

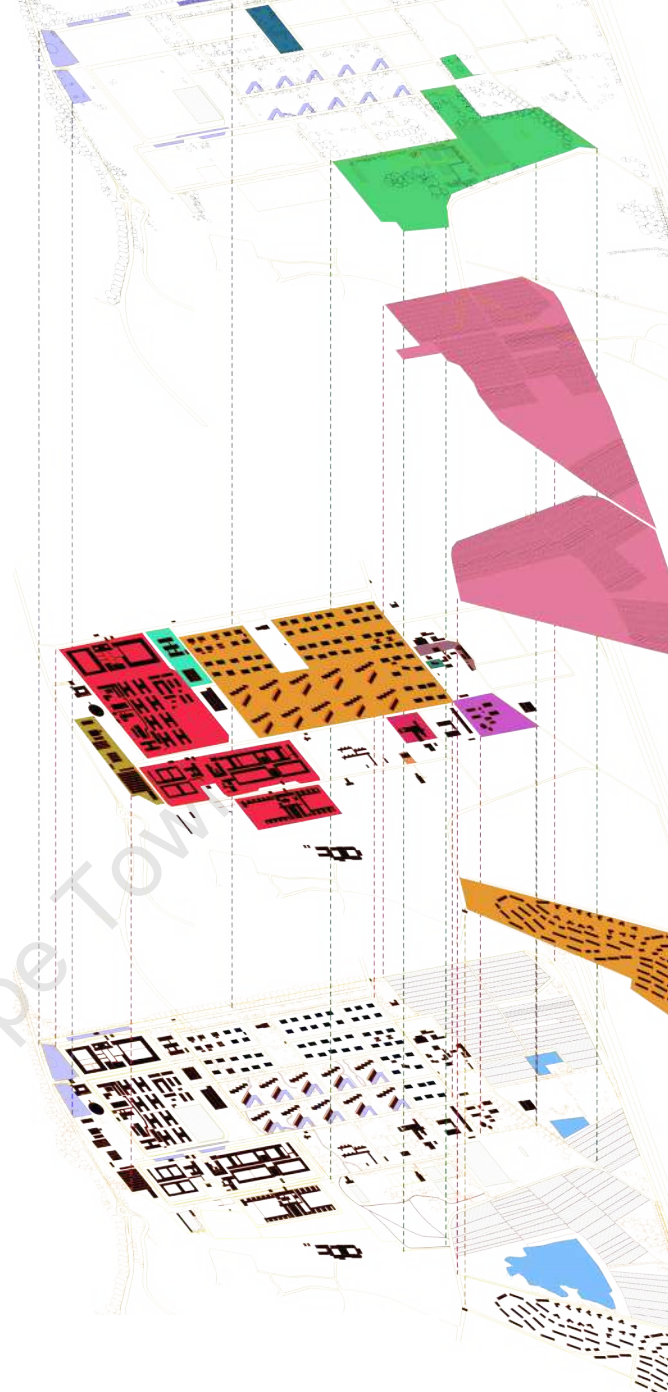
PRISON CITY: REDESIGNING POLLSMOOR PRISON

Liz Pullukattu
PLLLIZ001

Master in Landscape Architecture
MLA Dissertation
APG 5052S

School of Architecture, Planning and Geomatics

2017



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MLA Dissertation

Prison City: Re-designing Pollsmoor Prison

by

Liz Pullukattu
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This dissertation is submitted as partial fulfilment of the

Master of Landscape Architecture Degree

120 Credits

December 2017

School of Architecture

Faculty of Engineering and Built Environment (EBE)

University of Cape Town

Studio Convener: Clinton Hinds

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Signed by candidate

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Acknowledgements

I'd like to acknowledge all those who assisted me in this venture- your input was greatly appreciated!

Firstly, I'd like to thank Mr. Clinton Osbourn who gave me a glimpse into the world of Pollsmoor prison by sharing his stories of what life was like working with the inmates of Pollsmoor during his time with Youth in Prison (YiP). Without you I would never have been able to kickstart my research.

Thank you to all my supervisors (David Gibbs, Julian Raxworthy, Tarna Klitzner and Clinton Hinds) for your guidance, motivation and kind words from the very beginning till the end of this thesis. I truly appreciate the time you all took to review and offer sage advise during my process of completing this body of work.

A special thanks must also be given to Tomá Berlanda, for lending an ear and for the kind words you offered. Thank you!

Getting through a master's degree is no easy feat, and it would not have been possible without the regular confidence boosts and motivational phone calls by my wonderful sister, Divya, and my dedicated and hardworking parents, Jojo and Suma. I love you all.

Once again, thank you all!

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This design investigation explores techniques on how to **improve** and **humanize** prison spaces– spaces where inmates can spend up to 23 hours of their day, every day, for the rest of their sentence.

The investigation is not only looking into the design of the enclosed prison blocks, but also to the environments surrounding them– looking into the **healing** of inmates, their visitors, the staff that engage with prisoners, and the residents who live within the Pollsmoor compound.

The site takes on the qualities of a miniature “city”/ “village”, therefore the interventions proposed are those that encourage the healing of the

Prisoners | Users | Environment.

Spaces are known to have an effect on its users therefore creating rehabilitative, calming and educational spaces will assist in the process of rehabilitation of prisoners and other users within Prison City.

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STUDY: PRECEDENT

Re:Imagined

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ABSTRACT: Study

Rehabilitating the Prison System

The prison system in South Africa is a harsh and ineffective system that emphasises the need to punish rather than rehabilitate and reintegrate the incarcerated back into society. Although a lot of prisons in South Africa host a number of workshops and activities which have been introduced to inmates for such purposes- the recidivism rates of offenders, that have ended up in the penal system, has failed to drop or decline.

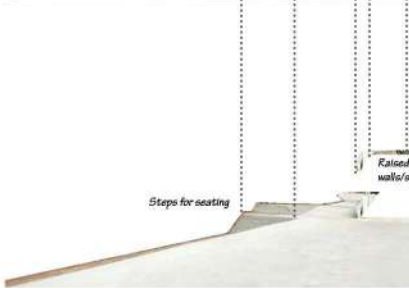
A Process of deconstruction and synthesis

The method of this study is to analyse and deconstruct existing prison or correctional/ penitentiary/ rehabilitation institute landscapes into potential design components and then synthesise these into environments that can promote the rehabilitation of prisoners.

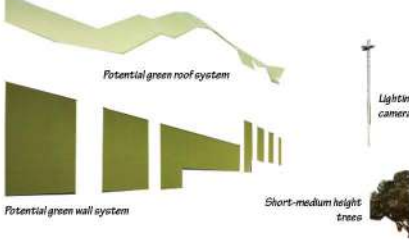
The projects analysed are of international and South African origin, and are of prisons or mental and other high-security institutions. The analysed projects will be looked at as potential interventions that can be synthesised within the landscapes (rather, lack of landscapes) of Pollsmoor Prison in Cape Town. Looking into redesigning Pollsmoor Prison- a prison where conditions do not support opportunities for rehabilitation and integration and where bland, cold concrete and brick facades enclose inmates for mostly 23-hours a day.

List of Precedent Studies

1. Mas d'Enric [Tarragona, Spain}
2. San Pedro Prison [La Paz, Bolivia]
3. Halden Prison [Halden, Norway]
4. EEA Temporary Green Wall [Copenhagen, Denmark]
5. Suomenlinna Prison [Helsinki, Finland]
6. Las Colinas Detention Centre [San Diego, USA]
7. Valkenberg Hospital Revitalization [TRUP, Cape Town]
8. PitterPatterns [Stuttgart, Germany]
9. Tree Crutches Growing Guides [Utrecht, Holland]
10. Gary Comer Youth Centre Roof Garden [Chicago, Illinois]
11. Hypar Pavilion [Lincoln Centre , New York]

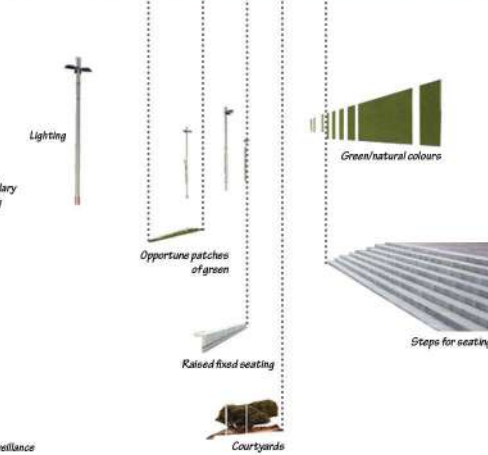


Open smooth concrete surfaces for surveillance



Potential green wall system

Short-medium height trees



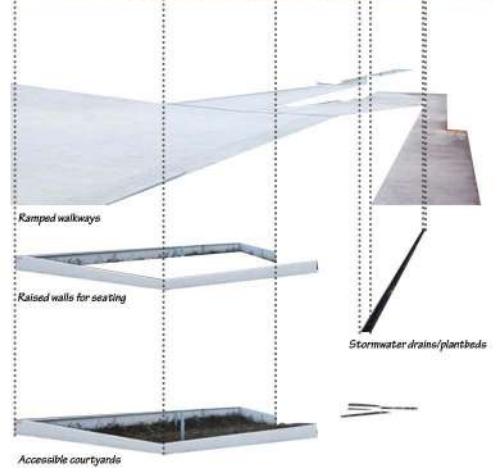
Lighting

Green/natural colours

Opposite patches of grass

Raised fixed seating

Courtyards

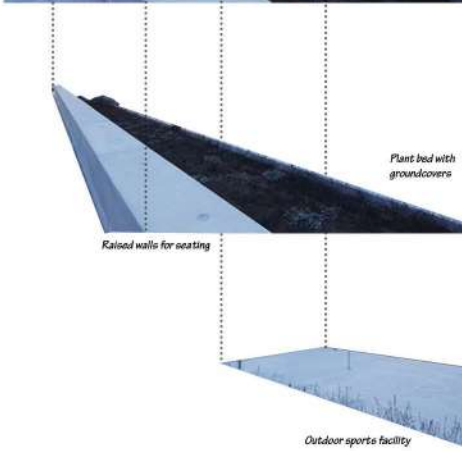


Ramped walkways

Raised walls for seating

Stormwater drains/plantbeds

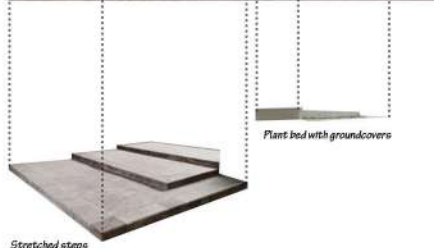
Accessible courtyards



Plant bed with groundcovers

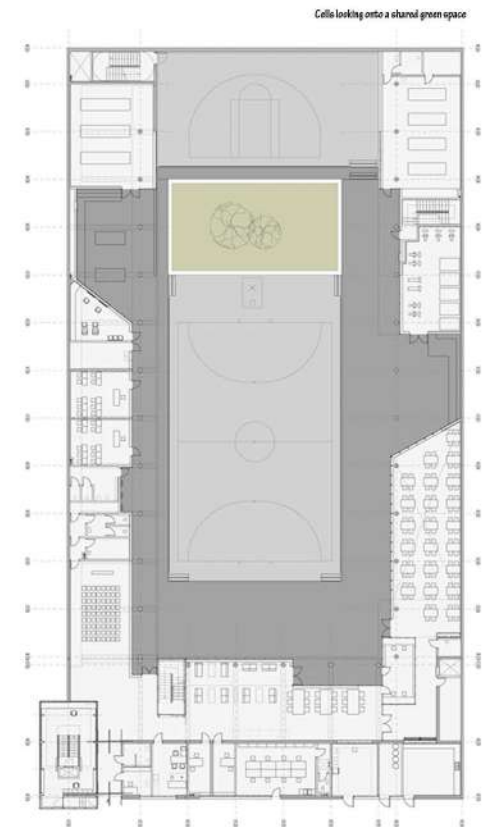
Raised walls for seating

Outdoor sports facility



Stretched steps

Plant bed with groundcovers



Cells looking onto a shared green space

Mas d'Enric

AiB estudio + PSP arquitectura
Tarragona, Spain

Re:Imagined

Mas d'Enric landscapes projected onto quad





Patterned floor designs

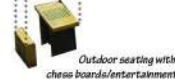


Colour and shading through canopy covers



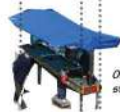
Fixed outdoor seating

Painted bright colours



Outdoor seating with chess boards/entertainment

Fixed outdoor seating



Outdoor entertainment stalls



Outdoor pool/ water feature



Central and accessible green space

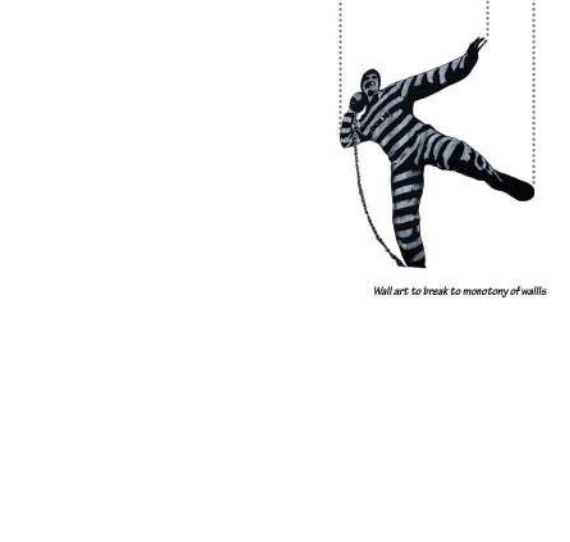
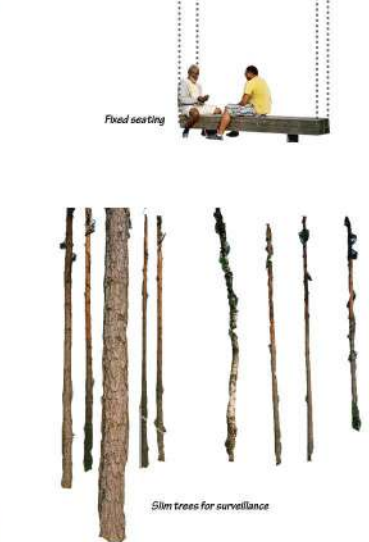
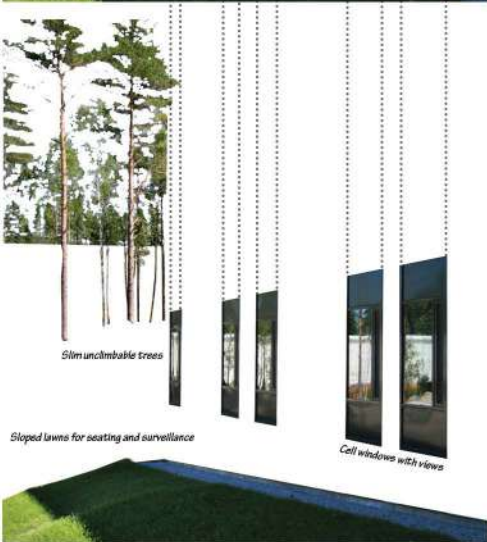
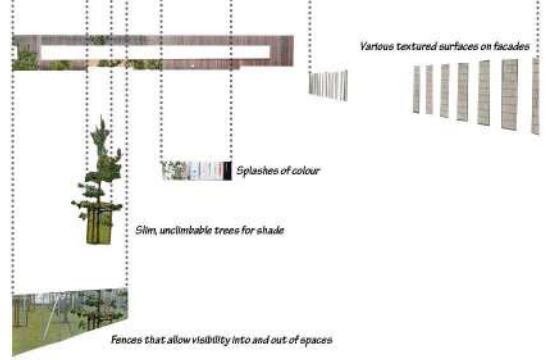
San Pedro Prison

La Paz, Bolivia

Re:Imagined

San Pedro Prison landscapes projected onto quad





Halden Prison

Erik Møller Arkitekter + HLM arkitektur
Halden, Norway



Bright colour palette



Exposure to art



Fixed outdoor gym structure



Colourful painted facades/ structures

Meditation Rooms



Bright, well-maintained sports facilities



Tarned surfaces

Re:Imagined

Halden Prison landscapes projected onto quad





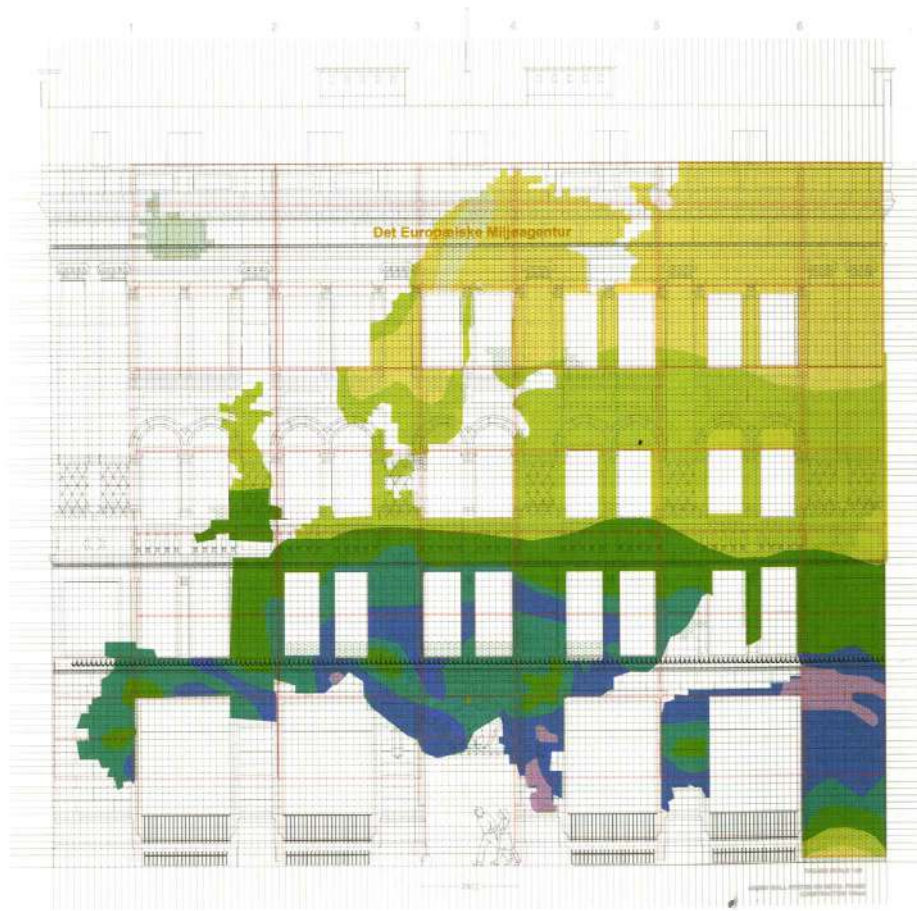
Construction of the



Construction of the

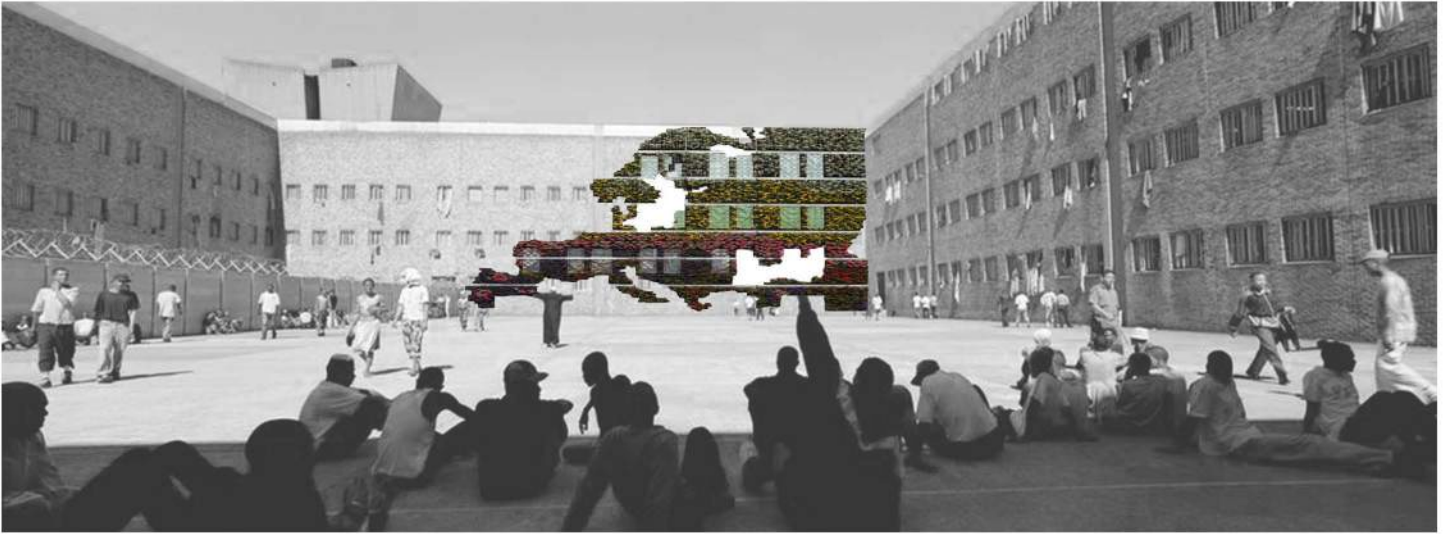


EEA Temporary Green Wall
Johanna Rossbach, Mangor + Nagel Arkitektfirma (Copenhagen)
Copenhagen, Denmark



Re:Imagined

Green wall projected onto quad





Views out towards natural spaces



Greenhouse/ vegetable gardens



Views out towards natural spaces

Outdoor seating

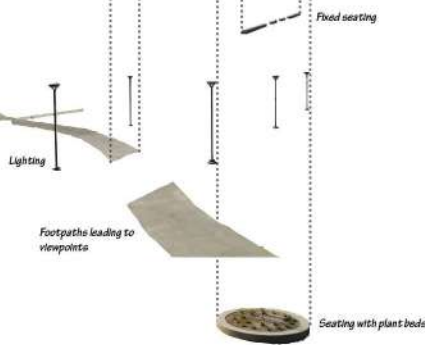
Suomenlinna Prison

Helsinki, Finland

Re:Imagined

Suomenlinna Prison landscapes projected onto quad





Las Colinas Detention Centre

KMD + HMC Architects
San Diego, U.S.A.



Landscape imagery



Palette of natural, soft colours



Fixed seating

Slim, unclimbable trees for shade

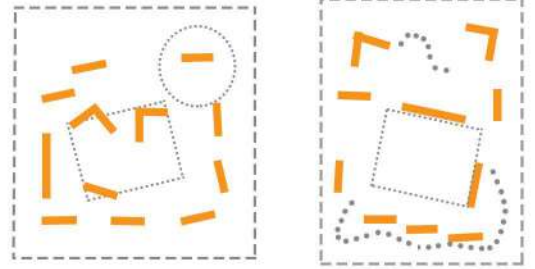
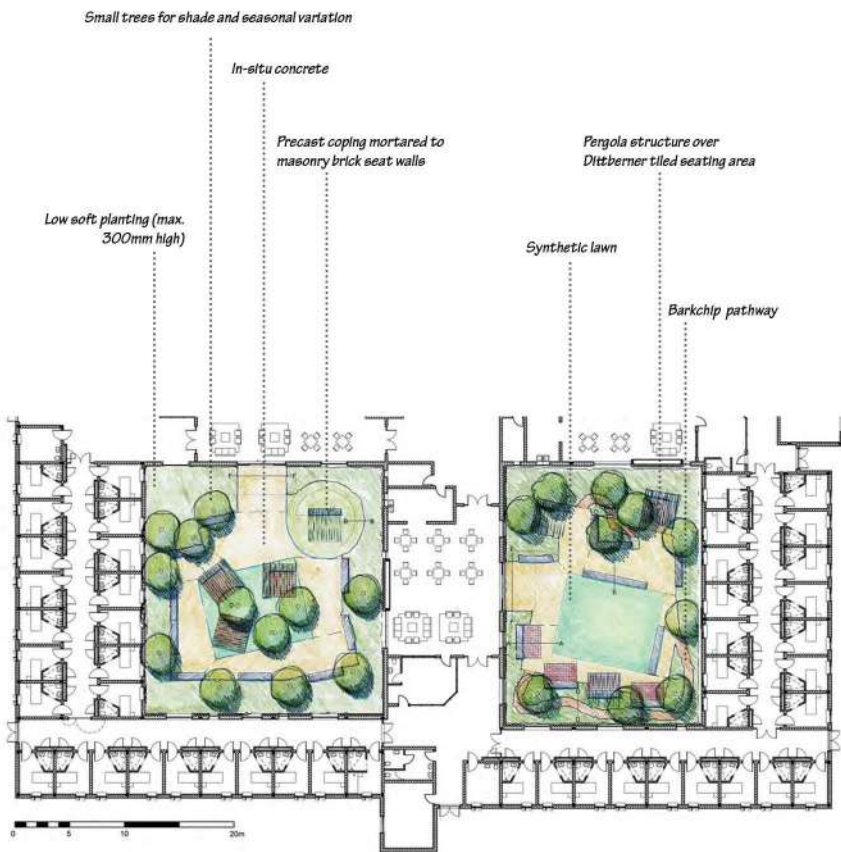
Patterned paving layout

Low-growing shrubs and groundcover

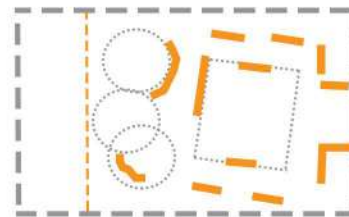
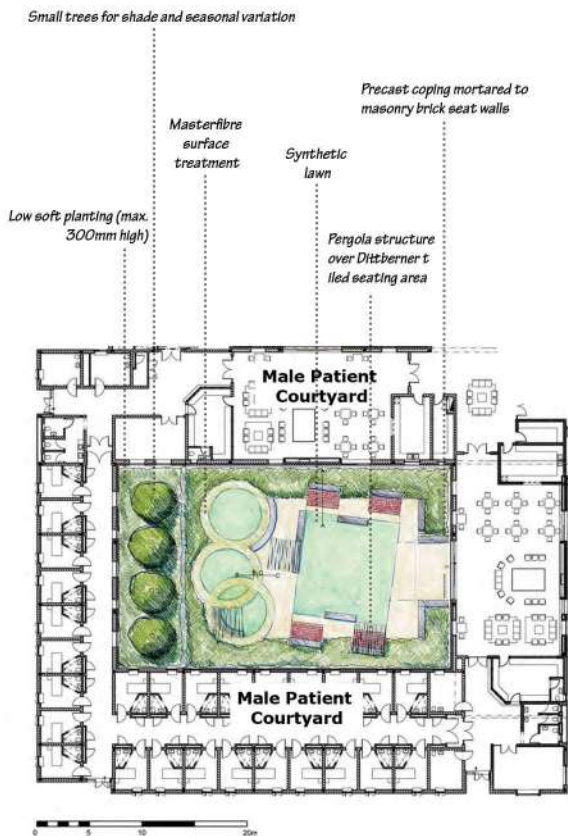
Re:Imagined

Las Colinas Detention Center landscapes projected onto quad





Breaking away from the rigid orthogonal layout of elements to create "pockets" of spaces within the small courtyard. These create points of interest within the small courtyard that increases movement within.



Just like the previous courtyard this one avoids linear orthogonal layouts in order to create niches and pockets within the small courtyard. Circular paths and forms attract the user to the space. A Bekaert fence restricts access to the deciduous trees planted within the courtyard.



5m high Bekaert fence to restrict direct access yet allowing for visibility of the trees. The fence is uncuttable and unclimbable.



Valkenberg Hospital Revitalization

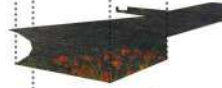
Tarna Klitzner Landscape Architect
TRUP, Cape Town



Precast coping mortared to masonry brick seat walls



Masterfibre surface treatment



Masterfibre surface treatment



Synthetic lawn

Fences that allow visibility into and out of spaces



Pergola structure over Diabener tiled seating area



In-situ concrete surface

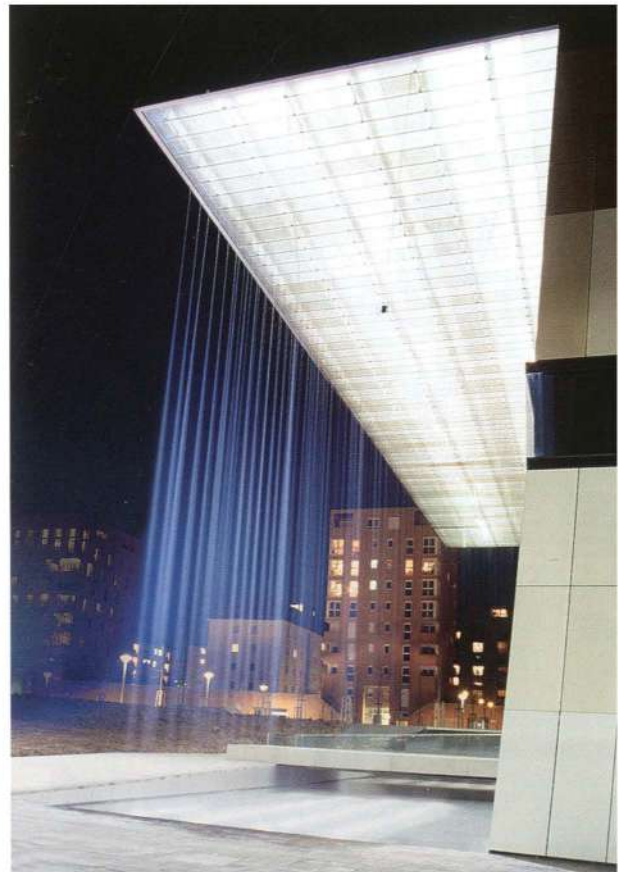
Low soft planting (max. 300mm high)



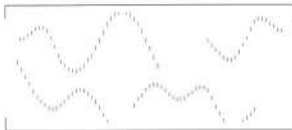
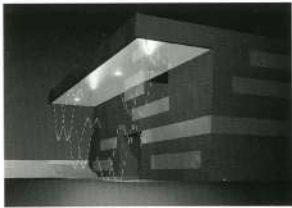
Re:Imagined

Valkenberg Hospital landscapes projected onto quad

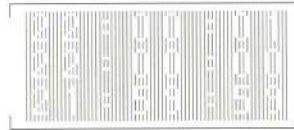
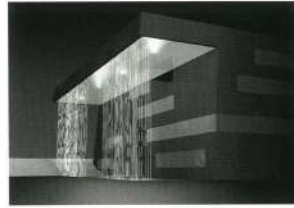




A water feature that brings in a constantly changing landscape/facade



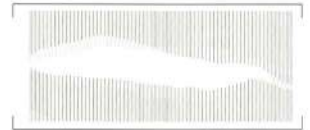
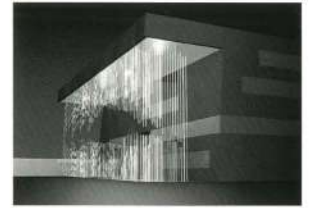
sinus drops



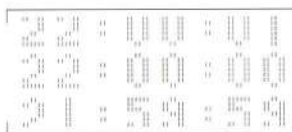
time gaps



falling clouds



rain cave



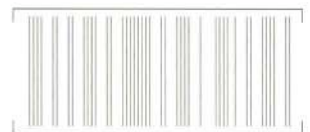
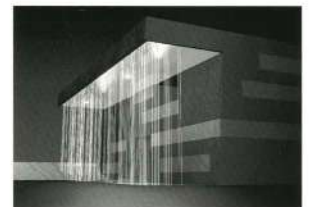
time drops



zig zag



frequency shower



rain code

Pitterpatterns

J. Mayer H Architekten
 Stad.haus, Scharnhäuser Park, Stuttgart, Germany

Re:Imagined

Pitter Patternswater feature and landscapes projected onto quad





Fixed colourful seating



Scored surface in-situ concrete

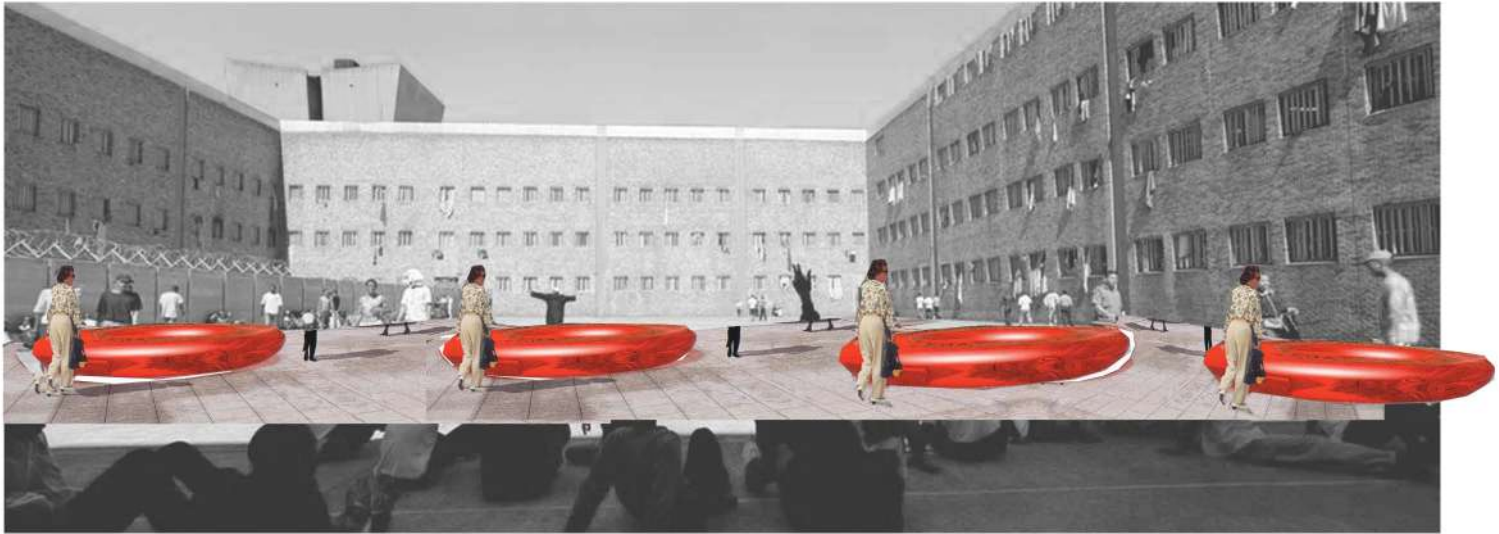
Tree Crutches Growing Guides

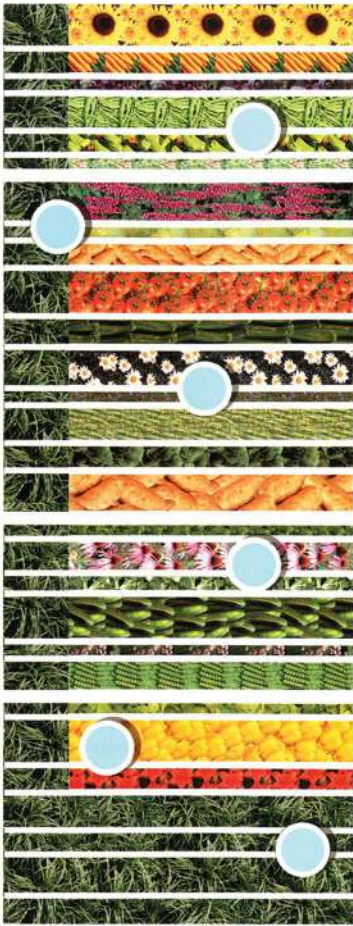
West 8

Courtyard Gardens, University Library of University Utrecht, Holland

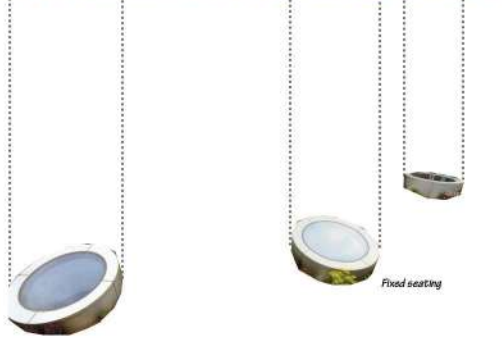
Re:Imagined

West 8 Tree crutches project's landscapes projected onto quad





- Sunflower Mixture with Tulip Bulbs
- Carrots
- Purple Leaf Lettuce
- Beans
- Hot Peppers
- Oregano / Basil
- Foxglove Mixture with Daffodil Bulbs
- Cabbage
- Sweet Potato
- Tomato
- Zucchini
- Daisy / Aster Mixture with Tulip Bulbs
- Rosemary / Dill
- Okra
- Romaine Lettuce
- Potato
- Parsley
- Coneflower / Beard Tongue Mixture with Muscadell Bulbs
- Broccoli
- Cucumber
- Chives
- Peas
- Butterhead Lettuce
- Yellow Bell Pepper
- Lily Mixture with Tulip Bulbs
- Creeping Lilyturf



Gary Comer Youth Centre Roof Garden

Peter Schaudt, Hoer Schaudt Landscape Architects
Chicago, Illinois

Re:Imagined

Cary Comer Youth Centre Roof Garden landscapes projected onto quad





Sloped lawn area



Stepped lawn



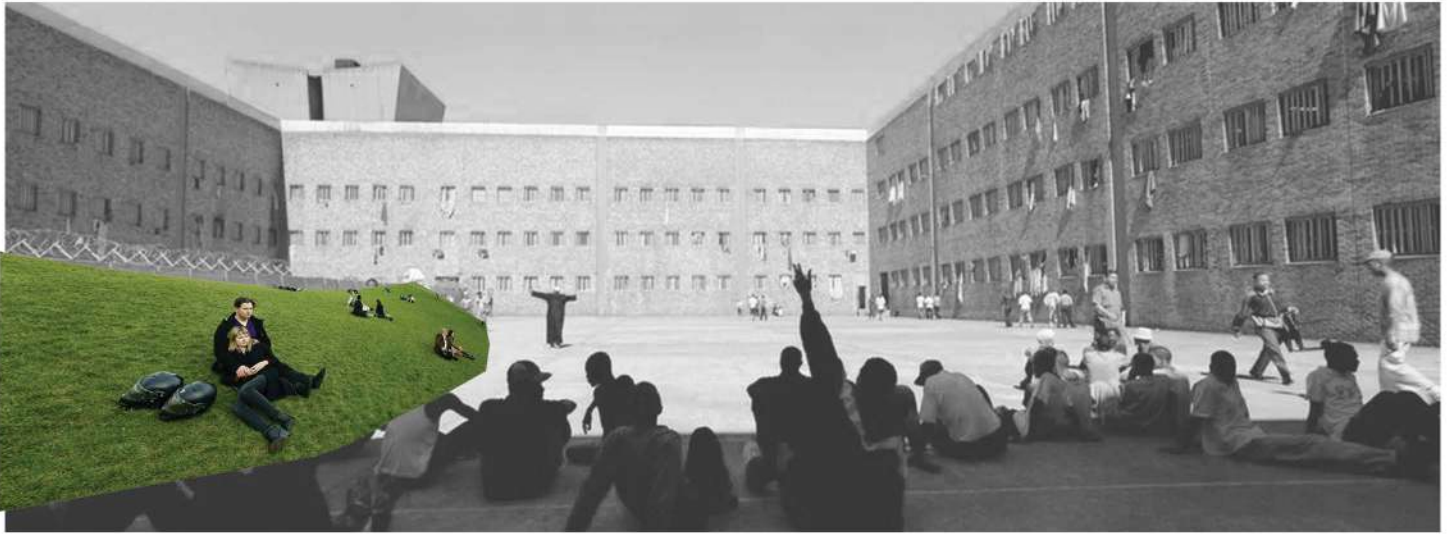
Stepped lawn

Hypar Pavilion

Diller Scofidio + Renfro
Lincoln Centre, New York

Re:Imagined

Hypar Pavilion's outdoor landscapes projected onto quad





Re:Imagined
A composite medley of studied landscapes projected onto quad

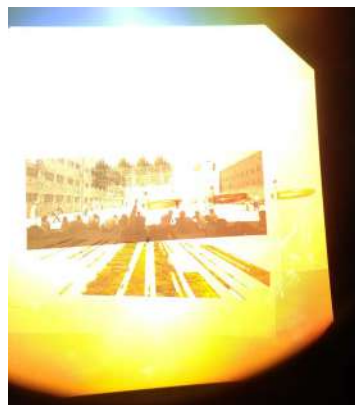
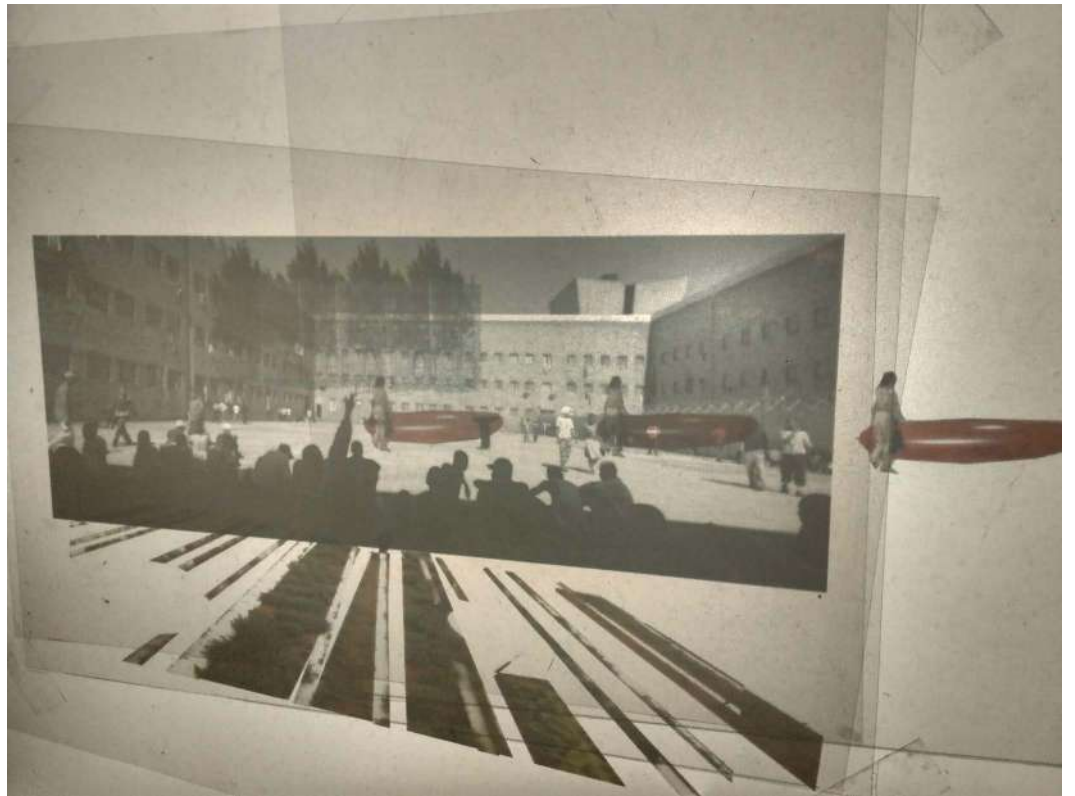


Components for “play” to reimagine with the physical model

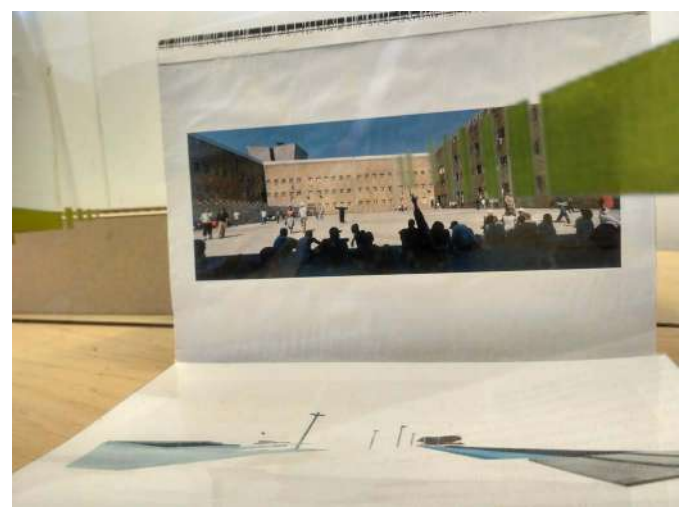
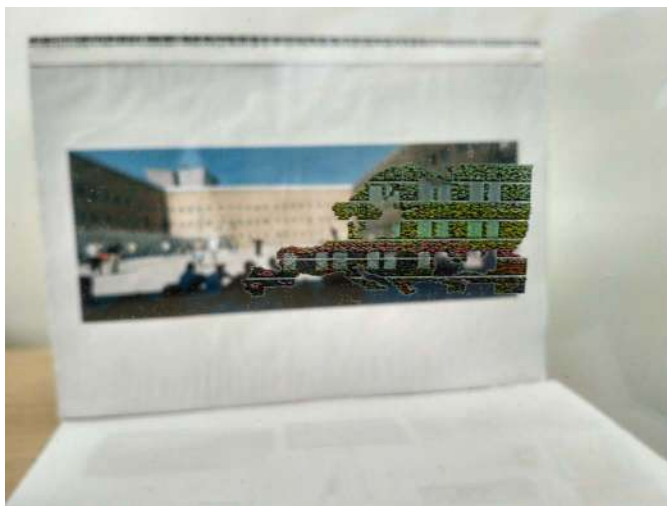


Re:Imagined Quad Model

Introducing interventions into the quad space, using “game” pieces based on elements from the design manual to re-imagine the space in physical form.



Re:Imagined Quad Perspectives
Projecting scenes on sheets of acetate from the design manual, to imagine the quad in perspective and to play with the quad landscape.



Re:Imagined Design Manual
Visualizing the the re-imagined quad spaces through
analysis, deconstruction and finally synthesis

Study Conclusion

The images of the Re:Imagined quad are of synthesized elements, and they prove that the unstimulating, unchanging quad can actually be improved by adding something, if not anything into the space. To make it a landscape that has **colour, texture, shade** and has **views** for prisoners to look into even when they be in their cells.

The benefits of introducing naturalistic settings in any space offer significant stress reduction and improve mental state [Lindemuth, 2007]. By introducing green and seasonally changing landscape elements into the prison quads we've introduced to prisoners an access to views, which according to Moore (1981) and West (1986) has a beneficial impact on its viewers. The behavioural and psychological outlooks of both the inmates and staff involved in Moore and West's studies could be measured according to the number of sick-calls to the infirmary. Fewer sick calls were made by inmates who had a higher percentage of visible access to naturalistic elements from the cells, and Spafford (1991) adds to this idea by suggesting that the view quality within a prison setting affects the behaviour of inmates and while also affecting the perceptions of the staff working with the inmates.

It should be noted that the costs of these interventions have been considered as they have been selected from the most affordable, low-cost prisons in Bolivia to higher-end institutions such as in Norway, allowing for future prison designers to select interventions that most suit their budget and size requirements.

The institutions selected for this precedent study is only a small sample of what is out there, but it proves that when one looks at similar institutions we can gather and distill an abundance of knowledge and techniques from them (even though the study focussed solely on the interventions within the enclosed, quad spaces of prisons).

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DESIGN DISSERTATION

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ABSTRACT: Design Dissertation

Pollsmoor Prison is a prison notorious for its inmates as well as the overcrowded and deplorable conditions most of its inmates live in. It's clear from the images and information gathered from site visits and research that the current conditions of spaces within the Pollsmoor's prison blocks struggle to encourage the rehabilitation and reformation of prisoners. These spaces are hard, grey and unstimulating- with concrete quads within which prisoners are allowed to only spend one hour of their day.

This isn't just the case with Pollsmoor, but with most other international and local correctional facilities. Lindemuth (2007) also suggests that "[American] correctional facilities are stressful social environments within stark institutional settings", and her paper stresses the negative effects these settings can on the staff and prisoners if they are exposed to them on a daily basis.

My research will look into the benefits of **humanizing** these harsh spaces by

- softening them with suitable vegetation (veg types used will be dependant on the security risk level of each space);
- softened surfaces and furniture;
- soft and calming colours;
- seasonal variety (as some inmates may be in the system for months or years- so a changing landscape is probably welcomed);
- educational elements to teach the inmates life-skills that they can use after release;
- and finally, introducing therapeutic landscapes to assist in stress relief and as well as to soften hardened criminals for rehabilitation.

From the precedent study conducted, the landscape "design manual" components deconstructed from the analysis of international and local penitentiary and mental health examples can be applied to the design of Pollsmoor's Prison City once they have been categorised according to their suitability to each security level (High | Medium | Low).

A large part of this Design Dissertation looks into investigating the benefits of healing landscapes for prisons, specifically Pollsmoor Prison, in order to improve the quality of life as well as the layout/ infrastructure of Prison City for ALL its users - not just the inmates, but their visitors, the staff that engage with them and the Prison City residents who may be family to staff and are in close proximity to the prison.

The concepts of healing landscapes have been applied to the site in three scales:

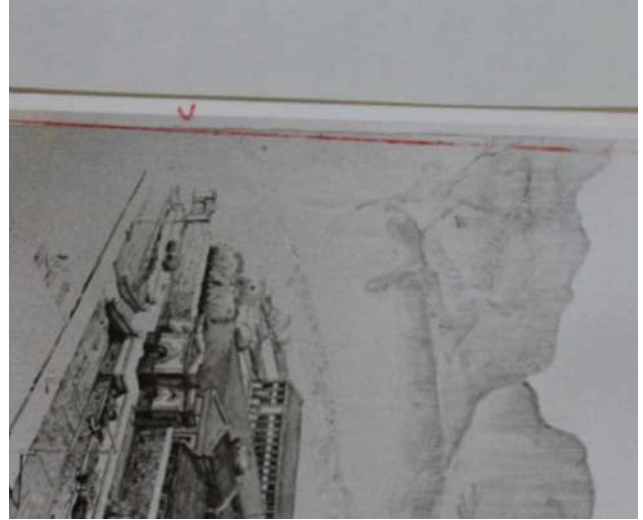
- Micro
- Intermediate
- Macro

With a communal green healing garden for either rehabilitation, stress- relief or to simply decompress allocated to each user type (prisoner/ staff/ visitor/ resident) within each scale.

The theme of **agriculture** or the growing and nurturing of plants for therapy and self-sustenance has been introduced into the micro- and intermediate scale landscapes through allotment gardens that can be found in the healing gardens of Low Risk Prisoners, as well as to the residential parks for households to utilize.

History of Prisons in S.A.

Prisons in Cape Town:



Breakwater Prison:

Constructed in 1860 to house prisoners who were used to build Cape Town's breakwater and Foreshore areas. The building was later converted into Breakwater Lodge Hotel and University of Cape Town's Graduate School of Business in 1991.



Roeland Street Prison:

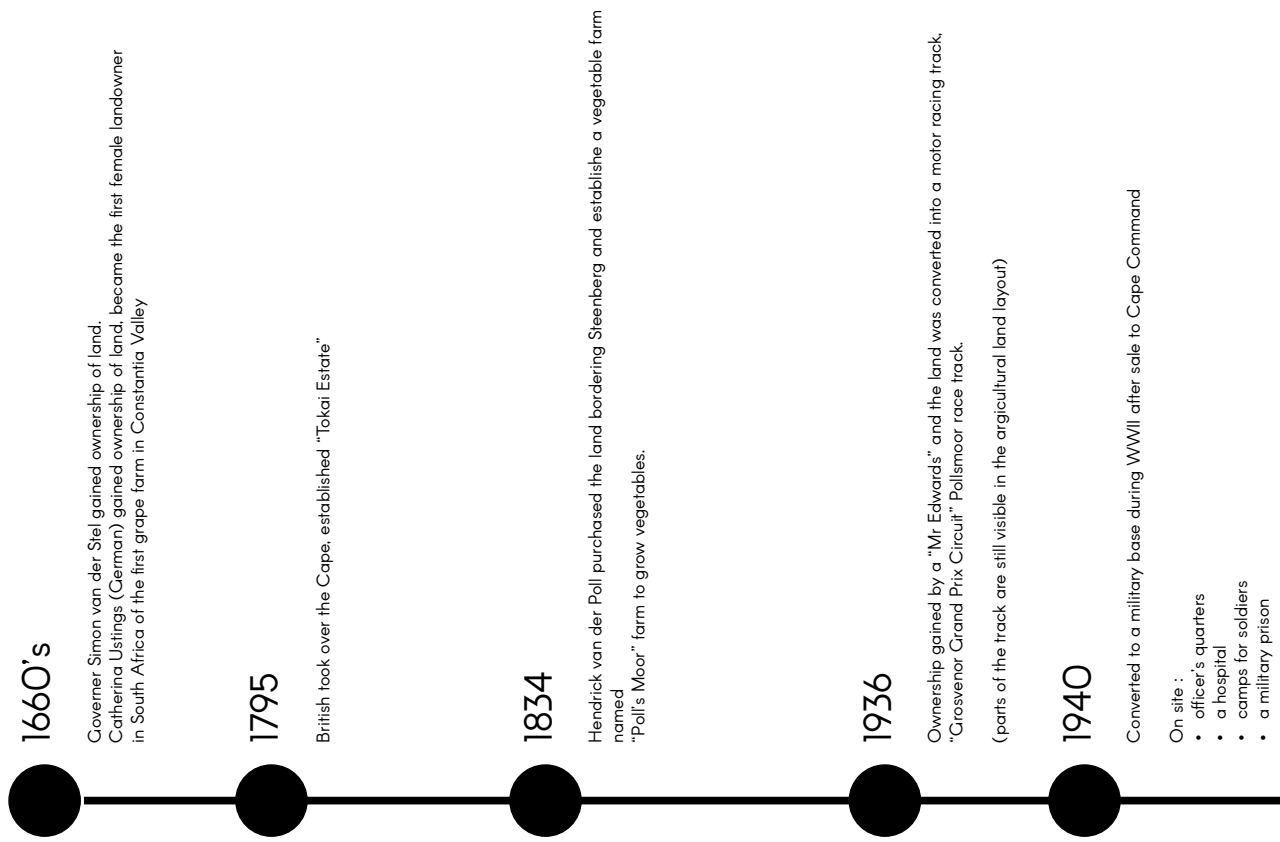
A prison that was once located in the heart of Cape Town. It has been referred to as the "Black Hole" of Cape Town. The prison stood for more than 100 years, but was demolished to be replaced by the more "modern" institute of Pollsmoor Prison.



Robben Island Prison:

Now a UNESCO World Heritage, the Prison Island once held apartheid political prisoners and forced them to do manual labour and work on the quarry on the island. Most say, the prisoner's view of the inland and Table Mountain are what kept them going till their eventual release.

A Timeline of Pollsmoor's History



1948

A prison labour system was established. And an outpost established for bringing prisoners from the Roeland Street Prison to site from Mondays to Fridays to work on nearby farms.

- 20 prisoners
- 3 cooks
- 4 cleaners
- 13 workers

1949

A further 200 prisoners brought in to work and live at outpost.

1959

Land officially reported as solely for prison use

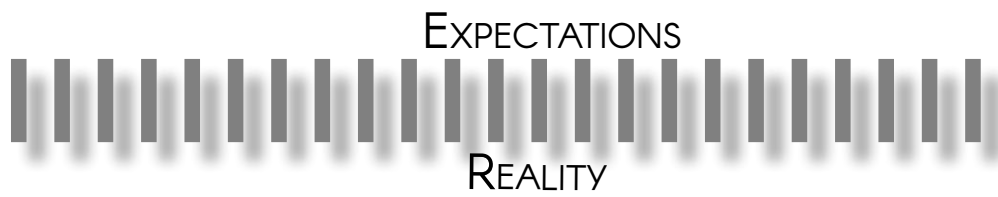
1989–1990

Popcru had discovered in 1989 and 1990 that senior prisons officials were using state materials to build holiday homes

2002

The centre houses some 3 300 inmates, crammed up to 55 in a cell designed for only 18.

Existing living conditions for inmates at Pollsmoor Prison



OVER-CROWDED CELLS

ONLY 2 MEALS PER DAY

INHUMANE TREATMENT OF PRISONERS

LACK OF GREEN ENVIRONMENTS

ONLY 1HR OF OUTDOOR TIME PER DAY

How are penal aims and philosophies (that is, what prison is 'for') expressed in prison architecture and design?

How effective is prison architecture, design and technology (ADT) in conveying and delivering that penal purpose?

The effect the spaces have on its users: the incarcerated and the prison staff.

'Prison architecture, design and technology and the lived experience of carceral spaces'.

*"Rehabilitation is seen as a process, and not an event or programme, aimed at addressing the specific history of the offender's criminal behaviour. Education and training programmes are just some of the tools that are being used to activate the offender rehabilitation process. These initiatives are supported by social work as well as psychological and spiritual / religious counselling." -But in order for this to happen, suitable and corresponding environments for these processes to occur in need to be present and easily accessible by the inmates. Therapy can be more effective through healing landscapes and spaces.

"If we create prisons that provide opportunities for education and meaningful work and also promote values such as empathy, trust and hope, we have a real chance not only of transforming lives, but of reversing the inexorable rising tide of prisoner numbers"

- prisoners' quality of life and wellbeing
- perceptions of penal legitimacy
- compliance with the regime
- prisoner-staff relations
- staff work satisfaction

Rehabilitating the system, not only the prisoners

" A further obstacle to the implementation of offender rehabilitation plans is the fact that South African prisons are seriously overcrowded."

" A statistical analysis shows that there is a major shortage in educational service delivery due to the fact that for 13 percent of all sentenced incarcerated offenders there is no opportunity to participate in educational programmes."

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SITE

Site Visit Photos



Existing BIG tree in visitor's parking lot



Highly vegetated recreational areas (Bowling greens)



Poorly landscaped resident's children's playground



Certain prisoners are allowed access out, to landscape and conduct maintenance on site



Prisoner and Guard walking outside of prison blocks within compound



Existing Maternity Prison children's playground and creche



Parking garage for Two-storeyed residential complexes (wasted land)



Boulevards of trees in residential areas, well planted with trees

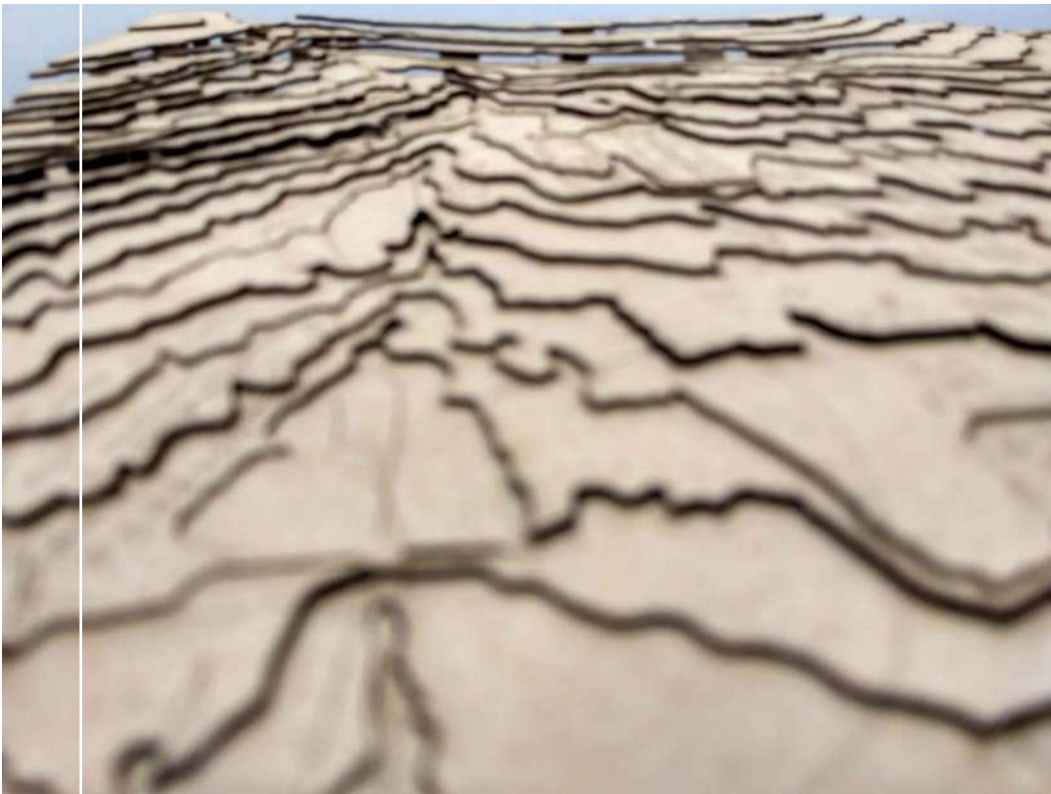
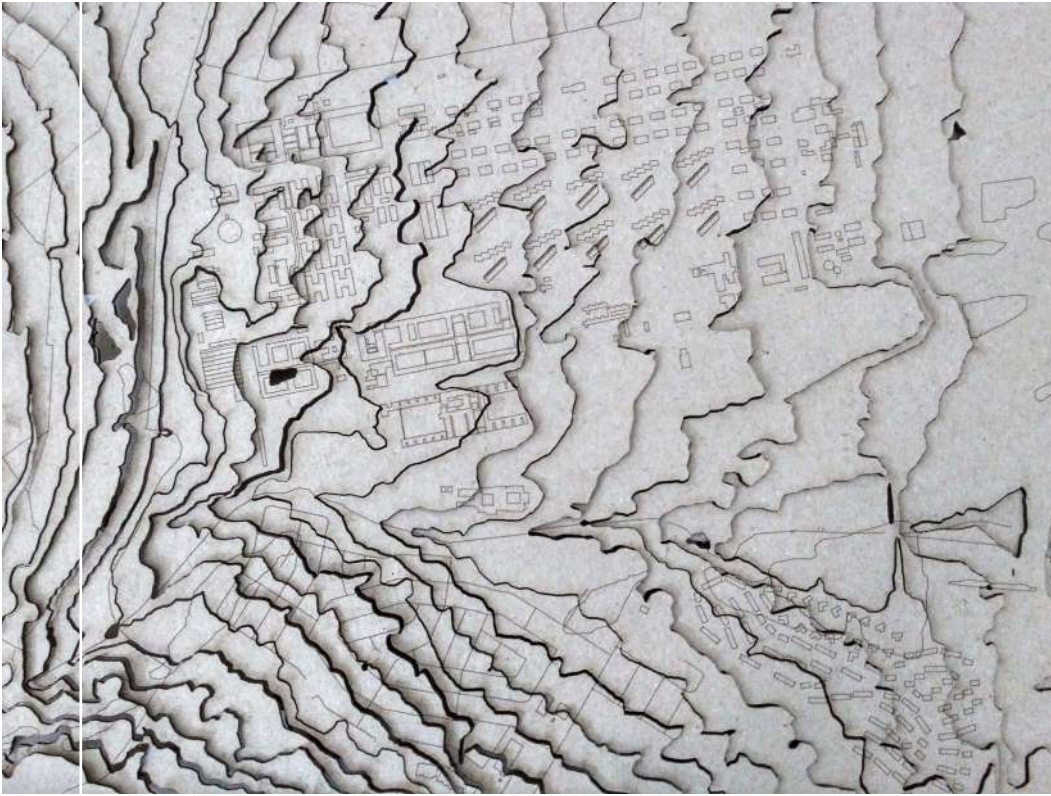


High fences, with no views or landscaping



Residential areas are well landscaped with trees, and well maintained

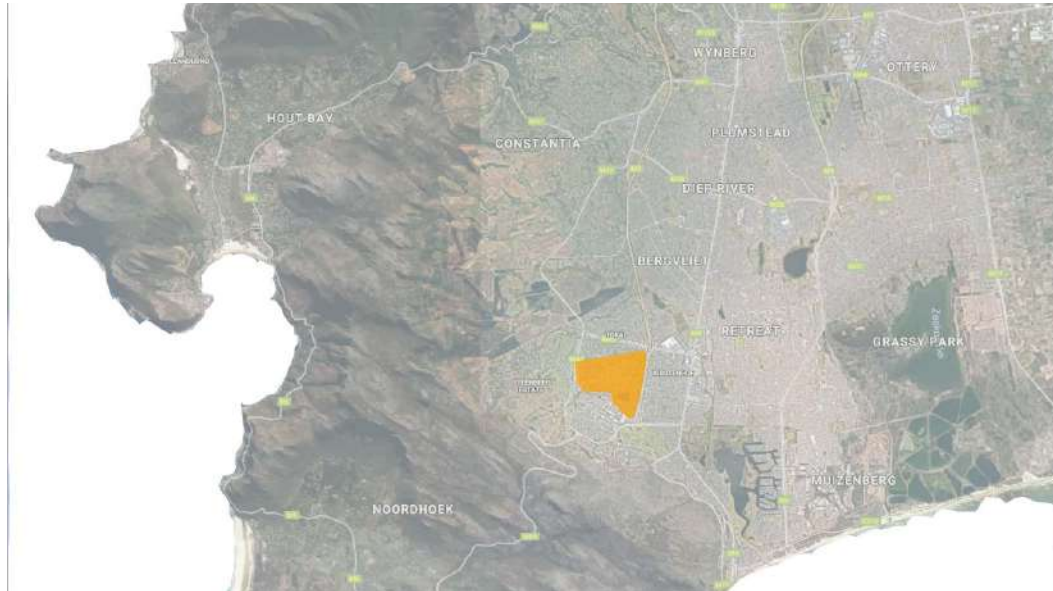
Contours of site and surrounds



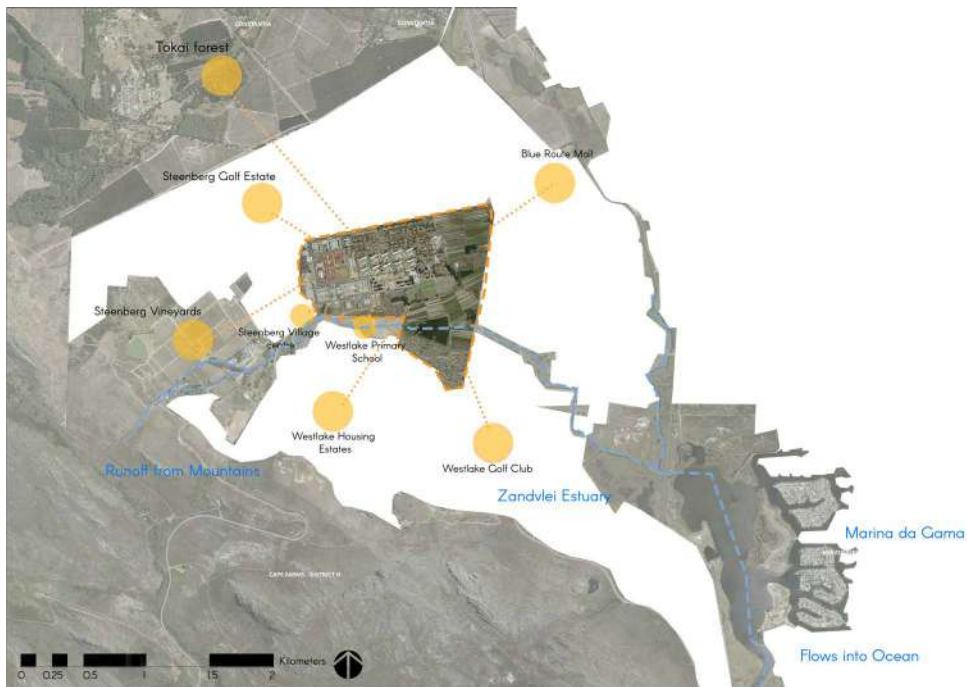
Exaggerated contour model of 2m intervals

Urban scale and context

Locating Pollsmoor within Cape Town



Nearby facilities and drainage flow through site





The “Walled City” of Pollsmoor



The site is well enclosed and fenced off from its neighbours, access is granted only through one of THREE existing security checkpoints. The main entrance is found to the east, the north and south checkpoints/entrances and secondary – used predominantly by residents and their visitors for access into Pollsmoor.



Existing Drainage and Site Contours

The site contours show a gradual slope from the base of the mountains in the west, down as we move east. There are existing drainage lines that flow through the site, therefore one must consider the flow of rainwater runoff from the slopes of the mountain eastwards. An introduction of swales, detention and retention ponds should be considered when redesigning the site. The site also hosts a canal or river that flows along the southern edge of the site, feeding into the agricultural dams onsite before it flows out towards the Zandvlei estuary further east, and then towards the coast.



Seci

Existing Security

As previously mentioned, there are three main entrances into Pollsmoor, with numerous security checkpoints at the entrances to prison blocks and one northern checkpoint (rarely occupied by guards) that secures the transition between prison and residential zones.

The existing fencing and security posts limit prisoners mobility to within their designated blocks. Controlling the accessibility of persons with different security clearances is important to improve security.



Existing Housing zones

The site plays host to a number of housing types. In the western half there are prison blocks which house the inmates, one prison housing block can be found all the way on the eastern edge of Pollsmoor. This Prison block houses maternity prisoners and their infants, and is completely misplaced when it comes to zoning and efficient prison security (it would have been better to relocate ALL prison blocks to the same zone and in close proximity to each other and to communal prison facilities).

Next, there are single-storey and two-storey housing types for staff residents of Pollsmoor.

And, finally, there are chalets, cottages and caravan parks for holiday accommodation –most of which are currently being utilized as housing for staff instead of for tourists.



Existing Recreational and Leisure facilities

There's a definite difference between the recreational/ leisure facilities of residents and staff, and those of the prisoners.

The prisoners' recreational spaces are limited to the enclosed, grey and barren concrete quads within their prison blocks, while the residents' and staff's are larger and more open. The pink and green facilities are visibly underutilized and are poorly maintained. Some spaces become redundant.



Existing Roads

A highway (M3) borders the site to the east, limiting further potential growth of the agricultural fields. There's a dense network of roads that makes the movement within Pollsmoor confusing. Many roads are poorly traversed and become redundant. For the design proposal, consideration must be given to re-designing the movement routes of cars and pedestrians, as well as the accessibility of persons of different security levels into and out of various spaces.



Existing Road Hierarchy

Most of the roads have restricted access. There is a primary road that circulates the northern half of the site, flowing between prison- administration- residential zones.



Redundant spaces on existing site

On the existing site one can find a number of redundant and underutilised spaces. Most of these spaces are large expanse of green fields with no specific use assigned to them, others are poorly utilized sports/recreational facilities, and most are road verges and empty lots. If these spaces were utilized for stormwater managed or assigned a new, useful purpose- the site would be better used.



Collage of Re-arrangement of Site

This collage takes the existing buildings and facilities on site and re-shuffles and -arranges them by grouping similar uses together, in order to make visible just how much area space is wasted when using the current layout of Pollsmoor. Large expanses of green fields are wasted and could be re-purposed for improving the lives of the residents, staff and prisoners.



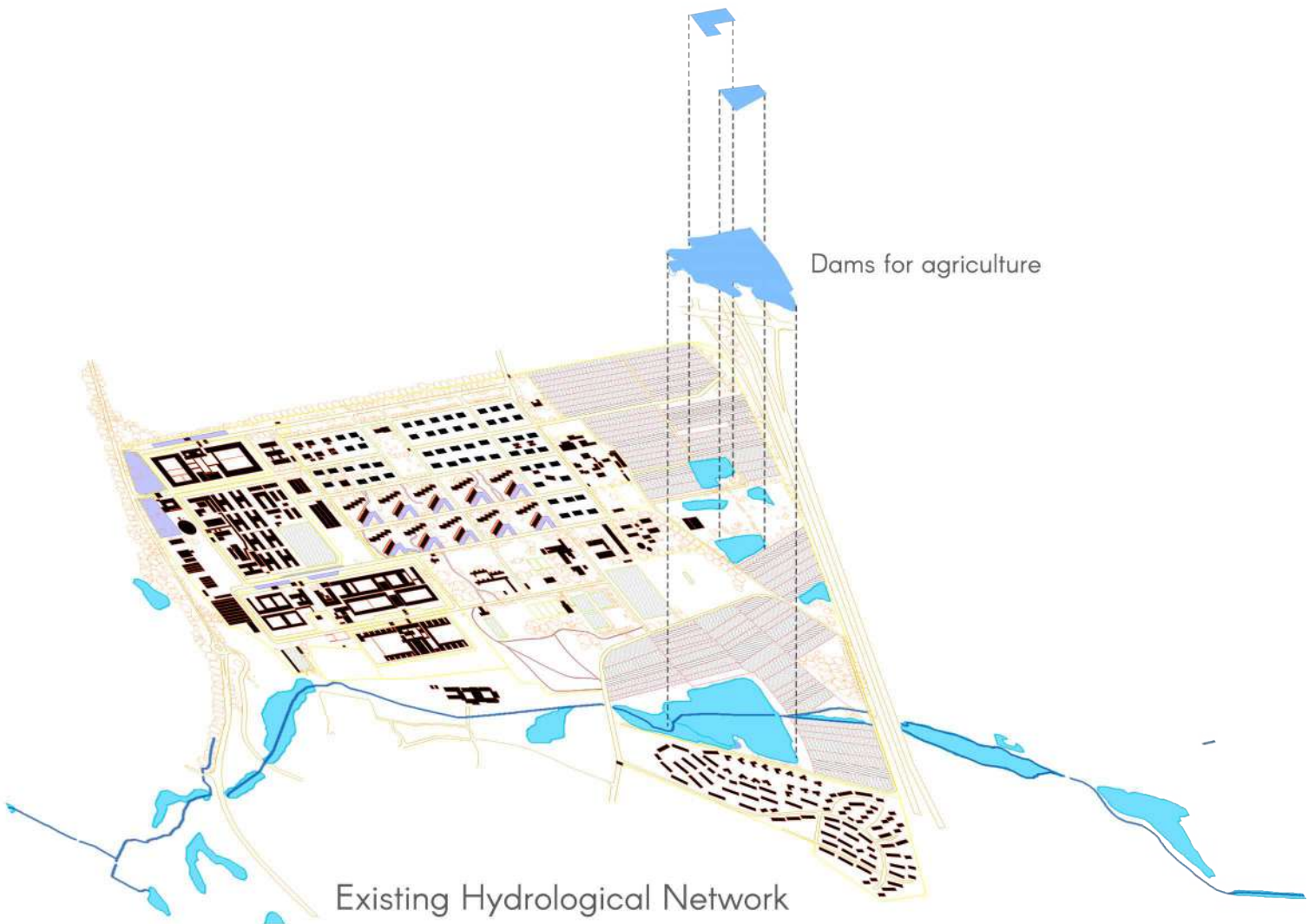
Existing Trees

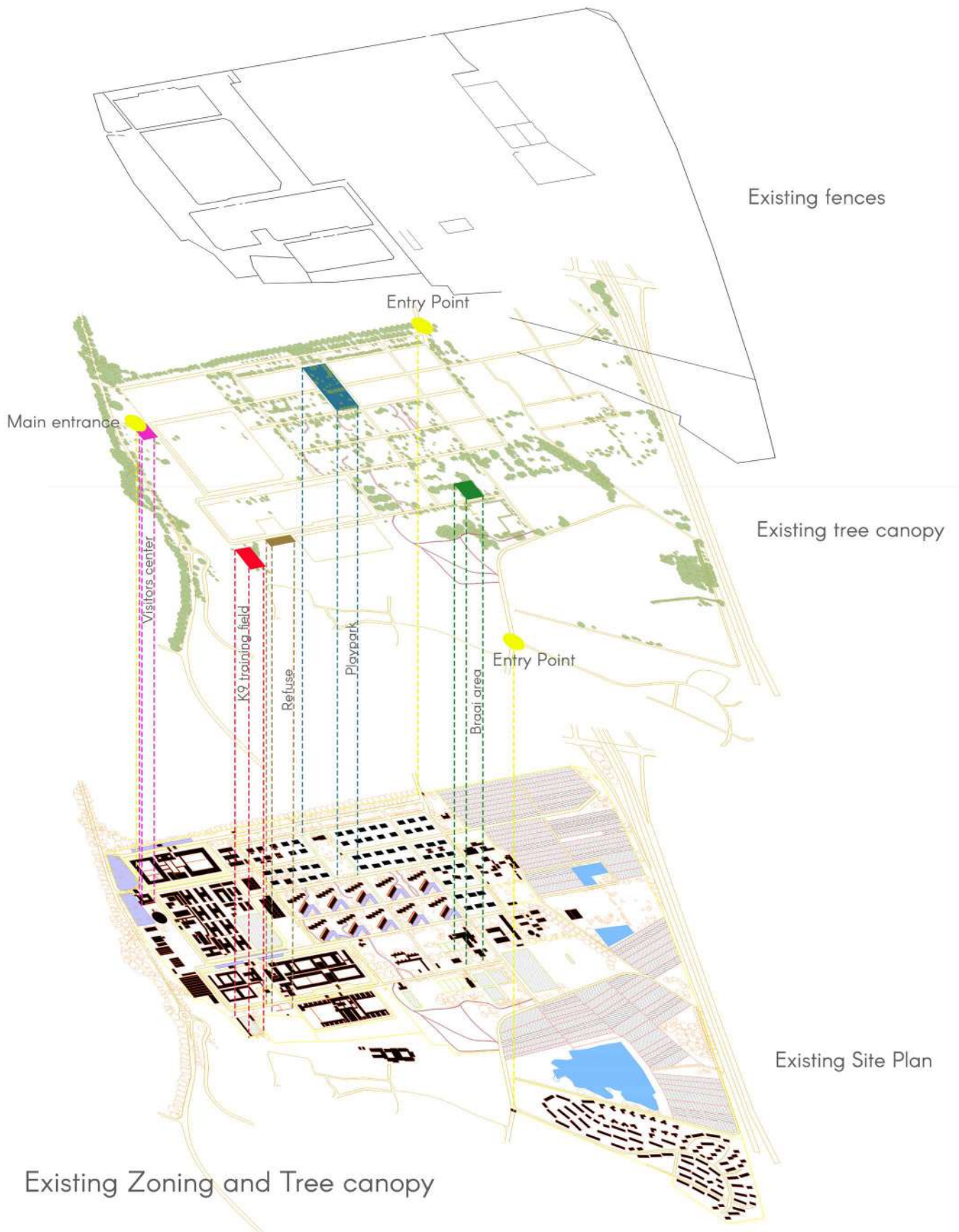
Parts of the site are densely vegetated with small, medium and large trees. The areas which lack greenification and trees are the prison blocks. This could be due to safety and security reasons, but shade and a connection to nature is also important for inmates and prison staff who engage with inmates on a daily basis.

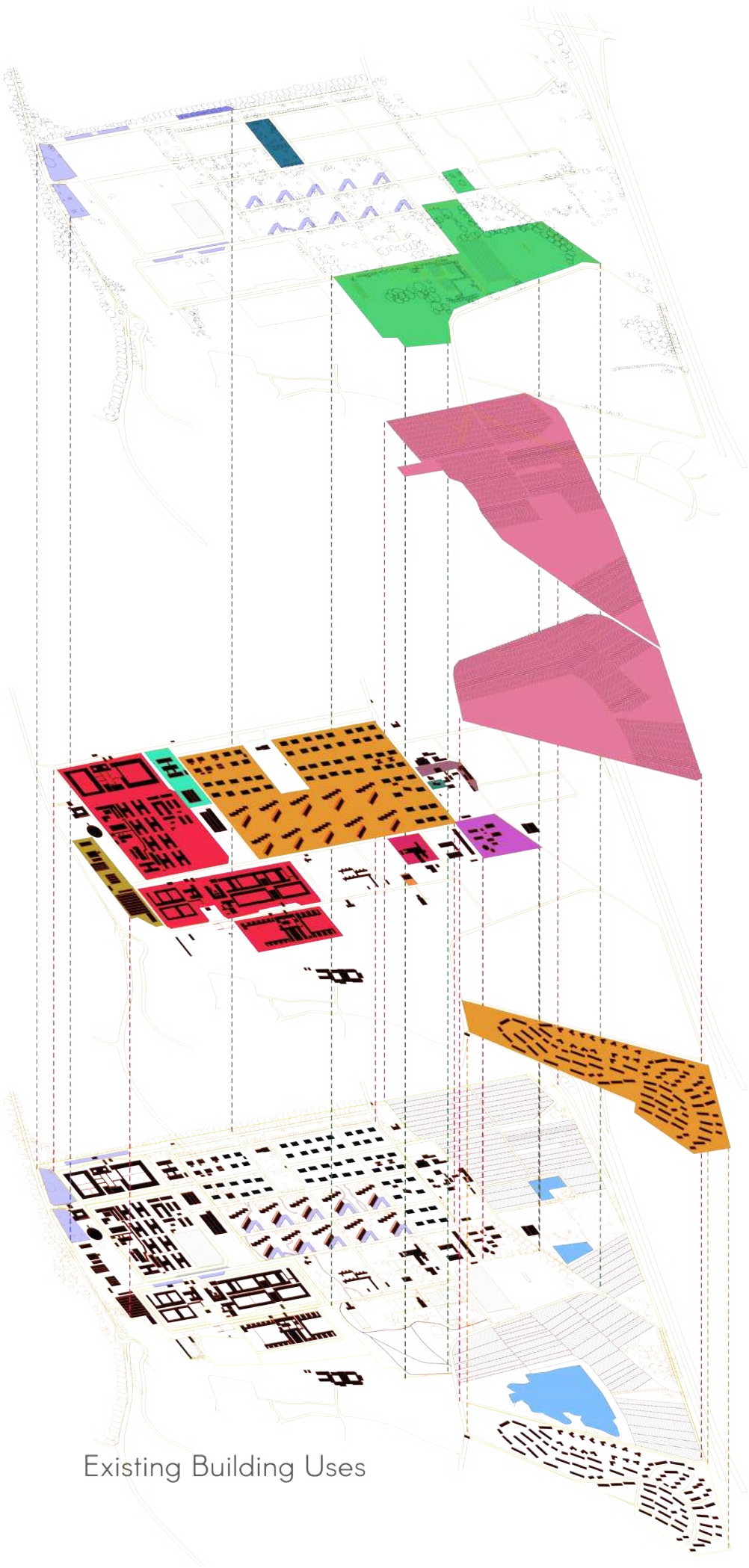


Existing Tree Boulevards

Looking at the plan of existing trees on site one can read the lines of potential, yet incomplete boulevards along the streets. A part of the design proposal is to address these incomplete boulevards –and to complete them, to create well shaded and vegetated routes for its users.







- Workshops
- Maintenance
- Retail
- On- campus outh
- Administration
- Prison
- Maternity Prison and infan
- Holiday Accomodation
- Residential
- Agriculture
- Recreation and Leisure
- Parking

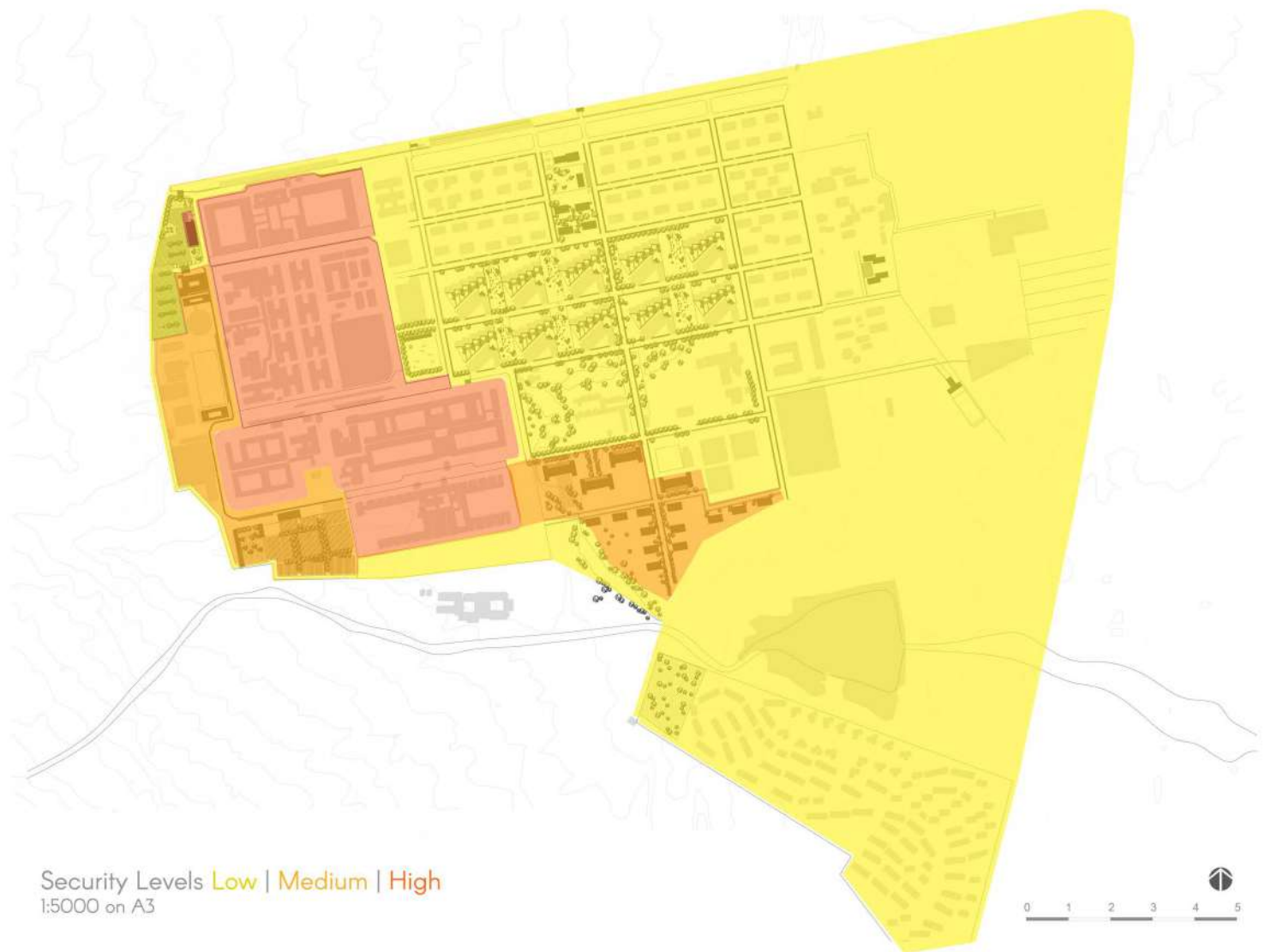
Existing Building Uses

OVERALL EXISTING SITE PLAN

Micro-scale

At the **micro-scale**, where the focus is on details, we'll be looking at suitable landscape and furniture interventions that have been compiled into a design manual in the form of the precedent study, where international and local examples of penitentiary and mental institutions have been analysed and deconstructed in order to be synthesized into suitable healing landscapes for each zone of security (High | Medium | Low).

Looking into techniques or elements that humanize and soften the spaces of enclosed courtyards or exterior spaces.



Security Levels **Low** | **Medium** | **High**
1:5000 on A3

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Intermediate Scale

The **intermediate scale**, where experience is the focus of design, we will be looking at the design of Healing Green Spaces for reformation and rehabilitation, as well as stress-relief using the salutogenic design principles of Healing landscapes, Sensory Gardens and Therapeutic Gardens in order to reconnect its users with nature for improved social, mental and physical health.

PROPOSED INTERVENTIONS:

INTERMEDIATE

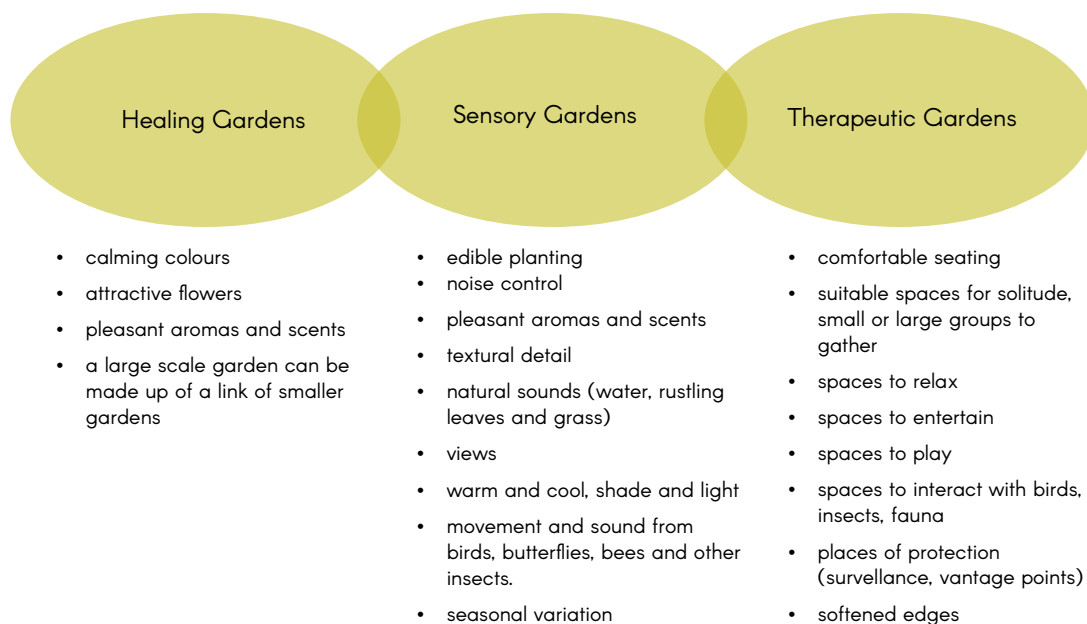
Healing Gardens | Rehabilitation & Reformation |

It can be considered as common knowledge that those who regularly frequent green spaces are healthier and experience an improved sense of well-being. In the research conducted by Learning Through Landscape (UK) and Children in Nature Collaborative (USA) links have been highlighted between the amount of time spent outdoors in well-designed spaces, and improved aspiration and achievement.

According to Gayle Souter-Brown, for man to achieve a sense of well-being Abraham Maslow's Hierarchy of Needs requires a revision from layers or levels of needs in sequence, into a relationship of needs which are all valued equally, with a nature connection being at the center.

Utilising salutogenic design approaches, where health and well-being is linked to landscape and urban interventions, is extremely relevant for the designing of prisons. The two, nature and well-being, are intrinsically linked where without ecological health there can be no human health and well-being and vice-versa. This thought is well summarised in one line:

“Less green nature means reduced mental well-being, or at least less opportunity to recover from mental stress.”



SALUTOGENIC DESIGN PRINCIPLES:

Salutogenic design aims to:

- promote active healthy lifestyles by providing access to natural sensory-rich spaces, in order to prevent illness;
- create holistic environments that soften the built environment while maximising on the site's potential, budget and community well-being;
- reduce rehabilitation times ;
- improve mood and memory;
- reduce aggression;
- promote general well-being

by utilising engaging and aesthetic soft landscape treatments.

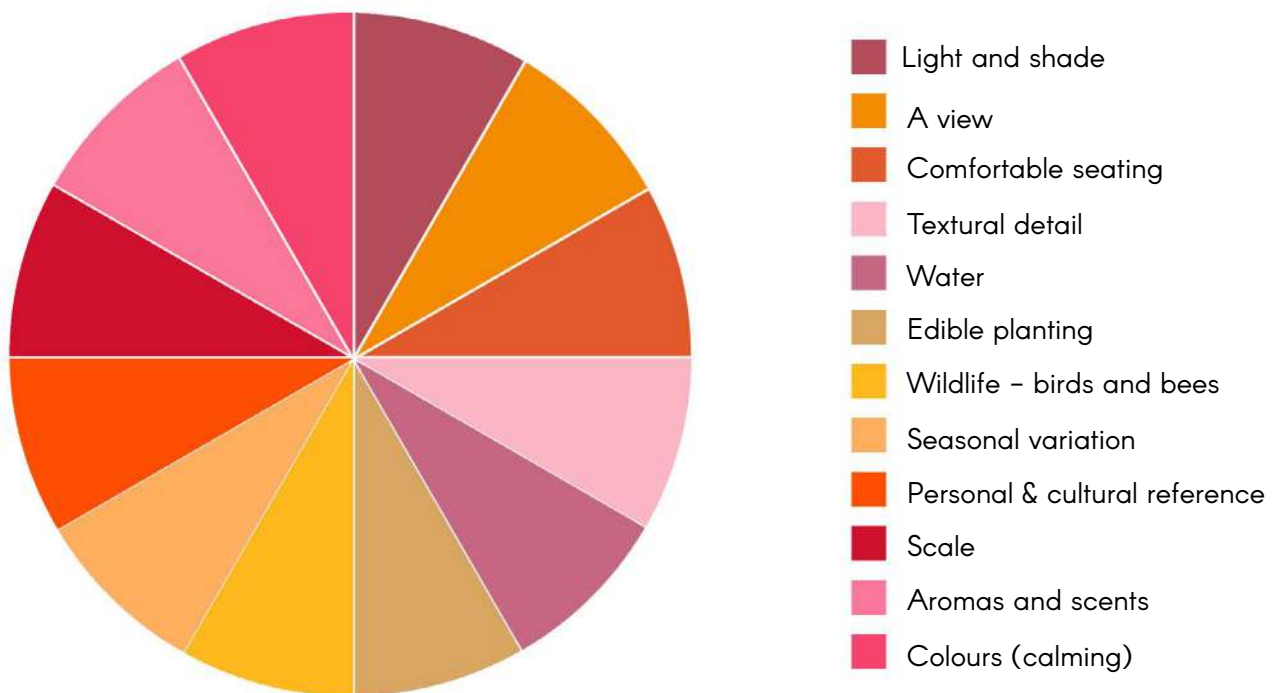


Figure:
Basic elements of a healing garden, adapted from Souter-Brown's Landscape and Urban Design for Health and Well-being

Ecotherapy

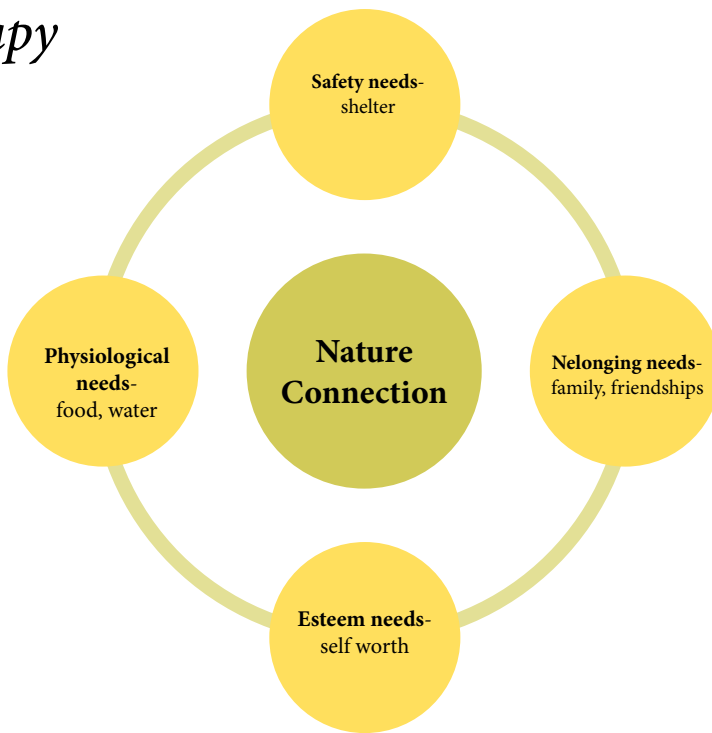


Figure:
Revised Hierarchy of needs in Souter-Brown's
Landscape and Urban Design for Health and
Well-being

We need to take on a more biophilic view where we accept the bonds between humans and the natural world and understand that public health and well-being are intrinsically linked with the health of the environment. Using nature and green spaces to heal and rehabilitate.

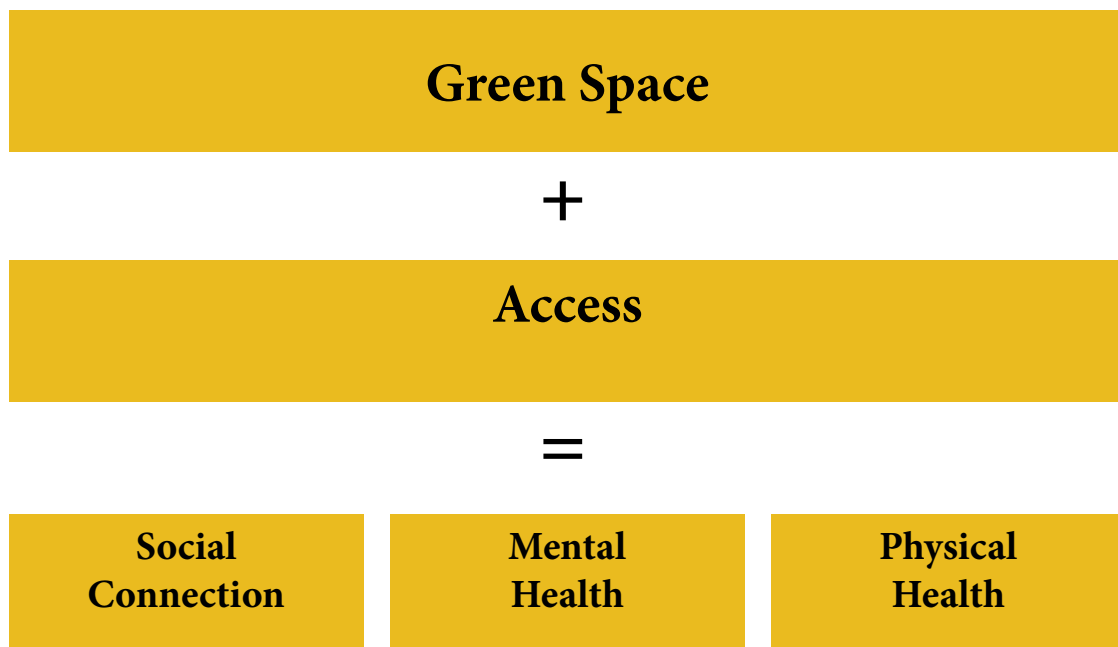
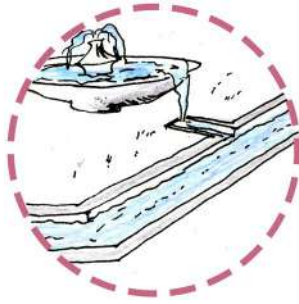
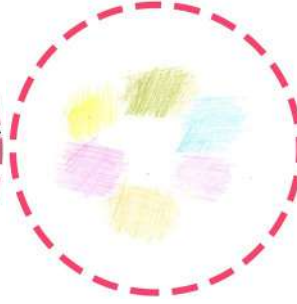


Figure:
Relationship between green space and social isolation according
to Souter-Brown's Landscape and Urban Design for Health and
Well-being

Elements of Healing Gardens



WATER



COLOURS (CALMING)



EDIBLE PLANTING



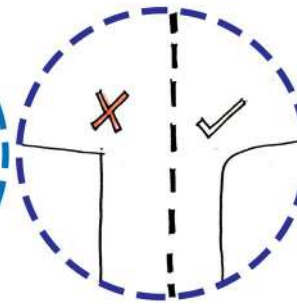
WILDLIFE:
BIRDS & BEES



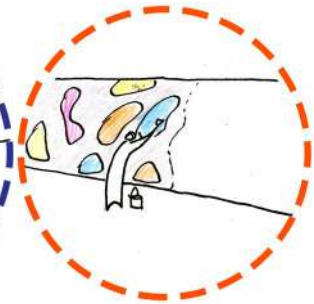
COMFORTABLE SEATING



EDUCATION
(HORTICULTURE & SKILLS)



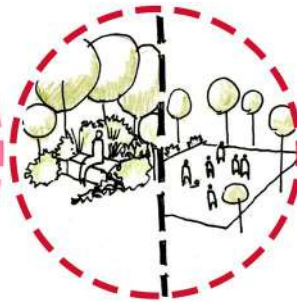
SOFT EDGES



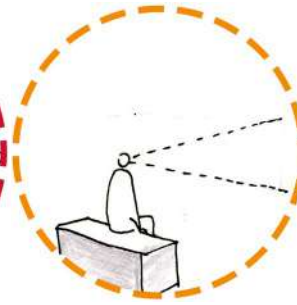
PERSONAL & CULTURAL
REFERENCE



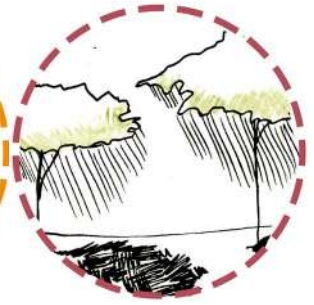
AROMAS & SCENTS



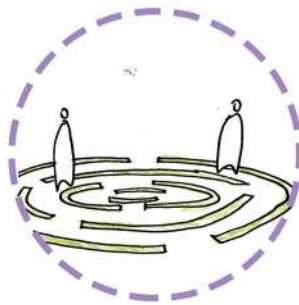
SCALE



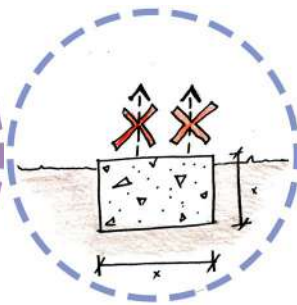
A VIEW



LIGHT & SHADE



MEDITATION



NON-REMOVABLE



SEASONAL VARIATION



NOISE CONTROL



TEXTURAL DETAIL

Healing Gardens for Prisons

Users:

- Those who are stressed from the violence in prison spaces;
- general mental health;
- for those who require SUPPORTIVE environments
- staff (sometimes)

Design Intention:

For a prison, architects should avoid designing prison spaces that emphasise the presence of physical barriers (such as gates, high fences, broken glass on walls topped with razor wire and security cameras) as these can exacerbate the user's feeling of social isolation as well as any tendencies towards anti-social behaviour. Instead, prison spaces can be designed under both utilitarian and aesthetic considerations.

Such gardens should aim to provide gradual support through a therapeutic reconnection of the individual with nature.

Many lessons can be learnt from the non-judgemental nature of gardening. Most prisoners come from a background of failure at school, unemployment and frustrations from being marginalised in society. Penal therapy gardens offer to empower prisoners through the development of horticultural skills and the resultant effect of this is new-found pride, new goals and productive efforts in one's life.

Time in the therapy gardens also offer privacy and solitude for prisoners to contemplate and meditate, and avoid the generally depressing environments prisons tend to offer when within. Inmates benefit positively from interacting and visiting green, natural spaces, and by using gardening as a treatment to heal and rehabilitate inmates can assist in the development of positive behavioural responses.

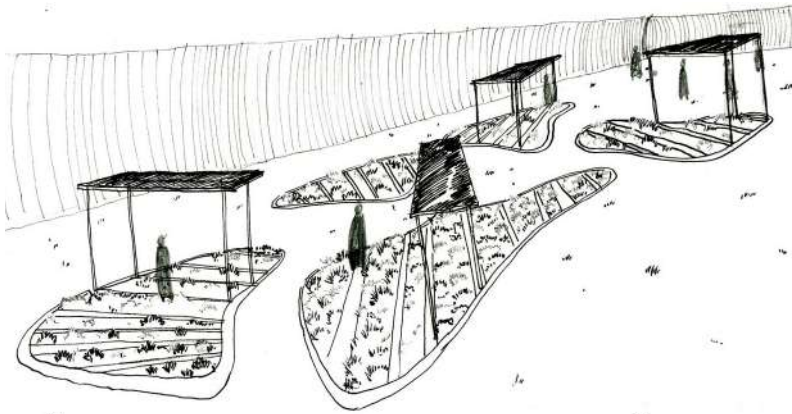
Removing a person from society as punishment due to them committing a crime may not be a suitable solution, this action may induce social disconnectedness and isolation and may be cause for further criminal anti-social behaviour. Providing green views, spaces and experiences through healing gardens assists with gaining social connection, sound mental and physical health.

Requirements:

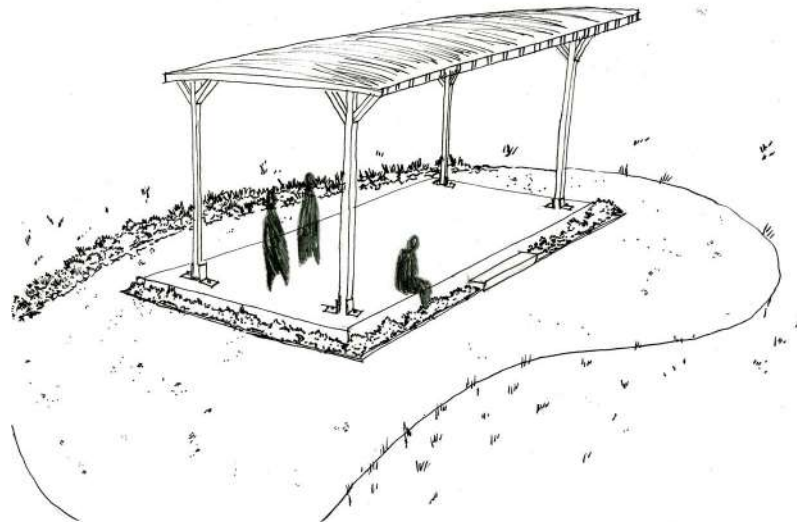
1. calming, pastels colour palette;
2. softened visibility of physical barriers;
3. therapeutic garden or horticultural programmes, which tend to calm and reduce aggression in prisoners while providing useful life skills at the same time;
4. a choice of sunny and shaded spaces that allow for quiet contemplation, private conversation, or larger communal interaction (group workshops);
5. spaces to reflect, grieve and meditate;
6. access to external views;
7. clear site lines to provide a sense of safety & security;
8. surfacings chosen to reduce glare;
9. lush planting to absorb sound and create a feeling of oasis in the city;
10. plants that specifically attract butterflies, in addition to diverse wildlife-attracting flora;
11. abundant seating – spaced at intervals no further than 50m apart with a mix of tables;
12. opportunities for light and more strenuous exercise;
13. a respite for staff to de-stress.



Healing Garden for Medium to High Risk Prisoners



1 Seasonal variation in planting beds
Medium to High Risk Healing Garden

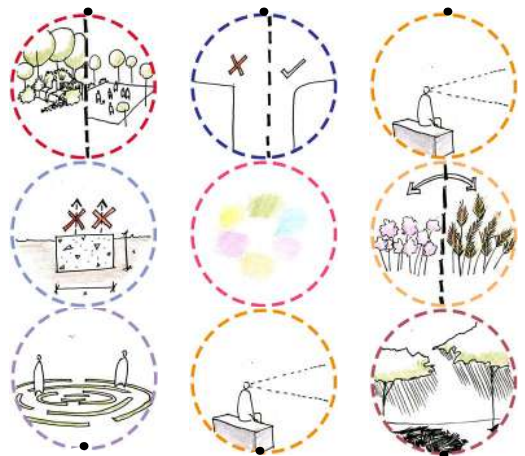


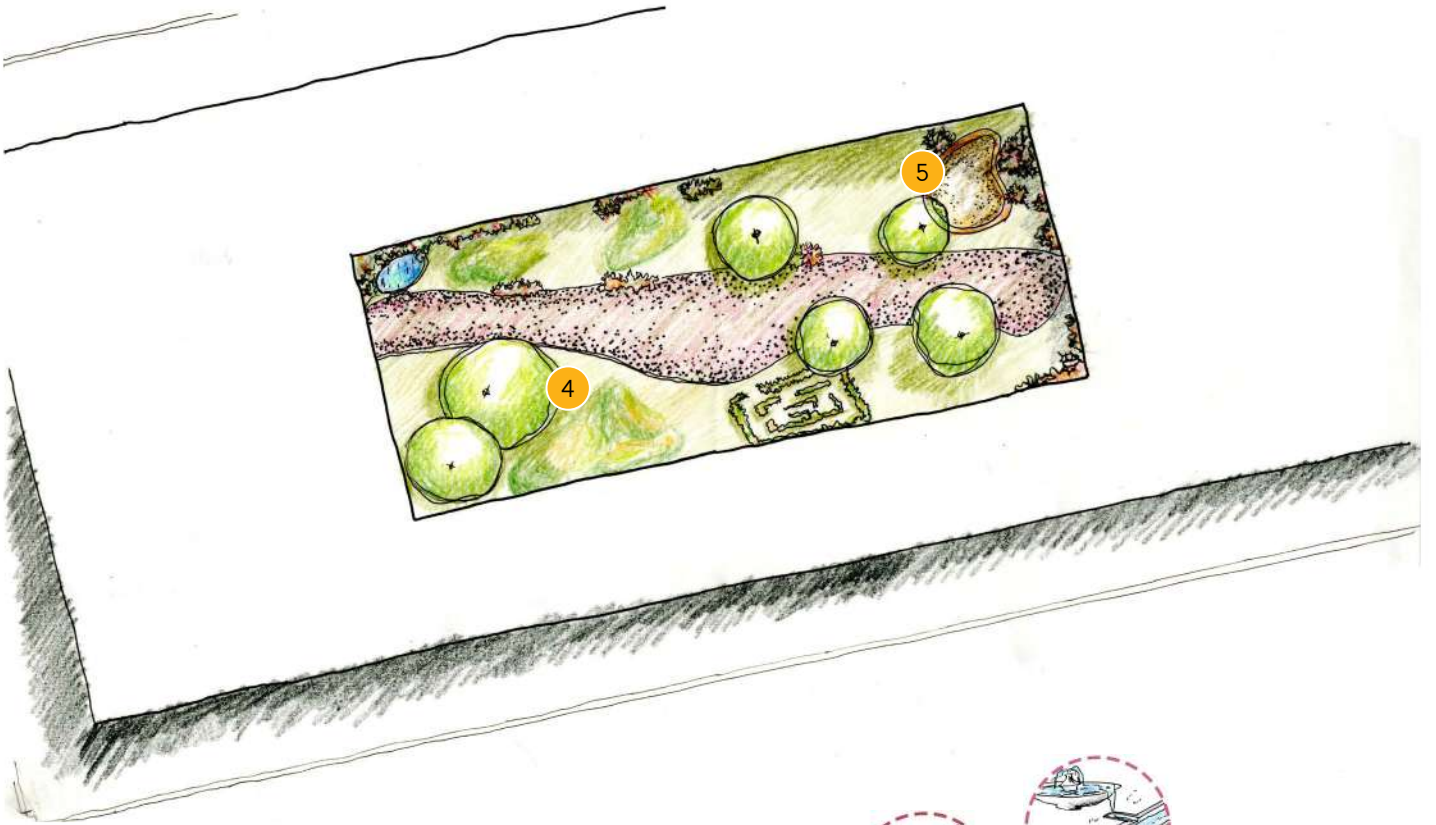
2 Shaded areas to sit (too high to climb)
Medium to High Risk Healing Garden

2



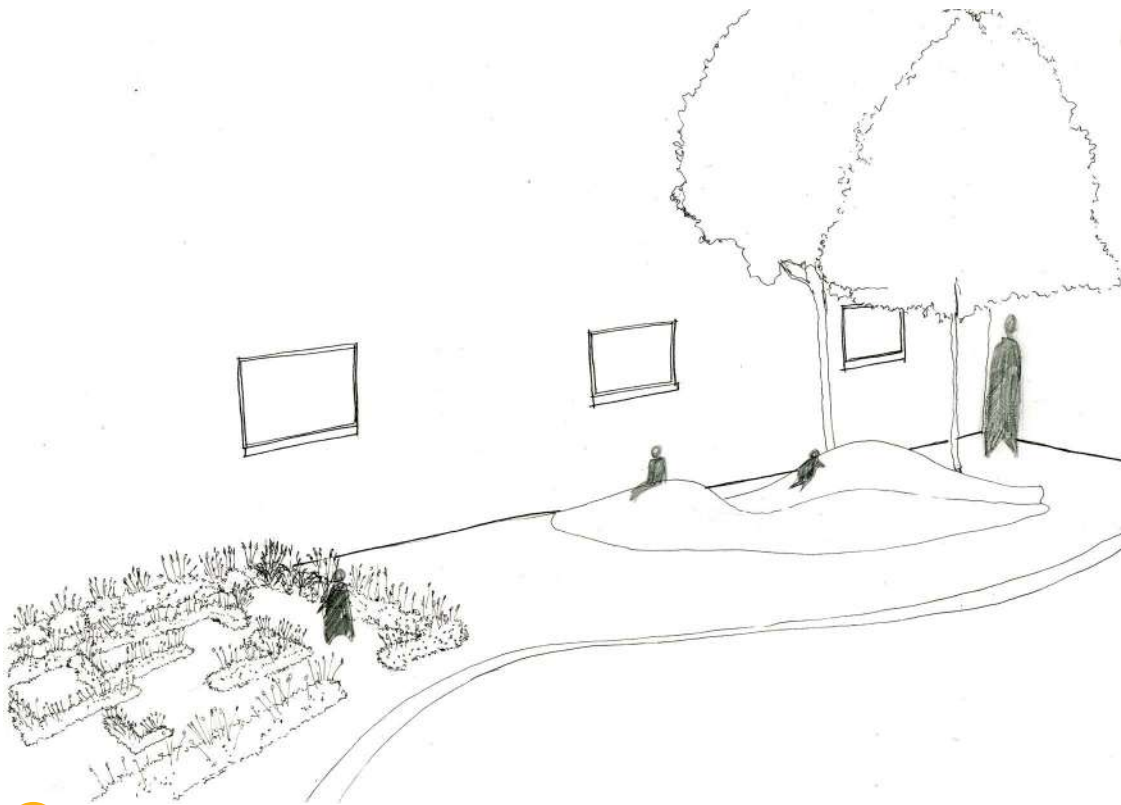
3 Meditative labyrinth with groundcover plants only
Medium to High Risk Healing Garden



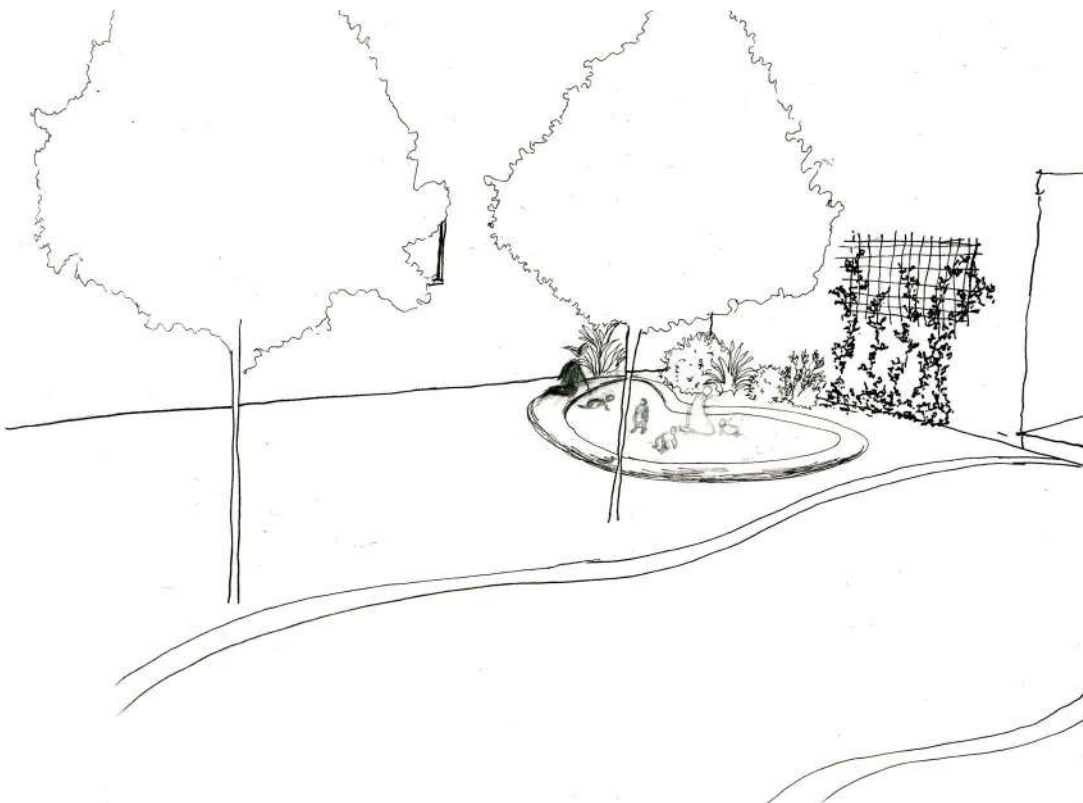


Healing Garden for Maternity Prisoners and Infants
1:100 on A3

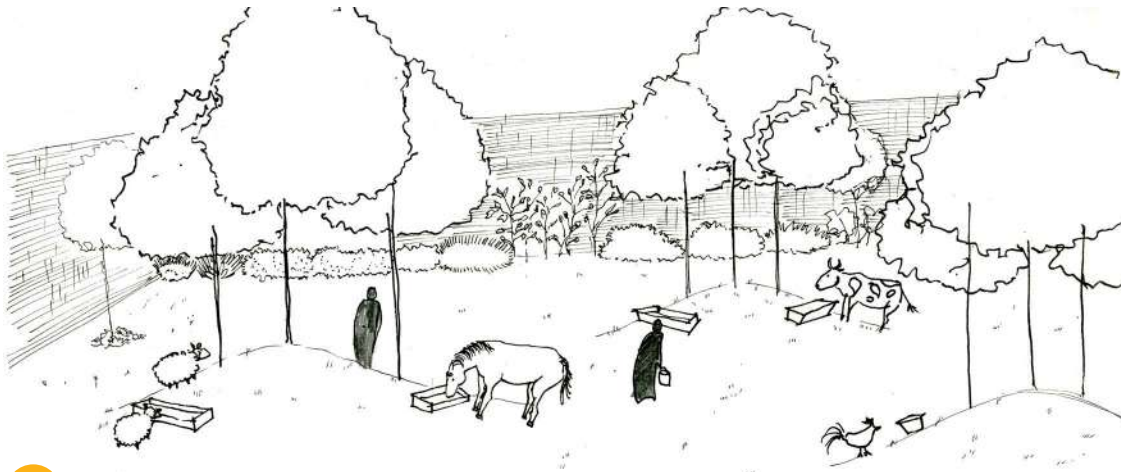




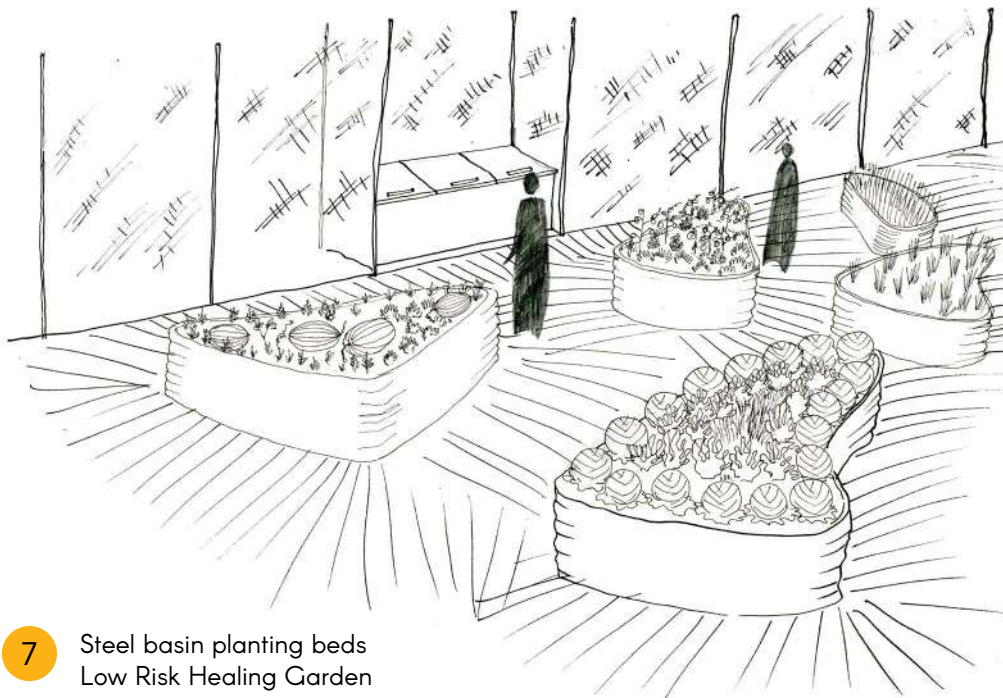
4 Meditative labyrinth with low-growing shrubs and roley mounds for children to play
Maternity Prison and infant's Healing Garden



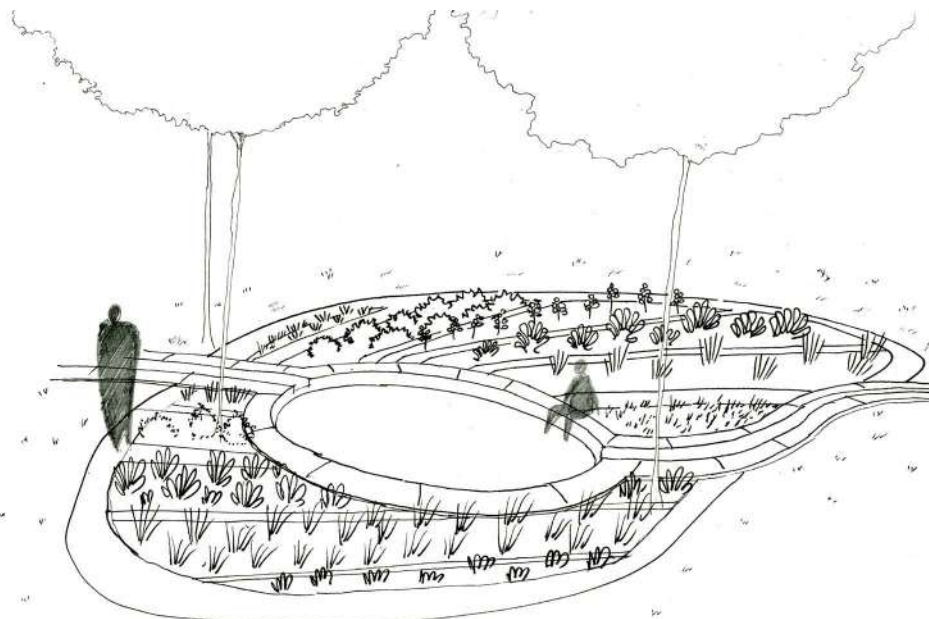
5 Sand box for children's play and textural detail
Maternity Prison and infant's Healing Garden



6 Animal farming within enclosed work area
Low Risk Healing Garden



7 Steel basin planting beds
Low Risk Healing Garden

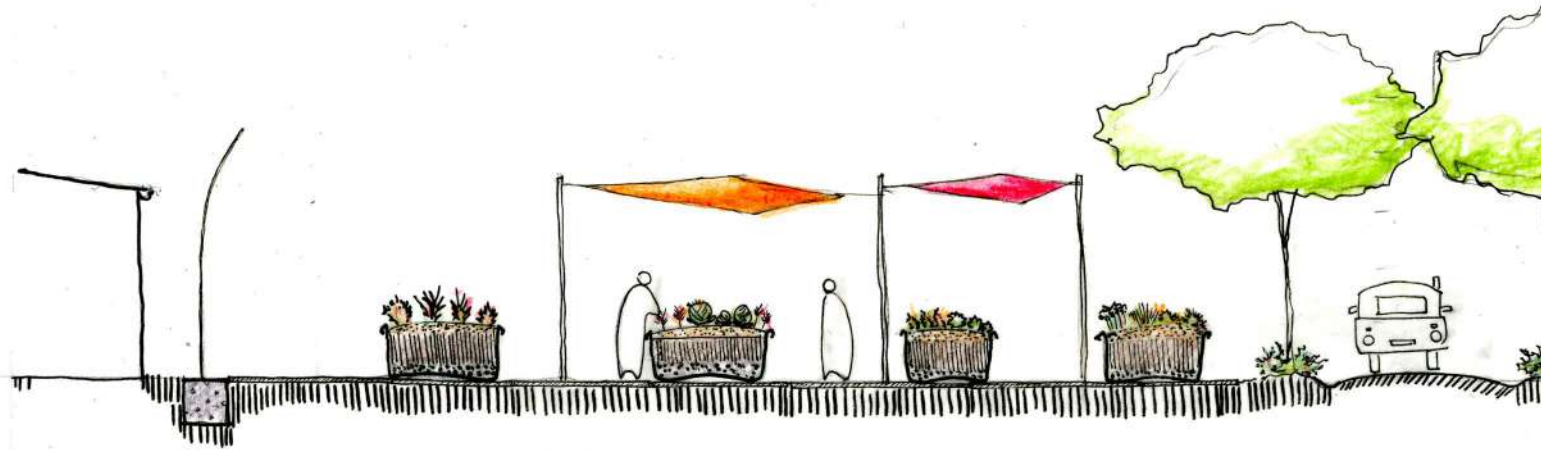


8 Water feature & planting beds
Low Risk Healing Garden



Healing Garden for Low Risk Prisoners

Section A-A 1:100 @ A3



Healing Garden for Low Risk Prisoners

Section B-B 1:100 @ A3

HEALING GARDENS FOR POST-TRAUMATIC STRESS DISORDER

Users:

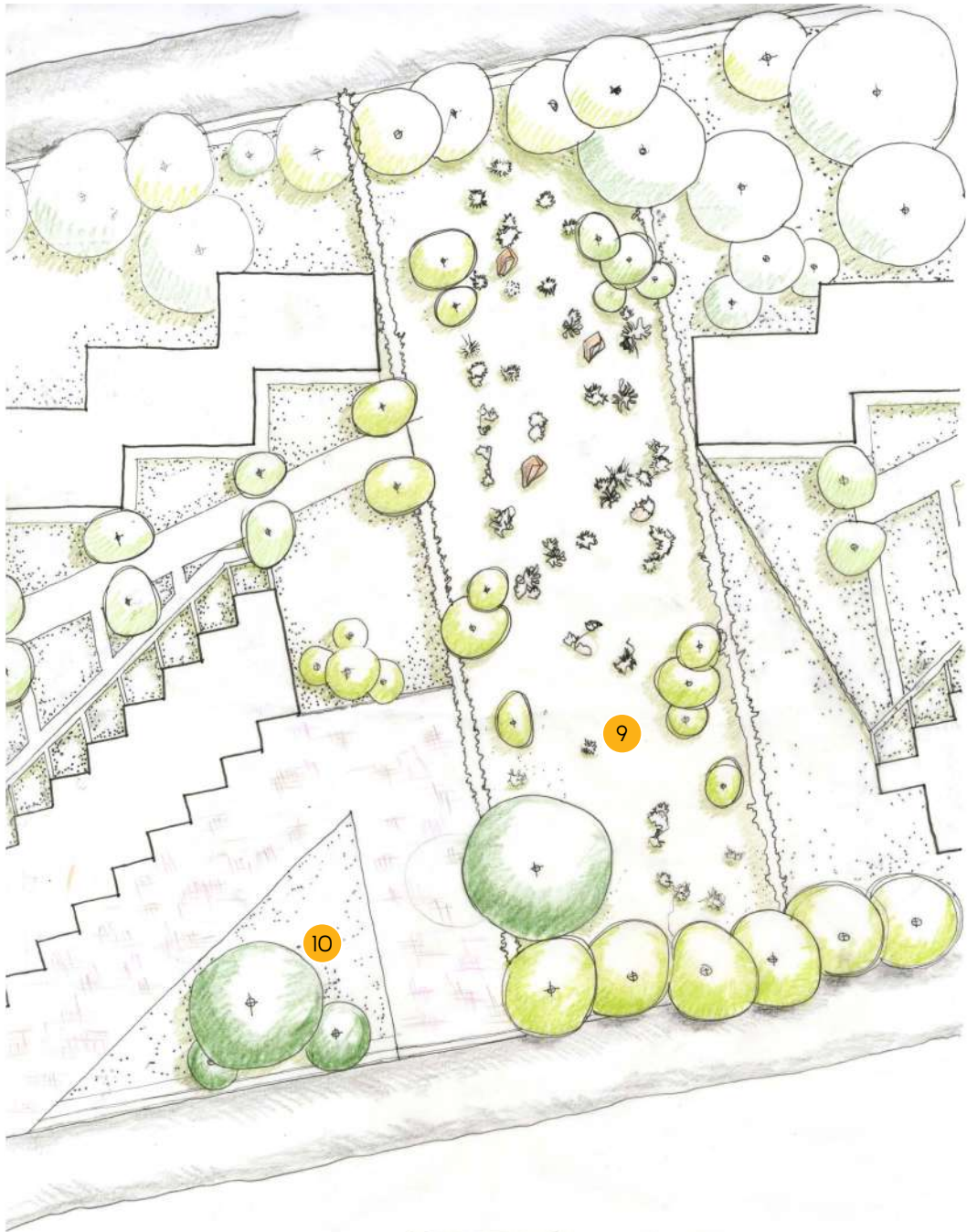
- Can be applied to those who are stressed from the sometimes violent and stressful environments of prison spaces;
- those seeking general mental health;
- for those who require SUPPORTIVE environments;
- a place of respite for staff / caregivers to de-stress;
- visitors of prisoners who may have been victims of crimes.

Design Intention:

Such gardens aim to provide gradual support through a therapeutic reconnection of the individual with nature. A place to feel safe and secure, to relax and de-stress.

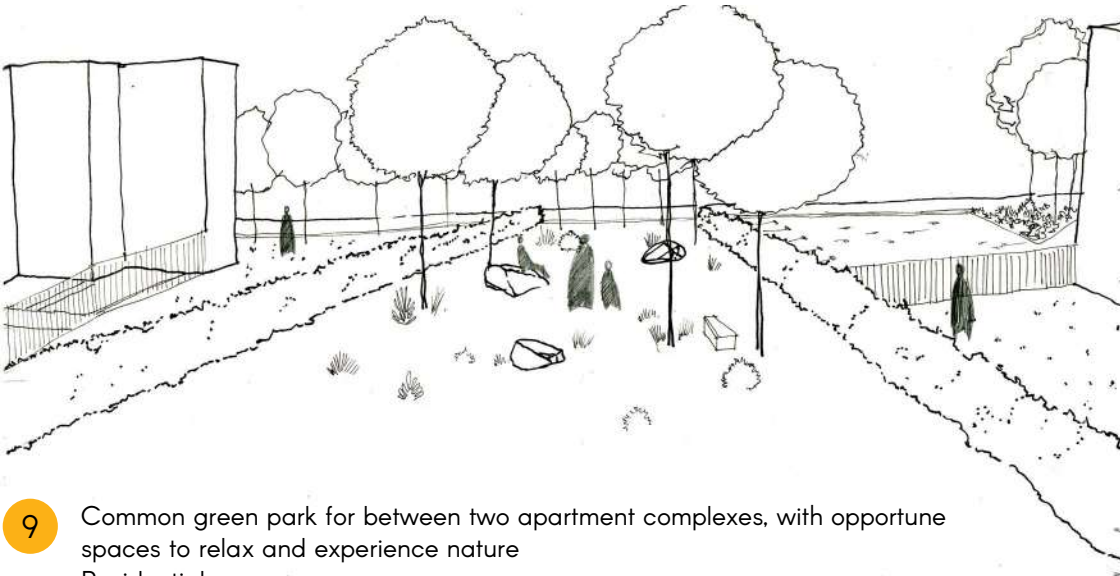
Requirements:

1. natural leafy shade;
2. clear site lines to provide a sense of safety & security;
3. a homelike environment, so no institutional furniture or surfacing;
4. flat walking surfaces without camber, but also some walkways that provide more of a challenge;
5. surfacings chosen to reduce glare;
6. lush planting to absorb sound and create a feeling of oasis in the city;
7. positive sound interference, such as water, to mask local traffic, noise and attract wildlife;
8. plants that specifically attract butterflies, in addition to diverse wildlife-attracting flora;
9. abundant seating – spaced at intervals no further than 50m apart with a mix of tables or wide-armed seats to promote casual picnicking;
10. covered areas – when supplied with cooling fans and/or heaters these areas allow vulnerable people to be outside in inclement weather;
11. playful areas, for adults and children, that include outdoor music, a performance space, a dance space, climbable sculpture, swings and balance beams;
12. a choice of sunny and shaded spaces that allow for quiet contemplation, private conversation, or larger communal interaction (group workshops);
13. opportunities for light and more strenuous exercise.

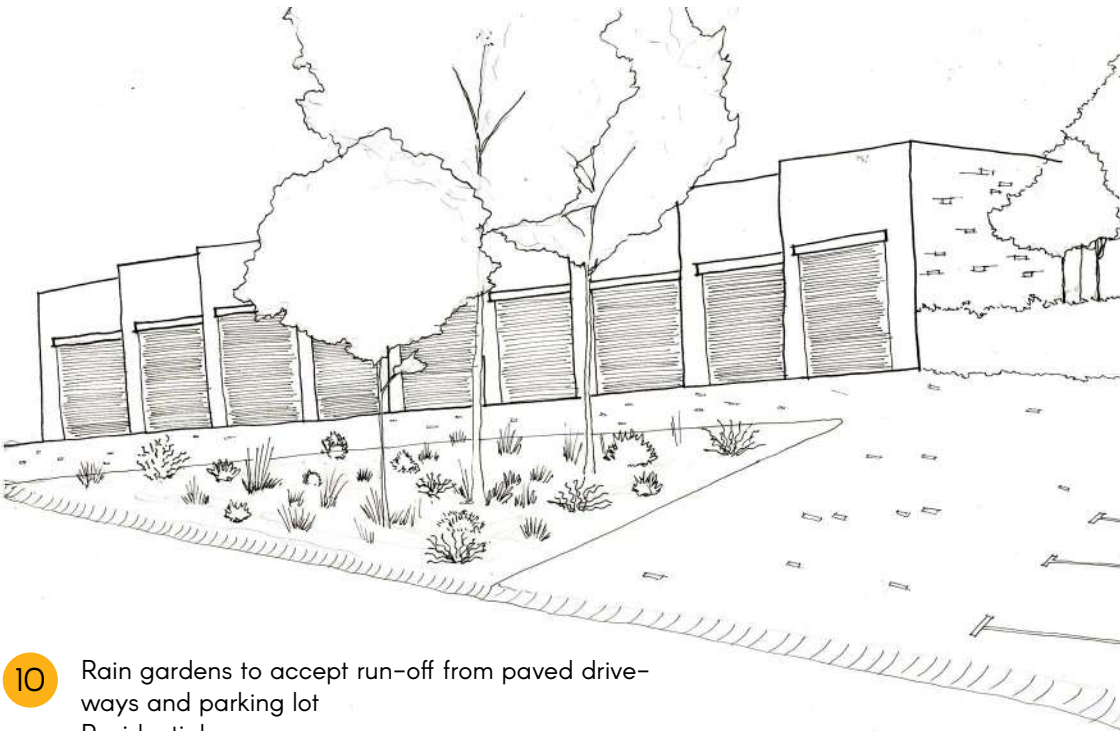


Healing Garden for Residents
1:300 on A3

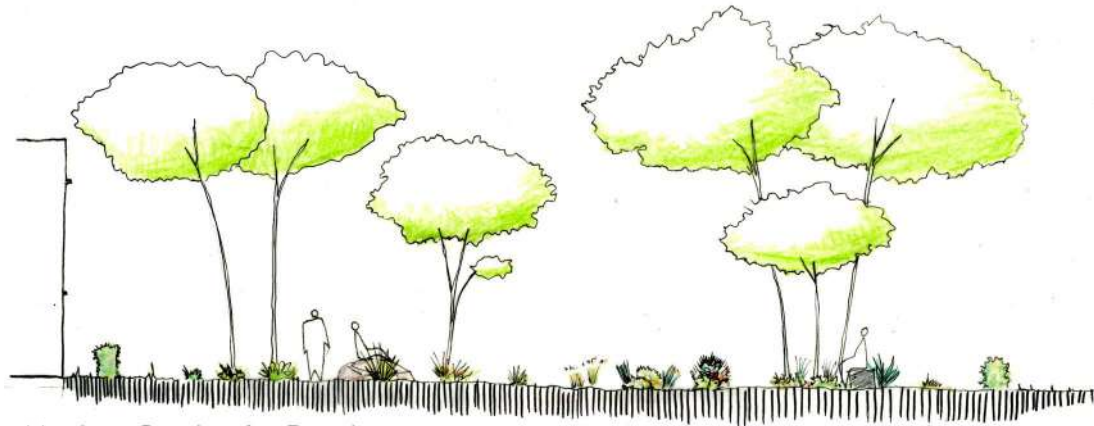




9 Common green park for between two apartment complexes, with opportune spaces to relax and experience nature
Residential

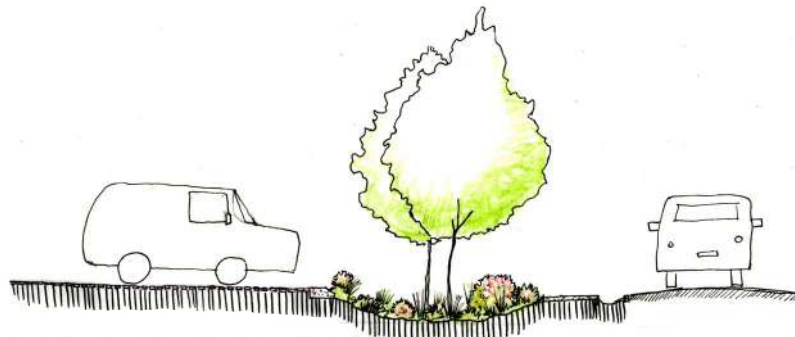


10 Rain gardens to accept run-off from paved drive-ways and parking lot
Residential



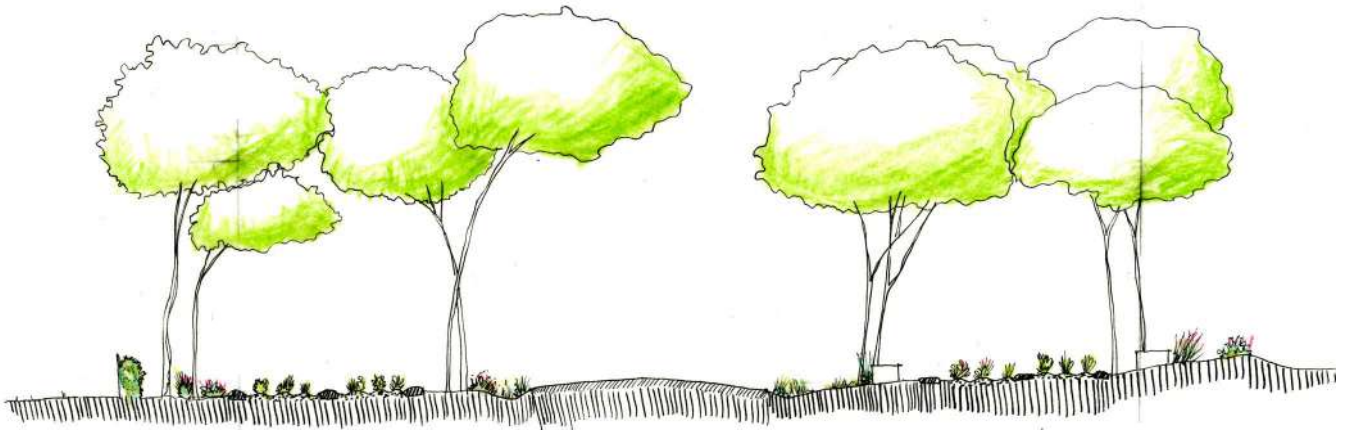
Healing Garden for Residents

Section C-C 1:100 @ A3



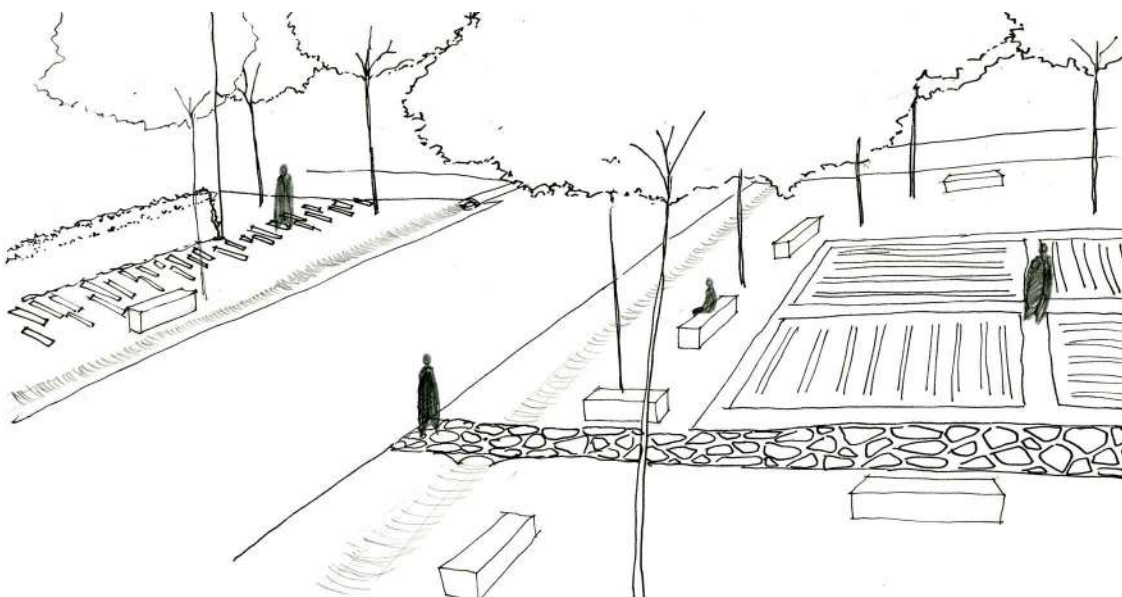
Rain Garden for Residential Parking Areas

Section D-D 1:100 @ A3



Food Garden and Allotments for Residents

Section E-E 1:100 @ A3



11 Allotment gardens for residents to learn to grow their own food
Residential

HEALING GARDENS FOR CHILDREN

Users:

- Children and supervising adults
- In the waiting space for visitors, it is necessary to provide a play area for visiting children to reduce stress if they are feeling anxious about visiting a relative who is an inmate.
- Babies and young children born or living in prison with their incarcerated mothers.

Design Intention:

Such gardens aim to encourage play, exploration, experimentation, engagement and imagination. Natural play areas can offer opportunities that manufactured play equipment can not– such as opportunities to test personal limits, varying things to do and see, a place to hang out with friends, sit and observe.

Requirements:

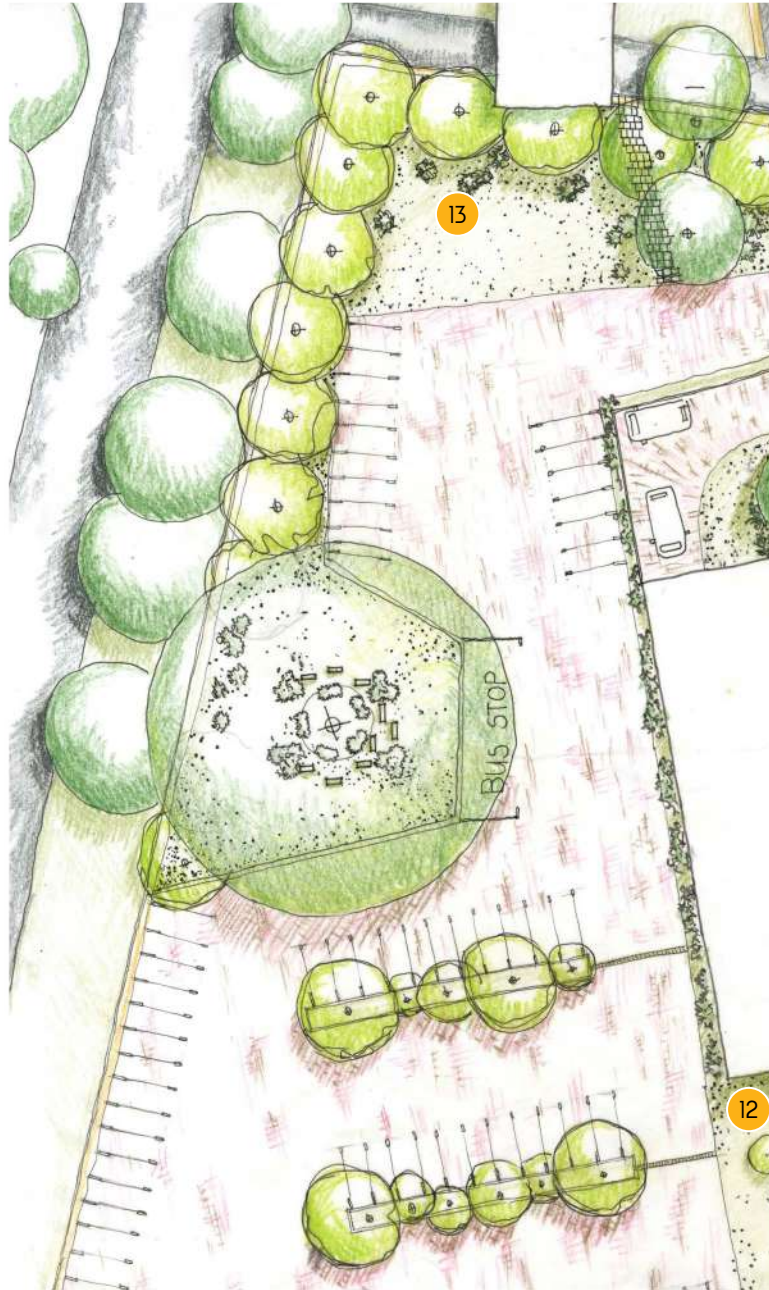
1. shade and light (natural shade from tall trees)
2. noise control (out of play area)
3. edible planting (fruit trees and vegetables)
4. mixed planting of both shrubs and trees, vines, groundcover
5. clear views into and out of play area (supervision)
6. textural detail
7. bio-diverse planting to attract wildlife
8. views of the sky
9. shapes
10. colours
11. softened edges
12. creative, comfortable seating
13. features and furnishings to climb, jump, hide behind, explore
14. a balance of quiet and active spaces

Examples of play activities that can be considered in the designing of children's play parks:

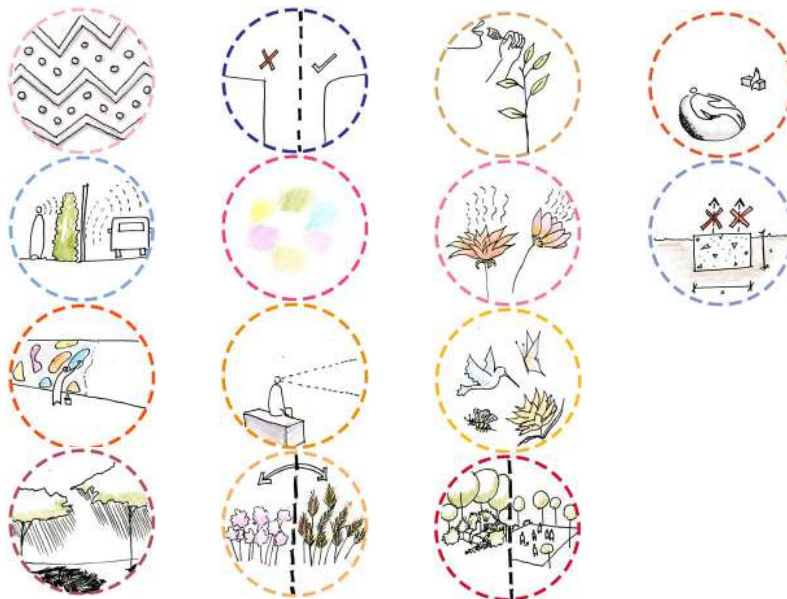
- sand and water play;
- scrambling, climbing and swinging opportunities;
- “playable planting” to highlight exciting parts of the play area to explore;
- rolling slopes;
- walk and crawl tunnels;
- open-air theatre;
- art and outdoor music.

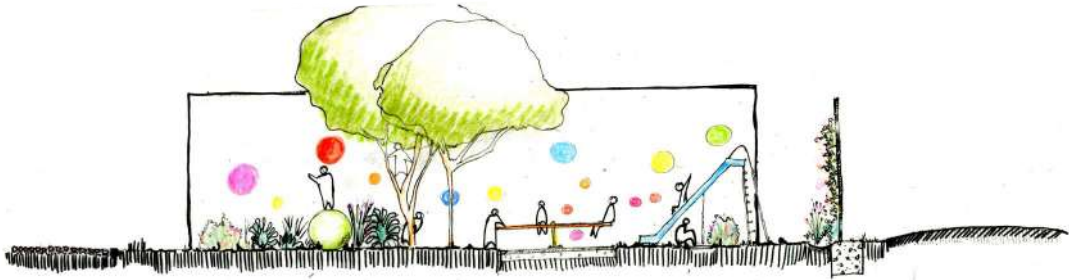
“Plants soften the built environment and when appropriate species are used, create a play garden for children. Playful gardens allow and support children in their need to explore and express themselves through play.”

-pg 111, Souter Brown (2015)



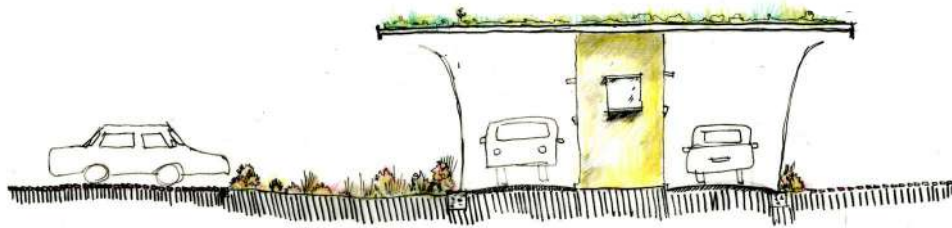
Healing Garden for Visitors & Children
1:300 on A3





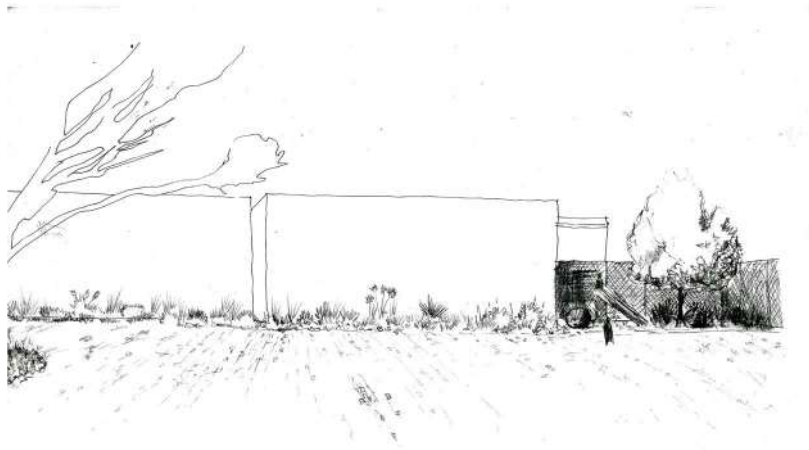
Healing Garden for Visitors and Children

Section F-F 1:100 @ A3

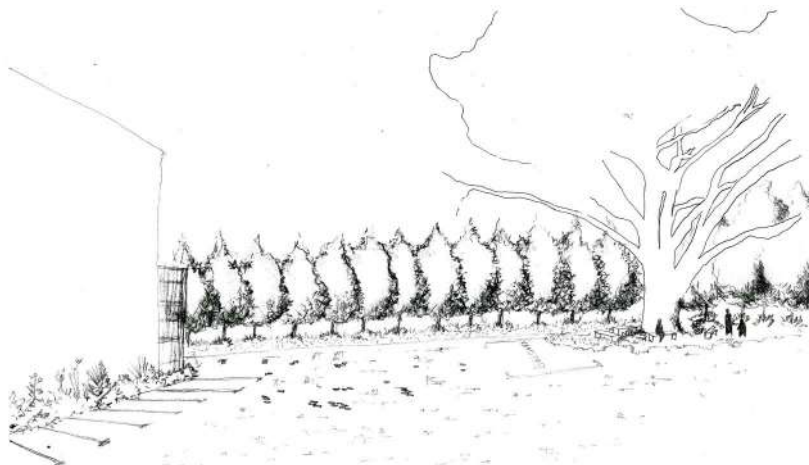


Healing Garden for Visitors and Children

Section G-G 1:100 @ A3



- 12 Children's play area in waiting area for visitors
- Visitor's parking and waiting area



- 13 Seating for visitors under the big Pine tree
- Visitor's parking and waiting area

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Macro-scale

The **macro-scale**, focusses on the general health of the the site's ecology as well as improving its infrastructure (movement routes, security and zoning) by introducing suitable Green Infrastructure, as well as introducing measure to rehabilitate the site's Hydrological networks for flood prevention and on site farming improvement.

- Existing & Introduced fences
- Existing & Introduced security posts



Introduce Fencing and Security Posts

In order to safely grant prisoners more access to outdoor spaces some fence lines and checkpoints have been shifted or newly introduced. This allows for improved movement within zones, while the new number of checkpoints make sure that security limits access into and out of the zones depending on each person's security level. These new fences separates Visitor Centre/ Waiting Area - Prison - Workshops - Administration - Residential - Agriculture.



Introduced Prison Leisure Space

By introducing “Green miles”, large outdoor green spaces that are accessible by each specific prison block, the prisoners can have access to their own block’s communal outdoor green space to walk, relax, take in views and interact with nature.

The brown enclosed courtyard spaces can be allocated for use by high risk security prisoners, while the outdoor green spaces can be accessible by medium to low risk security prisoners. This limitation of accessibility to green spaces to only inmates of Low to Medium Risk may encourage High Risk inmates to behave in order to gain access to natural spaces.

Within the enclosed courtyards landscape interventions can still take place (based on the categorized landscape elements from the design manual in the Micro-scale interventions chapter).

The following groups of users each have specific and sometimes overlapping zones through and within which they transition during the day. Specific user routes have been restructured and mapped in order to improve the efficiency of movement as well as to improve the current levels of security. The proposed design intervention looks into the re-arrangement and re-structuring of fences and checkpoints securing each zone and limiting access and exit from zone to zone i.e. prisoners can be granted more “freedom” and access to facilities outside of their prison blocks such as the workshops and healing gardens within their designated Prison Zone, depending on their level of security risk.



Visitor's Routes:

- enter through main security gate;
- walk or drive into visitor's parking;
- additional parking in Workshop facilitators' parking area (if needed);
- waiting under the Big Tree;
- walk around the landscaped garden;
- visitor children can play in children's play area while waiting;
- enter visitor's centre building;



Workshop facilitators' Routes:

- enter through main security gate;
- walk or drive into facilitators' parking area;
- access granted to workshop facilities, prisoner outdoor green spaces, animal farm, or Low Risk Prisoners' Healing garden;
- if required to go to admin, go through security checkpoint to admin zone



Prisoners' Routes:

Limitation of accessibility is dependant on security level

- enclosed courtyard space;
- access to “Green Mile” within block;
- access to workshop facilities;
- access to animal farm, Healing Garden, recycling depot/ workshop



Routes: Admin Staff
1:5000 on A3

Administration staff Routes:

- enter through main security gate;
- access into secured prison zone;
- access to administration zone via additional checkpoint;
- parking in administration zone;
- access to residential leisure and retail facilities



Routes: Residents
1:5000 on A3

Resident's Routes:

- enter through one of four security entrances;
- access to primary and secondary roads within the residential area only



Routes: Agricultural Staff
1:5000 on A3

Agricultural staff and workers' Routes:

- enter through main security gate at north-eastern corner only;
- drive straight into fenced off agricultural lands;
- access limited to other zones.



Introduced Green Infrastructure Interventions

The site lacked vegetation within and in close proximity to the prison zones, and now that the inmates have access to an entire prison zone where they can walk from prison block to animal farm or healing garden (depending on their security access level) and at the same times have visual access to green roofs from their walk, or from their outdoor green spaces allocated to each prison block (“Green miles”). Not only was focus given to greening for the purpose of views, but for rehabilitating the stream that flows alongside and through the site. In general, focus must be given to rehabilitating rivers and canals wherever possible, and by doing so here with the stream flowing through Pollsmoor one is restoring the stream banks for a visual improvement as well (some prison cell windows look out onto this stream- therefore improving the staff and prisoner’s views).

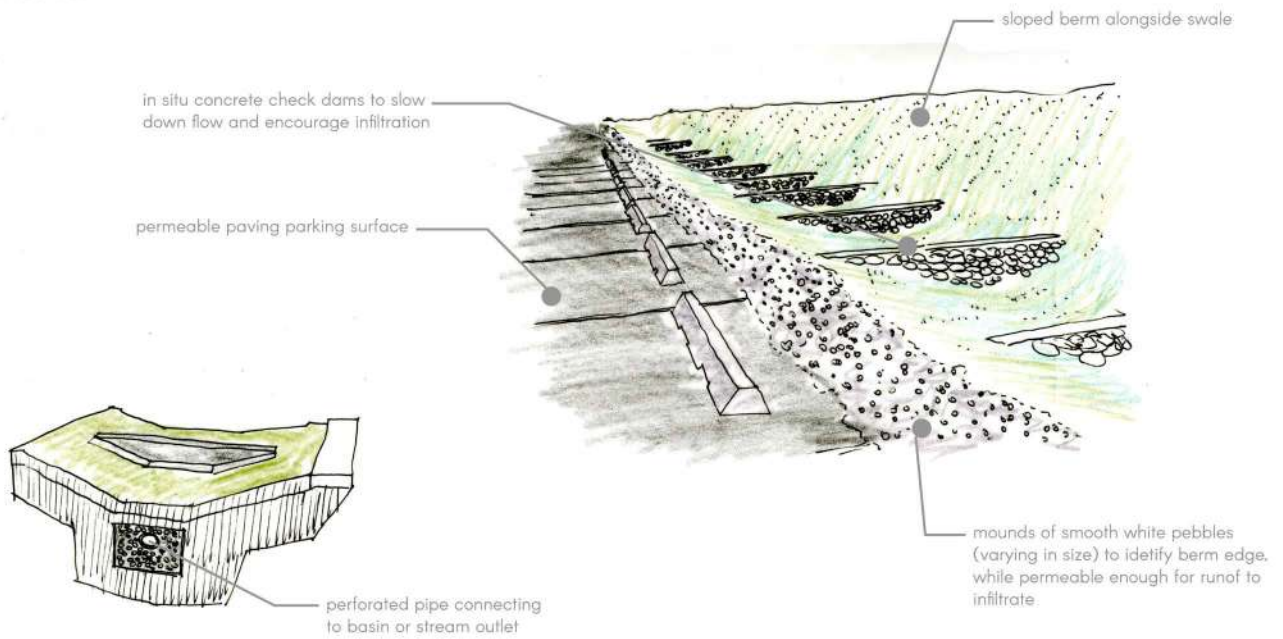


Introduced Hydrological Networks

Introducing stormwater management techniques to the site through permeable paving, swales, rain gardens and retention ponds this ensure that the water run-off from roads and roofs can slowly saturate into the ground to revitalize the water levels of the dams and the stream that flows through/ alongside the site. This ensures that the flow of unused, unnecessary water run-off continues down the stream or flows into one of the three agricultural dams for irrigation.

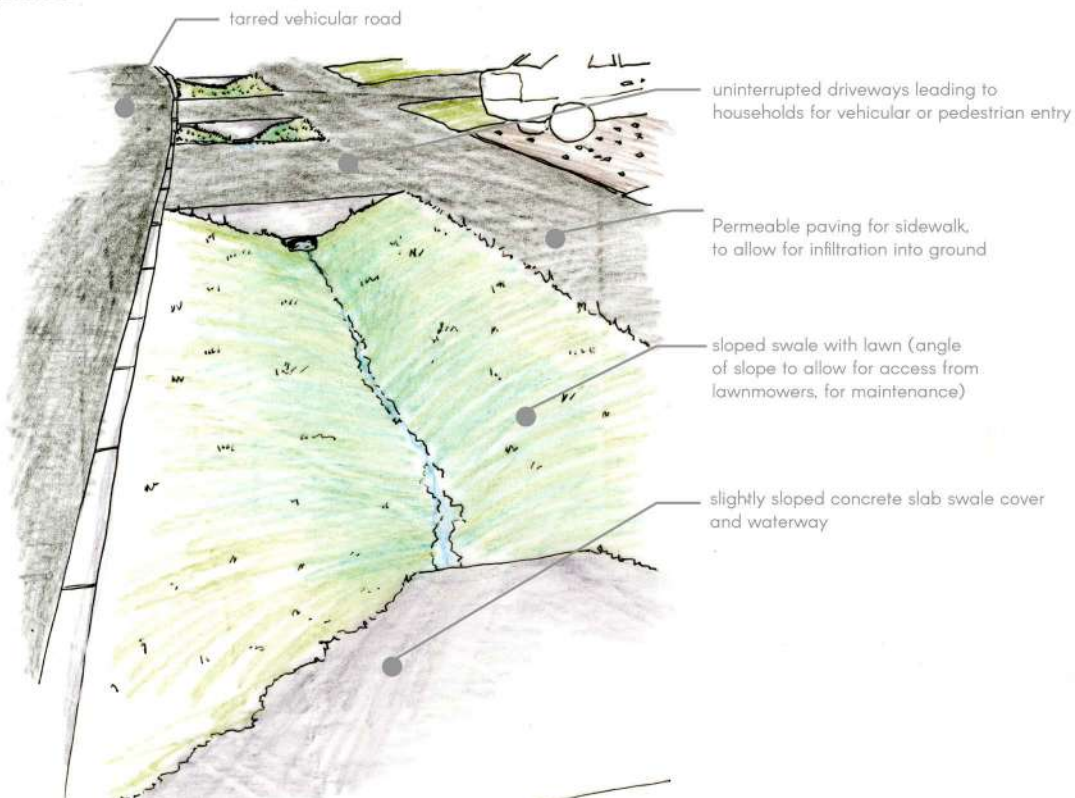
Grass Swale with Check Dams along parking

Unscaled



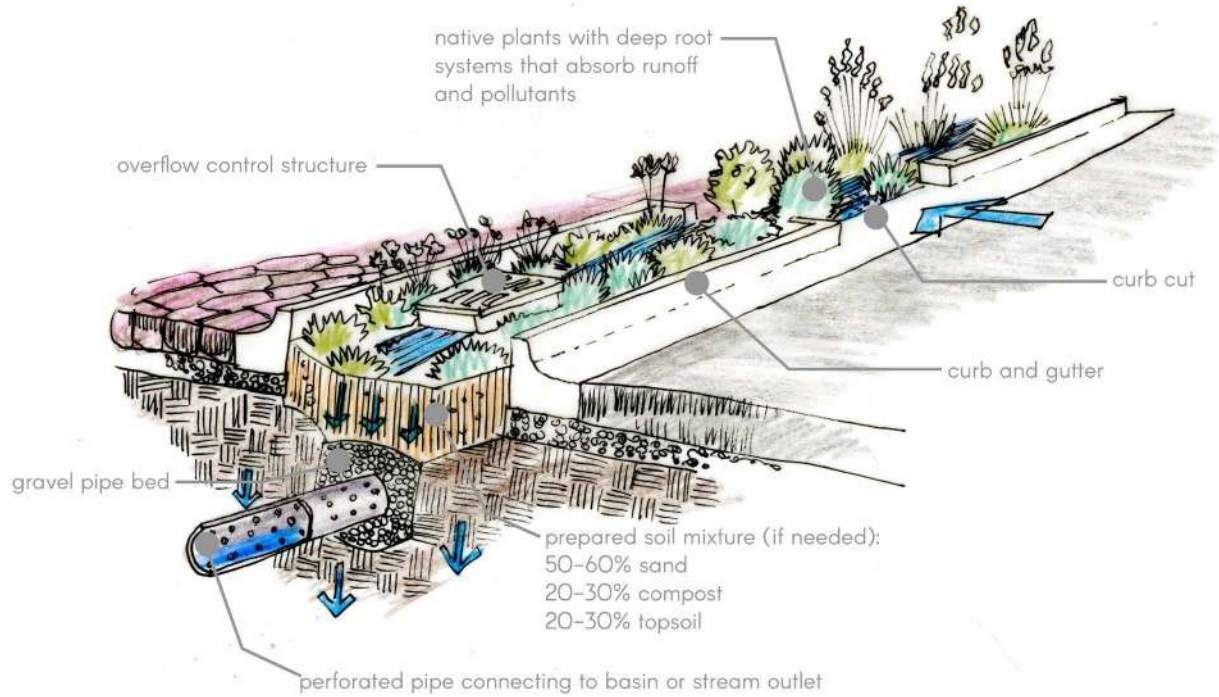
Interrupted Residential Swale Along Sidewalk

Unscaled



Sidewalk Rain Garden

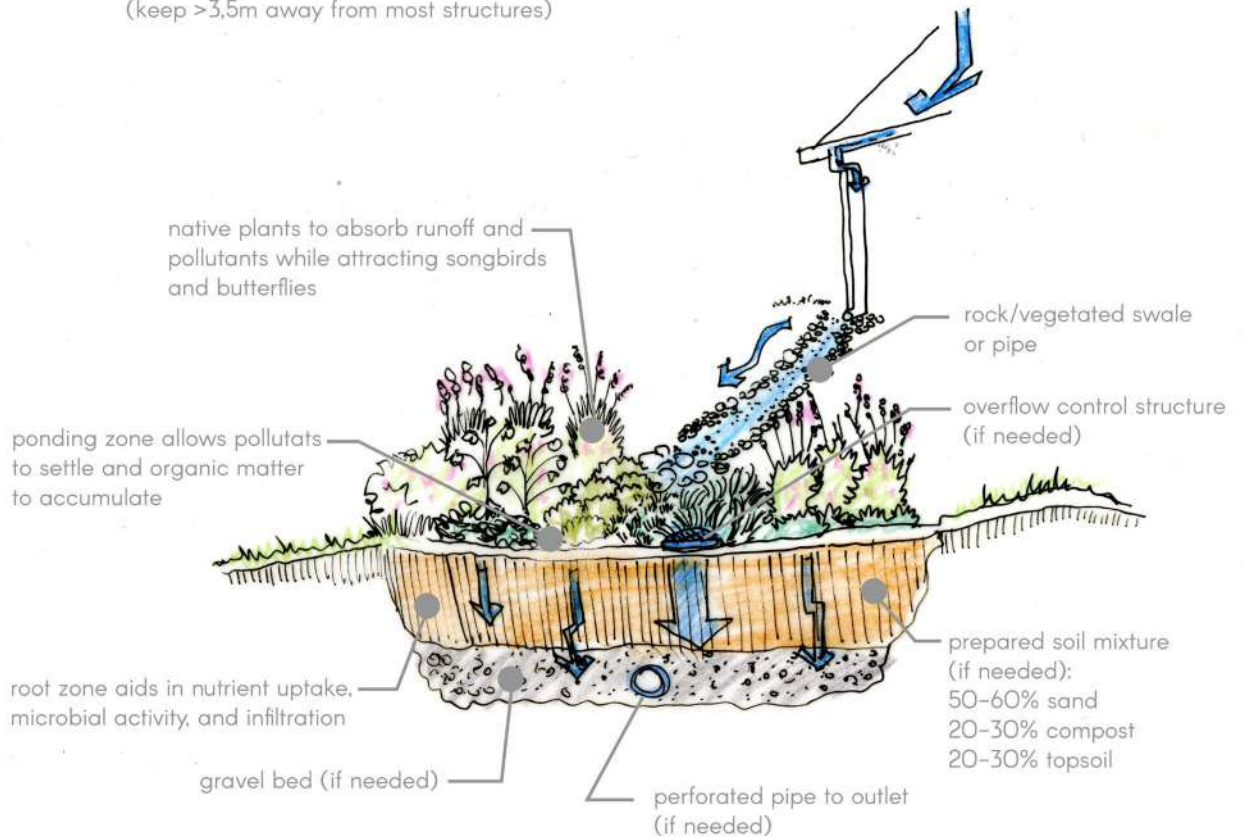
Unscaled



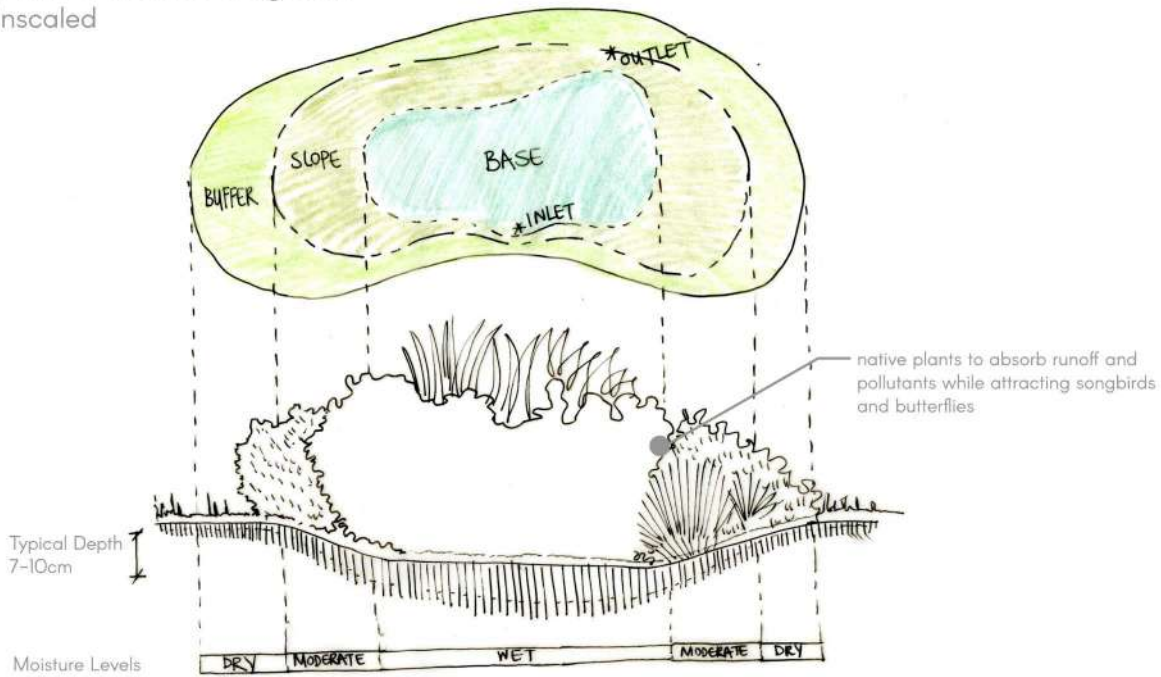
Residential Rain Garden

Unscaled

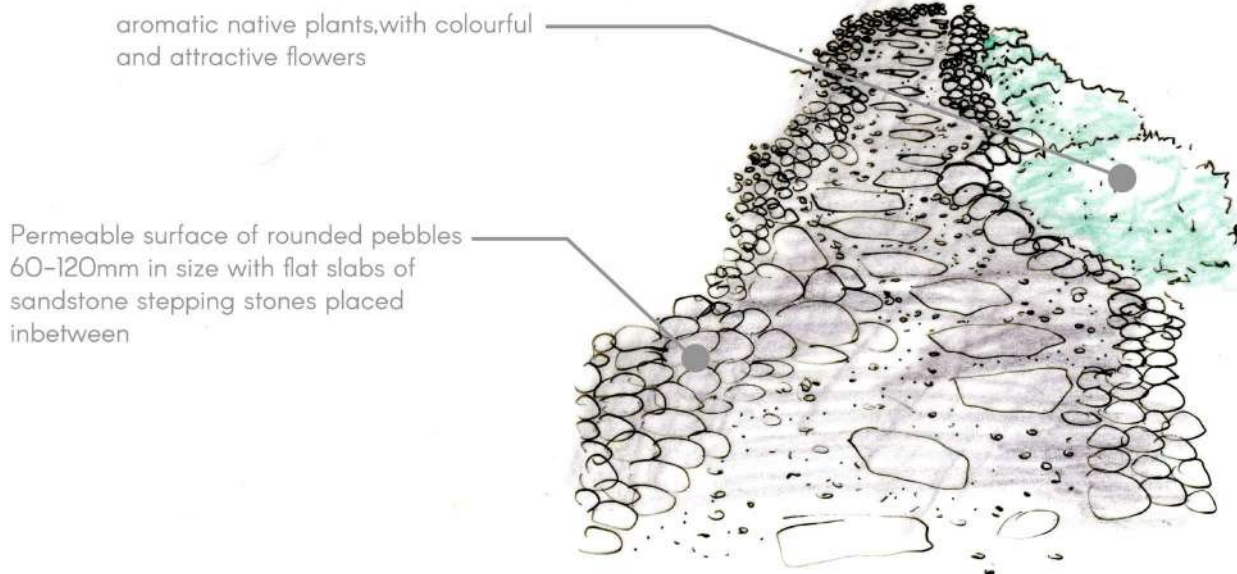
(keep >3,5m away from most structures)



Rain Garden Diagram Unscaled



Residential Permeable Pathways Unscaled



Relocated | Repurposed | Introduced



Conclusion

This thesis started out as an investigation looking into humanizing and softening the harsh spaces within Pollsmoor prison, as well as the mental and physical restoration one (specifically a prisoner) inherits from nature, and the important implications it has as a result on the mental rehabilitation of prisoners.

Over the course of the research the brief changed and expanded, and the focus group of the interventions evolved from solely the prisoners of Pollsmoor to Pollsmoor's other users as well –such as the family, friends or victims that may come to Pollsmoor to visit the inmates, the workshop facilitators who come in to engage and work with inmates for yoga training, theatre or ministerial classes, the security staff that engage with the inmates on a daily basis, the administration staff that sign the prisoners in and out for the beginning and end of their sentence, the agricultural staff that work with inmates on the fields, and the husbands, wives or children of the staff that reside within the Pollsmoor compound.

When it came to re:imagining the spaces within Pollsmoor each of these users, their general requirements and their levels of security risk were needed to be considered.

On top of the humanizing and softening of environments within prison blocks, another theme that came in strong through the design process was the benefits of healing landscapes and the role agriculture has within the site. The large expanse of agricultural land to the east of the site takes up a large portion of the site, and instead of isolating the activity solely to its zone the theme is carried through the site from east to west. The interaction between healing and 'living off the earth' takes place in the introduced allotment gardens for residents, and the animal farm and Low Risk Prisoners' healing garden. This encourages a connection of the user to nature, a dependency and appreciation through their regular interactions. A number of studies have been published promoting the benefits of introducing gardens for healing and therapy, especially for prisoners who gain confidence through the farming/ gardening skills learnt (Souter Brown, 2015) and experience mental and physical healing from the time spent in and viewing naturalistic spaces.

The healing landscapes introduced took on three types:

1. Healing landscapes for prisoners (low, low-medium, high-medium)
2. Healing landscapes for children
3. Healing landscapes for those who may be suffering from Post-Traumatic Stress Disorder

each of these healing landscape types had their own experiential requirements depending on their location and users.

Due to the magnitude of the site, the proposed design interventions took on three different scales (micro, intermediate, and macro) to encourage the healing of prisoners, staff/visitors/residents, and the ecology of the site.

The micro scale looked into improving the experiential qualities of the space, while looking at the suitability of possible interventions depending on the security classification of the space and its users. The intermediate scale also focussed on the experiential, but also on the designing of healing landscapes for its potential users and zone-types. The macro-scale focussed on the healing of the land and ecology through the introduction of suitable and site-improving green infrastructure and hydrological networks.

Prisoners | Staff | Visitors | Residents | Ecology

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APPENDIX

Plagiarism Declaration

1. I know that plagiarism means taking and using the ideas, writings, works or inventions of another as if they were my own. I know that plagiarism not only includes verbatim copying, but also the extensive use of another person's ideas without proper acknowledgement (which includes the proper use of quotation marks). I know that plagiarism covers this sort of use of material found in textual sources and from the internet.

2. I acknowledge and understand that plagiarism is wrong.

3. I understand that my research must be accurately referenced. I have followed the rules and conventions concerning referencing, citation, and the use of quotations as set out in the Departmental Guide.

4. This assignment is my own work, or my group's own unique assignment. I acknowledge that copying someone else's assignment, or part of it, is wrong, and that submitting identical work to others constitutes a form of plagiarism.

5 I have not allowed, nor will I in Future allow, anyone to copy my work with the intention of passing it off as their own work.

Name: Liz Pullukattu

Student Number: PLLLLIZ001

Date: 13 December 2017

Signed:

Signed by candidate

APPLICATION FORM

Please Note:

Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: <http://www.ebe.uct.ac.za/usr/ebe/research/ethics.pdf>

APPLICANT'S DETAILS		
Name of principal researcher, student or external applicant	LIZ PULLUKATTU	
Department	ARCHITECTURE, PLANNING & GEOMATICS	
Preferred email address of applicant:	lizpullukattu@gmail.com	
If a Student	Your Degree: e.g., MSc, PhD, etc.,	MASTER OF LANDSCAPE ARCHITECTURE
	Name of Supervisor (if supervised):	DAVID GIBBS
If this is a research contract, indicate the source of funding/sponsorship	Click here to enter text.	
Project Title	LANDSCAPES FOR PRISONS	

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

SIGNED BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	LIZ PULLUKATTU	<input type="text" value="Signed by candidate"/>	23 Aug 2017

APPLICATION APPROVED BY	Full name	Signature	Date
Supervisor (where applicable)	DAVID GIBBS CLINTON HINDES	<input type="text" value="Signed by candidate"/>	23 Aug 2017
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section 1; and for all Undergraduate research (Including Honours).	TOMA BERLANDA	<input type="text" value="Signed by candidate"/>	Click here to enter a date.
Chair : Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the above questions.	Click here to enter text.		Click here to enter a date.

Reference List

[Lindemuth, 2007]: Lindemuth, Amy L. 2007. *Designing Therapeutic Environments for Inmates and Prison Staff in the United States: Precedents and Contemporary Applications*. *Journal of Mediterranean Ecology*. Vol. 8, 2007: 87-97

[Moore, 1981]: Moore, Ernest O. 1981. *A Prison Environment's Effect on Health Care Service Demands*. *Environmental Systems* 11:17-34.

[Souter Brown, 2015]: Souter-Brown, Gayle. 2015. *Landscape and Urban Design for Health and Well-being: Using healing, sensory and therapeutic gardens*. Routledge. New York, NY.

[Spafford, 1991]: Spafford, Anne M. 1991. *The Prison Landscape and the Captive Audience: Is Nature Necessity or Amenity?*, Landscape Architecture, University of Illinois, Urbana-Champaign.

[West, 1986]: West, Marcia J. 1986. *Landscape Views and Stress Response in the Prison Environment*, Landscape Architecture, University of Washington, Seattle.

End