

CHAPTER SEVEN

Technical Investigation

Introduction

In the following chapter planting and material choices for the design will be discussed. The water strategy will be illustrated and then certain construction details of the project explored and explained.

Planting Strategy

Only Indigenous plants are used in the project to show people what beautiful plants we as a country possess with all of the amazing properties that they have. These are plants that we can use more often and can be proud of.

There are three predominant ways that fragrant plants are being use. Firstly in the Fragrant planting fields for production Secondly in masses along the fragrant route and thirdly in the production of essential oils.

To use fragrant plants as a tool alongside other design tools to create specific spaces where users will be confronted with a unique experience and possibly flooded by nostalgia and joy.

To enhance delightful fragrance in a space by using fragrant planting alongside structured spaces.

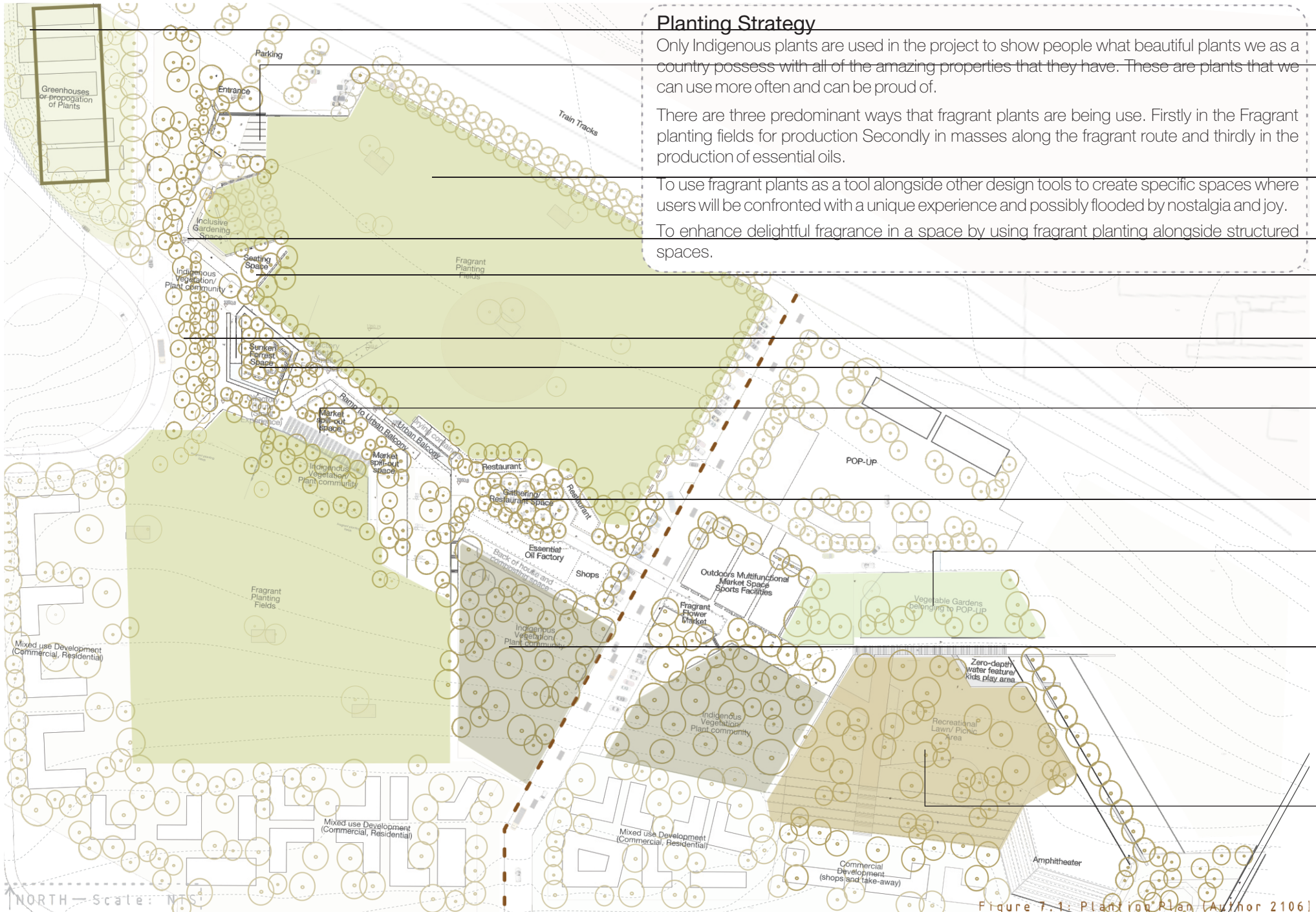


Figure 7.1: Planting Plan (Author 2106)

Propagation of seeds and cuttings will be grown here in this area and greenhouse

Coleonema pulchellum, Carissa edulis & Metalasi muricata

Specific fragrant plants are used along the fragrant route in mass to make sure the unique fragrance of the plant is redolent to the user

5 Ha of Fragrant planting will be harvested to be processed into essential oil.

The furrow flood irrigation method will greatly determine the way in which the fragrant plants will be planted

Eriocephalus africanus & Agathosma glabrata

Acacia xanthophloea & Heteropyxis natalensis

Screening plants will be used in this section to hide the traffic of the western side of the site.

Buddleja auriculata, Buddleja salviifolia & Buddleja saligna

Jasminum multipartitum, Jasminum angulare & Senecio macroglossus

Vegetation without fragrance will be used in the restaurant's social space to allow to natural smell of the different food and of the factory to penetrate the social space. *Celtis africana* will be used to provide shade for the restaurant seating areas in the summer losing its leaves in winter allowing sun to penetrate the area when it is colder outside.

Vegetable gardens will be introduced into the design as a tool to help and promote the empowerment of POP-UP scholars.

The Open Woodland community of the Svcb 6 Marikana Thornveld will be recreated in these areas.

The plant choice from the community will be based on the position of the plants in the design. The species of this community will be used together to benefit from the ecological functions already existing within the community; The plants are already well adapted to local conditions. Because the plants are indigenous they will attract indigenous biota. The plants already fulfill particular roles in the local specific pool of species. *Acacia karoo* will be planted in these areas along with varies types of veld grass, geophytes and asparagus to mimic the Open Woodland community.

Recreational lawn areas are a very necessary element in a park. Due to the expected users from the CBD and surrounding commercial entities. The lawn and play areas in the park will ensure that people can enjoy an outdoor environment daily and kids get to daily play outdoors which they need to learn and develop. *Stenotaphrum secundatum* (Buffalo Grass) will be used as it is water wize and requires less mowing, it can also withstand high pedestrian traffic and is shade tolerant.

Fragrant Planting Palette

SHRUBS

	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
* <i>Agathosma capensis</i> Buchu 1,5 x 1m												
* <i>Agathosma lanceolata</i> Honey Buchu 1 x 0,6m												
* <i>Agathosma glabrata</i> Buchu 1,5 x 1m												
* <i>Coleonema pulchellum</i> Confetti Bush 1 x 0,8m												
* <i>Eriocephalus africanus</i> Wild Rosemary 1,7 x 1,7m												
<i>Syncolostemon obermeyeræ</i> Soutpansberg salie 1,5 x 1,5m												
* <i>Pelargonium cordifolium</i> Heart-leaved Pelargonium 1 x 1m												
* <i>Pelargonium graveolens</i> Rose-scented Pelargonium 1,3 x 1m												
* <i>Lippia javanica</i> Fever tea/ Lemon Bush 2 x 1,4m												
<i>Hypericum revolutum</i> Currybush 3 x 3m												
<i>Carissa edulis</i> Num-num 3 x 2m												
* <i>Buddleja auriculata</i> Weeping Sagewood 4 x 4m												
* <i>Buddleja salviifolia</i> Sagewood 5 x 4m												
<i>Buddleja saligna</i> False-olive 4 x 3m												

Fragrant Planting Palette

	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
CREEPERS												
* <i>Jasminum multipartitum</i> Starry Wild-Jasmine 2 x 1m												
<i>Senecio macroglossus</i> Flowering Ivy 3 x 1.5m												
OTHER												
<i>Stachys natalensis</i> White Stachys 0,3 x 0,2m												
<i>Osteospermum muricatum</i> White felicia 0,6 x 0,4m												
<i>Hebenstretia dura</i> Cat's Tail 0,6 x 1m												
* <i>Helichrysum petiolare</i> Everlasting 1 x 2m												
* <i>Helichrysum splendidum</i> Cape Gold 1 x 2m												
* <i>Artemisia afra</i> Wild Wormwood 1,5 x 1,5m												
<i>Metalasia muricata</i> White Bristle Bush 2,5 x 1,6m												
TREES												
<i>Schrebera alata</i> Wild Jasmine 5 x 4m												
<i>Dombeya rotundifolia</i> Wild Pear 6 x 4m												
* <i>Croton gratissimus</i> Lavender Feverberry 6 x 6m												
* <i>Leucosidea sericea</i> Oldwood 6 x 5m												

Fragrant Planting Palette

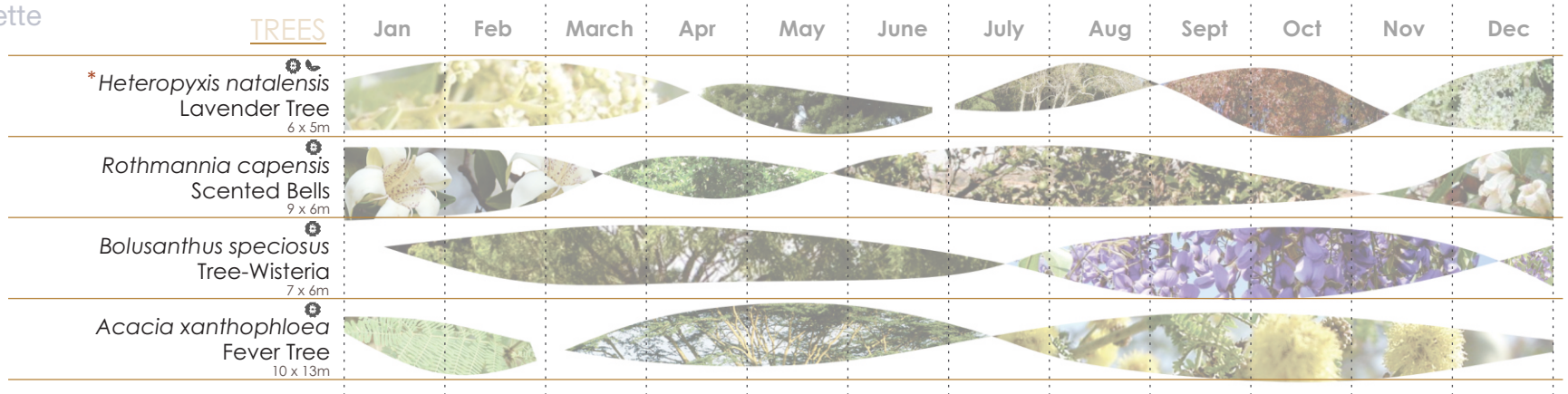


Figure 7.2: Plant Palette (Author 2016)

Essential Oil Plant Palette and Harvesting Seasons

🌸 Flowering season of plant whose flowers ARE used in extraction process

🌿 Flowering season of plant whose flowers ARE NOT used in extraction process
(Leaves, stems and other parts of the plant is used in the extraction process)

✗ Month of harvest

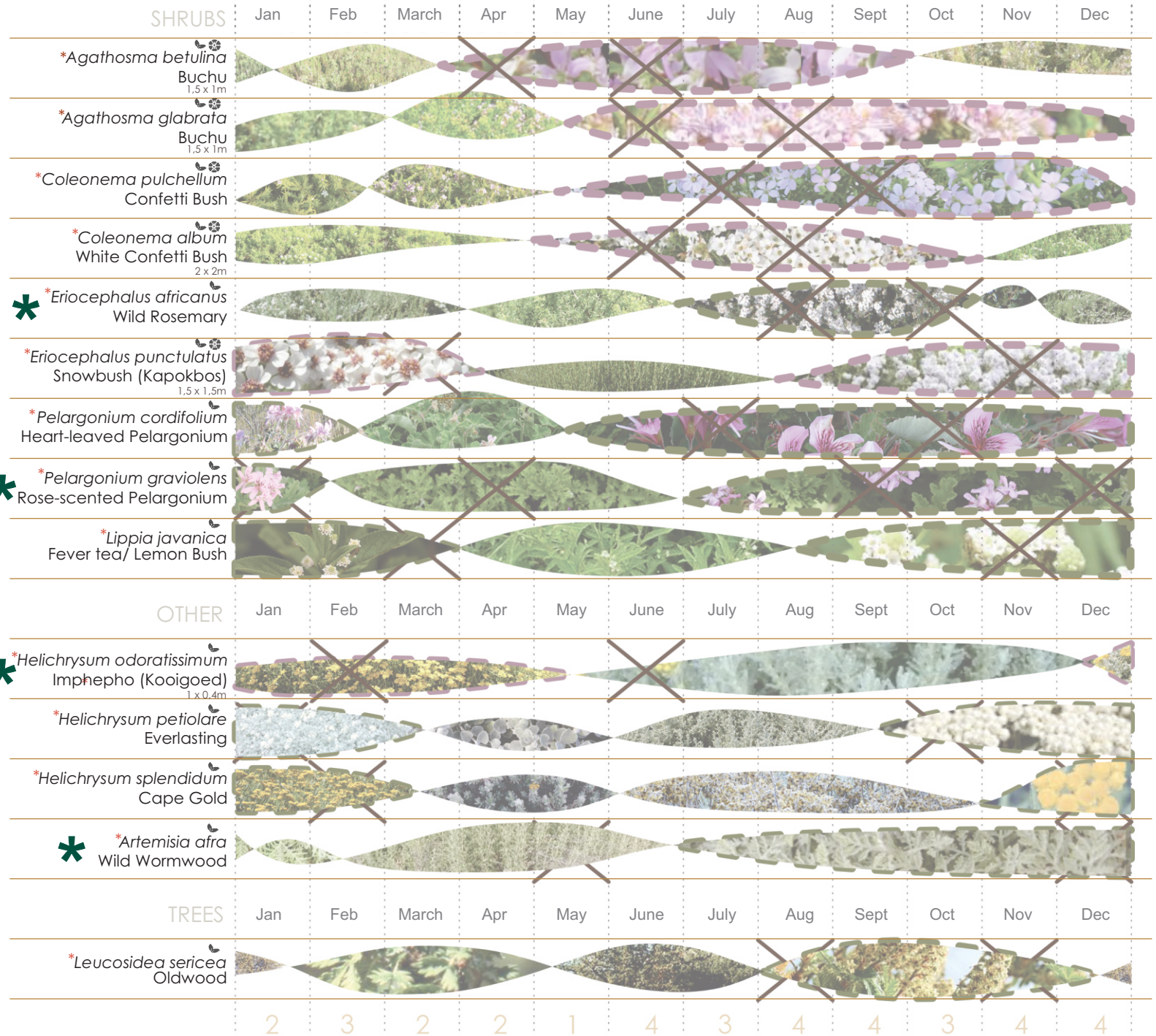
Symbols:

* Known essential oil (advised by specialists and online research)

🌸 Flower used in essential oil extraction

🌿 Leaves used in essential oil extraction

* Plant used in first phase of project



Water Strategy

The water strategy for the design is illustrated in the following diagram. It is divided into two different systems, the first in lighter blue will provide for the southern side of the design (no. 1 on the diagram) and the green for the northern side of the design (no. 2 on the diagram). These two systems are also linked to each other as indicated in the diagram.

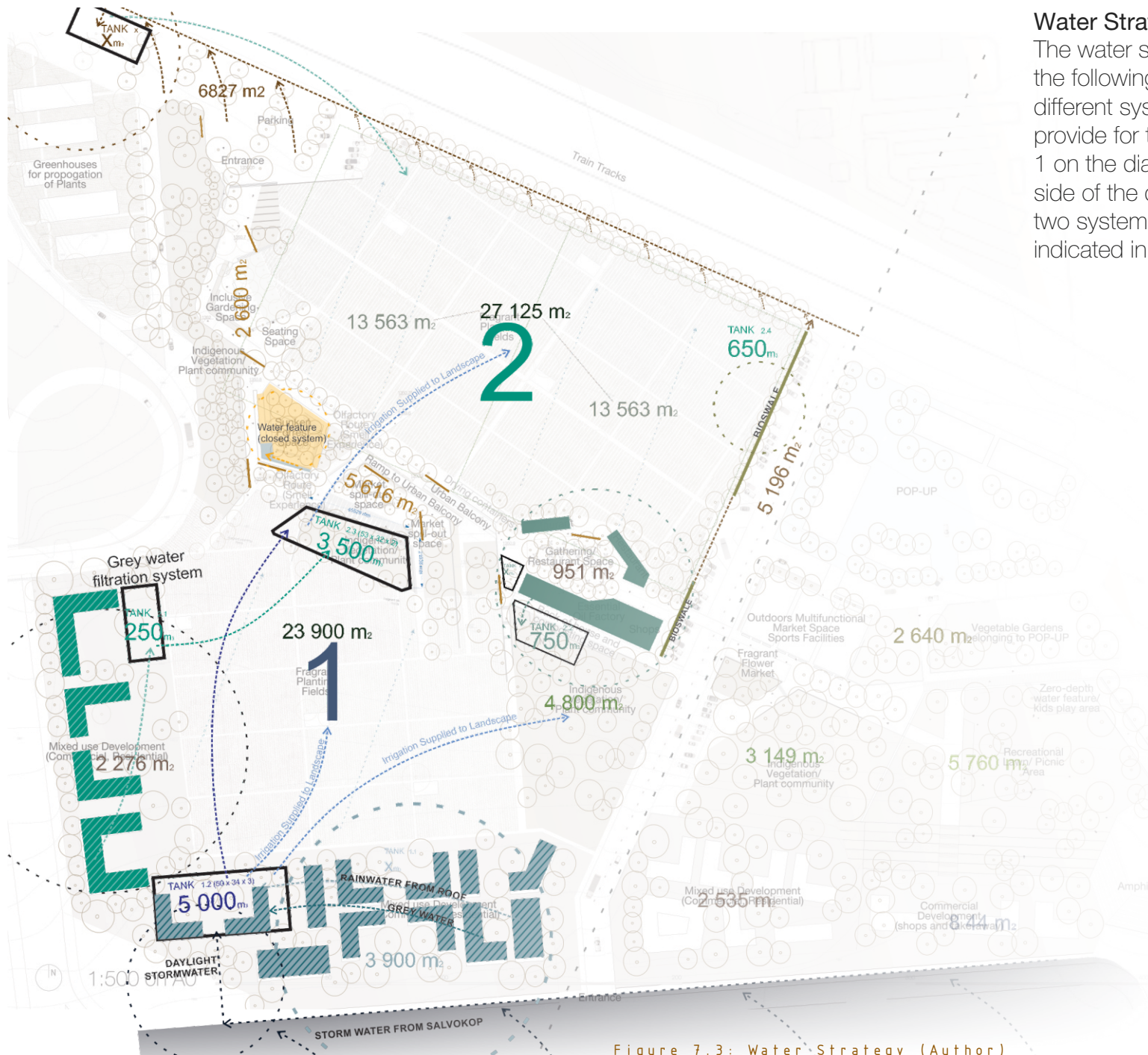


Figure 7.3: Water Strategy (Author)

Materials



Concrete



Large Concrete Brick



Steel



Galvanised Steel Grating
and other permeable metals



Natural Stone

Concrete is a very robust, durable and widely available material. Its strength, durability and aesthetic appeal is however dependant on the mixture (the ratio of cement, aggregate and water used) as well as the correct method of implementation (thus the quality of the labour used).

All concrete surfaces are to be a minimum of 80mm thick with a two way mesh placed 20-30mm from the top of the slab and constructed from a minimum 15 MPa strength reinforced concrete with expansion joints at 1500mm intervals and joints are to be filled with polyethylene joint filler. They must be cast on suitable compacted ground fill in layers of 150 - 300mm. Concrete surfaces are to be sand-blasted to reveal the aggregate and aid in the slip resistance of the walkways when they are wet.

All interior concrete floor surfaces must be cast on a 0.25mm polyethylene damp proof membrane. They are to be finished off with a 30mm concrete screed, finished with a [6mm] layer of clear epoxy. This material has no maintenance requirements (depending on its strength and the above mentioned factors) it is also very light and thus reduces the heat island effect and creates a more favourable microclimate in the area. Many different

textures can be created with it by using different shuttering materials. It is very cold to sit on thus any possible position where people may sit; it will be considered to cover those surfaces with timber.

Steel is used in construction because of its hardness, durability and tensile strength.

Using steel can ensure longer spans, thinner columns, and easy alteration (Wegelin 2009:188). It is also recyclable and re-usable although it is made from non-renewable resources.

Although steel is quite expensive and the process of making it takes up a lot of energy and water, this is equalized by its speed of erection due to standardized elements, different shapes and sizes, its length of span and strength.

To protect the steel against corrosion it can be galvanised or painted (with a primer or paint coats) (Wegelin 2009:191). Where desired the steel can also be left to naturally age, thus treating it in such a way to end up with a rusty looking brownish colour for aesthetic reasons without compromising its structural strength.

Steel will be used in the construction of pergolas, in some walkways and in concrete as reinforcement

The materiality of the project needed to be robust but also reflects the idea of permeability as to allow odourant molecules to penetrate through materials, for example perforated metal. Permeable metal is also used in a very functional way in walkways to allow plants to grow through the gaps in the metal and be crushed by people as to release their smells.

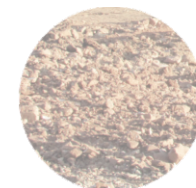
Timber is a beautiful natural and commonly used construction material. A critical factor when using timber is making sure it is sources from registered plantations who plant new trees if old ones are cut off.

It is biodegradable, re-usable and recyclable for example is composite timber products and mulch and even the production of paper.

Timber especially when used outside does require treatment to prevent moisture, sun and pest damage.

Class H3 CCA treated Saligna can be used. It is usually sealed with penetrating wax (with the option of a sanded finish).

Materials found on site



Reference Plan

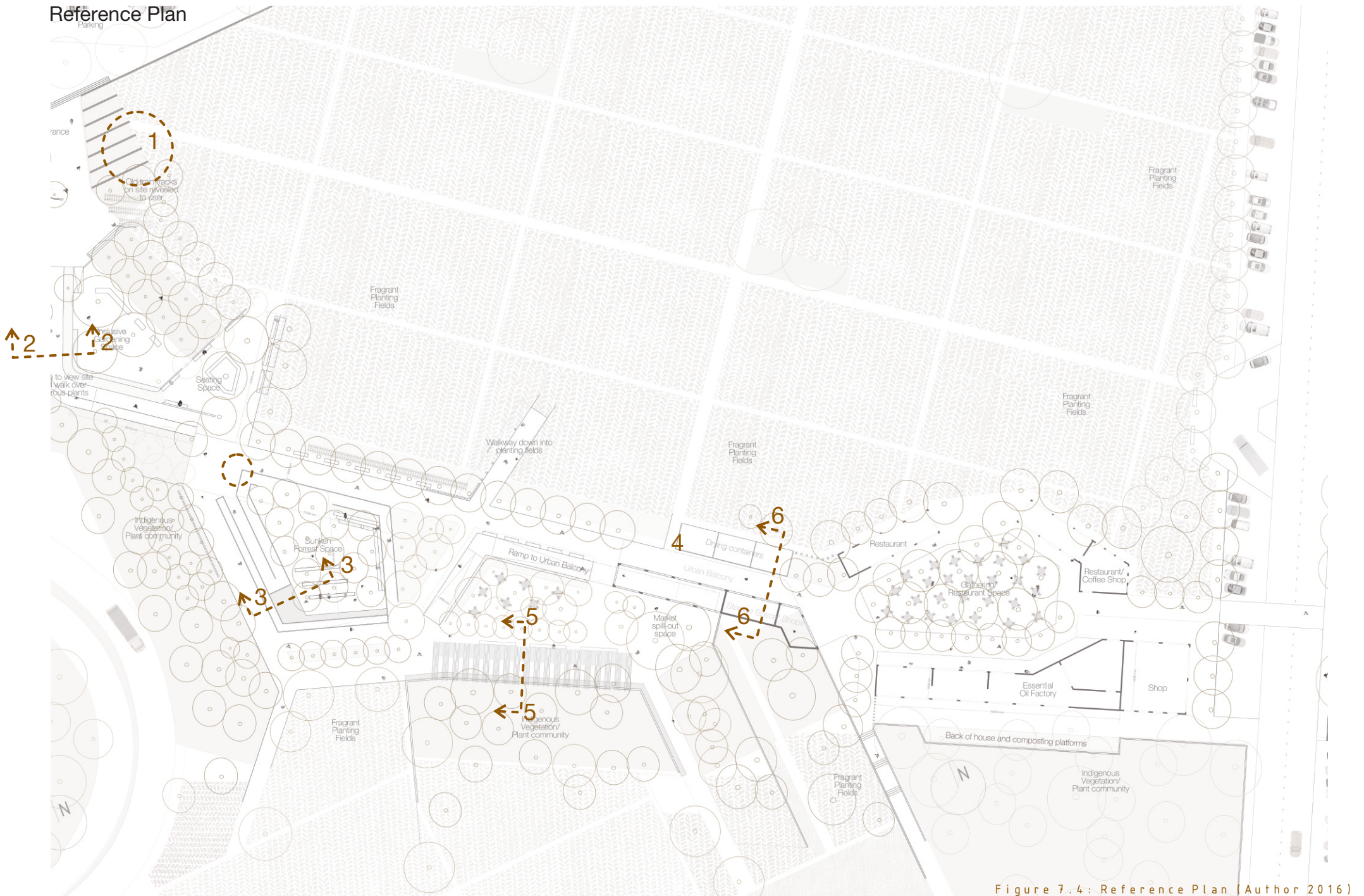
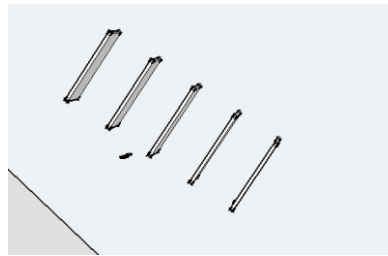
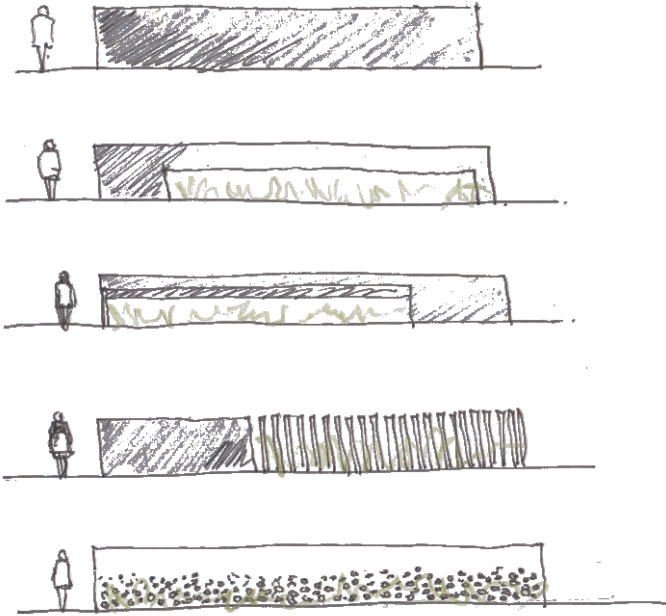
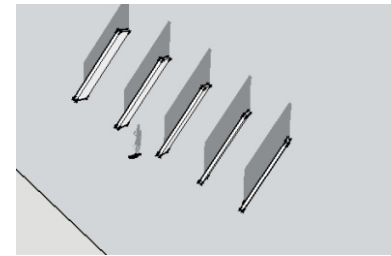


Figure 7.4: Reference Plan (Author 2016)

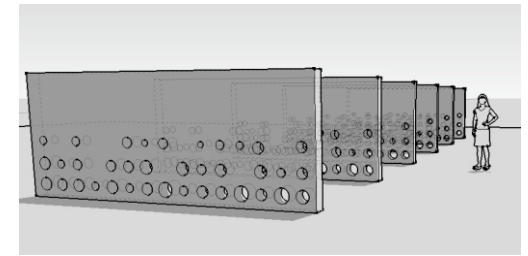
Detail 1



Summer Noon Sun



Winter Noon Sun

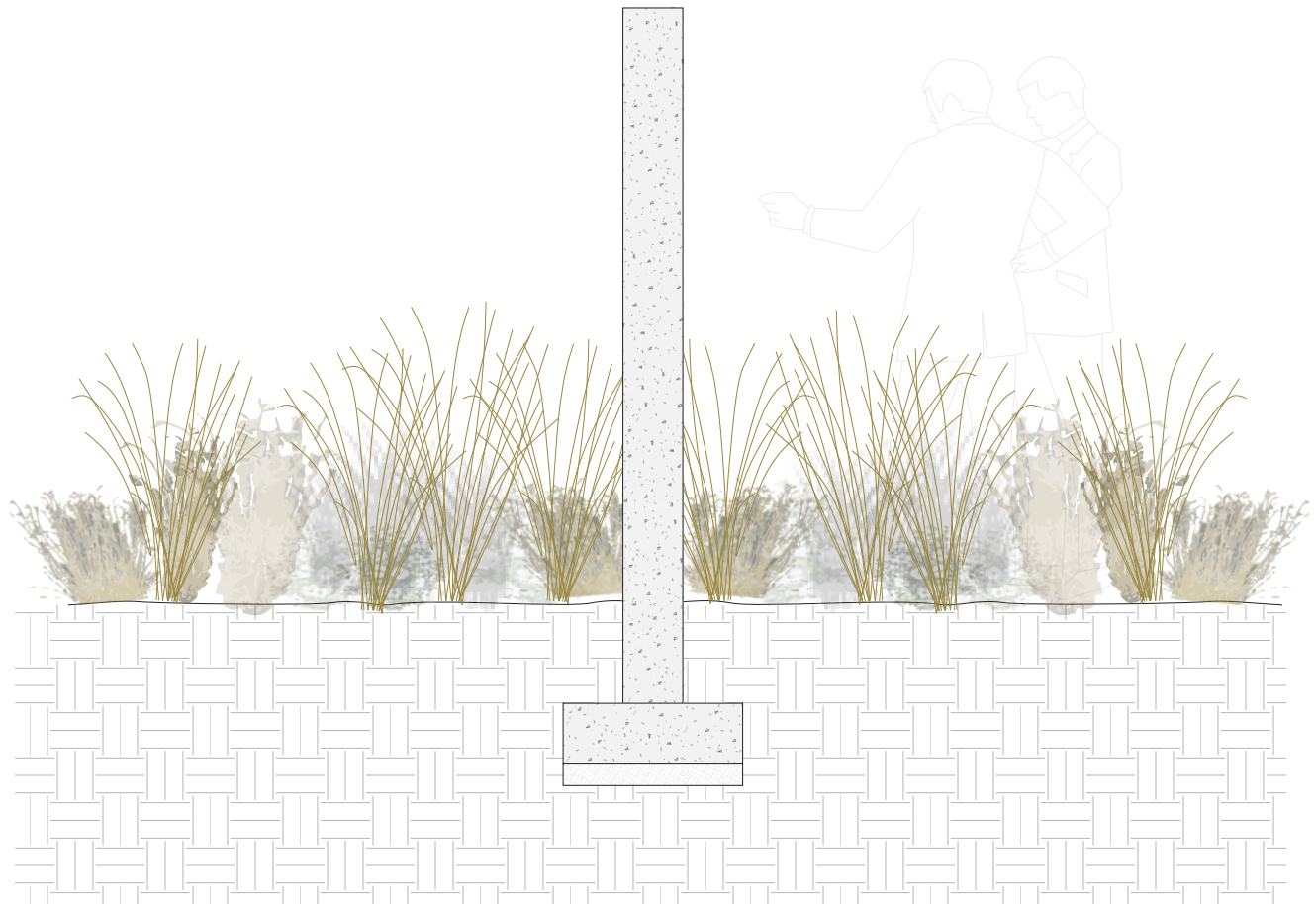
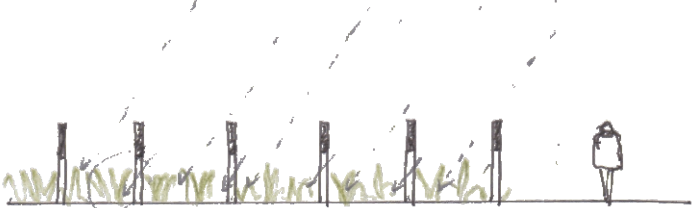


Perforated Concrete

Different versions of fins

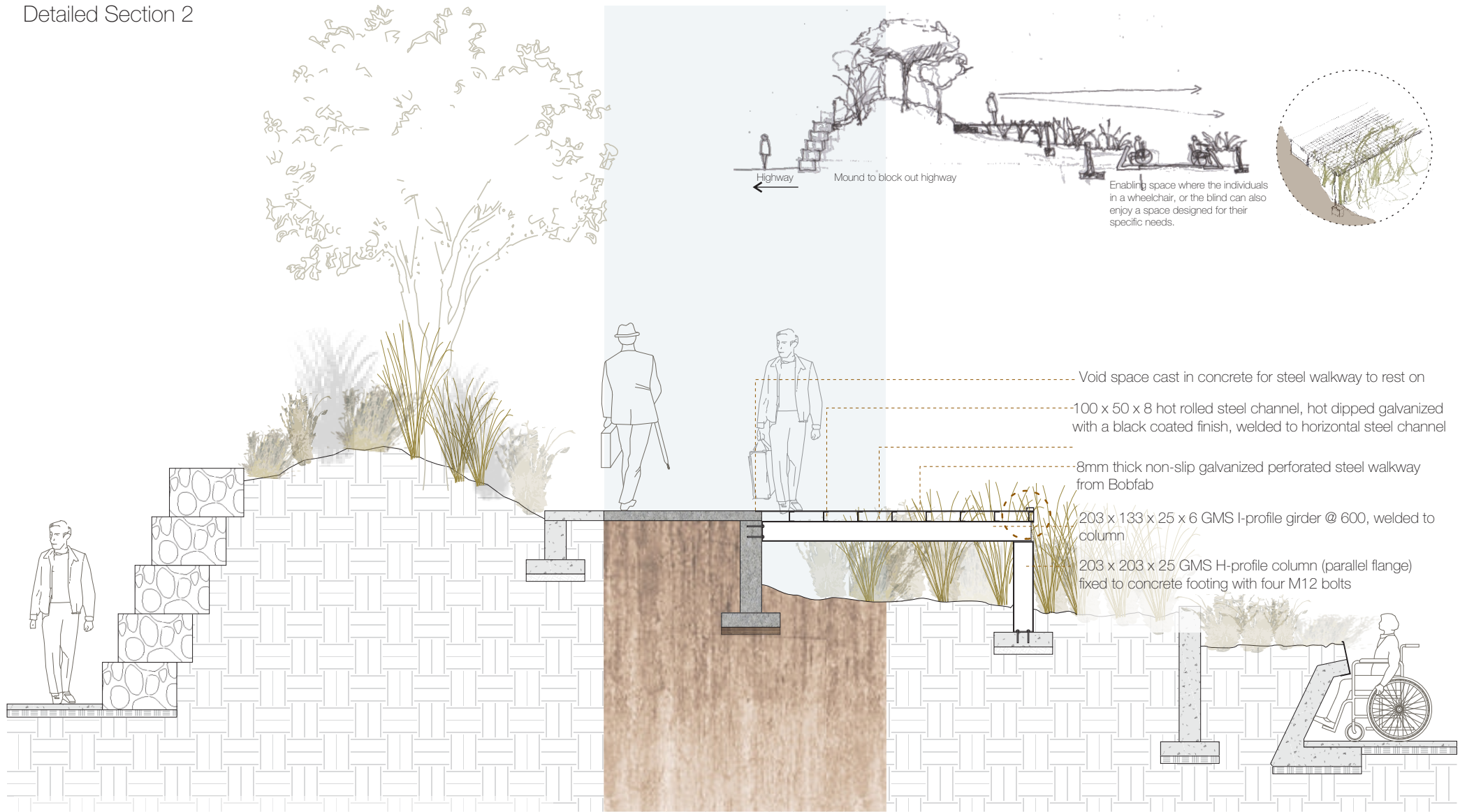
Vegetation is planted in between the fins at the entrance as an attempt to direct the wind and create wind tunnels sweeping the sweet fragrance of the essential oil plant to the nose of the visitor to the site.

To ensure that the plants grow everywhere between these fins the bottom part of them are going to need to be permeable.



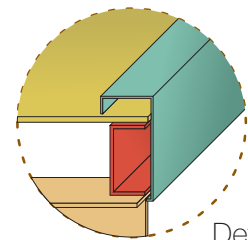
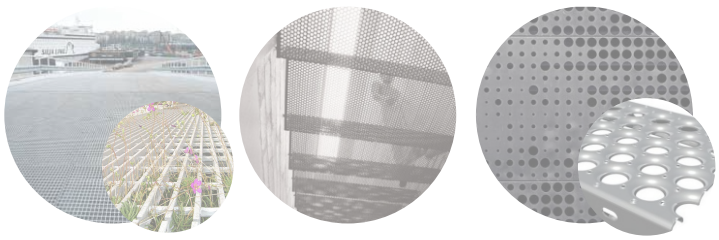
Detail 1: Concrete fins - NTS

Detailed Section 2



Enabling space where the individuals in a wheelchair, or the blind can also enjoy a space designed for their specific needs.

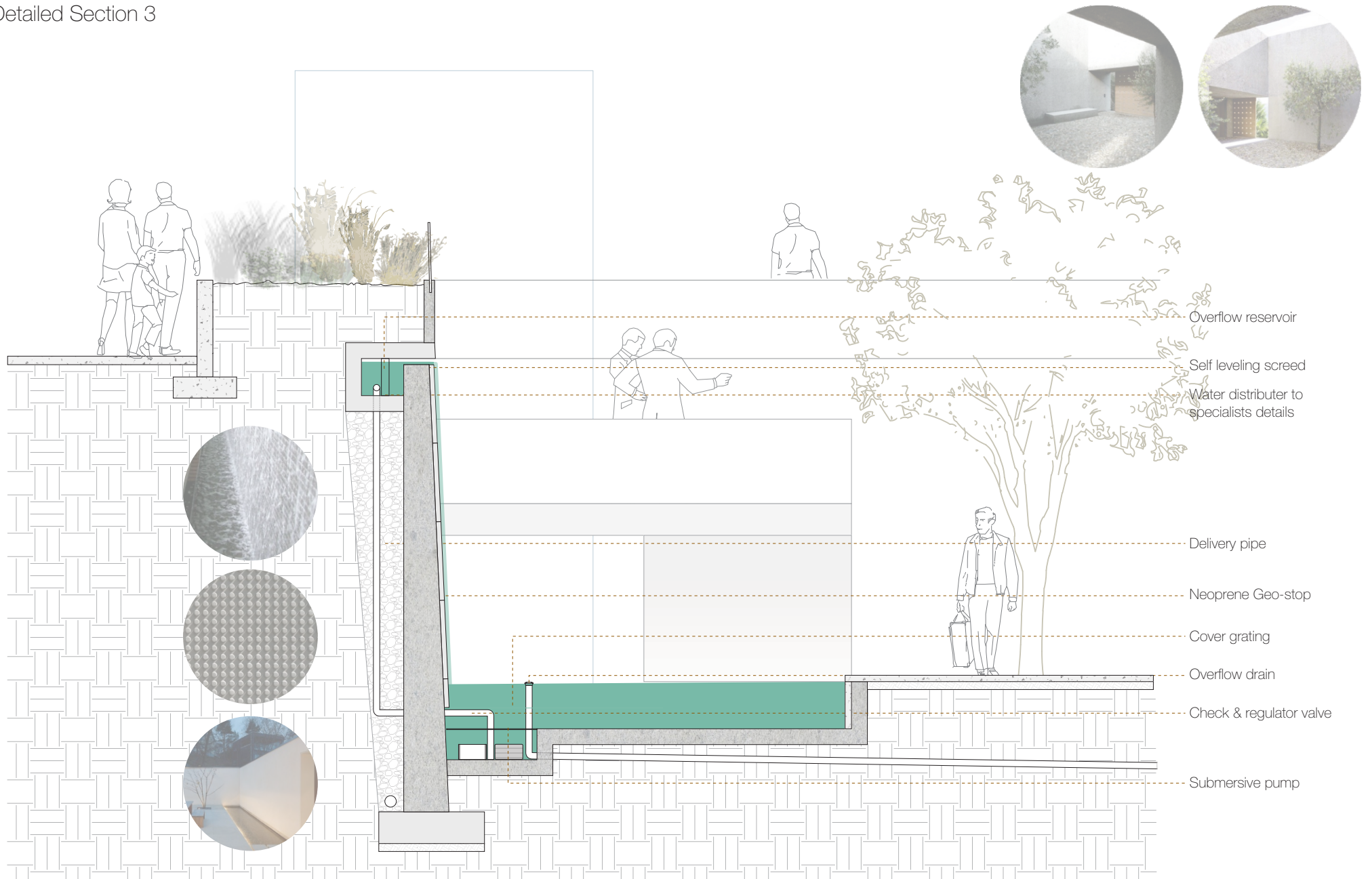
Detail 2: Walkway



Detail 2.1 NTS

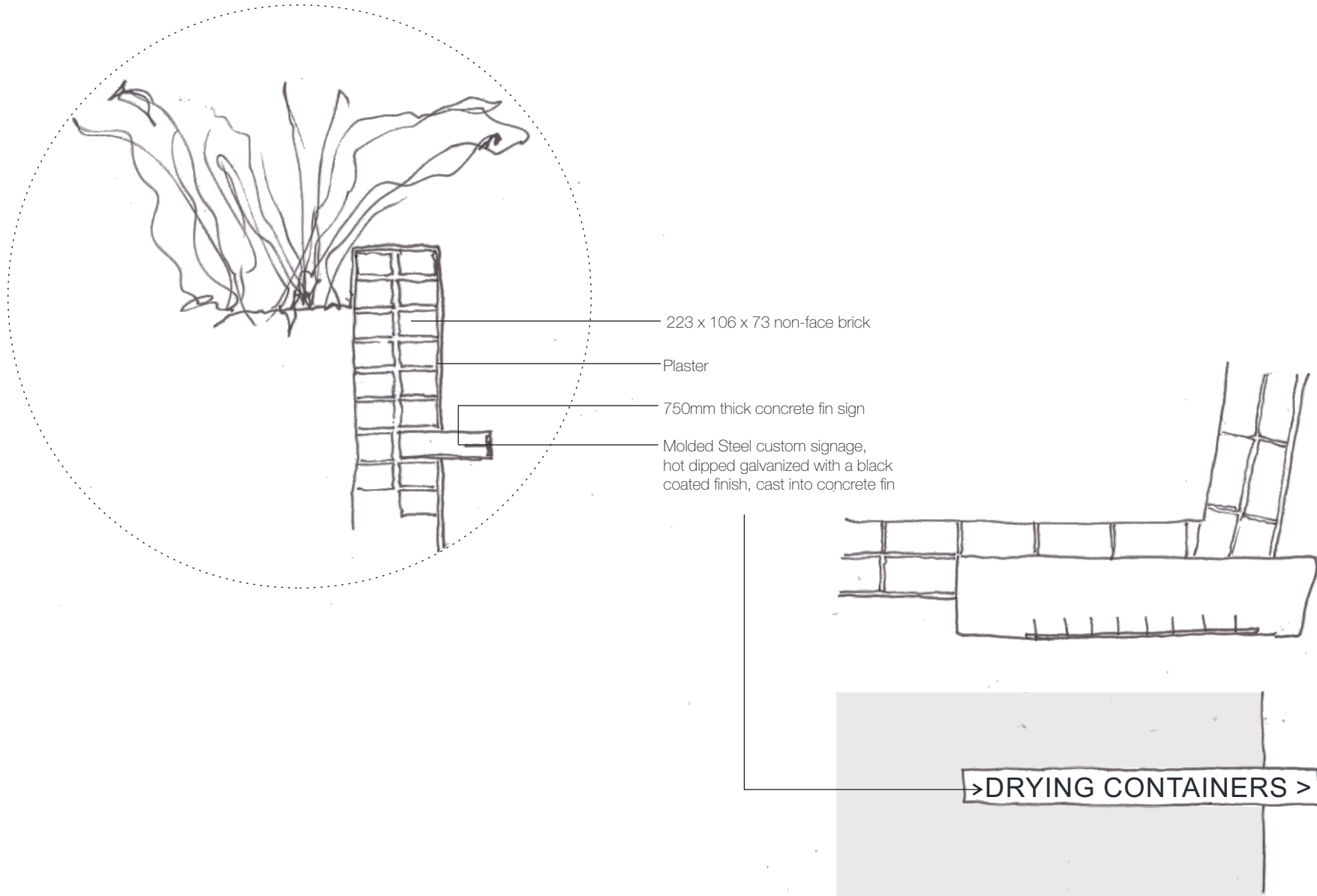
Section 2 NTS

Detailed Section 3

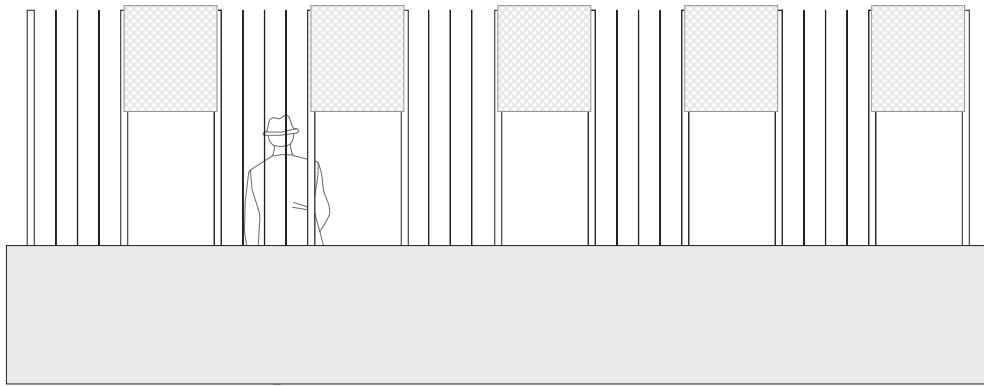


Detail 3: Water feature in sunken Buddleja forest - NTS

Detail 4



Detailed Section 5



100 x 50 x 8 hot rolled steel channel, hot dipped galvanized with a black coated finish, bolted to concrete wall with M12 galvanized steel rawl bolts

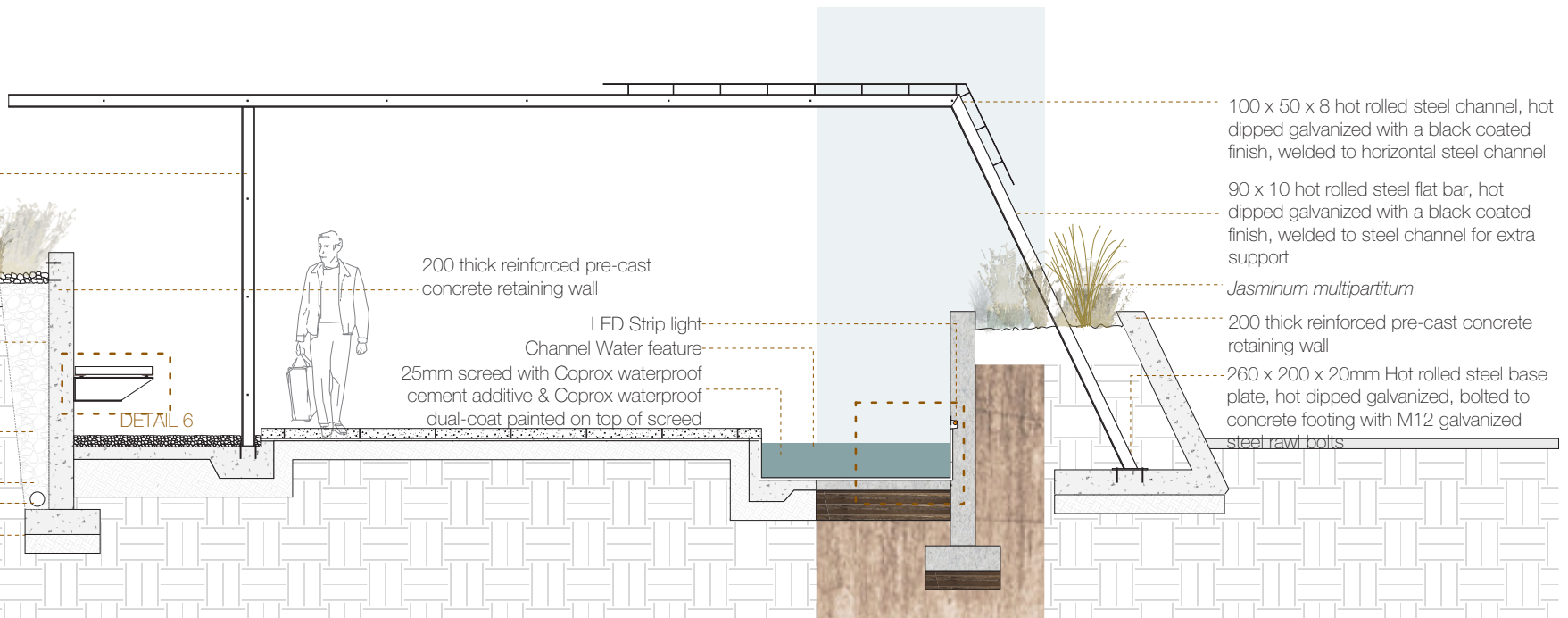
0,45 Poliolefin dpc membrane wrapped at the top between the last and second last brick and ended of against the concrete footing

Geotextile (bidim) to separate the soil from the granular backfill

110mm dia. Geopipe

600 x 200 insitu reinforces concrete footing

150mm layer compacted backfill at 90% MOD AASHTO



200 thick reinforced pre-cast concrete retaining wall

LED Strip light

Channel Water feature

25mm screed with Coprox waterproof cement additive & Coprox waterproof dual-coat painted on top of screed

100 x 50 x 8 hot rolled steel channel, hot dipped galvanized with a black coated finish, welded to horizontal steel channel

90 x 10 hot rolled steel flat bar, hot dipped galvanized with a black coated finish, welded to steel channel for extra support

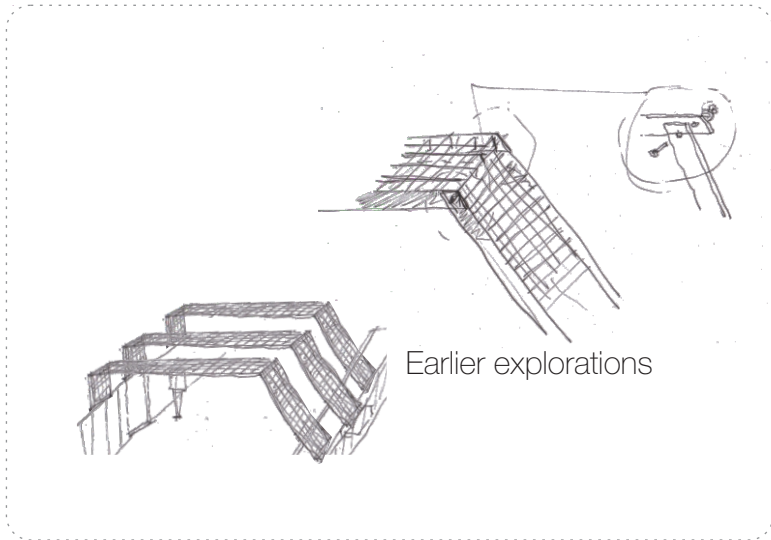
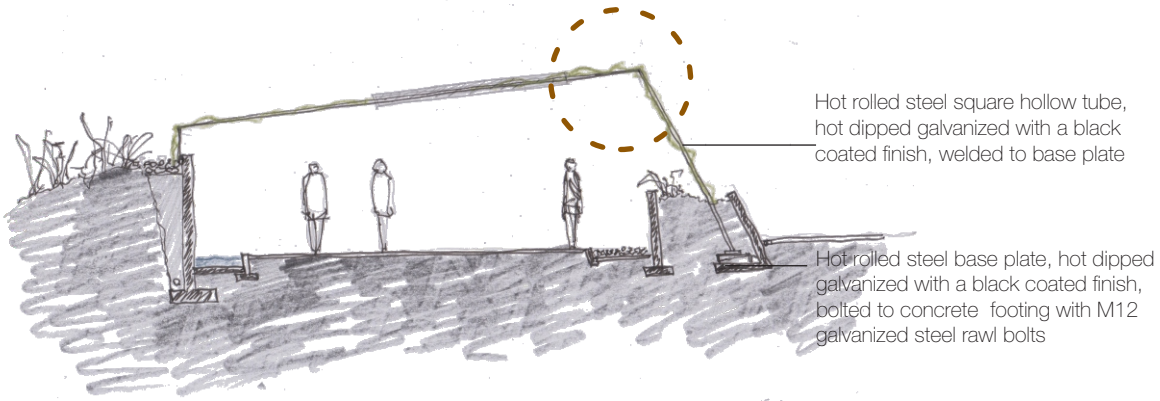
Jasminum multipartitum

200 thick reinforced pre-cast concrete retaining wall

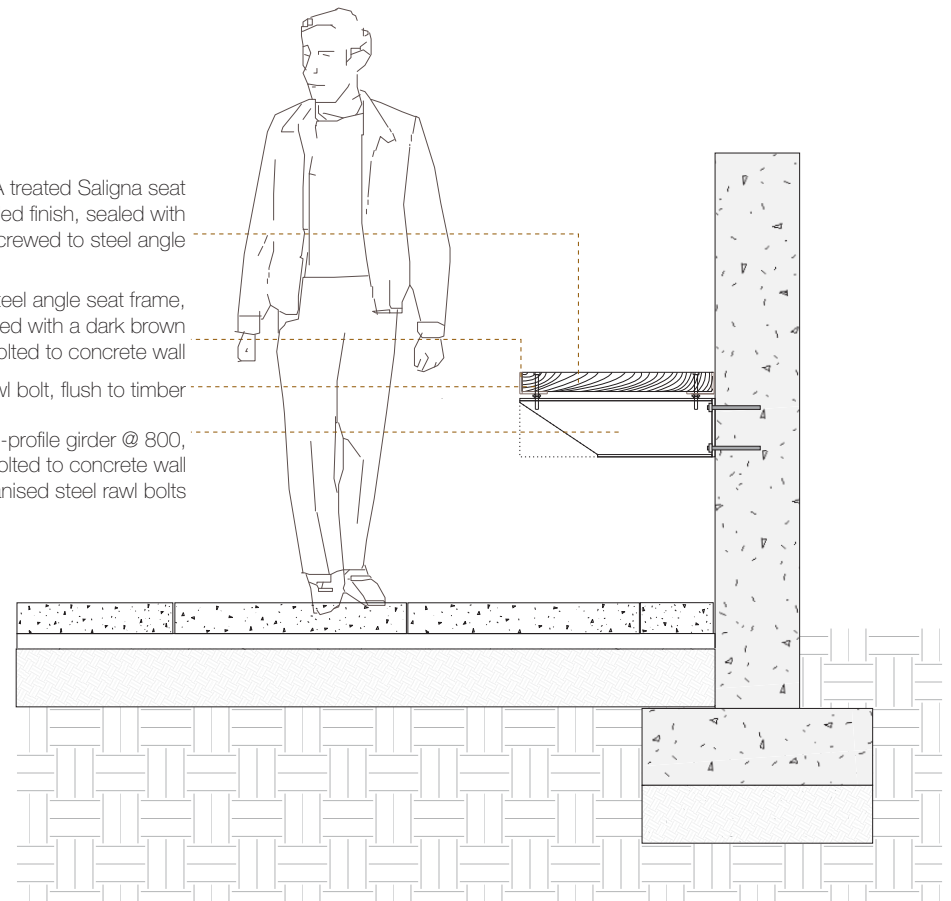
260 x 200 x 20mm Hot rolled steel base plate, hot dipped galvanized, bolted to concrete footing with M12 galvanized steel rawl bolts

Detail 5: Jasmine Pergola NTS

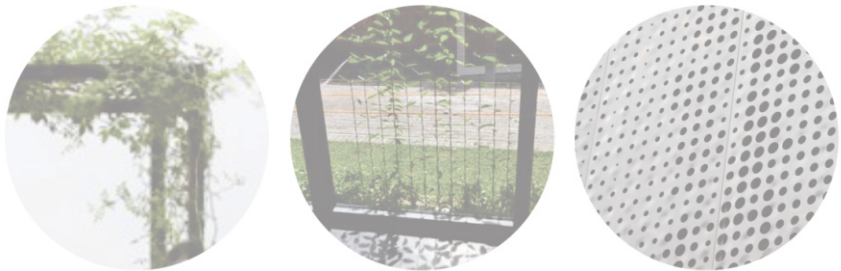
Detail 5.1



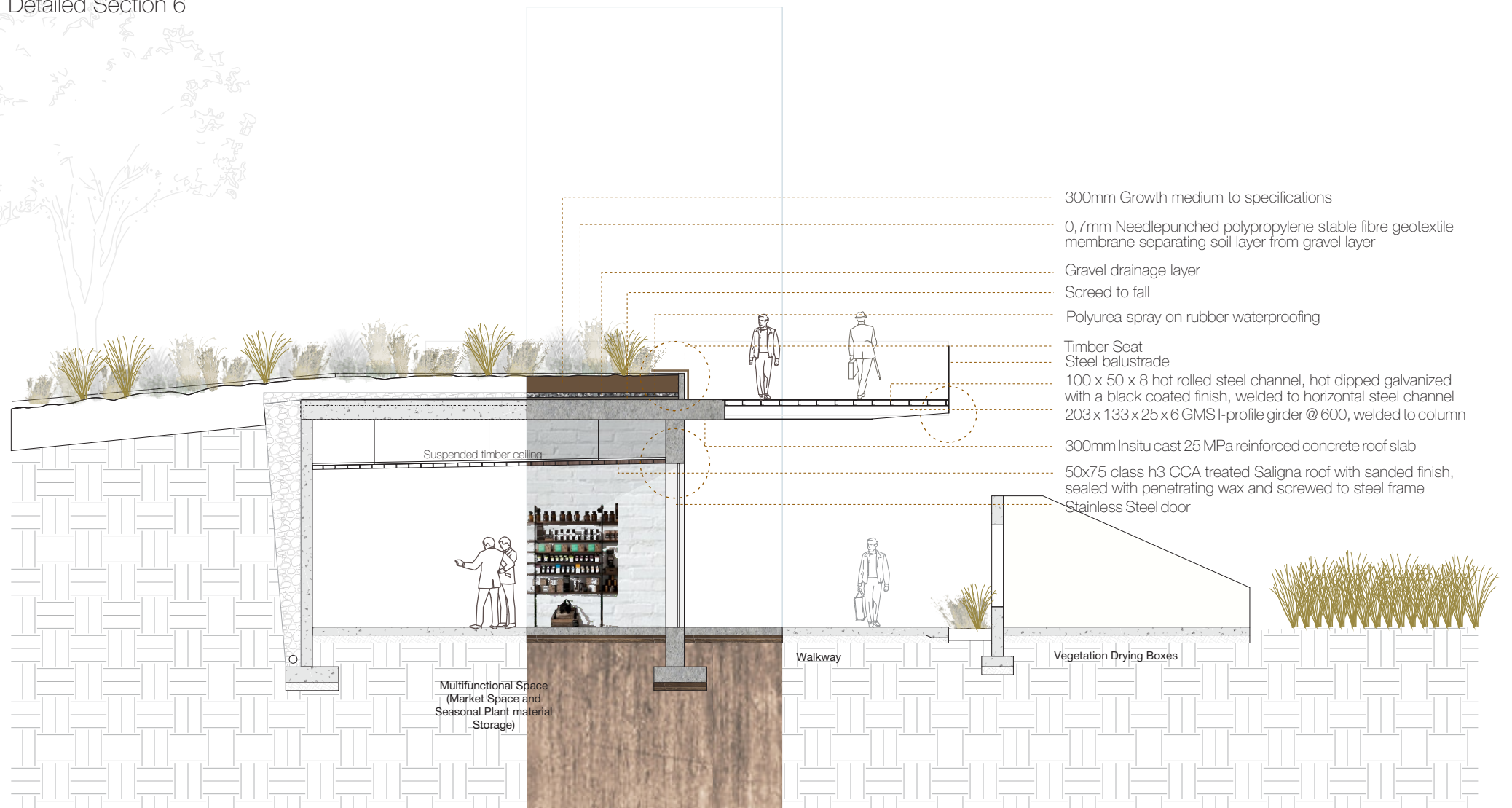
- 50x75 class h3 CCA treated Saligna seat surface with sanded finish, sealed with penetrating wax and screwed to steel angle
- 66x80x6mm hot rolled steel angle seat frame, hot dipped galvanized with a dark brown coated finish, bolted to concrete wall
- M12 class 8,8 steel rawl bolt, flush to timber
- 203 x 133 x 25 GMS I-profile girder @ 800, welded to base plate, bolted to concrete wall with M12 galvanised steel rawl bolts



Detail 6: Timber Seat - NTS



Detailed Section 6



Detail 7: Urban balcony - NTS

List of Figures

- Figure 1.1: Urban Green Space Guidelines (Cape Space 2005:85)
- Figure 1.2: Site location and some surrounding landmarks (Author 2016)
- Figure 1.3: Methodology diagram (Author 2016)
- Figure 2.1: The location of the limbic system and odourant receptors in the brain (Author 2016)
- Figure 2.2: Air flow and odour concentration (image drawn by Nabil Awad) (Henshaw 2014:182)
- Figure 2.3: The smellscape as a composition of different notes (image drawn by Nabil Awad)(Henshaw 2014:170)
- Figure 2.4: the The Noar Foundation principles and local application (Author 2016)
- Figure 2.5: Principles for economic empowerment and local application (Author 2016)
- Figure 2.6: Therapeutic design principles (Author 2016)
- Figure 3.1: The Development of Pretoria (Van der Waal Versameling 2009)
- Figure 3.2: Timeline of landmarks and monuments (Discarded Landscapes Group 2016)
- Figure 3.3: Ecological elements in Tshwane (Discarded Landscapes Group 2016)
- Figure 3.4: Image showing Public and private open space (Discarded Landscapes Group 2016)
- Figure 3.5: The heritage fabric in Tshwane (Discarded Landscapes Group 2016)
- Figure 3.6: The development of Salvokop seen on aerial photographs (Van der Waal 2009)
- Figure 3.7: The development of Salvokop seen on aerial photographs (Google Earth)
- Figure 3.8: Locality map of the proposed site (Author 2016)
- Figure 3.9: Land use analysis map (Author 2016)
- Figure 3.10: Photos of the site (Author 2016)
- Figure 3.11: Old engineers office now occupied by POP-UP (Author 2016)
- Figure 3.12: Photo of Computer and office administration class (Author 2016)
- Figure 3.13: Photo of sewing class currently in a corrugated steel building on site (Author 2016)
- Figure 3.14: Photo of POP Kids who attend classes in these containers (Author 2016)
- Figure 3.15: Photo of Vegetable tunnels whom one of the learners at POP-UP care for (Author 2016)
- Figure 3.16: Site Analysis (Author 2106)
- Figure 3.17: Site Analysis (Author 2106)
- Figure 3.18: Wind study (CSIR)
- Figure 4.1: Tshwane Open Space Framework Vision (TOSF 2005:107)
- Figure 4.2: Framework for Salvokop by GAPP (Culmatrix 2003)
- Figure 4.3: Re Kgabisa Framework (Rekgabisa 2013:6)
- Figure 4.4: Framework for Salvokop (Salvokop Group 2011)
- Figure 4.5: Urban Framework Proposal (Author 2016)
- Figure 4.6: Framework proposal ideas (Author 2016)
- Figure 5.1: Composite Functional Relationship Diagram (Author 2016)
- Figure 5.2: Graphic representation of three different layers (Author 2016)
- Figure 5.3: Three principles of sustainable landscape design according to Elizabeth Meyer (Author 2016)
- Figure 5.4: Response to the linearity of the train tracks (Author 2016)
- Figure 5.5: a) beautiful views to the city (Author 2016)
- Figure 5.6: b) indigenous pioneer grasses glowing in the late afternoon sun (Author 2016)
- Figure 5.7: c) beautiful views to the city (Author 2016)
- Figure 5.8: d) The city lights at night (Author 2016)
- Figure 5.9: e) Stone and concrete pieces left on site (Author 2016)
- Figure 5.10: 7 Factors that influence smellscape design (Author 2016)
- Figure 5.11: Different irrigation systems (Author 2016)
- Figure 5.12: Recommended gradients for different soil types (AGIS 2002)
- Figure 5.13: The essential oil distillation process (Author 2016)
- Figure 5.14: Scale of distillation equipment (Author 2016)
- Figure 5.15: Vision for the design
- Figure 5.16: Conceptual drawing illustrating the form and potential moments of smell (Author 2016)
- Figure 5.17: Informed watercolour abstractions of smellscapes (Author 2106)

Figure 5.18: Models used in the exploration of different design outcomes (Author 2106)

Figure 5.19: Development of the master plan through iteration (Author 2106)

Figure 5.20: Development of the master plan through iteration (Author 2106)

Figure 5.21: Development of the master plan through iteration (Author 2106)

Figure 5.22: Master plan (Author 2016)

Figure 5.23: Master plan indicating datum line and different uses (Author 2016)

Figure 5.24: Master plan assessed (Author 2016)

Figure 5.25: Master plan indicating section lines (Author 2016)

Figure 26: Master plan with sketch plan area indicated (Author 2016)

Figure 6.1: Development of the sketch plan through iteration (Author 2106)

Figure 6.2: Development of the sketch plan through iteration (Author 2106)

Figure 6.3: Development of the sketch plan through iteration (Author 2106)

Figure 6.4: Development of the sketch plan through exploring spaces in sections (Author 2106)

Figure 6.5: Development of the sketch plan through iteration (Author 2106)

Figure 6.6: Development of the sketch plan through exploring spaces in sections (Author 2106)

Figure 6.7: Development of the sketch plan through iteration (Author 2106)

Figure 6.8: The final sketch plan (Author 2106)

Figure 6.9: The olfactory route presented on sketch plan to show the process of making essential oil (Author 2106)

Figure 6.10: Photo presentation of steps indicated on plan (Author 2106)

Figure 6.11: An overview of the moments of smell (Author 2106)

Figure 6.12: The moments of smell (Author 2106)

Figure 6.13: Wind direction in relation to moment 1 (Author 2106)

Figure 6.14: Plant palette for moment 1 (Author 2016)

Figure 6.15: Plant palette for moment 2 (Author 2016)

Figure 6.16: Plant palette for moment 3 (Author 2016)

Figure 6.17: Plant palette for moment 4 (Author 2016)

Figure 6.18: Plant palette for moment 5 (Author 2016)

Figure 6.19: Essential oil planting fields

Figure 6.20: *Helichrysum petiolare* (Olivier 2014)

Figure 6.21: *Helichrysum splendidum* (Shoot 2004)

Figure 6.22: *Pelargonium cordifolium* (Staudenfuehrer)

Figure 6.23: *Pelargonium graviolens* (NetPS Finder)

Figure 6.24: Dried plants (Adobe 2016)

Figure 6.25: The essential oil process

Figure 6.26: Plant not containing any strong fragrance (Author 2106)

Figure 2.27: Moments of choice indicated on the final sketch plan (Author 2106)

Figure 6.28: Different routes to take indicated on the final sketch plan (Author 2016)

Figure 29: Section A-A through (Author 2016)

Figure 6.30: Section B-B through (Author 2016)

Figure 6.31: Perspectives (Author 2016)

Figure 7.1: Planting Strategy (Author 2016)

Figure 7.2: Plant Palette (Author 2016)

Figure 7.3: Water Strategy and Systems (Author 2016)

Figure 7.4: Reference Plan (Author 2016)

Bibliography

American Planning Association. 2016. City Parks Forum. Internet: <https://www.planning.org/cityparks/>. Accessed 27 August 2016.

Bowring, J. 2006. The Smell of Memory: Sensorial Mnemonics. IFLA Conference Papers: Environment, Society and Design Division.

Cattaneo, A. 2003. A Polysensitive method for qualitative sociological research. IULM University, Milan.

Choudhury, D. 2015. Sustainable Architecture and Human Senses: International Conference On Sustainable Technologies In Building and Environment. Budha College of Architecture, Karnal, Haryana-132001, India.

City of Tshwane. 2005. Tshwane Open Space Framework: Volume Three.

Dr Woods, G. 2015. How Humidity Affects Your Scent Control Strategy in hunting. Internet: <http://www.bowhuntingmag.com/tactics/humidity-can-impact-scent-control-strategy/#ixzz4NSVTQJFA>, Accessed 25 Aug 2016.

Dr. Mercola, J. 2015. Why Smells Can Trigger Strong Memories. Internet: <http://articles.mercola.com/sites/articles/archive/2015/08/06/smells-trigger-memories.aspx>. Accessed 13 June.

Eyben, R., Kabeer, N., Cornwall, A., 2008, 'Conceptualising Empowerment and the Implications for Pro-Poor Growth', Paper prepared for the DAC Poverty Network by the Institute of Development Studies, Brighton

Fox, K. 2002. The Smell Report: The psychology and anthropology of scent. Social Issues Research Centre, United Kingdom.

Gainsley, S. 2012. Extensions Highscope: The Importance of Sensory Play. HighScope Press.

Giesw, E. 2006. The Health Benefits of Parks: How Parks Help Keep Americans and Their Communities

Fit and Healthy.

http://www.eastshorepark.org/HealthBenefitsReport_FINAL_010307.pdf
GSDRC. 2016. Social and economic empowerment. Internet: <http://www.gsdrc.org/topic-guides/voice-empowerment-and-accountability/supplements/social-and-economic-empowerment/#ec>. Accessed 22 July 2016.

Helen Keller, 2004. The World I Live In . Main Edition. NYRB Classics, New York.

Henshaw, V. 2013. Urban Smellscapes: Understanding and Designing City Smell Environments. Routledge, United Kingdom.

Howes, D & Claassen, C. 2006. The Sensescape of the Museum: Western Sensibilities and Indigenous Artifacts" in Elizabeth Edwards, et al. (eds.). Sensible Objects: Colonialism, Museums and Material Culture. Oxford: Berg Publishers.

Landscape Architecture Foundation. 2014. Conversations with Leaders in Landscape Architecture: Steven Spears. Internet: <https://lafoundation.org/leadership/conversations/steven-spears/>. Accessed. 30 July 2016.

Landscape Architecture Foundation. 2014. Five Questions with Steven Spears. Internet: <https://lafoundation.org/leadership/conversations/steven-spears/>. Accessed 5 September 2016.

Mathrani, V. 2008. The power of Smell. Internet: <http://serendip.brynmawr.edu/exchange/serendipupdate/power-smell>. Accessed 15 April 2016.

Meyer, E. K. 2008. Sustaining Beauty: The performance of appearance – A manifesto in three parts. Internet: <http://www.arch.utah.edu/cgi-bin/wordpress-cmp/wp-content/uploads/2012/09/meyer2008sustaining-beauty.pdf>. Accessed 10 May 2014.

Meyer, W. 2007. Persistence Of Memory: Scent Gardens for Therapeutic Life Review In Communities for The Elderly. The University of Texas at Arlington, United States.

Naddeo, V et al. 2013. Odour Impact Assessment Handbook. 1 Edition. John Wiley & Sons: New Jersey, United States.

Nishimura, K, 2011. The Aesthetics of Smell and Taste For The Appreciation Of Landscape. Journal Of The Faculty Of Letters, The University Of Tokyo, Aesthetics, Vol 36, 28.

Noar Foundation. 2010. Economic Empowerment. Internet: <http://noarfoundation.org/economic-empowerment.cfm>. Accessed 22 July.

Palmer, A. 2013. Mirror Online: 20 Fascinating Facts about Our Sense of Smell. Internet: <http://www.mirror.co.uk/lifestyle/health/20-fascinating-facts-sense-smell-1977351>. Accessed 24 March 2016.

Pines, M. 2004. The Mystery of Smell. Chevy Chase, Maryland: The Howard Hughes Medical Institute. Internet: www.hhmi.org/senses/d110.html . Accessed 21 April 2016.

Recovering Landscape: Essays in Contemporary Landscape Architecture, Edited by James Corner, Princeton Architectural Press, New York.

Ryan, R. 2010. University of Rochester: Spending Time in Nature Makes People Feel More Alive, Study Shows. Internet: <http://www.rochester.edu/news/show.php?id=3639>. Accessed 12 March 2016.

Stone, C. n.d. Studies Show These 8 Smells Make People Happy. Internet: <http://www.rd.com/health/wellness/happy-smells/2/>

Swaffield, S. 2002. Theory in landscape architecture: A Reader. University of Pennsylvania Press. Philadelphia.

Ward, C., Roe, J., Aspinall, P., Mitchell, R., Clow, A. & Miller, D., 2012. More green space is linked to less stress in deprived communities: evidence from salivary cortisol patterns. Landscape and Urban Planning 105(3), 221-229.

Wyatt, T. 2014. TED Talks: 10 Fun Facts About Your Sense Of Smell. Internet: <http://ted.tumblr.com/post/85827458470/10-fun-facts-about-your-sense-of-smell>. Accessed 5 July.

All glory and honour to God, my Heavenly Father. Thank you for leading and guiding every single part of this dissertation. Thank You that I can call myself a daughter of the Most High King.

Aan Ida Breed, baie dankie vir al die wysheid, leiding, raad en jou vertrouwe in my.
Dit was 'n plesier en 'n voorreg om jou as studie leier te gehad het.

Aan Johan en Amanda, my geliefde ouers asook Suné, my liewe sussie, baie dankie vir julle oneindige ondersteuning, liefde, gebede en oproepe reg deur die jaar.

Aan André, baie dankie vir jou ondersteuning, moed in praat, gebede en mooiste hart.
Jy is my rots.

Aan Johan Prinsloo, baie dankie vir die rigting en inspirasie.
Jou passie vir die dissipline is waarlik inspireerend.

Aan Anne, Anieta, Stephanie en Kayli, baie dankie vir julle ondersteuning, gebede, koffie aandra, laat aande op speld dat ons duim blou is en onverdeelde hulp op die dag van my eksamen.

“But seek first the kingdom of God and his righteousness, and all these things will be added to you.” - Matthew 6:33

