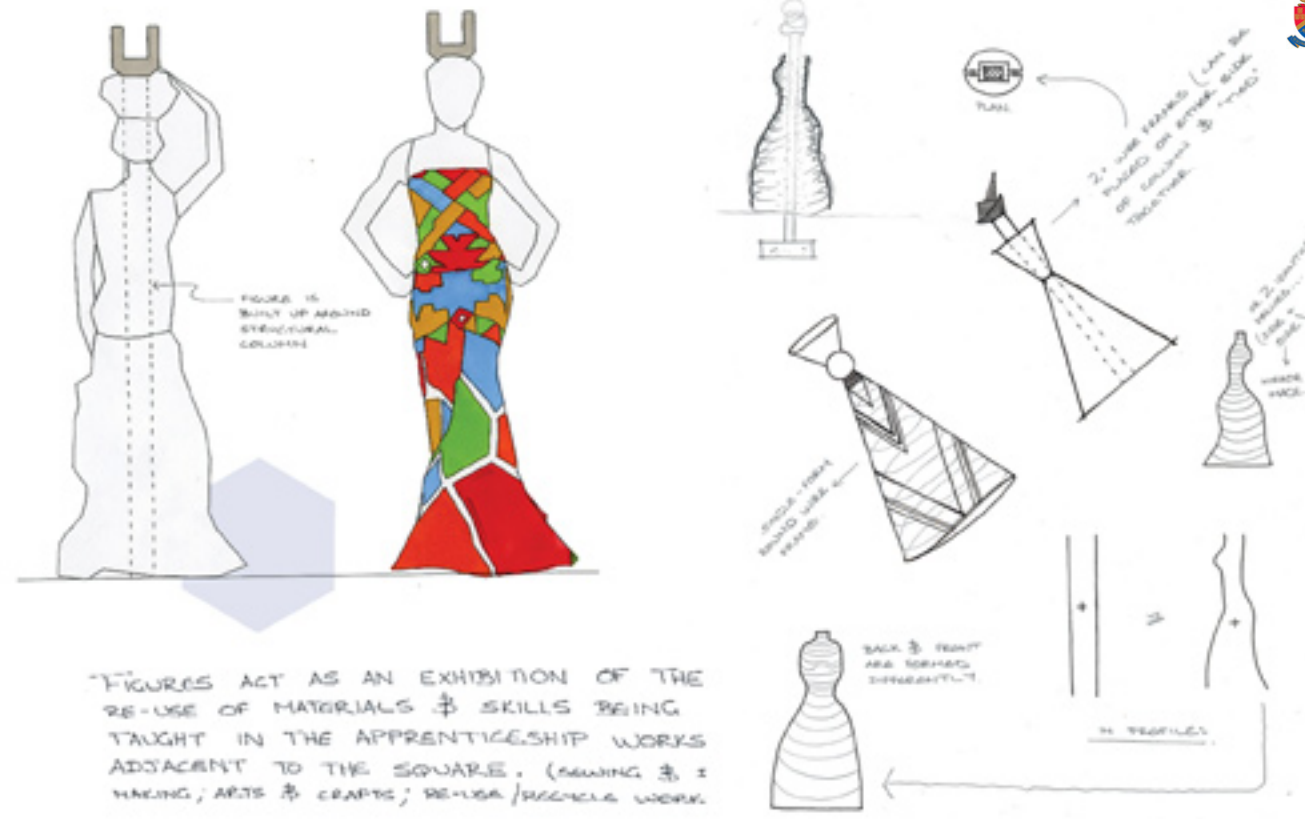
B - B

Lights can be attached to cable system to provide focal light for stage performances

Pathway lighting on all main circulation routes

Focal Lighting





FIGURES ACT AS AN EXHIBITION OF THE RE-USE OF MATERIALS & SKILLS BEING TAUGHT IN THE APPRENTICESHIP WORKS ADJACENT TO THE SQUARE. (SEWING & MAKING; ARTS & CRAFTS; RE-USE/RECYCLE WORK)

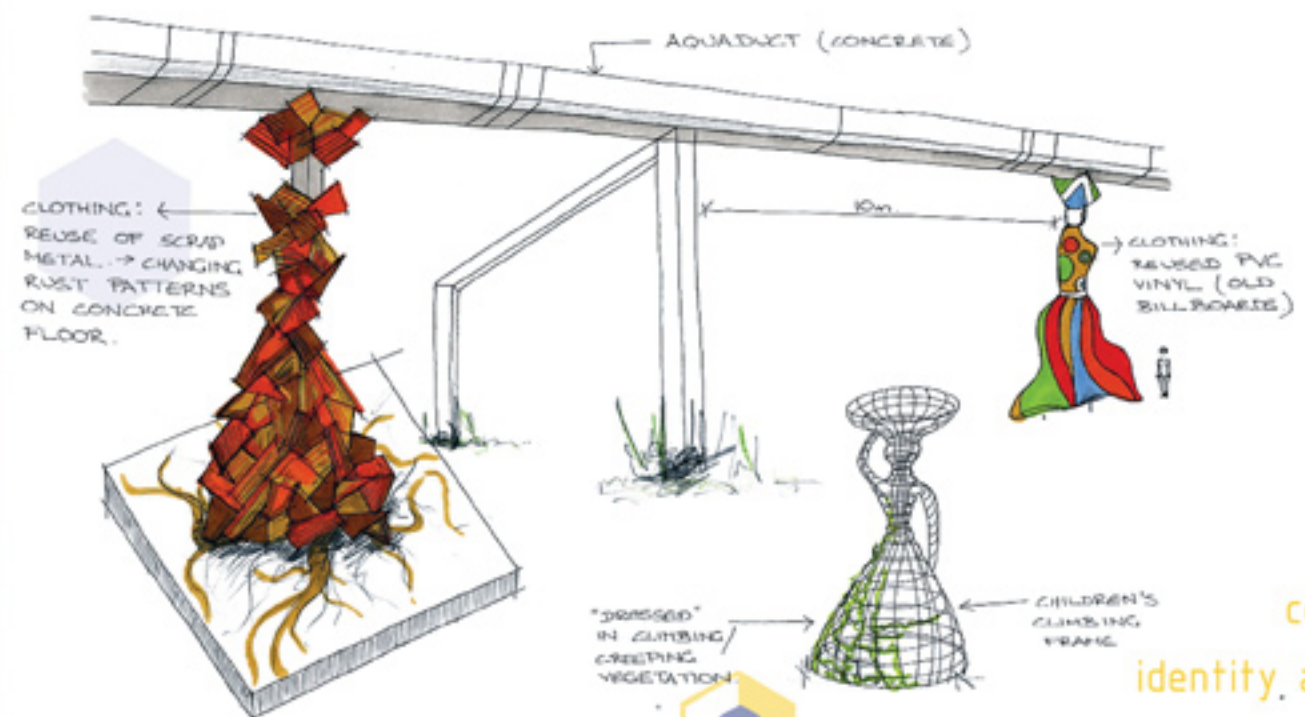


Figure 244: Conceptual exploration of female sculptures - materials, construction, etc. (Author, 2008)

exhibition
community art
identity, and character

female sculptures
aqueduct
fig trees

landmark creation
identity creation
space as place

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The spaces created by the three *Ficus sycamorus* trees, specifically chosen for their plank root systems, can be used for relaxation and reflection as well as a playground. Concrete blocks are placed in the detention dam, and are displaced by the tree roots as they grow and move. This is symbolic of the delicate balance between nature and man-made elements. The constantly shifting patterns are not rigid and ordered, but change as nature wills them to.



Figure 245:
Children can play, climb and hide in their 'garden of imagination'
(Author, 2008)



Figure 246:
A place of relaxation and reflection where one can commune
with nature (Author, 2008)

100

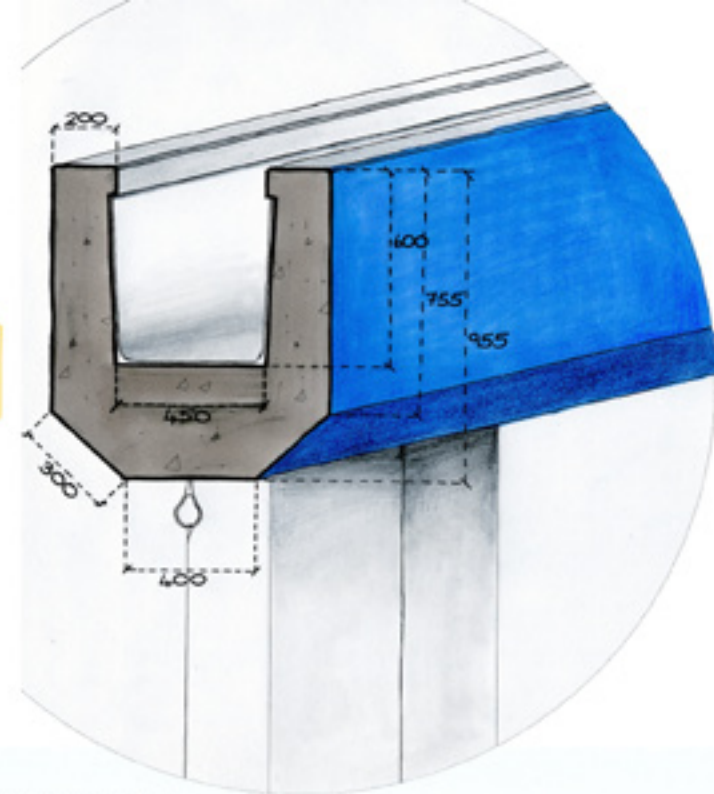


Figure 247:
Aquaduct particulars (Author, 2008)

35 MPa concrete with waterproofing admixture, finished in middle sky blue exterior paint. Interior painted with 3 coats of ABE Super Lakold

sit and reflect
commune with nature
play, climb, hide

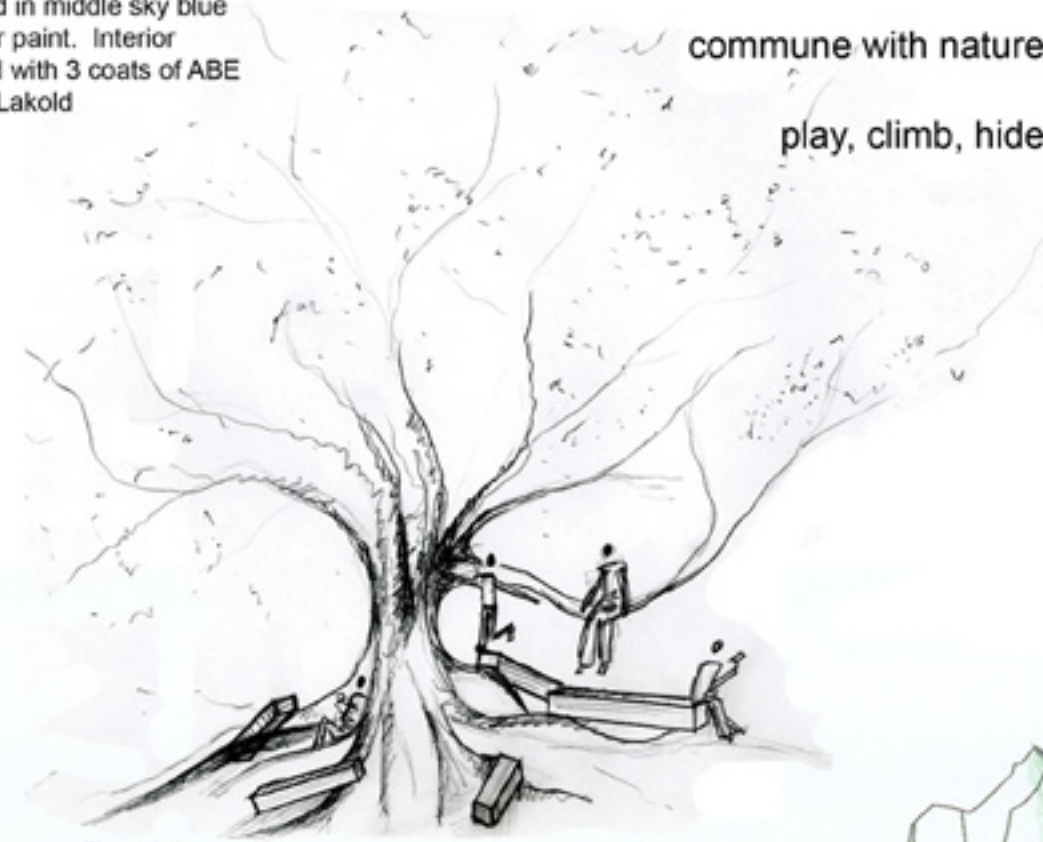
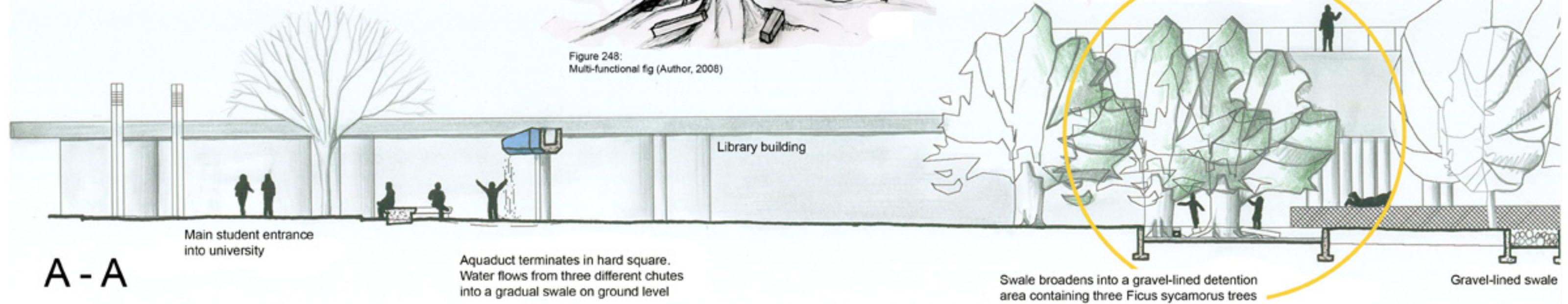


Figure 248:
Multi-functional fig (Author, 2008)



Figure 249:
Conceptual model of space around ficus trees (Author, 2008)



A - A

Main student entrance into university

Aquaduct terminates in hard square. Water flows from three different chutes into a gradual swale on ground level

Library building

Swale broadens into a gravel-lined detention area containing three Ficus sycamorus trees

Gravel-lined swale

View over square from uncovered second floor of library - extends all the way into the university

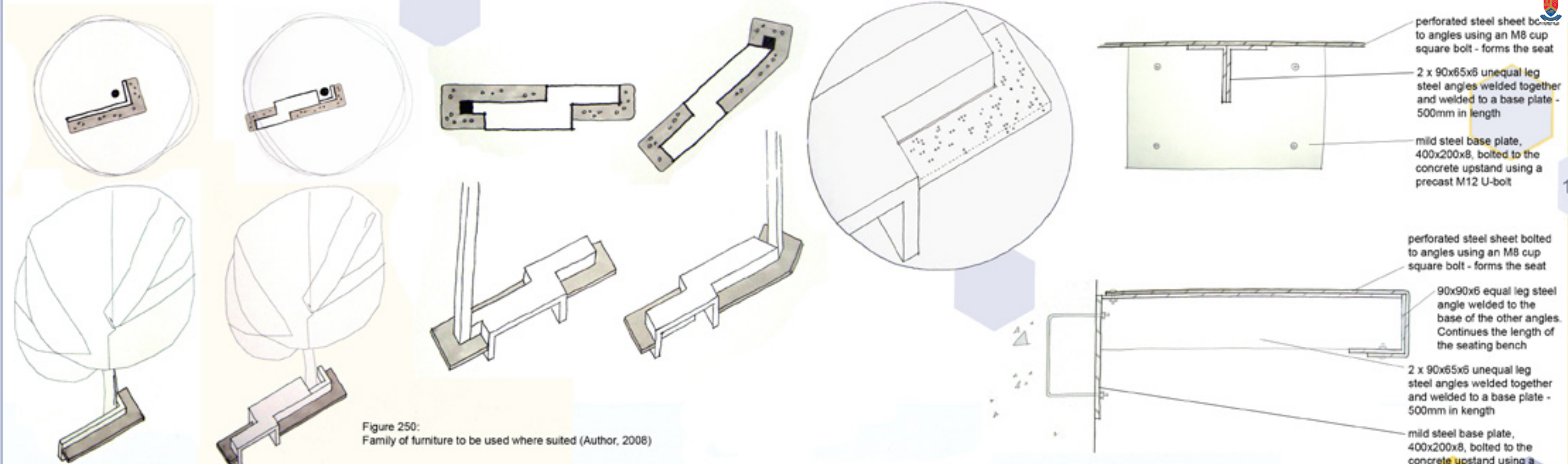
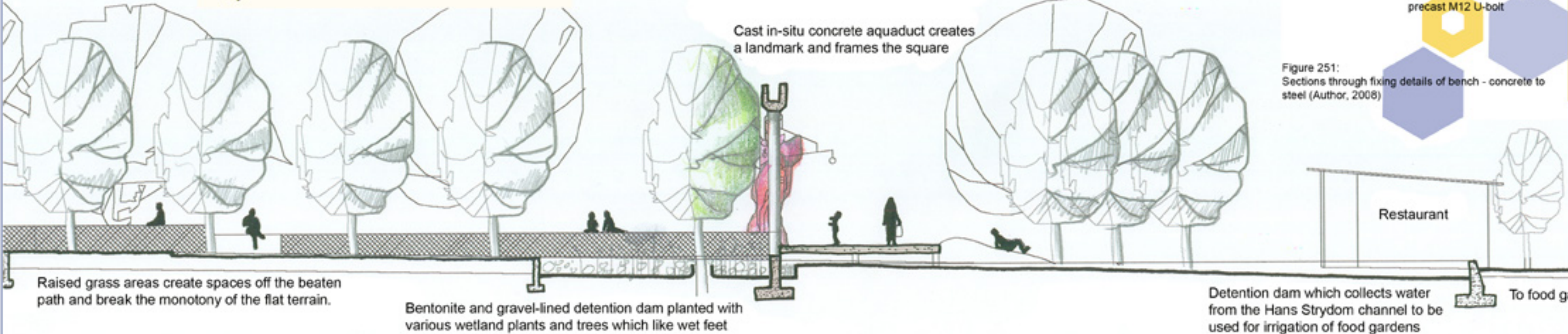


Figure 250: Family of furniture to be used where suited (Author, 2008)

Figure 251: Sections through fixing details of bench - concrete to steel (Author, 2008)



Part 4: Conclusion

'Learn 2 live; live 2 learn' is an empowering landscape at the heart of Pretoria University's educational division in Mamelodi. This landscape attempts to integrate the surrounding community with the campus through the shifting and rethinking of fences, and the creation of a community park as the interface between the two. This open green space provides areas in which members of the community can gather, play and reflect. It is also equipped to handle the hosting of workshops and short courses.

'Learn 2 live; live 2 learn' embeds itself well within the vibrant atmosphere of the township through the incorporation of robust, multi-functional spaces that are accessible to all. It also makes use of sensory and ephemeral elements to create places of interest; places people will identify with, remember and come back to. Landmark elements, like the aquaduct and the female sculptures are employed not only as focal elements, but also as community art works and exhibitions of skill. These 'announcements' in the landscape speak of the culture and identity of the surrounding people and become a testament to their pride, hope, diversity and sense of self - true maieutic symbols.

The strong sense of place created, and the resultant empowerment will, in time, bring about the rejuvenation of the campus in such a way that it can be of benefit to all. No longer an island, the University will function as a stitch - bringing together people, connecting minds and interlinking thoughts. The University thus becomes an example of a new type of education - one that starts in the landscape.

