

MACARTHUR MEMORIAL PARK

LANDSCAPE DESIGN RESPONSE

Florence Jaquet
Landscape Architect



ACKNOWLEDGEMENTS

Prepared for the Catholic Metropolitan Cemeteries Trust
for the purpose of a Development Application to the
Campbelltown City Council, by

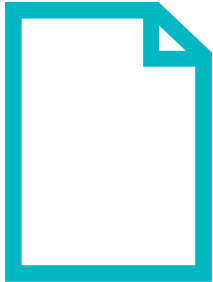
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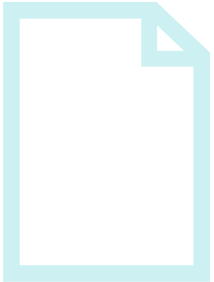
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Landscape Design Response 12.08.2017

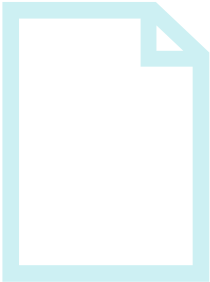
The Landscape Design Response is the 1st of 3 reports:



LANDSCAPE
DESIGN RESPONSE



PUBLIC ART
STRATEGY



INTERPRETATION
STRATEGY

We acknowledge the consultant team without whom we
could not have developed our vision:

- Acoustic Studios
- Architectural Projects
- Artefacts
- Botanica
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1. VISION

1.1 SUMMARY

THE PROJECT

The Catholic Cemeteries Trust has purchased this site with the view to provide a unique landscape cemetery for the whole community in Sydney's West. The site is approximately 113 hectares in size, situated between Camden Valley Way and the Hume Highway, characterised by undulating grassed hills and pockets of forested areas. It sits within the Scenic Hills and surrounds the historical Varroville House.

Our aim has been to look at the project through an analytical lens, to better inform the concept outlined on the following pages. The concept is based on the belief that a cemetery can be a park, a sanctuary, a sculpture park and open space.

The result is a unique cemetery, one which respects the land onto which it is built, the burial practices of its time and the aspirations of the public. This cemetery design is unlike anything else currently offered in Australia.

THE LANDSCAPE DESIGN RESPONSE

Building upon a rigorous analysis process the Landscape Design Response:

- Firstly, recaps the analytical process, as it is a fundamental building block in the creation of the cemetery's design.
- Secondly, explores the potential narratives/stories to be told on site, and how these ideas can be interpreted and woven into the overall design of the park, in alignment with the aims and vision of the Masterplan.



1. VISION

1.2 INTENT

THE VISION

The Vision for the site is:

- A distinctive landscaped cemetery, the best of its kind, the pride of the industry
- A Sculpture Park, offering opportunities for local and Australian artists
- A respectful space and scenic route, open to all,
- A cemetery which respects and safe keeps the important colonial and non-colonial landscape.
- An arboretum for future preservation and education of generations to come.
- A concept which respects the Land, its landform and ecology by carefully laying roads and any built environment and limiting their “footprint” (for example minimum width, using boardwalks, avoiding existing significant trees...)
- Concealed, private and low laying burial spaces to minimise visual impact.
- Much needed burial space for the area whilst offering choice, at affordable prices, in varied settings, for a multi-denominational community.

THE AIMS

- Minimise the impact on existing environment, especially the topography and the Cumberland Plains Woodland, to protect them for future generations.
- Protect the Colonial landscape qualities
- Provide an environmentally sensitive development
- Achieve Best Management Practices in all aspects of cemetery provision, including Stormwater Management and Ecologically Sustainable Developments.
- Provide an exceptional open space for the community, for perpetuity.
- Provide a quality burial ground for the whole community



2. SITE ANALYSIS

2.1 INTRODUCTION

THE SITE

A number of constraints exist on site, some relating to topography and ecology (to name just a couple) but also relating to the rich history which preceded us on the site.

The designer's challenge is to turn these constraints into opportunities whilst respecting all applicable legislative requirements from all levels of Government.

Furthermore, the operational requirements of a cemetery add another layer of complexity. When combined with the client's aspirations for a unique contemporary cemetery, the challenge is sizeable.

For these reasons it was imperative during the analytical period which preceded this design response & concept to address the issues in a systematic and rigorous fashion.

This produced a concept which uniquely responds to this specific site.

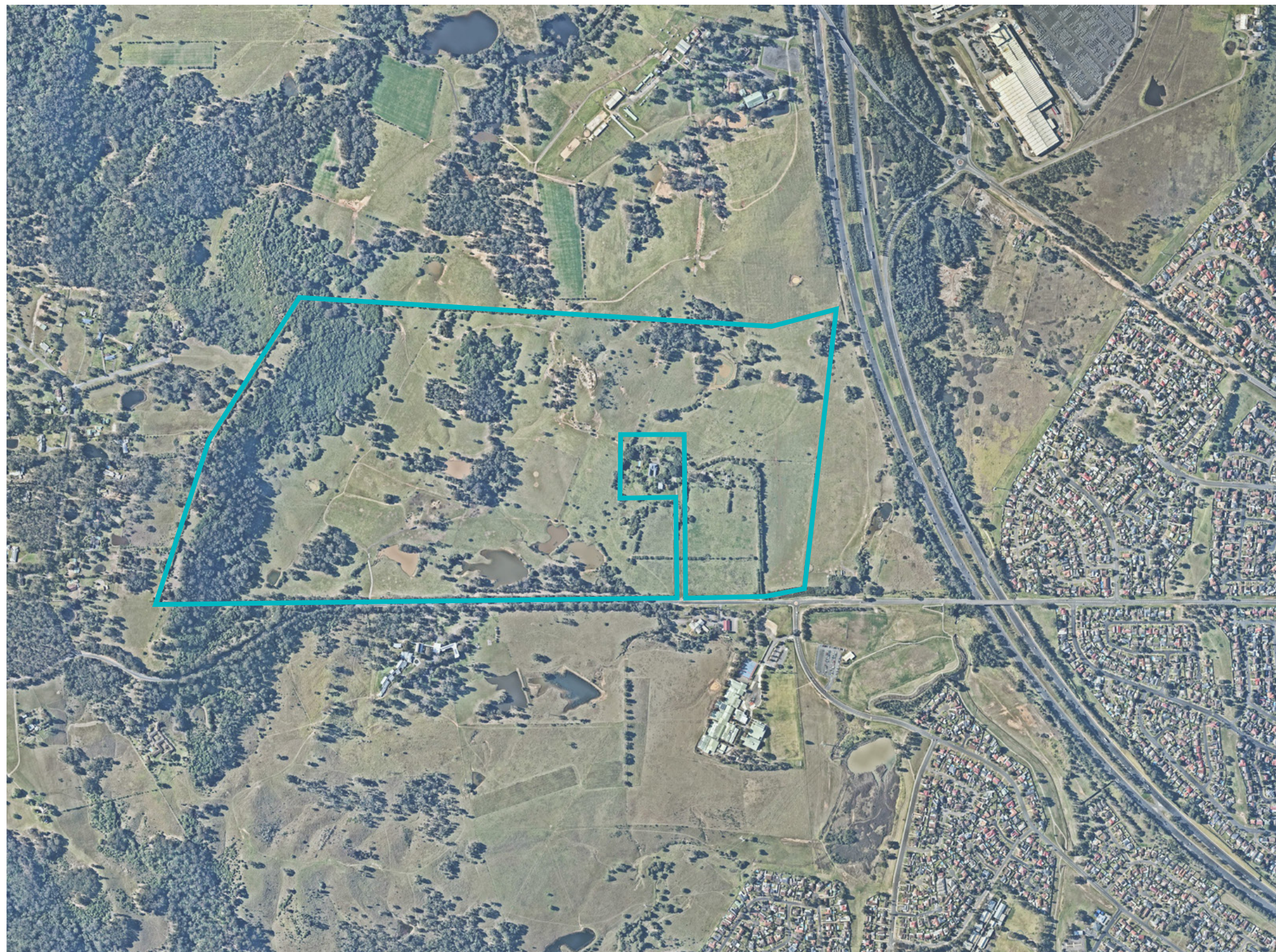


Figure 1. Site aerial

2. SITE ANALYSIS

2.2 SUMMARY

2.2.1 BACKGROUND

A number of specialists reports informed our concept. This non-exhaustive list below provides a summary of the main issues.

2.2.1 CONTEXT

The site is approximately 113 Ha and lies north of the Hume Highway and East of St Andrews road, directly opposite Mt Carmel Retreat Centre and Secondary School.



Figure 2. URBIS: Site Context Map



Figure 2. Dimensions Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.2 PLANNING CONTROLS

The site is within the zone described as “Development on Steep Land (Scenic Hills), specifically the “Escarpment Preservation Area”.

The Campbelltown LEP 2015 allows for cemetery use on the site.

Lot 1 and part of Lot 22 have an additional “no Built” overlay.

A 10 metre wide “burial free” buffer zone has been assumed along all boundaries.

Refer to Planning report by Urbis for more details on planning controls.

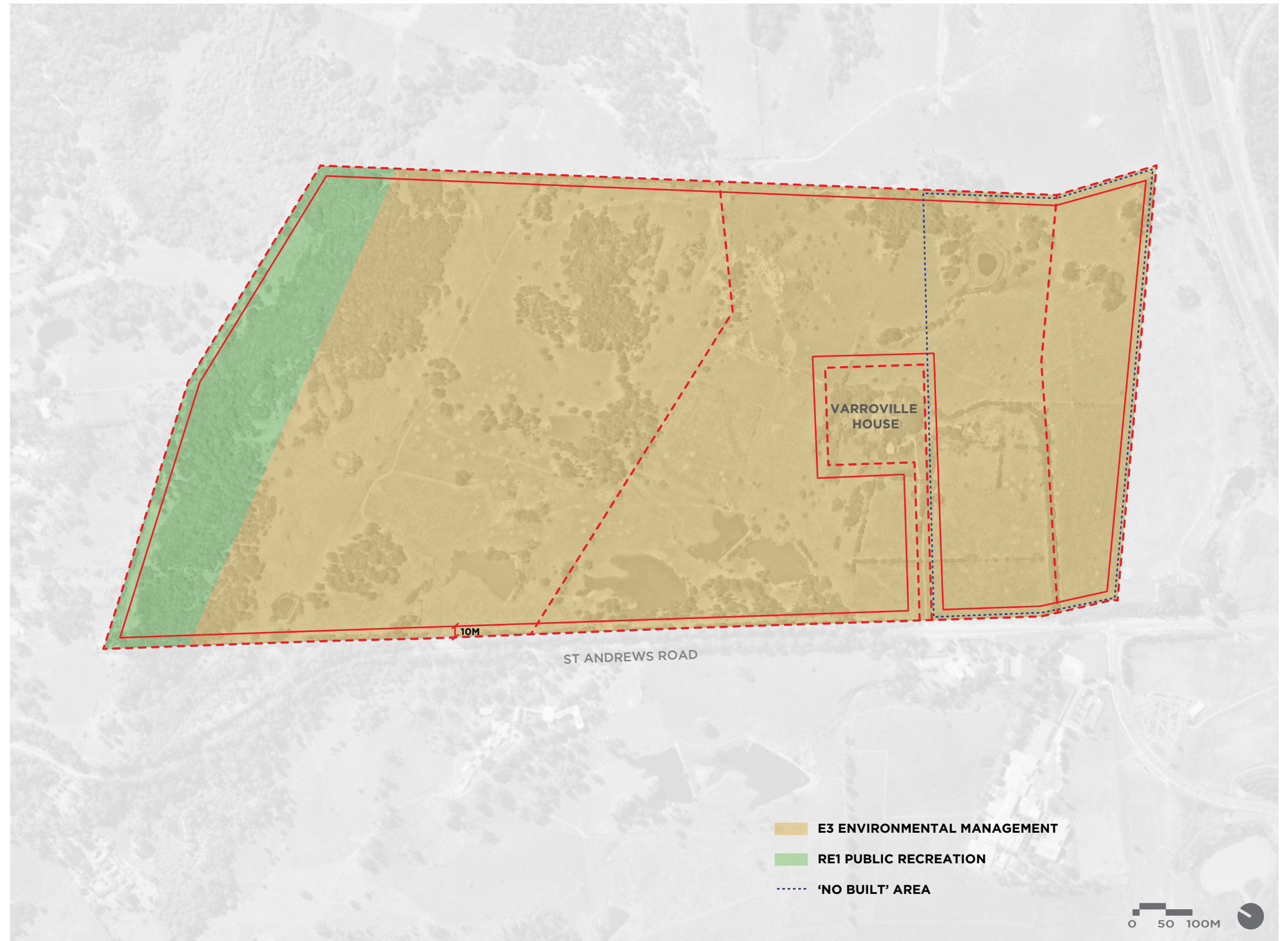


Figure 3. Planning Controls Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.3 GEOLOGY

The site falls within a geological area known as “Bringelly Shale”, consisting of weathered shale over a silty clay base. Steep slope have the potential to be unstable where steeper than 1:4.

The two main soil landscapes are Blacktown and Luddenham. They both relate strongly to native vegetation characteristics and distribution.

Luddenham is an erosional soil type, typically on ridge tops, It is a loamy sand/clay moderately reactive.

Blacktown is a residual soil type, typically on valley sides, It is a loamy topsoil to yellow clay, with low soil fertility and susceptible to seasonal water logging, sometimes saline.

A groundwater assessment was commissioned. Investigations failed to find any groundwater on site. Refer geoscientific investigations.

There is an expectation and some site evidence of colluvium formations at the base of the escarpment. Burials have been kept out of these suspected zones.

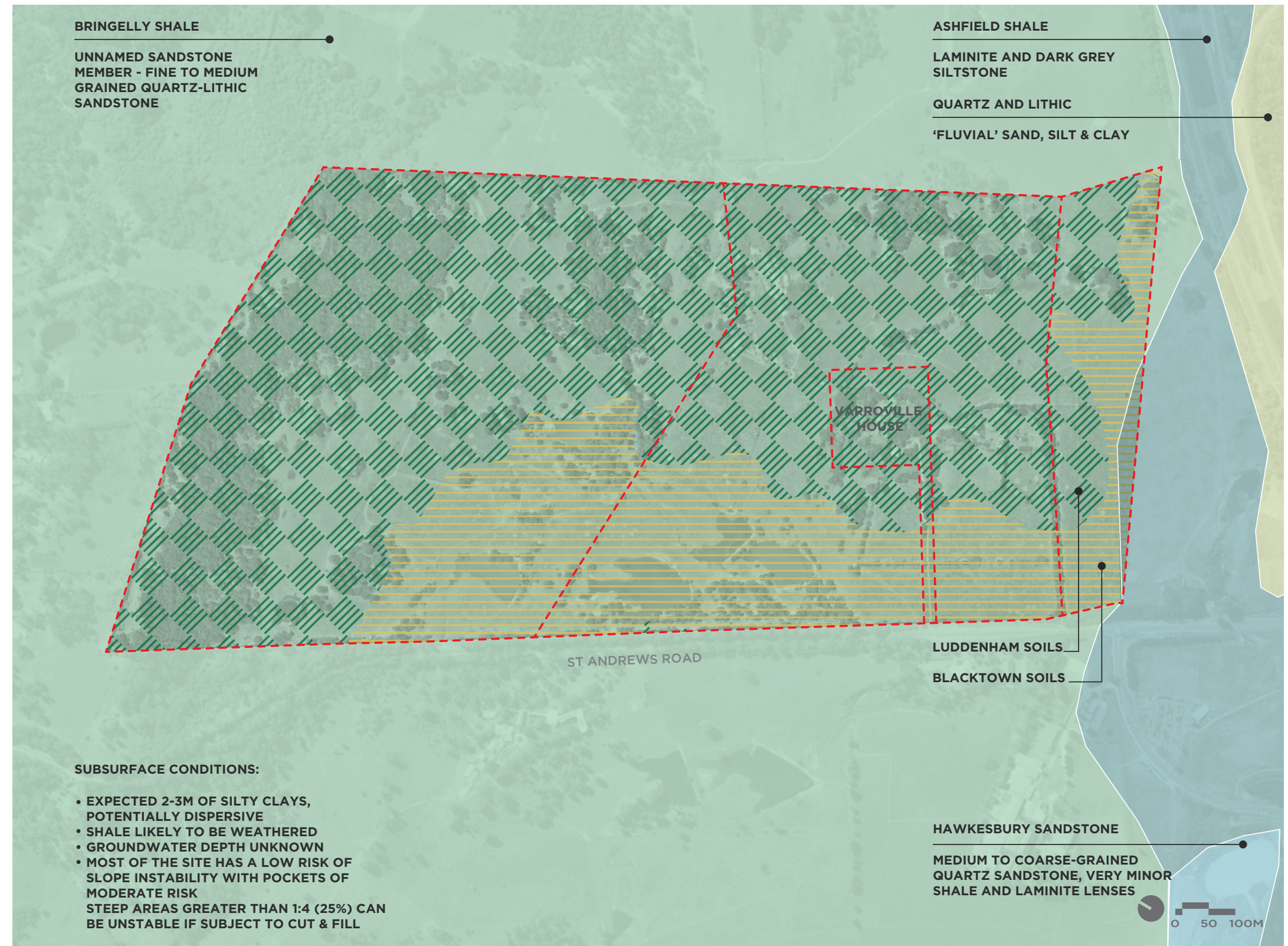


Figure 4. Geology Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.4 MICROCLIMATE & TOPOGRAPHY

The topography of the site influences the microclimates on site with warmer northern and western slopes and cooler ones facing south.

Generally the top half of the site is more sheltered due to its natural amphitheatre shape, except in winter when exposed to south-westerly winds.

Hotter summer winds mostly affect the lower slopes below Varroville House.

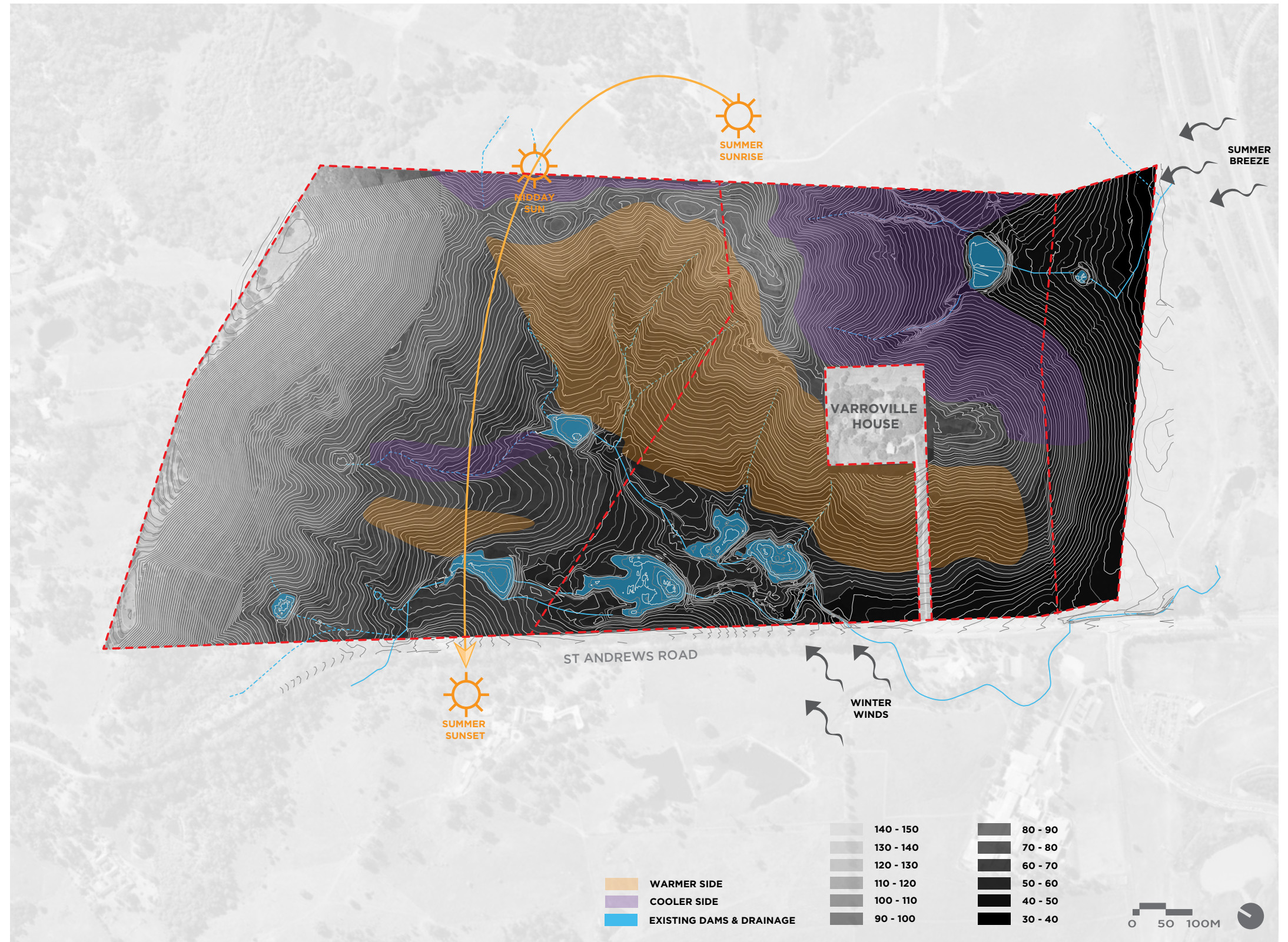


Figure 5. Microclimate & Topography Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.5 VIEWS

Significant views from key viewpoints outside the site (shown in orange) have been carefully assessed prior to the JRPP decision. These views are the subject of a separate analysis report by Dr R. Lamb & a recent re-rendering exercise.

A number of 'historically significant' views to Macquarie Fields, Denham Court & Robin Hood Farm (shown in dark blue) were identified in the Bitton & Morris' 2000 study of colonial properties of the Cumberland Plain. It is acknowledged that some of these vistas are now partially or totally obscured.

We have identified a number of key vantage points (shown in light blue) within the site where long scenic views are on offer, onto the Sydney CBD, the surrounding landscape & neighbouring hilltops- these should be retained & enhanced.

We also recognise that Varroville Homestead has enjoyed, over the years, a number of views into the site. Although it is unwarranted to 'freeze them in time,' the pastoral character should be retained and views onto structures mitigated (shown in pink).

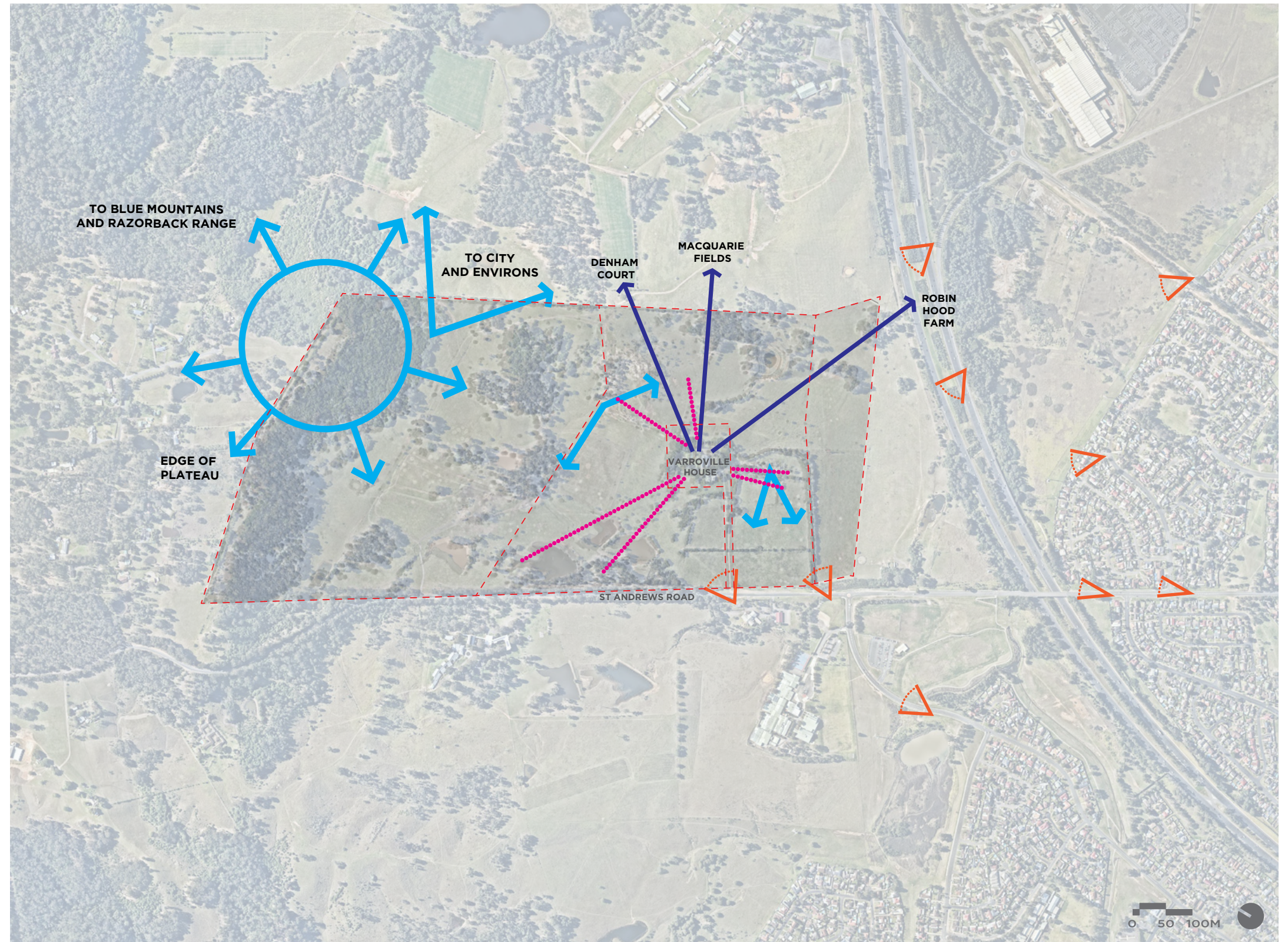


Figure 6. Views Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.6 LANDSCAPE CHARACTER

The site is characterised by undulating grassed hills and pockets of forested areas with panoramic views. A number of farm dams adorn the site (10 in total, of various sizes).

The site encompasses the Bunbury Curran Hill top. From this local high point, the land drops steeply to a valley along the western boundary whilst the eastern boundary offers a lower ridge protecting it from the eastern views. This lower ridge continues towards Varroville House (which is not part of the property), in effect separating the site into two distinct “precincts” with different exposure and outlook.

The site is characterised by undulating grassed hills and pockets of forested areas. It enjoys panoramic views onto the Blue Mountains, Sydney CBD and the Campbelltown valley below.

The site has been used for grazing and agistment for a number of years, leading to some degradation of the native vegetation on site and introduction of weeds throughout.

It is part of an area known as the Scenic Hills which offers complex topography, rich views with depth of field, contrasting vegetation in creeks and in ridge tops together with colonial cultural landscapes of Bunya Pines and other introduced species of large trees typical of the era.



Figure 7. Site Photos

2. SITE ANALYSIS

2.2 SUMMARY

2.2.7 STREETSCAPE CHARACTER

We undertook a record of existing streetscape along St Andrews Rd and an analysis of fencing styles in the vicinity of the site.

The landscape character is generally rural with informal planting. It is more built up in the area of the school and Catholic Church with steel fencing and close driveways.

The vast majority of the planting occurring along St Andrews road consists of native (probably self-seeded) vegetation within the public road reserve. Additional, yet similar, boundary vegetation exists in some private properties contributing to the “green tunnel” effect.



Figure 8. Green Tunnel Effect



2. SITE ANALYSIS

2.2 SUMMARY

2.2.8 FENCING

Fencing varies greatly from the visually obtrusive to the least intrusive:

- 2m high chainmesh with barbed wire top (195 St Andrews Rd)
- Timber rural fence (Mt Carmel)
- Metal Arc fencing (school & church)
- Low bollards with cable (Council Reserve)

It should also be noted that cemeteries are not necessarily fenced off with high security fencing. To the contrary, fencing is generally low and aimed at restricting car access only. The height of fencing is entirely at the discretion of Management and based on safety perceptions or adverse experiences.



Figure 9. Local Fencing examples

2. SITE ANALYSIS

2.2 SUMMARY

2.2.9 ECOLOGY

The site is host to the Moist Shale Woodland (MSW) and Cumberland Plain Woodland (CPW) vegetation communities, both of which are threatened planting communities in need of protection. The habitat they provide for the threatened Microbat and Land Snail species also needs protecting.

A full survey of trees on site has been conducted. A number of habitat trees have been identified for retention-

Refer to Travers' Bushfire & Ecology P/L- Ecological Constraints Assessment (2015) for details.

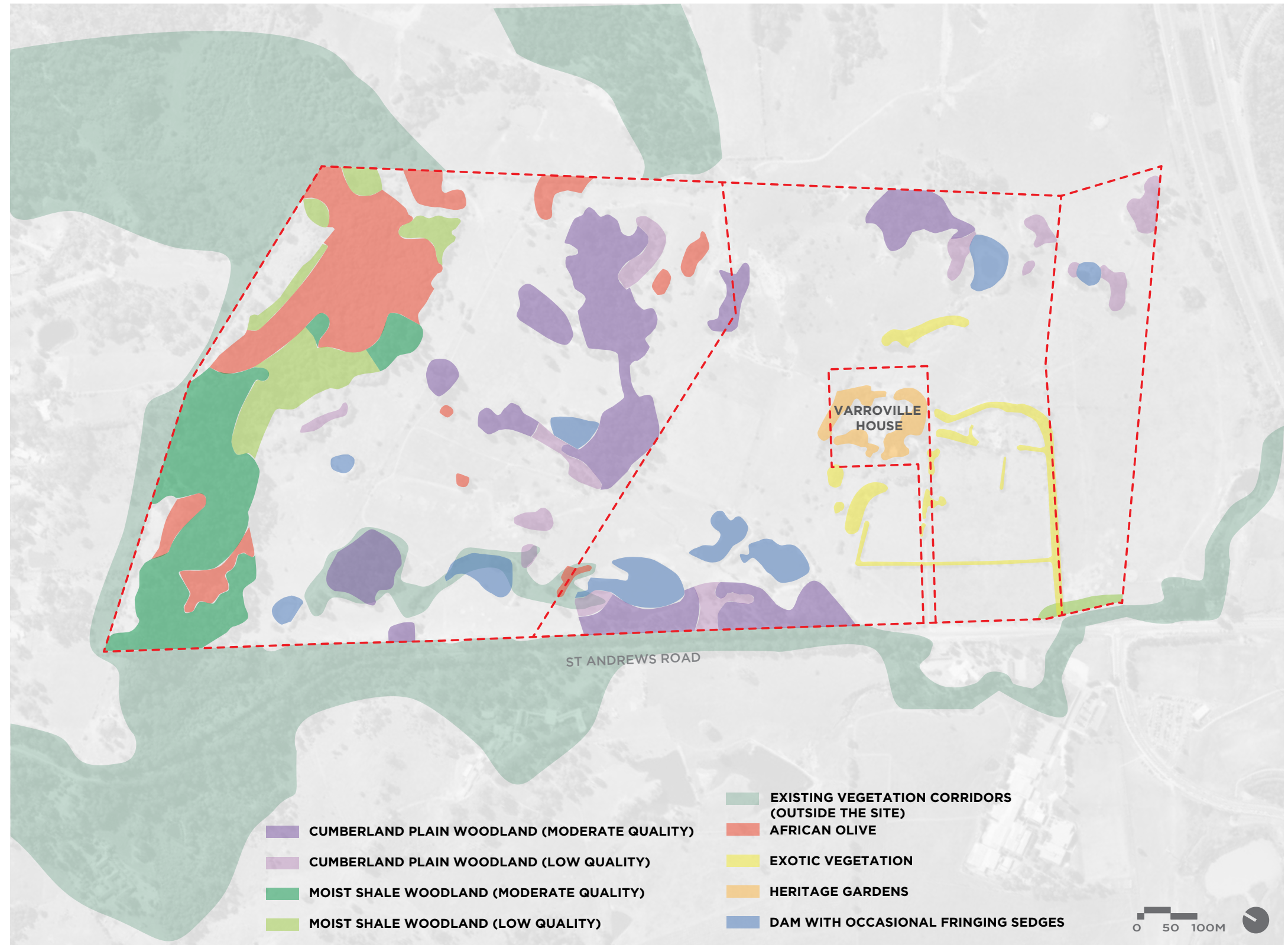


Figure 10. Ecology Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.10 WATERCOURSES

A number of watercourses cut through the site. They fall into 2 categories:

- validated watercourses requiring riparian corridors (as per Office of Water requirements)
- drainage lines (which can be modified)

Refer to Travers Bushfire & Ecology P/L- Watercourse Assessment (2015) for details.

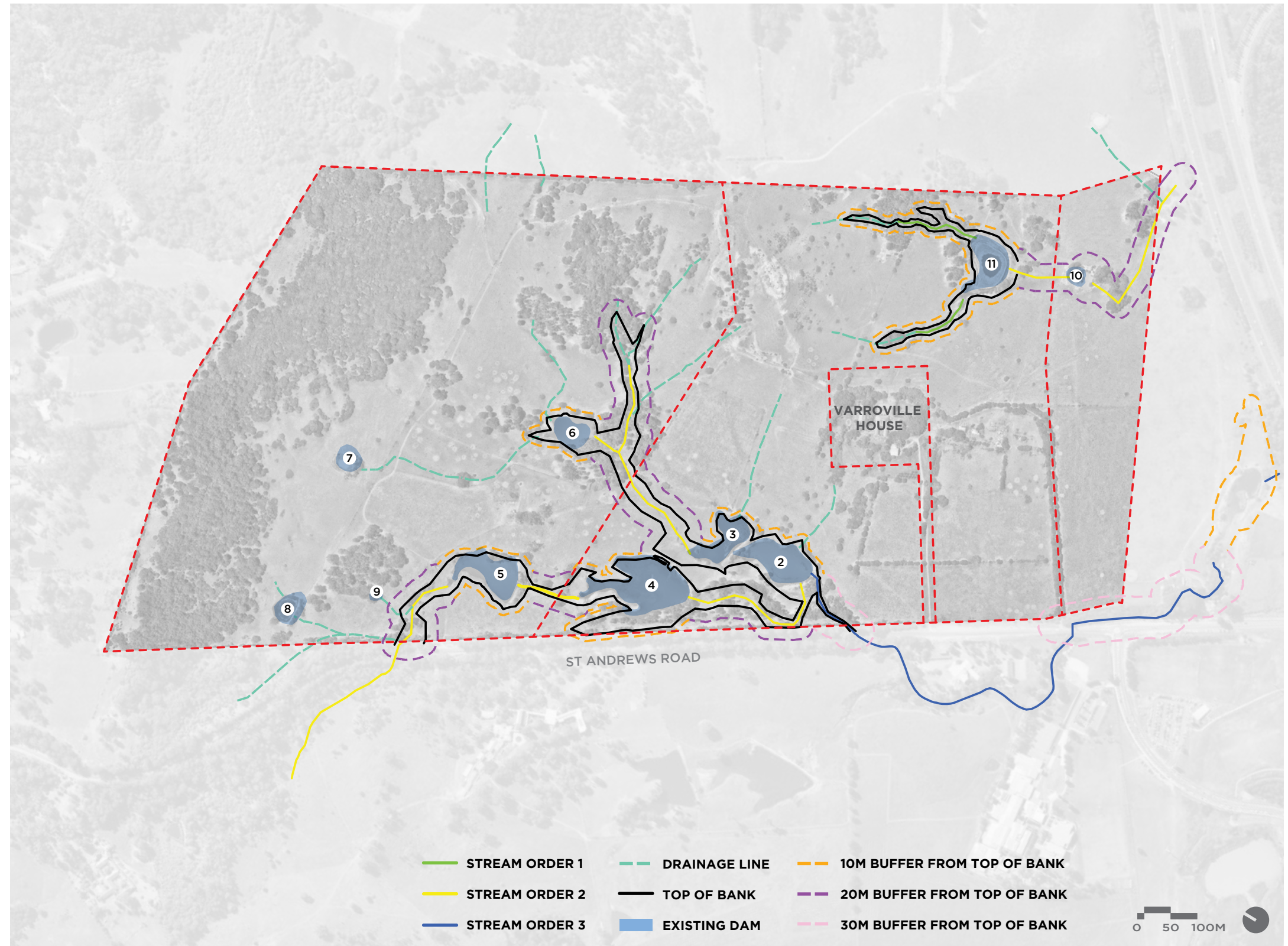


Figure 11. Watercourses Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.11 DAMS

There are ten (10) dams of varying size on site. All are used as water holes for the cows grazing on the site.

The CMP refers to Dams # 2, 4, 6, 10, 11 as “of moderate significance” as they may have been associated with Charles Sturt water management strategy for the site (subject to confirmation following archaeological investigations).

These dams should be retained for the purpose of water management and can be modified to bring them up to current safety standards.

CPW’s trees have established close to the dams’ edges and on dam walls. A report was commissioned to investigate the risks associated with any potential dam breach.

All trees growing on structural dam walls should be removed.

2.2.11 BUSHFIRE

The site lies within a Bushfire Prone area. This affects the number of exit points required on the site, the width of road, parking and planting within the Asset Protection Zones (APZ) around each building.

- Two-way carriageways are to be 6.5m wide minimum
- One-way carriageways are to be 3.5m
- Perimeter roads (behind Chapel) are to be 8m wide, with no parking on bushfire hazard side

Refer to Travers Bushfire & Ecology P/L- Bushfire Protection Assessment (2015) and subsequent report. Also refer to civil engineers report for DA 2017.

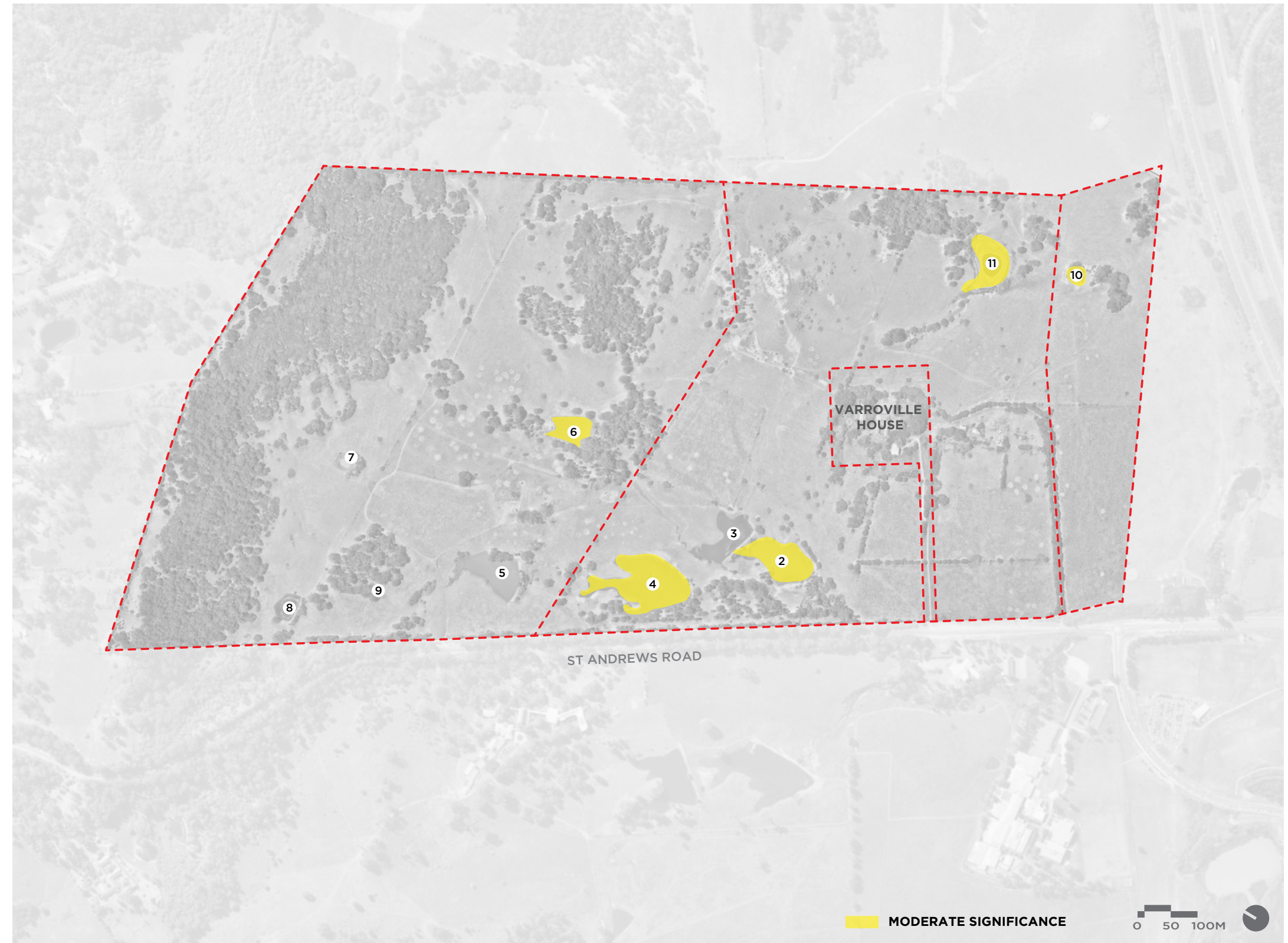


Figure 12. Dam Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.12 SERVICES

Refer to xxx report by Steensen Varming.

2.2.12 TRAFFIC AND NOISE

A Traffic Impact Assessment Report was commissioned in 2015 (refer to GTA Consultants- Transport Impact Assessment).

More detailed investigations were carried in 2017.

Refer to Acoustics report 2017 by

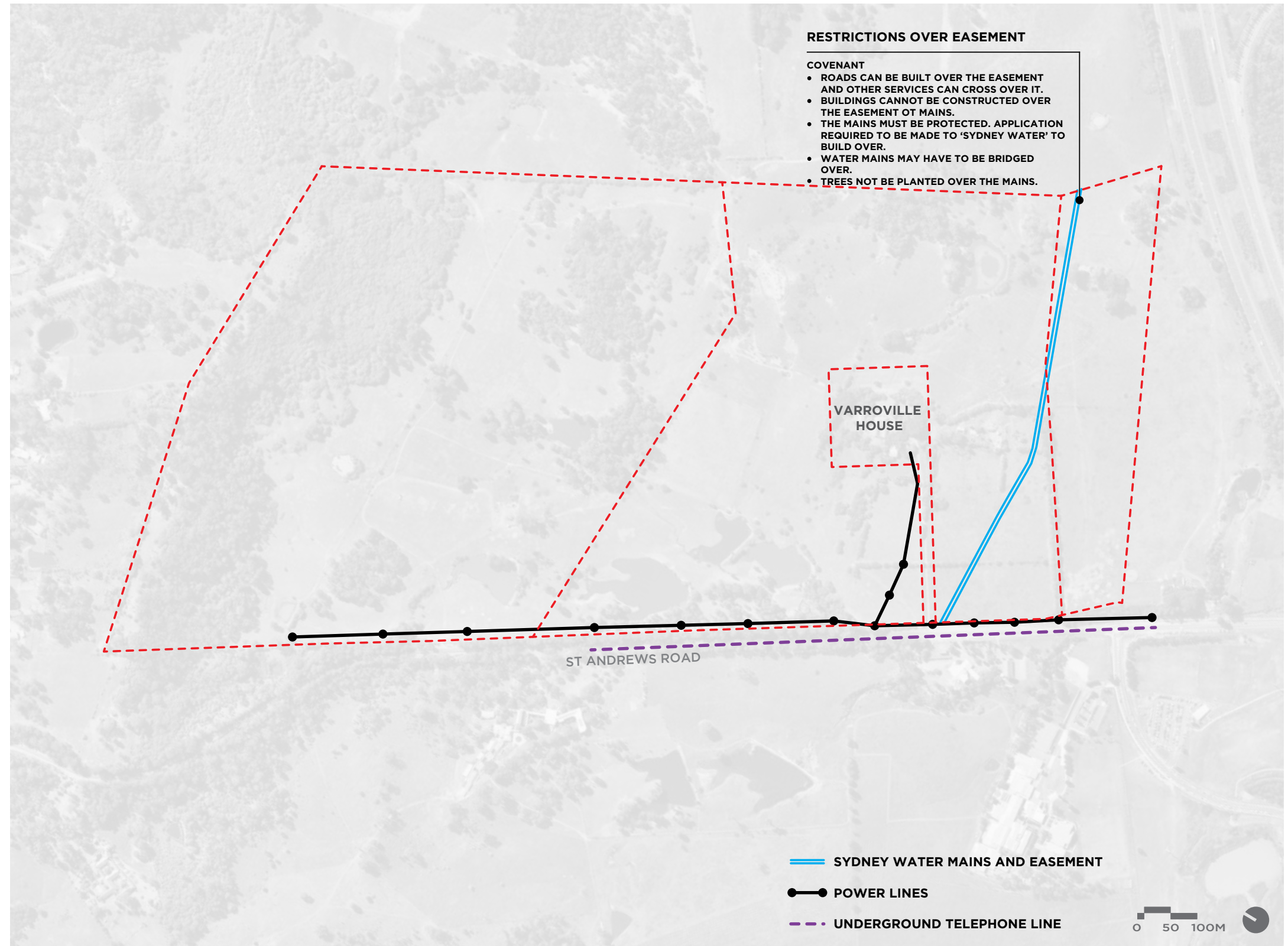


Figure 13. Services Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.13 CULTURAL HERITAGE

The European and Aboriginal Heritage were thoroughly researched and compiled into the Conservation Management Plan 2015 (by Urbis).

In turn, the CMP informed our design response, Interpretation and Public Art Strategies, ensuring that the historical significance of the site is captured in all aspects of the design.

Similarly, Aboriginal archaeological site investigations carried out in 2017 informed our proposals with site specific findings, ensuring that a minimisation of the impact of the proposal onto the Land.

Further archaeological excavations relating to the European Heritage are scheduled for the next few months and will inform the proposals in due course.

Refer to Conservation Management Plan Report by Urbis

Refer to Aboriginal Archaeological Assessment report by Artefacts

2.2.13 ABORIGINAL HERITAGE

“Prior to the settlement of the area by Europeans, the study area and the surrounds would have been covered by Cumberland Plain Woodland.

Aboriginal people were highly mobile hunter-gatherers utilising different landforms for travel and resource zones for food and shelter.

The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay. As a result the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts.

An overview of previous studies that artefacts scatters and isolated artefacts and the most common site types recorded. Sites are generally expected around creek lines and crest of hills.”

(extract from CMP-Urbis -2015, specifically Archaeological Survey Report -2015 Artefacts)

The areas of the site of “most to least” sensitivity are shown on Fig.14.

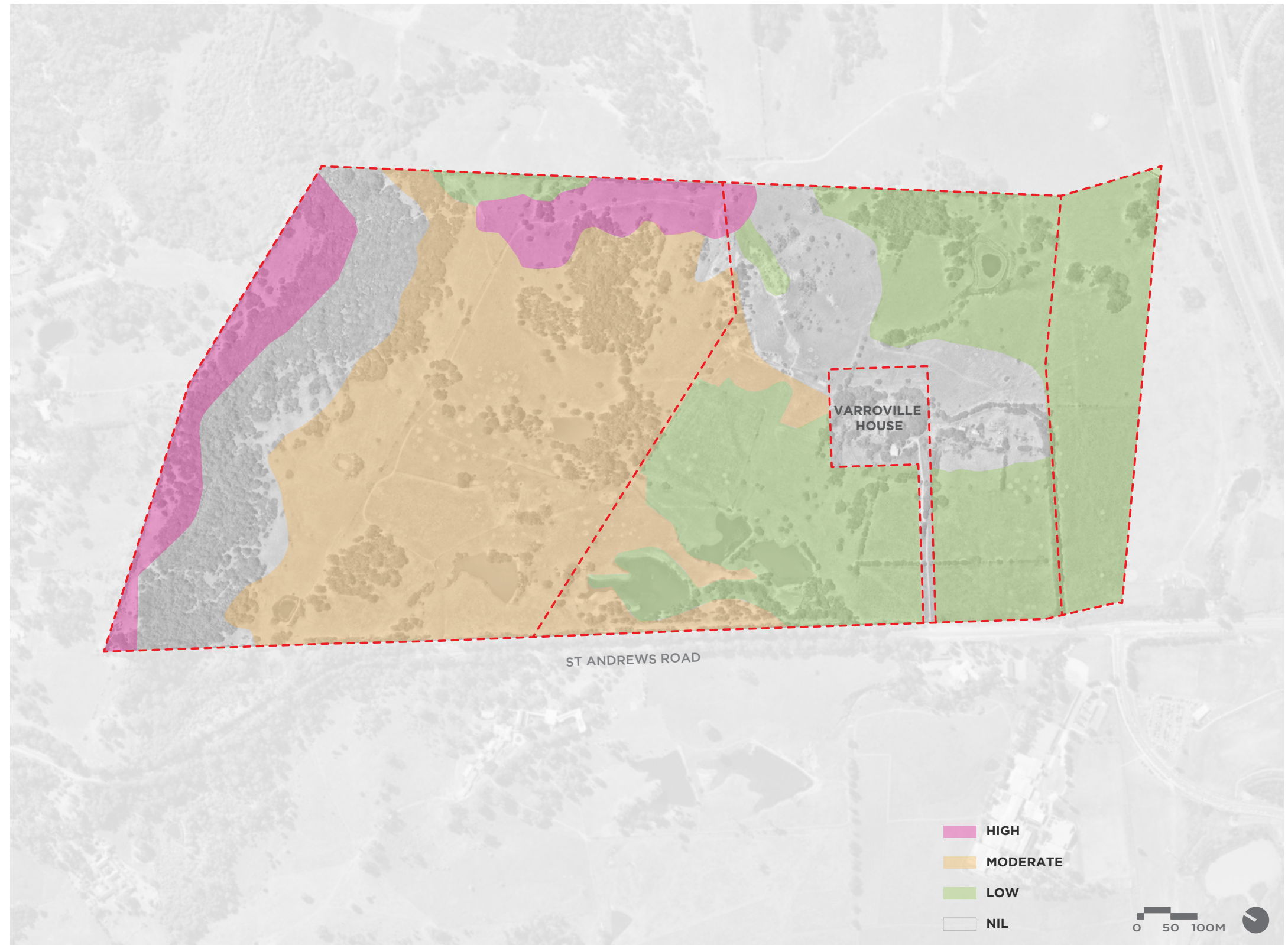


Figure 14. Aboriginal Heritage Map

2. SITE ANALYSIS

2.2 SUMMARY

2.2.14 EUROPEAN HERITAGE

“The site is of historic significance as a large remnant of the ‘Varroville’ estate established by Dr Robert Townson from 1812 and further developed by a succession of subsequent owners. The subject site includes substantial remnants of the 19th century farm complex and cultural landscape potentially associated with the phase of development of the first permanent Varroville homestead (1812- 1858) including outbuildings, as well as dams, remnant agricultural evidence including vineyard terracing (contoured trenches) and evidence of the early access road. Varroville and the estate have been continuously occupied since the award of the grant in 1810. As a founding and significant estate in the development of the region (from c.1810), the estate is significant for its role in the early settlement and development of the area as a farming district and was significant to agriculture and food production and horticultural development in early New South Wales. The former cottage and stables buildings are a good example of 19th century farm buildings and reflect the 19th century development of the farmstead.”

“The cultural landscape of the subject site is also of local heritage significance for its associative, aesthetic, social, and representative values and for its research potential”.

“Varroville and the estate have strong associations with several individuals and families important in the development of rural industries in the colony of NSW including agriculture, horticulture, viticulture and stock breeding. This includes Doctor Robert Townson, the original grantee for the estate and the colony’s most highly regarded academic when he arrived in 1807; explorer Charles Sturt, who is credited with the construction of the dams... The site is also significant for its relationship with Bunbury Curran Hill - a viewing point used by both Governor and Mrs Macquarie”.

(extract from CMP- 2105- Urbis)

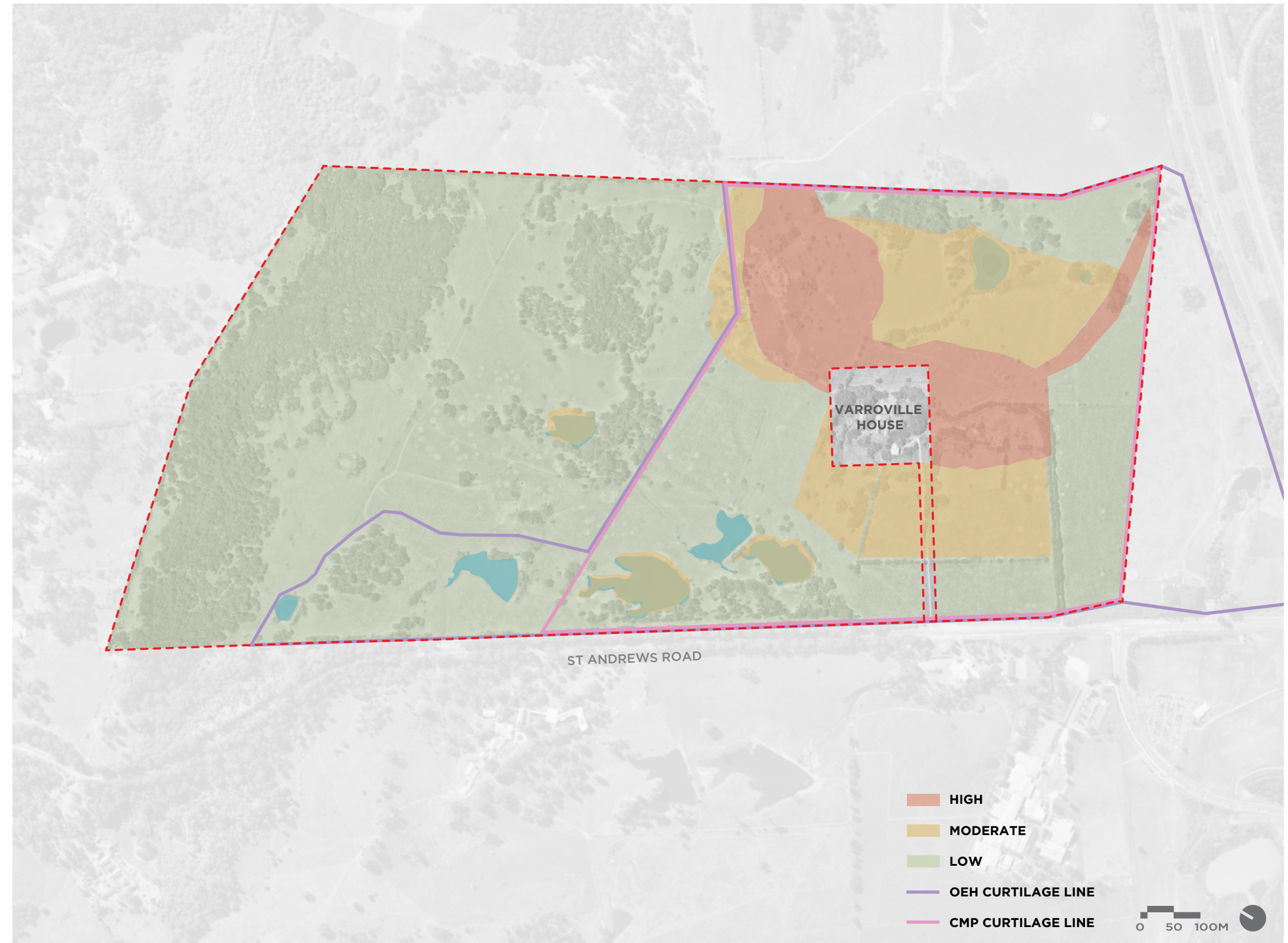


Figure 15. Services Map

3. TIMELINE

3.1 LINEAR

THE BACKGROUND

A cemetery is a record of social & cultural history. The land also bears records of passed events from the time of Gondwana Land to nowadays.

Both the land and cemeteries are testament of this “passing of time” and life’s cycle- thus providing us with a design narrative appropriate to the use of the site and its rich history.



3. TIMELINE

3.2 CYCLIC

THE BACKGROUND

Drawing on the Aboriginal Culture's deep respect for the environment and their harmonious management & measured impact on the land, our design narrative suggests that an environmentally responsible cemetery development needs to learn from the past custodians of the land and restore a cycle of harmony & respect on this significant site.

“

Aborigines have a deeply spiritual connection with the land, one forged on respect & harmony with nature- the land will return to a spiritual use where multiple faiths exist in harmony.

”

“

Life and death are one thread, the same line viewed from different sides.

”

“

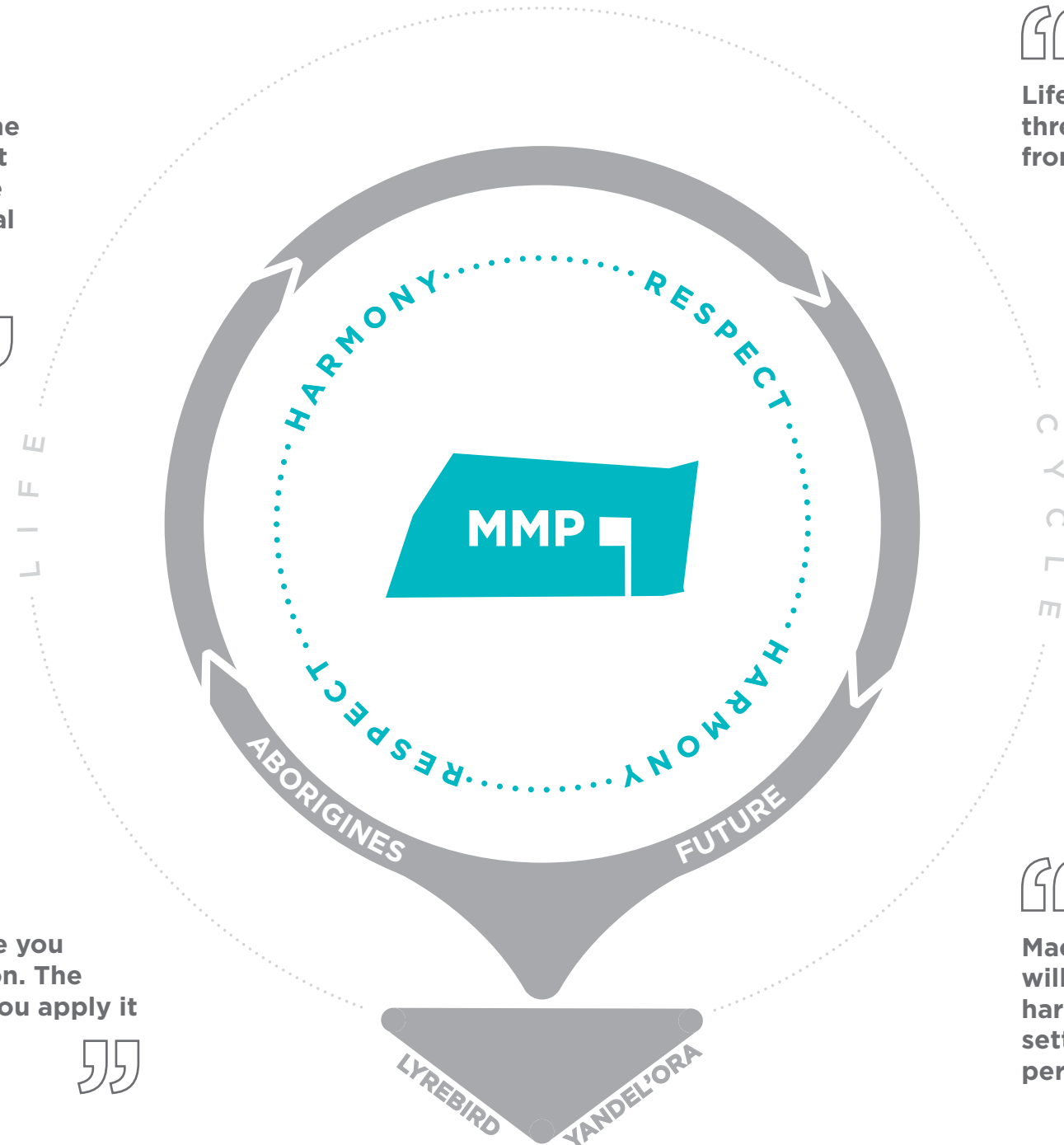
The past is where you learned the lesson. The future is where you apply it

”

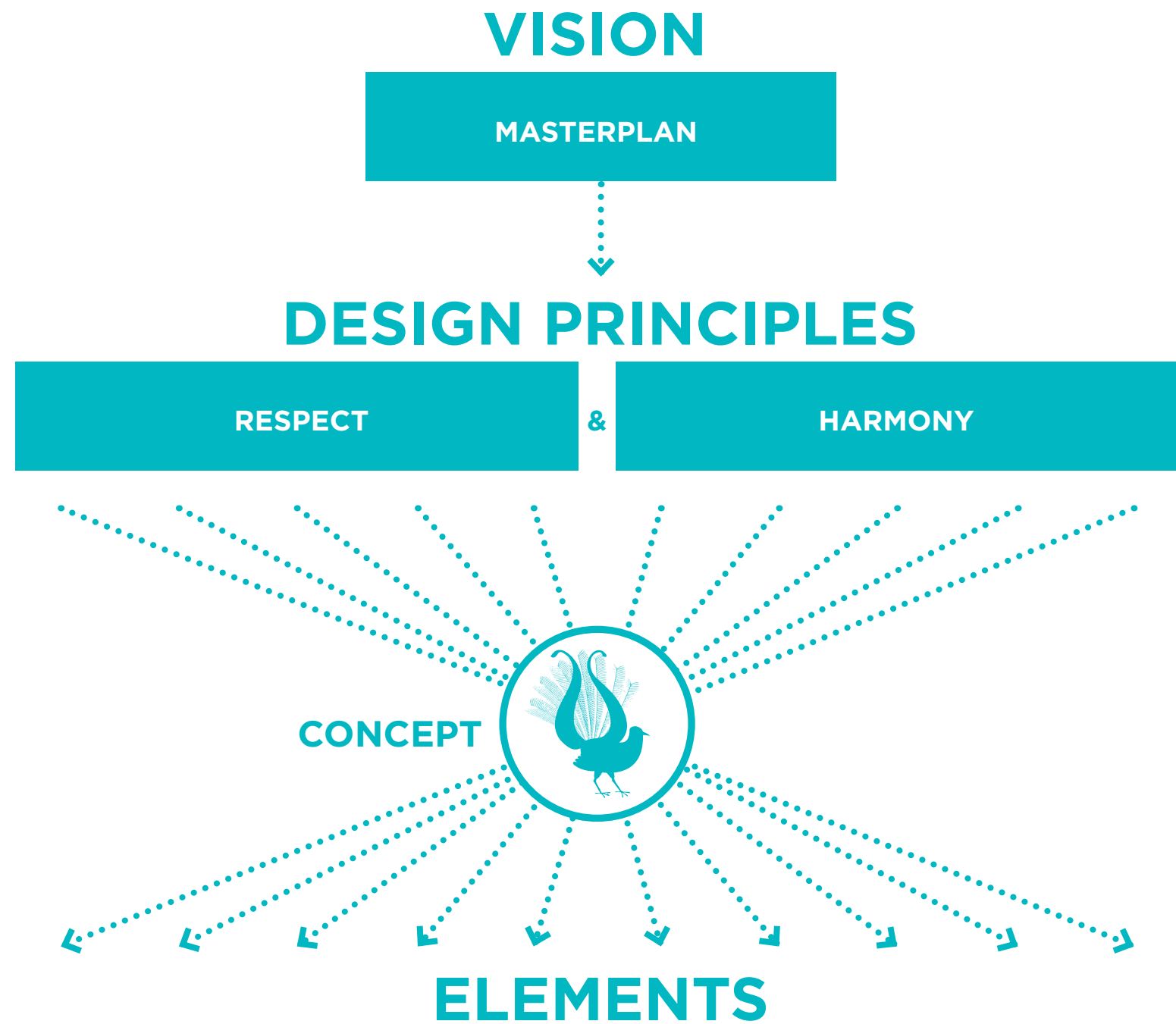
“

Macarthur Memorial Park will be a spiritual place set harmoniously in its natural setting for all to enjoy for perpetuity

”



HIERARCHY



GATES & FENCING, ROADS, PARKING STRATEGY, PEDESTRIAN NETWORK, LAWN BURIALS, NATURAL BURIALS, BURIAL ROOMS, SUB-ROOMS, ASH INTERMENTS, SCULPTURES & GATEWAYS, PLAY AREA, SHELTERS, LIVING CHAPEL, BIRD HIDE, MOIST SHALE WOODLAND, CUMBERLAND PLAIN WOODLAND, RIPARIAN ZONES & DAMS, WSUD, PLANTING PHILOSOPHY, FURNITURE, WATER STATION & SOIL DEPOTS

DESIGN OBJECTIVE

“To Create a unique, inspirational, multidenominational contemporary cemetery and public park”

DESIGN PRINCIPLES

The design principles of **Respect** and **Harmony** relate to the functional and spiritual aspects of Macarthur Memorial Park, through...

RESPECT

FUNCTIONAL ENDEAVOURS

Respect of the sites:

- Visual qualities
- Heritage
 - By conserving
 - By interpreting
- Ecology
 - Flora
 - Fauna
 - Waterways

Promote...

- Sustainable solutions-
 - Soil management
 - Water management
 - Use of material
 - Recycling
- Use best practices-
 - Cemetery design
 - Funeral & Bereavement practices

Benefits:

- Provides a long term essential cemetery facility
- Protects open land in perpetuity
- Enhances and protects fauna and flora
- Conserves sites heritage
- Provides permanent public open space

HARMONY

SPIRITUAL ENDEAVOURS

Provides for:

- Land and man in balance
- Multi-cultural & inter-faith harmony
- Quality of funeral and mourning process
- Integration with and interpretation of the site's-
 - Aboriginal heritage
 - European heritage
- Education in-
 - Cycle of life
 - Sites history
 - Sites natural history

Benefits:

- Place for...
 - Remembrance
 - Spiritual healing
 - Passive recreation
 - Park as living memorial

5. NARRATIVE

5.1 ABORIGINAL HISTORY

DESIGN NARRATIVE

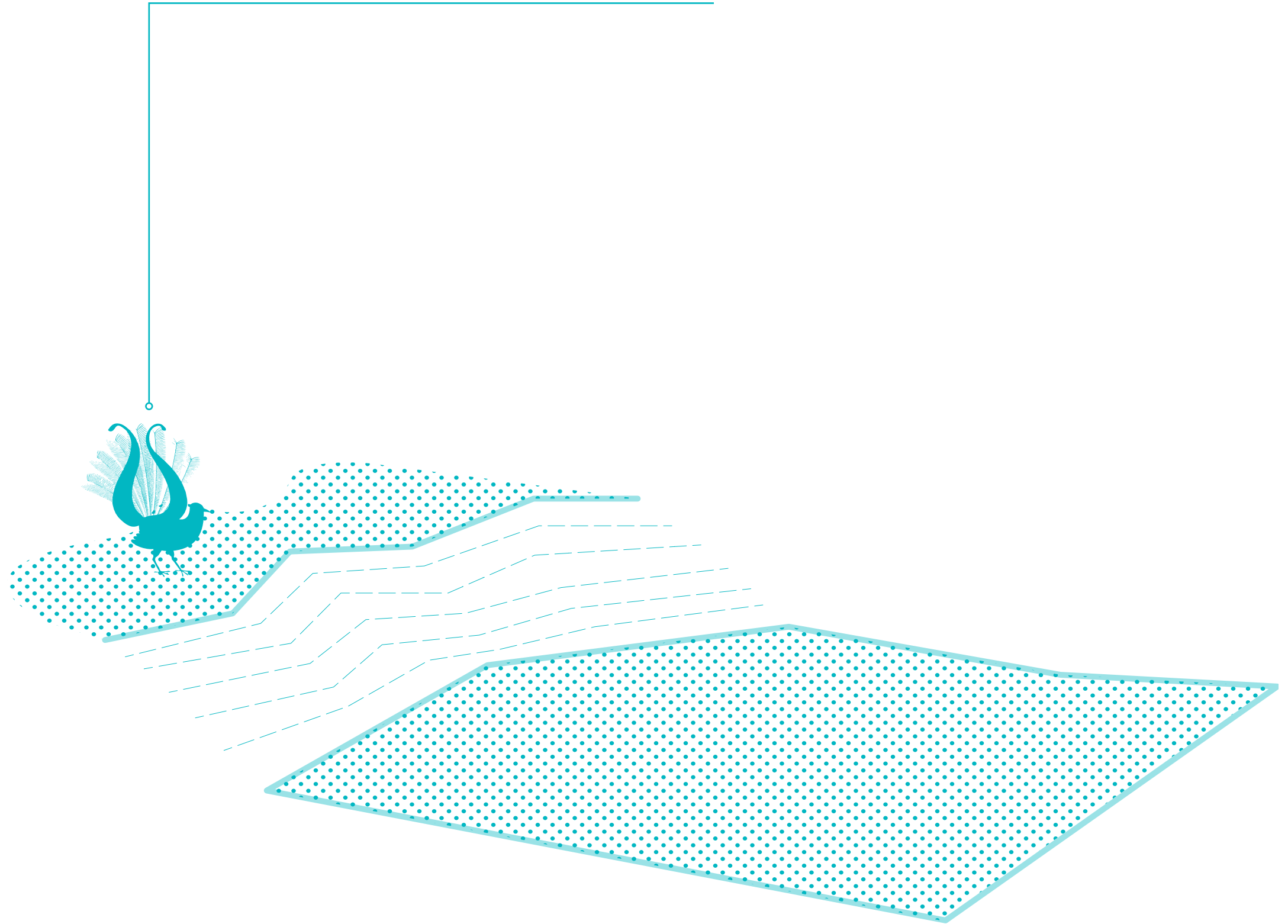
Macarthur Memorial Park is situated in the Macarthur region in which The Dharawal people continue to be acknowledged as the Traditional Custodians. Dharawal people cared for and inhabited land from Botany Bay to the Shoalhaven River and Nowra and inland to Camden. **A traditional totem of the area is recognised as the lyrebird.**

Dharawal people were able to move from area to area in safety and to maintain resources for many of thousands of years before colonisation. They moved between the areas now known as Campbelltown, Liverpool, Camden and Picton, and occasionally as far as Parramatta.

Natural resources supplied all their material needs. The land of the George's River and its tributaries provided water, food and shelter. The streams and swamplands offered a variety of food. The forest lands sheltered possums, lizards, kangaroos and wallabies and there were roots, berries and seeds to gather. Birds also provided meat and eggs.

In choosing this narrative, we respectfully acknowledge the aboriginal people of the region and pay our respects to Elders, past and present.

LYREBIRD/WIRITJIRIBIN : D'HARAWAL TOTEM



5. NARRATIVE

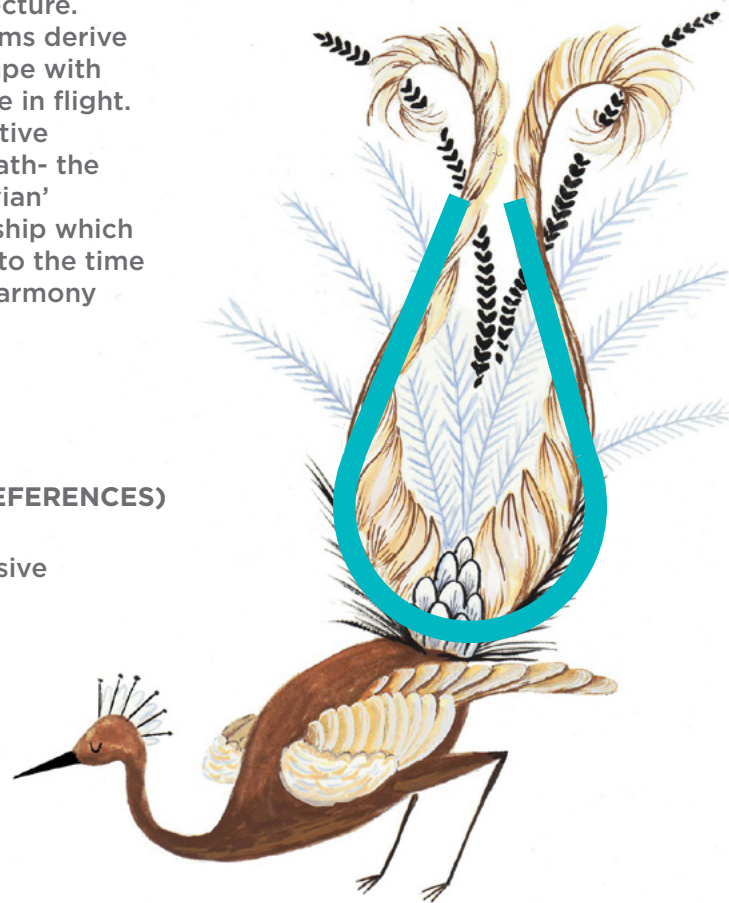
5.2 LYREBIRD (D'HARAWAL TOTEM)

FORM

Land and architecture. Architectural forms derive from the landscape with reference to dove in flight. Landscape narrative follows similar path- the landform and 'avian' lyrebird relationship which references back to the time of respect and harmony with the land.

LYREBIRD (LANDSCAPE REFERENCES)

- Inward focus
- Private/reclusive
- Enclosing
- Nurturing
- Light & dark



PHYSIOGNOMY

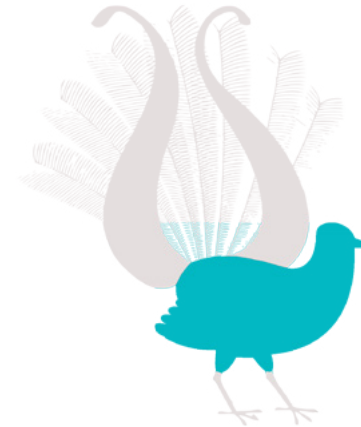


1. CALL

Refined vocal calls, mimicking sounds

METAPHOR:

Placemaking, atmosphere, sense of place, spirituality, blending cultures and surroundings

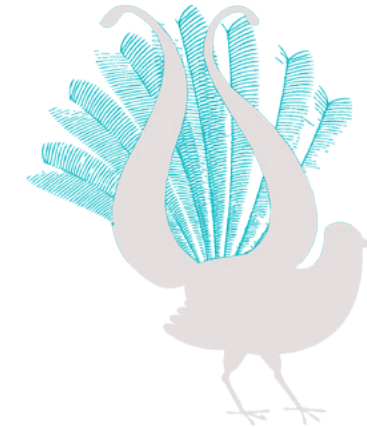


2. BODY

Brown & black feathers, earth colours, recessive

METAPHOR:

Woodlands, pastoral landscape, Scenic Hills



3. TAIL

Display, arching, caressing, feathery

METAPHOR:

Ceremony, architecture, roof forms, rhythm, patterns & materials, light & dark, sculptures, planting highlights



4. LYRE SHAPE

Mark making, choreography

METAPHOR:

Enveloping, enclosure, movement, ceremony, experience



5. NARRATIVE

5.3 DESIGN LANGUAGE IN LANDSCAPE

LANDSCAPE

The design language through the cemetery landscape is highly related to the lyrebird & the imagery, feel & shapes it conjures;

- **Mimicking:**
The proposed landscape is respectful of the sites character, vegetation & contours- it aims to blend in with & 'mimick' the sites important characteristics.
- **Recessive:**
For the same reasons stated above the use of predominantly recessive colours is an important requirement in the Scenic Hills. In using predominantly recessive colours & planting, the proposed landscape is allowed to blend in with its surroundings.
- **Curves:**
The shapes derived from the birds body & tail also become an important part of the landscape language giving its curvilinear paths & circular meeting places.

The tail's lyre shape is an inviting, protective, concave shape & is reflected in the burial room shapes, furniture designs and shelter.
- **Feathery display:**
One of the most beautiful features of the lyrebird is its distinctive tail. The light & shade effect and overlapping lines have been an inspiration for the various textures used within the landscape (eg. road thresholds, furniture design, planting philosophy).



**MIMICKING-
INSPIRATIONAL**



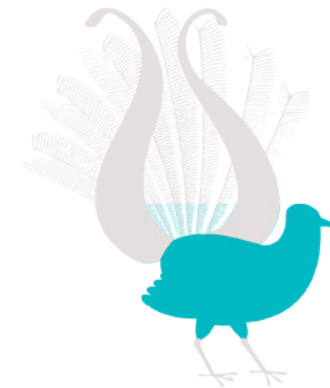
**ROADS/GRAVES
FOLLOWING CONTOURS**



ONE OF A KIND CEMETERY



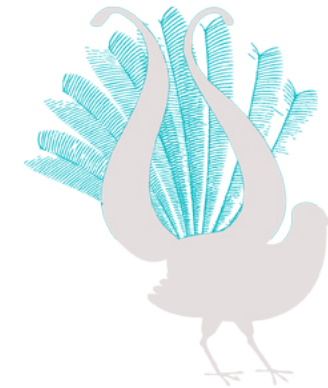
BLENDING CULTURES



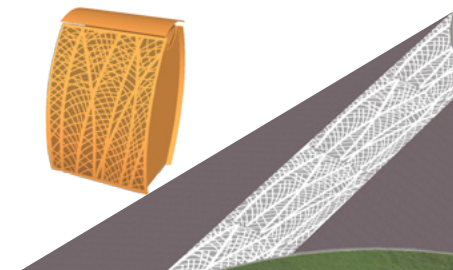
RECESSIVE COLOURS



**NATIVE PLANTING THAT
BLENDS IN WITH SURROUNDS**



DISPLAY



PATTERNS



SCULPTURE DISPLAYS



PLANTING HIGHLIGHTS



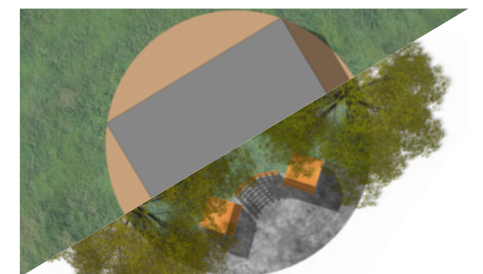
**CONCAVE/CURVY
SHAPES**



**PROTECTION/BURIAL
ROOMS**



FLOWING/CURVED PATHS



WATER STATIONS / SHELTERS

5. NARRATIVE

5.4 LINES

CREATION

Lines are not only man-made. They exist everywhere in nature. The lines of graves are a metaphor for lines found in many living things. They can also be site specific and attempt to align with the site contours & existing structures.

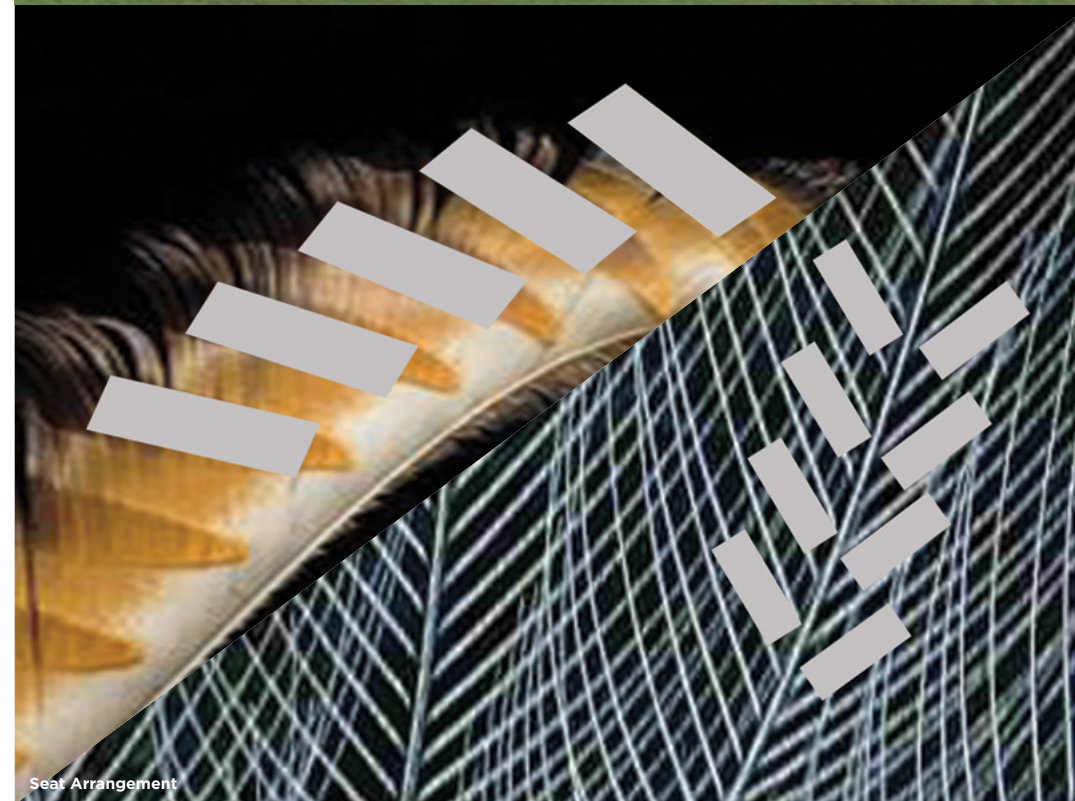
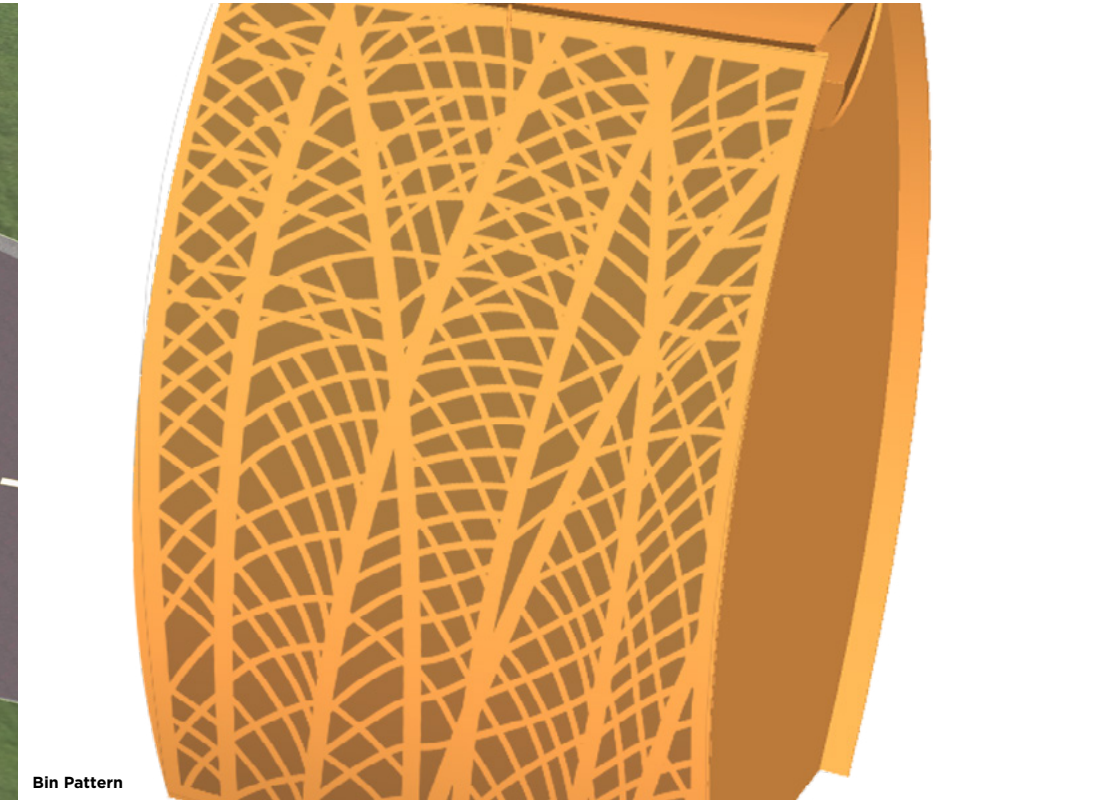
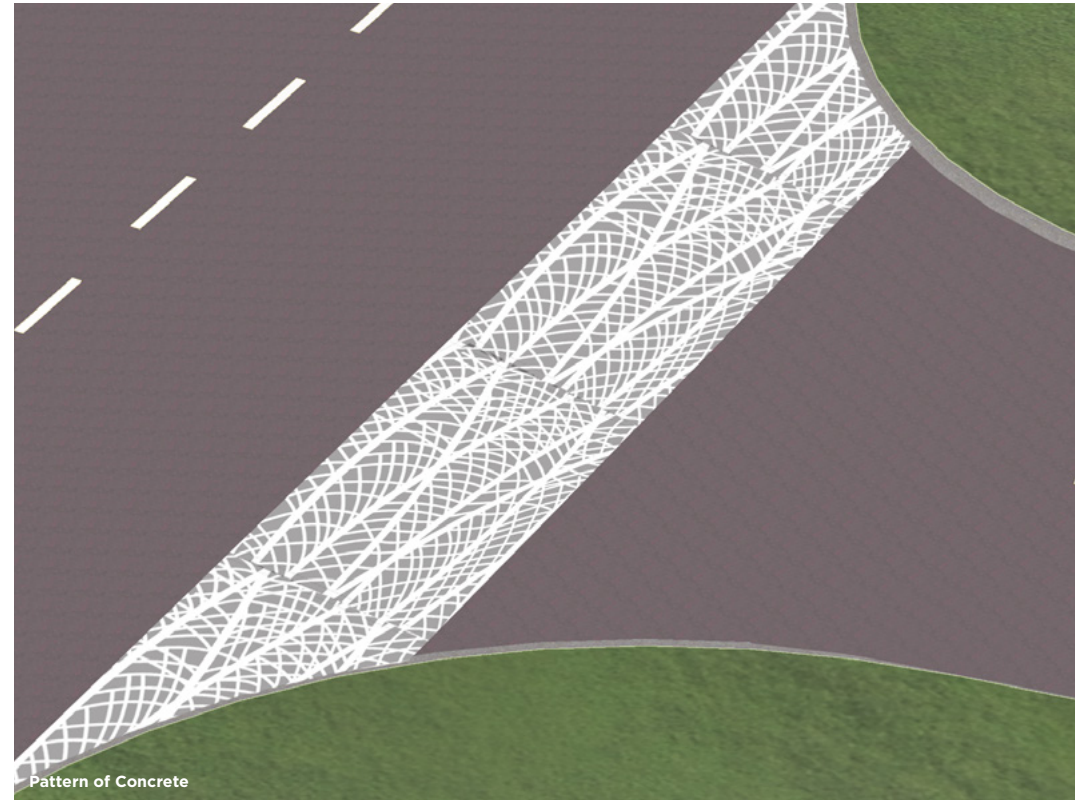


5. NARRATIVE

5.4 LINES

INSPIRATION

Our design is inspired from the lyrebird's majestic tail, its rich pattern of light and dark and intricate lines. It has given meaning to the seating arrangements, the patterns on paving and on designed objects throughout the site. It focus part of a strong landscape narrative and pays homage to the Dharawal's Totem.



5. NARRATIVE

5.5 PLANTING

DESIGN RESPONSE TO THE LYREBIRD - THE D'HARAWAL TOTEM

Autumn foliage as a feature within the predominant backdrop of the indigenous canopy trees

The proposed planting incorporates deciduous trees with a variety of leaf colours to echo the unfurling of the tail of the Lyrebird.

The mail entrance point is selected as the base of the tail and the deciduous trees are positioned so that the colours appear to 'unfurl' up the sloping site. The trees with darker coloured autumn display are positioned nearer the entrance and those with the brighter golden coloured leaves are located further up the slope around the chapel. The golden display or 'unfurling of the tail' will appear to fan out around the chapel, signalling the significance of this building on the site. The colour gold, in Christianity, is used in depictions of God. In Islam it is the colour associated with Paradise. For many of those who come to grieve the golden foliage will be symbolic of the afterlife. In the Buddhist philosophy autumn leaves falling are seen as a symbol of 'letting go', reinforcing the concepts of death & renewal, the cycle of life.

Species with autumn foliage of a dark red/purple leaf colour, Claret Ash is used around the Café precinct and as a backdrop to the view of the first sculpture along the entrance road. A species with more reddish gold coloured autumn leaves, Scarlet Oak is used as a transition to the orange coloured Crepe Myrtles which are the signature species for the Function Centre. As the Autumn colour fans out at higher levels, around the Administration Building and in the memorial gardens below the Chapel, the Aristocrat Pear and the Japanese Elm with their distinctive forms, supplement the Crepe Myrtles. The statuesque golden autumn foliage of the Maiden Hair Tree will 'unfurl around the rear of the Chapel, with the golden foliated 'Todd' Chinese Elm utilised as the sentinel tree within the roundabout at the entrance to the Chapel car park. Golden Elms, a species of smaller scale, will be the feature trees in the Chapel car park.

The Maiden Hair Tree, or Ginkgo, is a sacred tree in Buddhism, planted around Buddhist temples in China, and featuring in Buddhist ideology.

In the autumn breezes the coloured leaves will ripple up the slope echoing the unfurling of the Lyrebird tail and giving the leaves a shimmering character reminiscent of the fragile nature of the tail feathers.

The repetition of the various autumn foliage species on either side of the road from the main entrance to the Chapel will reinforce the mimicking calls of the Lyrebird.

The introduction of coloured feature species on either side of the main entrance drive into the site will assist in establishing a unique sense of place as one first enters the Memorial Park.

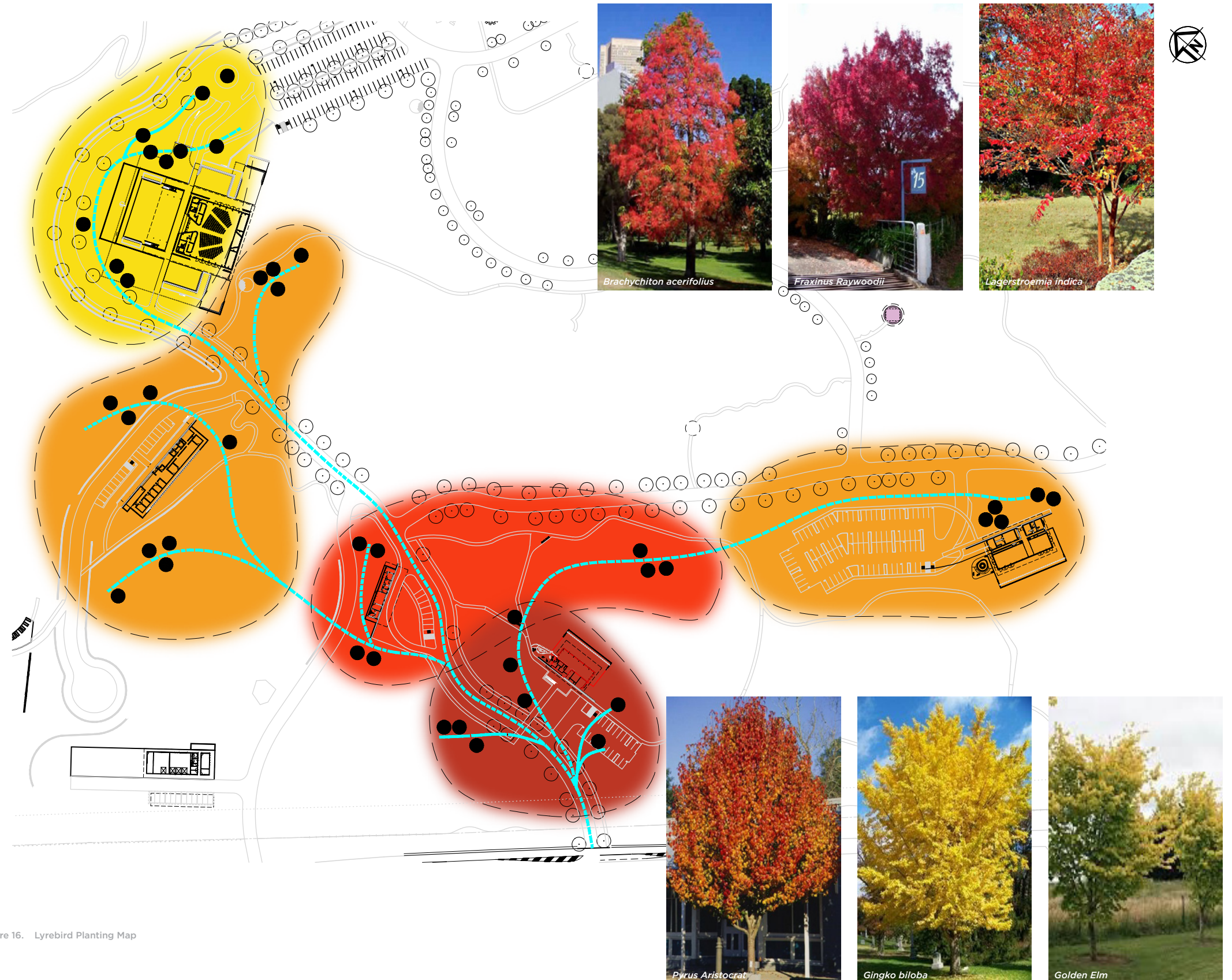


Figure 16. Lyrebird Planting Map

6. MASTERPLAN

Cemetery landscapes are evolving fast and moving with the times.

Long gone are the days of “functional” cemeteries, with “efficiency” as a only driver for design.

Long gone are the days of “stone monumentation as far as the eye can see”.

Long gone should be the days be when cemeteries fill up, become forgotten, unusable and unmanageable destinations, with no connections to the community it used to serve.

The Cemetery Industry is changing and recognising that cemeteries are a part of the community's life and landscape, that functionality need not be synonymous with barrenness and that their clients' expectations are evolving with their appreciation of environmental issues and a greater shift towards sustainable solutions.

The Masterplan for this site embraces all these ideologies plus more:

- The design of a cemetery should consider the continuing relevance of the site, to the community it serves, well after it is full.
- The design should be mindful of the grieving process and recognise that careful design can assist all stages of grief.
- The design should be responding to the multi-cultural society Australia is made of, and the changes it is likely to face over the next century as migration patterns change.
- The design should aim to be the best of its kind, not just because of the client's brief but because it should always aim higher.

Our approach to the site, as described in the Vision (refer Pages 5 and 6), has been to design a unique cemetery which respects the complex land on which it sits.

Integration into the Scenic Hills' landscape

Acknowledging the beauty of the Scenic Hills, its landscape character of rolling grassy hills, farm dams and Cumberland Plain Woodland vegetation, the proposal retains the existing landform, features and protected vegetation offered on the site.

Acknowledging the Scenic Hills as a green backdrop to the urban areas of Campbelltown, Camden and Liverpool, the proposal provides an overwhelmingly “green” asset to the community.

Acknowledging the need for the Scenic Hills to provide Open Space for recreation, the proposal offers more than 30% (More than 36Ha) of the site to Public Open Space,

in perpetuity. It also returns Bunbury Curran Hill top and its magnificent views to the public domain.

Acknowledging the views of the site enjoyed from various key viewpoints in the municipality, as part of the Scenic Hills experience, the proposal ensures the preservation and mitigation of these views by carefully siting all six buildings on site and limiting their height.

Purposeful landscapes

The proposal offers distinctive landscapes, each responding to its own setting and requirement:

The recreational landscape:

Generally located along St Andrews Road, it gives buffer to the Memorial Landscape and provides the first impression of the site: contemplative and peaceful in essence.

It continues to infiltrate the site along its waterways, embracing all pockets of Cumberland Plain Woodland and Moist Shale Woodland.

It is associated with a 7+ kilometre network of meandering paths through native vegetation and around water bodies, boardwalks and bridges over waterways and interpretation material relating to the rich history of the site from Gondwana Land to nowadays.

It respects the heritage significance of the site and has been adapted to provide interpretation of significant items where relevant (refer to Interpretation strategy report, Chapter 5.5- Heritage significant areas).

It provides more than 35Ha of enhanced native habitat through its riparian , CPW and MSW landscapes.

This recreational landscape is host to the Café, Function building and historical outbuildings, all of which have a more public use and a respite function, consistent with the passive and recreational landscape.

The Memorial landscape:

Generally located deeper into the site, it is the main destination for the cemetery . The Memorial landscape blends with the site's character with its lawn and native tree clusters.

It responds to the need for privacy, cultural diversity and protection from the elements by providing small pockets of burial grounds, open or protected by vegetation screens.

It respects the heritage significance of the site and has been adapted to provide interpretation of significant items where relevant (refer to Interpretation strategy

report, Chapter 5.5- Heritage significant areas)

It respects the grieving process by separating it from the recreational areas. It assists the same grieving process by providing a beautiful, well managed setting for contemplation and commemoration. These landscapes are a form of “healing landscapes” and provide a better setting for mourning.

The Memorial landscape is host to the Chapel, Mortuary, Administration Building and Gatehouse, all of which are associated with the funeral operational activities.

Most importantly, the Memorial landscape has been designed as if it was a park to ensure that the public feels an affinity and respect with the site, a sense of ease in contrast to the unease often expressed by cemetery visitors, a sense of pride that the Memorial Park is a well cared for and beautiful place for loved ones and an uplifting sensation each time they visit. And when the cemetery is full, the Park will still offer the same advantages it did when operating, as it will be regarded as a Park in its own right.

The Sculptural landscape

Linking the Recreational and Memorial landscapes and creating a threat between the two throughout the site will be the role of the Sculptural Landscape.

A number of quality sculptures will adorn the site, usually located at key axis points of the main buildings and as focal points in the landscape. In addition, the entrances to the protected Cumberland Plain Woodland walks will be flanked with sculptural Gateways as an invitation to explore. These Gateways symbolise the threshold to a “special” environment, in the same way a Lych gate signals the entrance to a sacred church yard.

The Plant Collection/Arboretum

As is often the case, cemeteries can be the repository of significant or rare specimen plants and trees. This is an important role cemeteries play for future generations and the Masterplan enables this tradition to continue by:

- Protecting the CPW and MSW and allowing paths though it so visitors can experience these significant plant communities.
- Allocating a plant name to each burial areas and allowing these to display a collection of plants from the chosen genus. This will enable a plant collection to be built and a gene pool of plant material to be available for future generations.

6. MASTERPLAN



Florence Jaquet
Landscape Architect
Cemetery Specialist

6. MASTERPLAN

The Mourning process

The Masterplan proposals are primarily targeting the experience of the mourner, his/her arrival, journey through the site, destination at the Chapel for a service, or the Administration building for an enquiry, or grave site for visitation.

The experience of the recreational visitor is secondary.

Psychology behind the grieving process

To design a cemetery, it is important to understand the funeral process, the psychology behind the grieving process, the changing moods of the mourners evolving along their journey through the funeral rituals. It is crucial to incorporate all of it into the design of buildings and the surrounding landscapes.

First impression is always important: The gates and ornamental fencing complement the stunning landscape of rolling hills and dams.

Way-finding needs to be clear in time of grief with simple road systems, a main road leading to exits and main buildings.

Accessibility is an issue for both mourners and the elderly (which constitute the majority of visitors) so clear paths, short walking distances and easy parking throughout are a must.

A caring approach needs to be displayed in all aspect of the design but also in all aspects of operational matters. Both are intrinsically linked.

On such a large site, the burial grounds must remain at human scale. They have therefore been divided into rooms to both minimise the visual impact of headstones on the overall landscape but also provide intimate spaces into which to mourn more privately.

Buildings and circulation

The Café is the first visible building from St Andrews Road and the main entrance. It welcomes the visitors with its refreshments and /or its flower shop for a quick purchase on the way to visiting a grave.

The Gatehouse welcomes the funeral corteges and enables the checking of the Funeral directors' paperwork by the cemetery staff prior to guiding them to a grave site for burial.

The funeral cortege which follows the hearse will be parked on the parking strip along the entrance road whilst the paperwork process takes place. A public toilet is provided at the Gatehouse, for their convenience.

Importantly, it is located before the first intersection to

facilitate the distribution of traffic, either straight on to the northern portion of the site or right to the remainder of the site.

The Administration building is a destination on its own, usually for enquiries and pre-arrangements and can be separated from the processional route. It is, nevertheless, close to the Chapel and Staff/Workshop area to facilitate staff movement between them.

The Chapel (and Mortuary below) is carefully sited at the foot of the Escarpment and its striking architectural qualities become visible from the Café onward, making it the most obvious destination on site.

It is sited low enough to minimise the visual impact of its moderately sized façade from surrounding neighbourhoods, but high enough to still enjoy some views onto the string of dams below.

Its elevated position responds to its religious function and the aspiration of faithful mourners to be close to their God.

The Chapel is not visible from Varroville House as it is obscured by a large patch of existing Cumberland Plain Woodland.

Mourners attending a cremation or burial service will be logically drawn to the Chapel.

A combination of underground and aboveground parking provides ample parking for mourners. Most will choose the underground carpark first, the overflow being directed to the adjacent outdoor carpark, clearly visible as one exits the underground carpark ramp. This carpark has been carefully located at the back of the building to ensure a unique sense of arrival to this majestic building.

The Function building's primary function is to host funeral wakes. It is purposely separated from the Chapel responding to the change of sentiment/mood experienced by mourners after a Chapel service. The journey between the two buildings represents the journey between the "mournful service" and the "celebration of life" which follows.

Its setting, overlooking the water and separated from any new groups of mourners entering the site for their Chapel service, gives it a more private and contemplating atmosphere in which mourners can mingle, talk and commemorate... loudly if need be.

The Workshop and Ground staff facilities is secluded, yet easily accessible by material delivery vehicles via its own entrance.

The Crypts are buried into the site of the hill, overlooking a small dam. They are located in the most isolated corner

of the site, away from view.

The Outbuildings will obviously remain in their current location, south of Varroville House. The buildings which are worthy of retention will be restored and become the venue for an educational precinct, easily accessible by school and local residents.

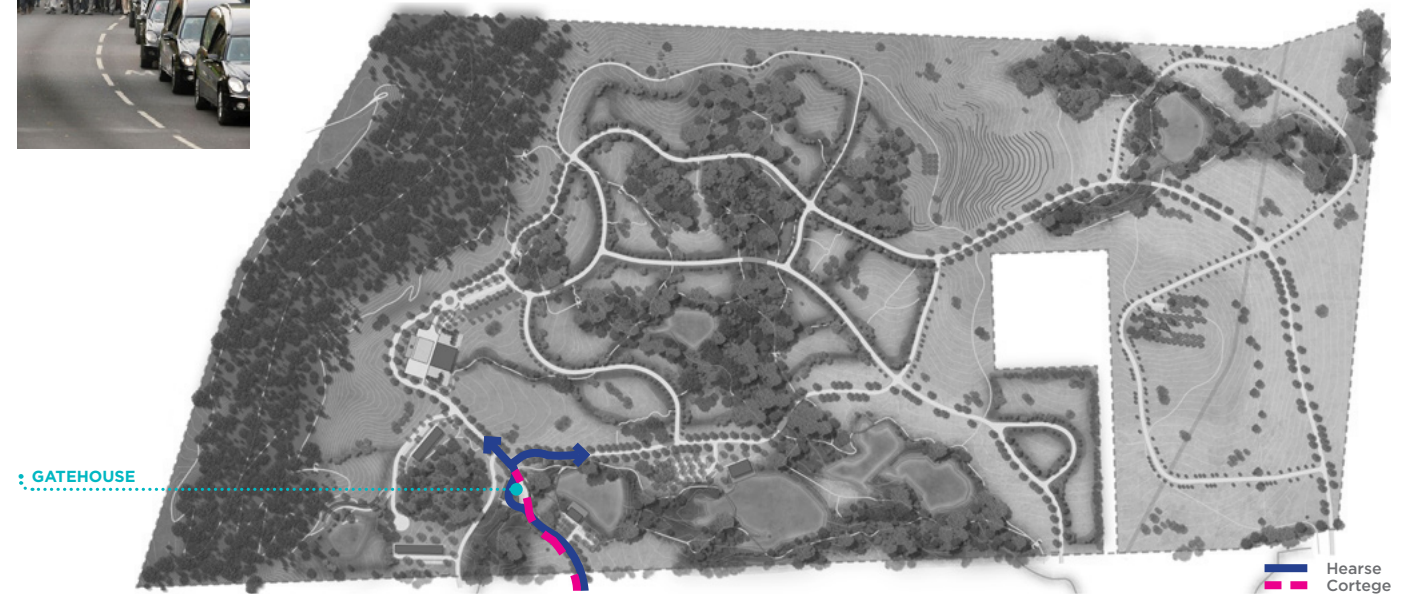
As this portion of the site will not be open for burial for many decades, the outbuildings will continue to be accessed by the existing tree-lined driveway.

In summary, the Masterplan delivers a stunning Memorial Park, well integrated and respectful of its surrounding, the pride of the region and the cemetery industry at large, an inspiration to others and an example of how cemeteries should continue to be designed in the future.

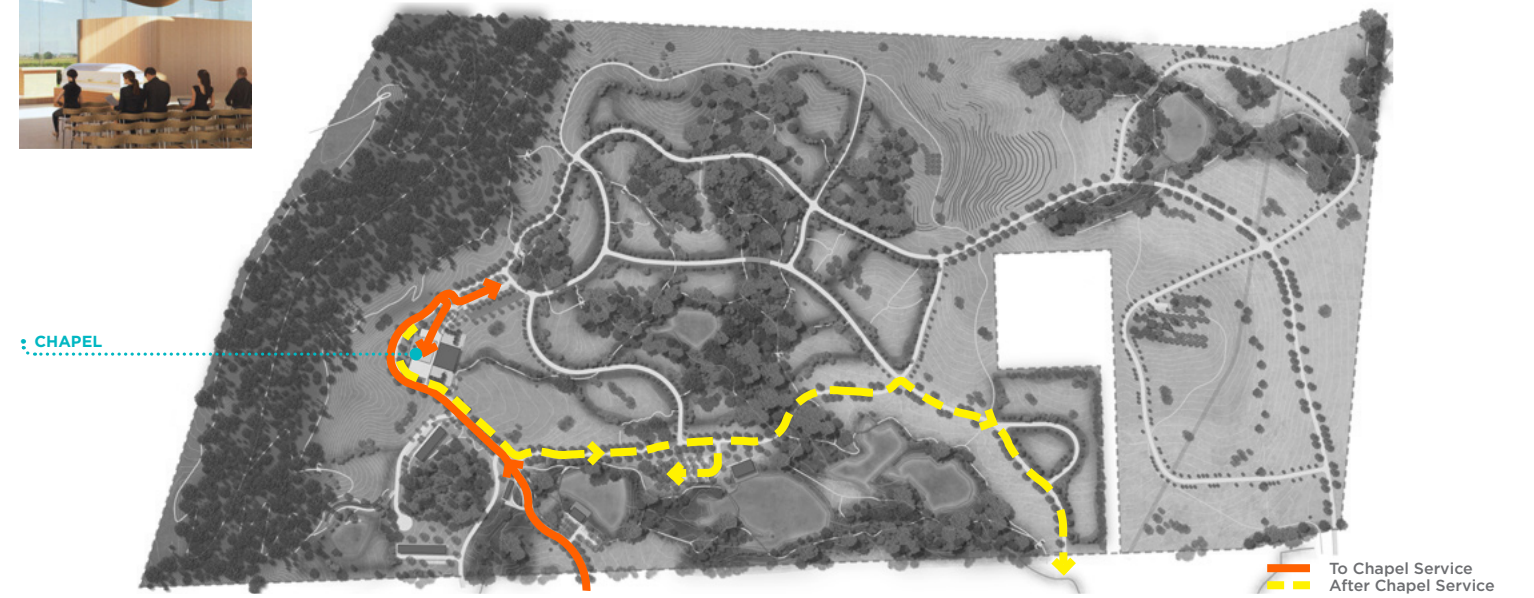
The next chapter concentrates on the detail of each design elements, theme by theme, describing:

- The design principles which guided it
- The rationale behind the design
- The aesthetics and
- The location and distribution of each one.

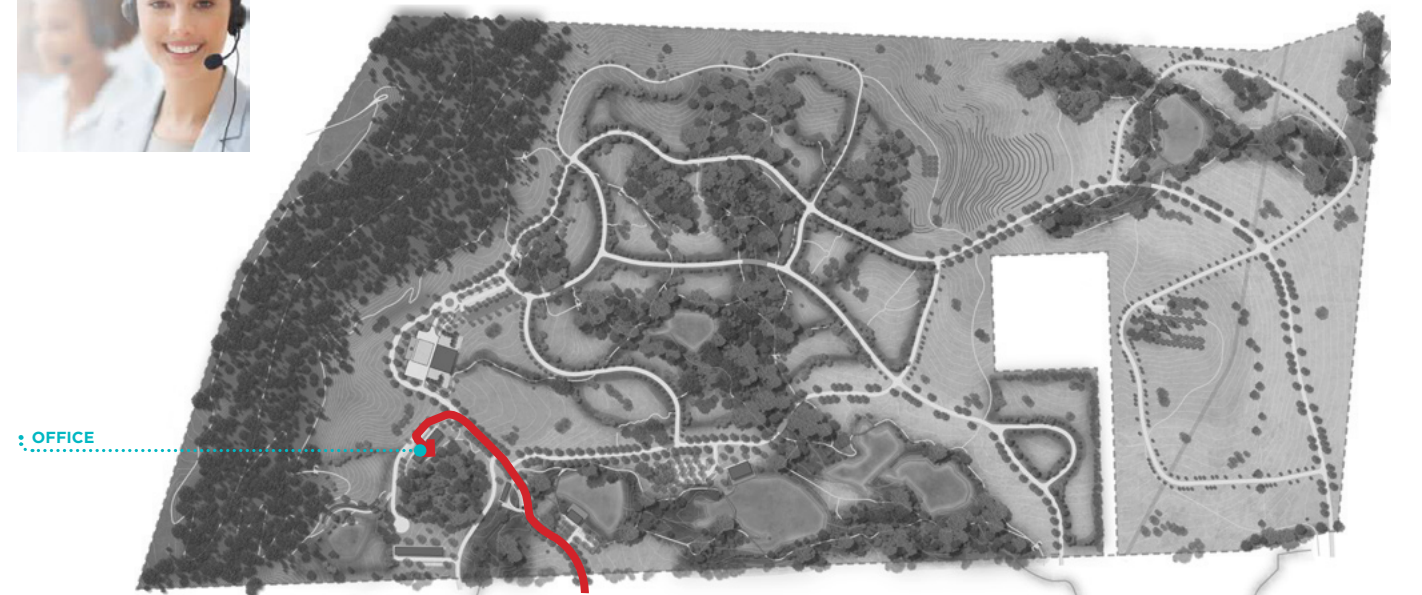
6. MASTERPLAN



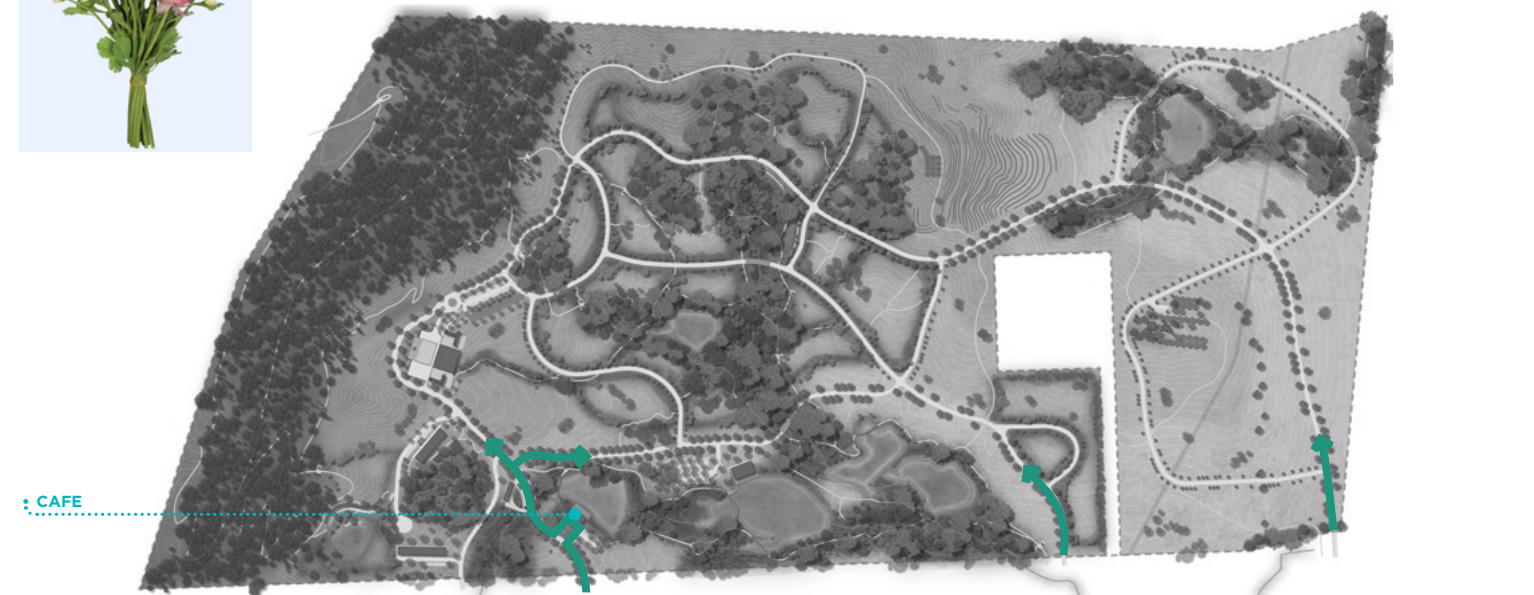
FUNERAL CORTEGE TO GRAVE SITE



CHAPEL SERVICE



OFFICE ENQUIRIES



CASUAL VISITOR

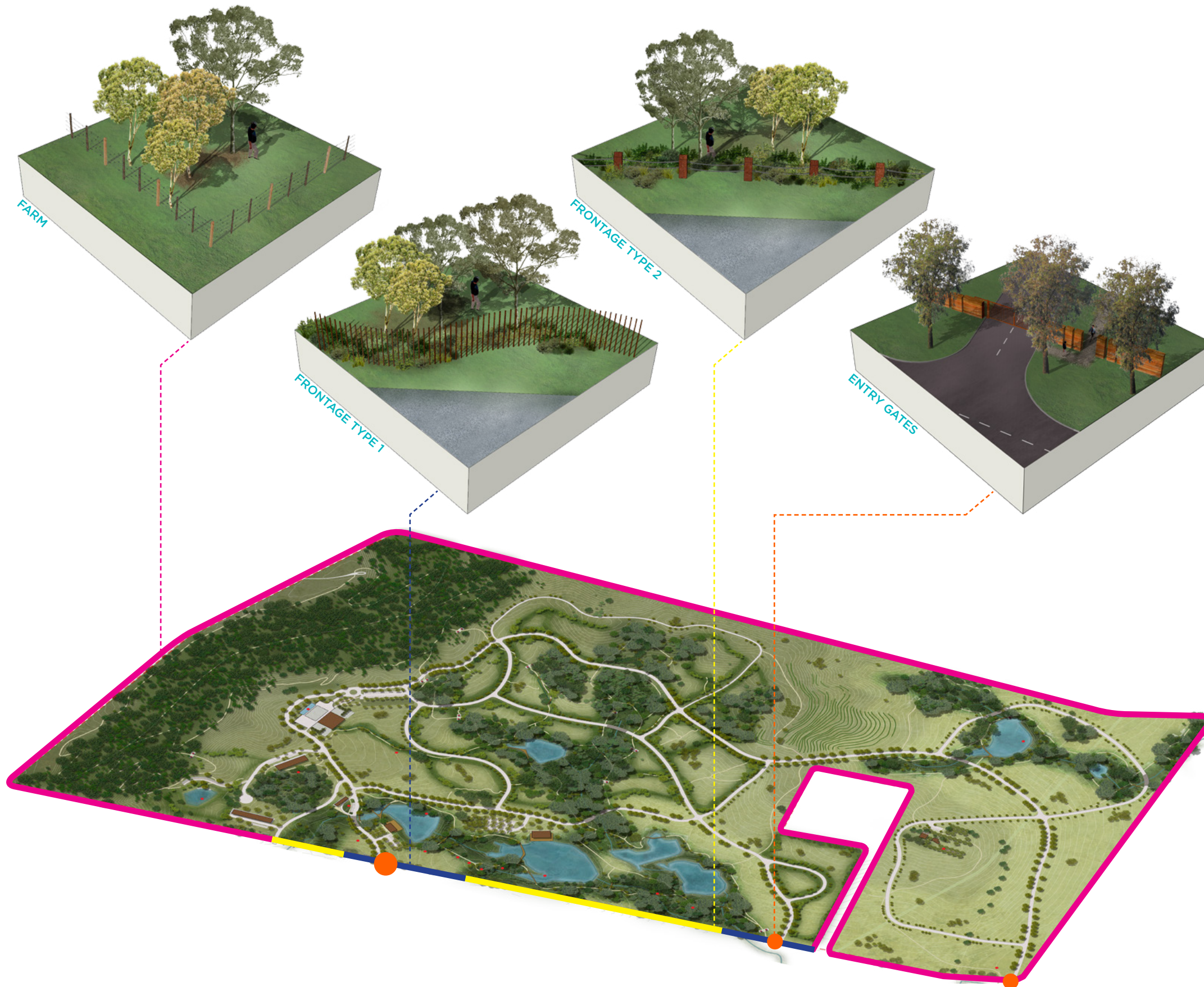




7. DESIGN ELEMENTS

7.1	GATES & FENCING
7.2	ROADS
7.3	PARKING STRATEGY
7.4	PEDESTRIAN NETWORK
7.5	LAWN BURIALS
7.6	NATURAL BURIALS
7.7	BURIAL ROOMS
7.8	BURIAL SUB-ROOMS
7.9	ASH INTERMENTS
7.10	CUMBERLAND PLAIN WOODLAND
7.11	MOIST SHALE WOODLAND
7.12	RIPARIAN ZONES & DAMS
7.13	WSUD
7.14	PLANTING PHILOSOPHY
7.15	SCULPTURES & GATEWAYS
7.16	SHELTERS, LIVING CHAPEL & BIRD HIDE
7.17	FURNITURE
7.18	PLAY AREA
7.19	WATER STATION
7.20	SOIL DEPOTS





DESIGN PRINCIPLES

- Respect visual qualities of the site
- Respect through interpretation of the site's heritage
- Respect through sustainable/longlife materials
- Unique
- Contemporary

RATIONALE

- Retain 'post and wire' or existing rural fencing on all private boundaries and internally (until area is required for burial) to control stock.
- Provide long lasting, low and transparent fencing on frontage to public land.
 - Sculptural close to vehicular entry exit points. (TYPE 1)
 - Recessive amongst vegetation elsewhere (bollard and cable). (TYPE 2)
- Provide fencing which restrict vehicle access outside of nominated entry points yet allows pedestrian access 24/7.
- Provide entry points with entry statement and signage.
- All entry points to be gated. Entry gates and walls to be larger at main entrance.
- Vehicular entry points to be closed/locked at night.
- Fencing to be implemented in stages and associated with the progressive expansion of the cemetery.

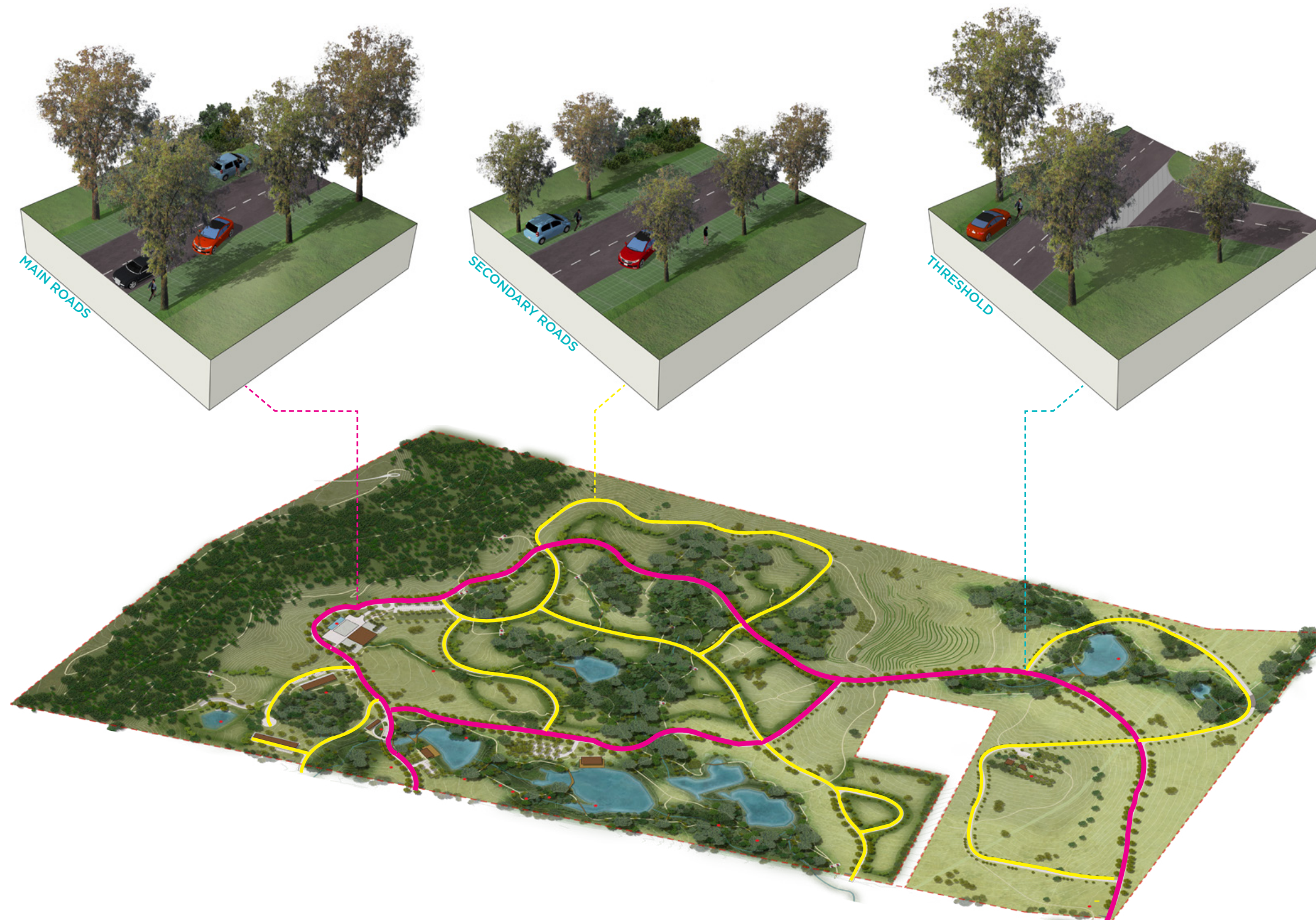
7. DESIGN ELEMENTS

7.1 GATES & FENCING



7. DESIGN ELEMENTS

7.2 ROADS



DESIGN PRINCIPLES

- In harmony with funeral and mourning process
- Respect visual quality of the site
- Respect environment

RATIONALE

- Roads have been placed to minimise impact on the landscape, the ecological areas and any significant heritage features.
- Cut and fill has been kept to a minimum by setting the centre line of all roads at existing ground level (except where gradient is too steep for road standards or in close proximity to buildings).
- Cut and fill on road edges is treated with gabion walls where space is restricted or 1:3 embankments where planted or 1:6 to 1:8 slopes where grassed.
- Road width and layouts are compliant with RFS requirements and other relevant standards (refer civil and traffic reports).
- Stormwater run-offs are collected at the road side with an “end-of-line” treatment (refer WSUD report)
- Materials are asphalt with concrete kerbs.
- Main roads are defined as links between public entry and the main exit point.
- Main roads are sealed with flush or rollover kerbs and flanked with larger street trees.
- All secondary roads have a threshold treatment at its junction with the main road to highlight the hierarchy difference and assist in way finding.
- Above mentioned thresholds are to be noticeable, durable, decorative and in keeping with the design narrative.
- Wherever possible, main roads are flanked by lawn to retain the pastoral experience whilst travelling through the site.

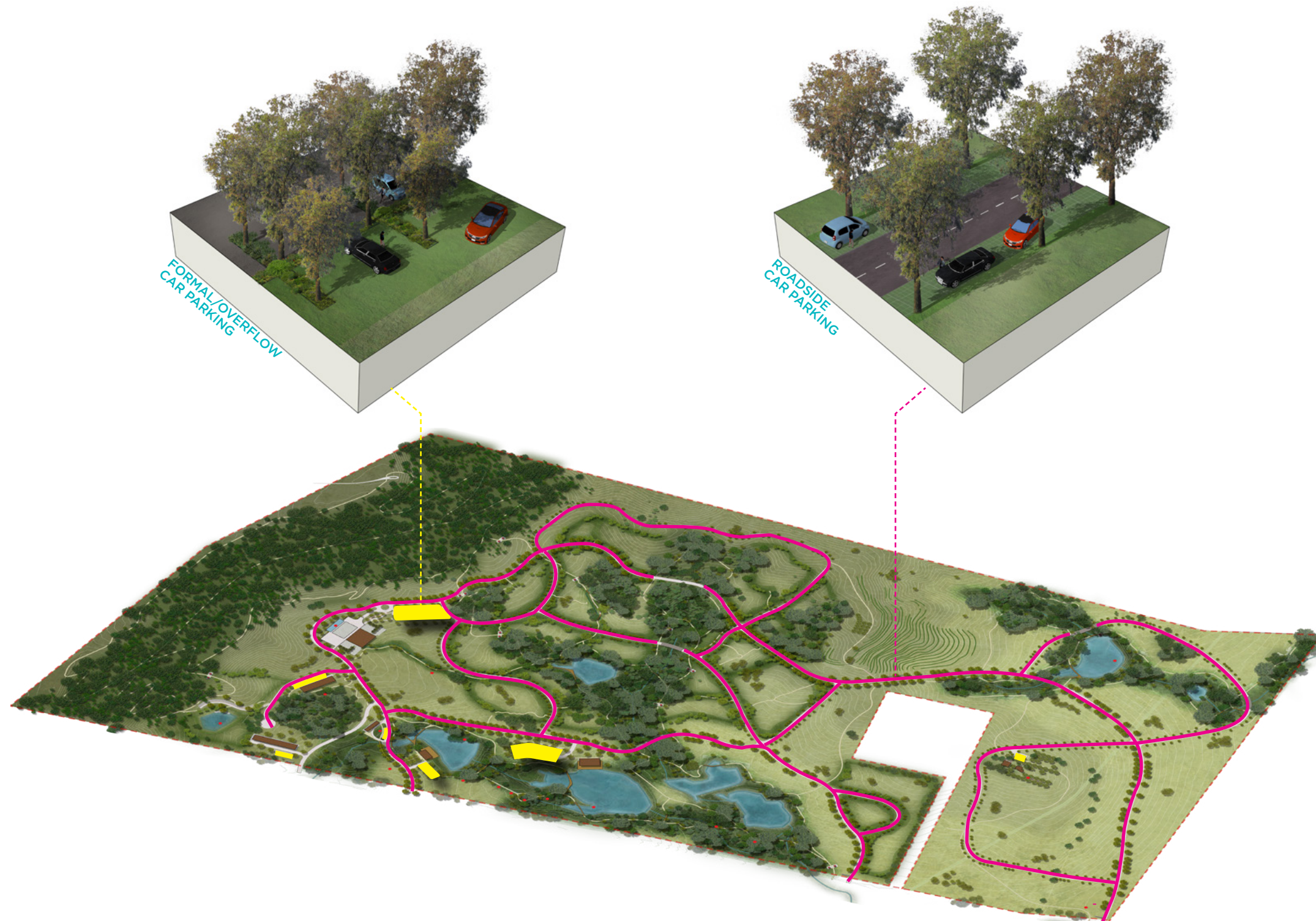
7. DESIGN ELEMENTS

7.2 ROADS



7. DESIGN ELEMENTS

7.3 PARKING STRATEGY



DESIGN PRINCIPLES

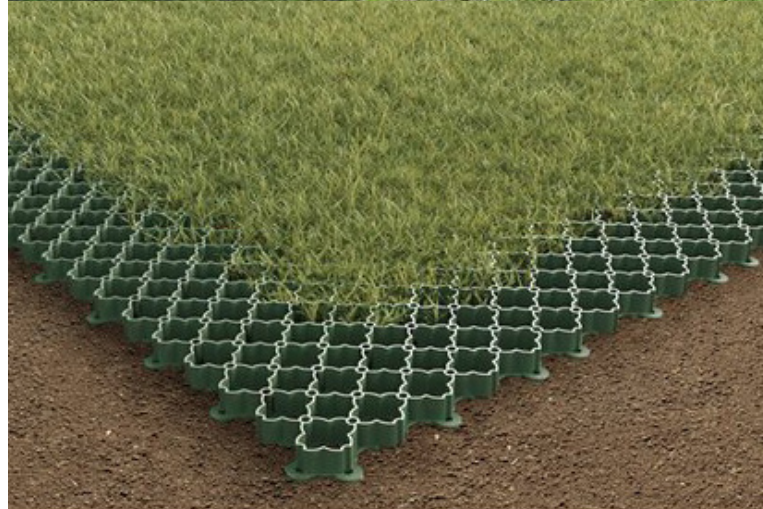
- Respect visual qualities of the site
- Respect environment
- In harmony with environment
- Minimise Visual and Environmental Impact

RATIONALE

- Provided in the vicinity of all buildings (refer Architectural and traffic reports for numbers)
- Generally road side elsewhere, to facilitate access to grave site by cemetery visitors and minimise walking distances.
- Generally provided on both sides of the roads (one side only on single roads), on reinforced grassed surfaces to minimise hard impervious surfaces and visual impact.
- No parking verge provided near CPW to minimise width and therefore minimise cut and fill and ultimately minimise impact on CPW.
- Also using grassed reinforced surfaces in overflow parking to minimise impervious hard surfaces and visual impact.

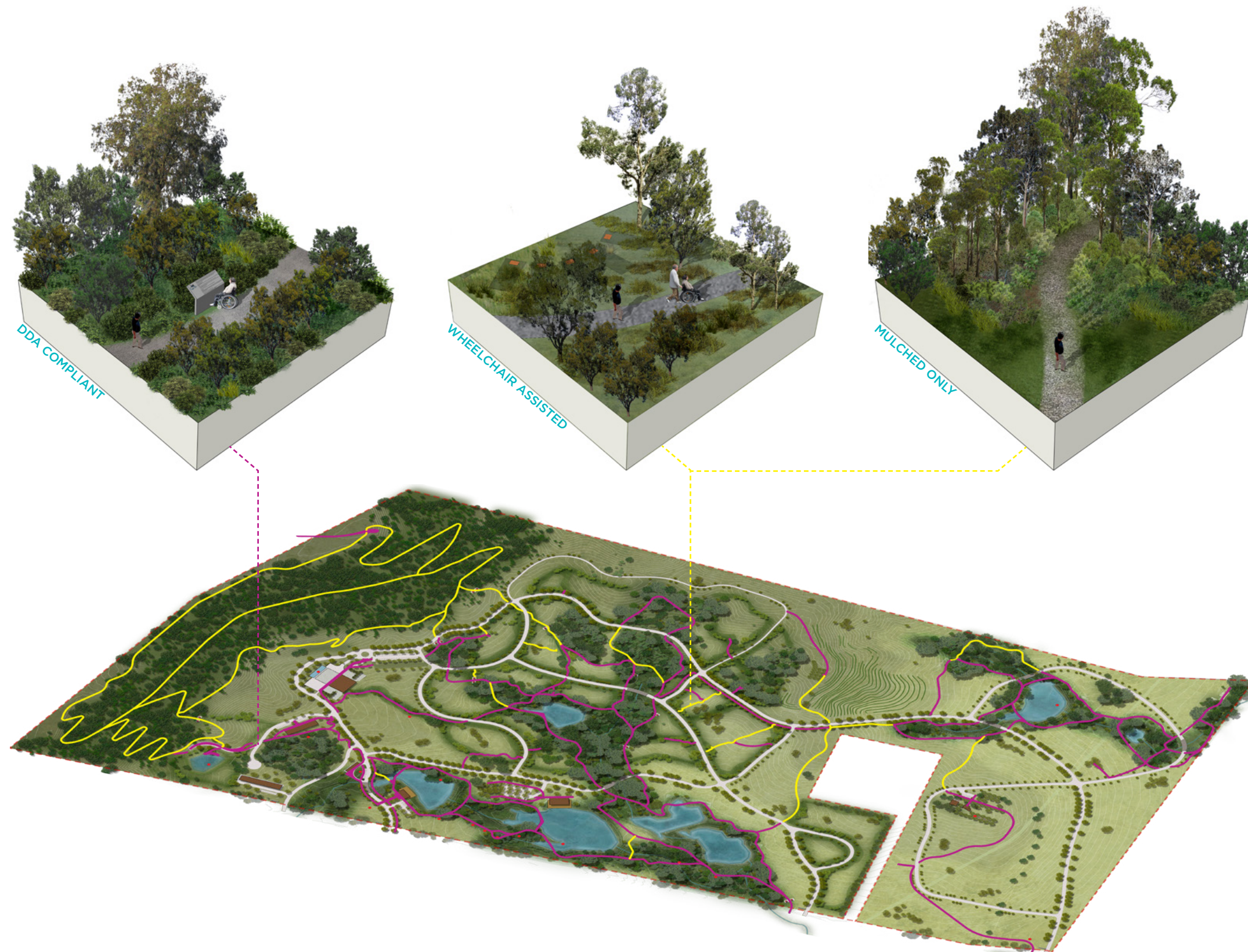
7. DESIGN ELEMENTS

7.3 PARKING STRATEGY



7. DESIGN ELEMENTS

7.4 PEDESTRIAN NETWORK



DESIGN PRINCIPLES

- Respect visual qualities of the site
- Respect environment
- In harmony with environment
- Minimise Visual and Environmental Impact

RATIONALE

- Generally 1.5m wide for paths
- Providing access through all areas of Public Open Space and linking them through a network of approximately 7 kilometres of walking paths.
- Paths are memorialised in places, consisting of individual interment markers of contemporary style, with sculptural qualities, along the edge of selected paths. (refer Ash Interments herein)
- Paths are either:
 - DDA compliant: near and in between buildings, shelters, in the interpretation areas (outbuildings, Timeline Walk in some, parts of the CPW), bird hides, dam walk and Living Chapels. Materials will be either concrete, asphalt, timber or malting.
 - DDA - non compliant: in steeper parts of the site, in some areas of the CPW. Materials will be either concrete, asphalt or mulch.
- All memorial paths will be DDA compliant.
- Wheelchair accessibility will be provided to the entrance of all burial sections only. Beach wheelchairs may be available at the Administration Building for use on lawn areas.
- Boardwalks are generally located where a crossing is required over water courses and drainage lines
- Boardwalks are generally timber with non-slip property, on steel frame structure for ease of maintenance and durability.

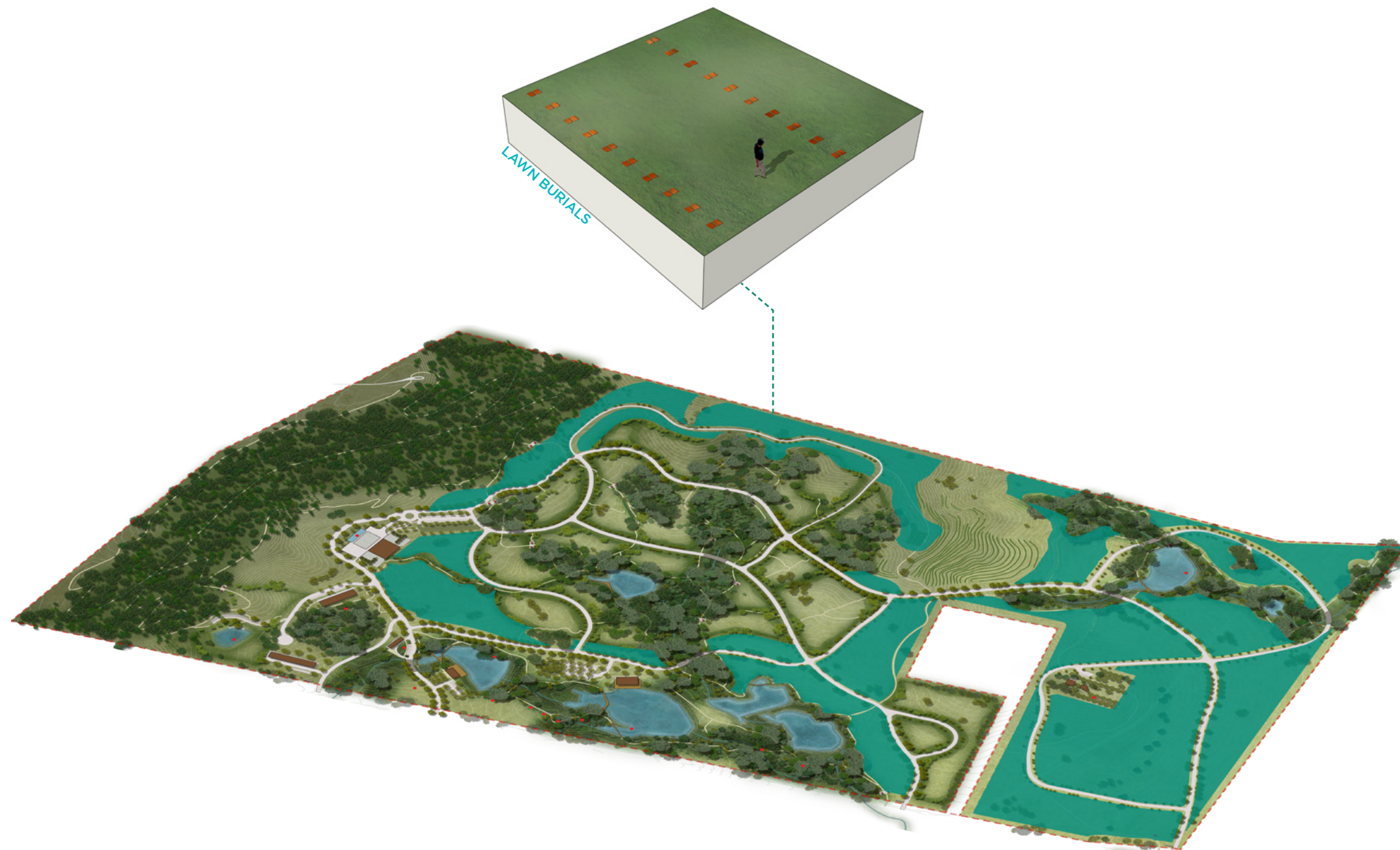
7. DESIGN ELEMENTS

7.4 PEDESTRIAN NETWORK



7. DESIGN ELEMENTS

7.5 LAWN BURIALS



DESIGN PRINCIPLES

- Contemporary
- Respect visual quality of the site
- In harmony with the environment

RATIONALE

- Memorialisation only allowed as a plaque flush with lawn.
- Concealed concrete beams below ground (necessary to avoid subsidence)
- Minimise visual impact of cemetery from the main road.
- Generally, grave rows follow existing contouring of the land.
- Re-grading only where localised water ponding may occur.
- Provide occasional specimen tree for shade and respite.

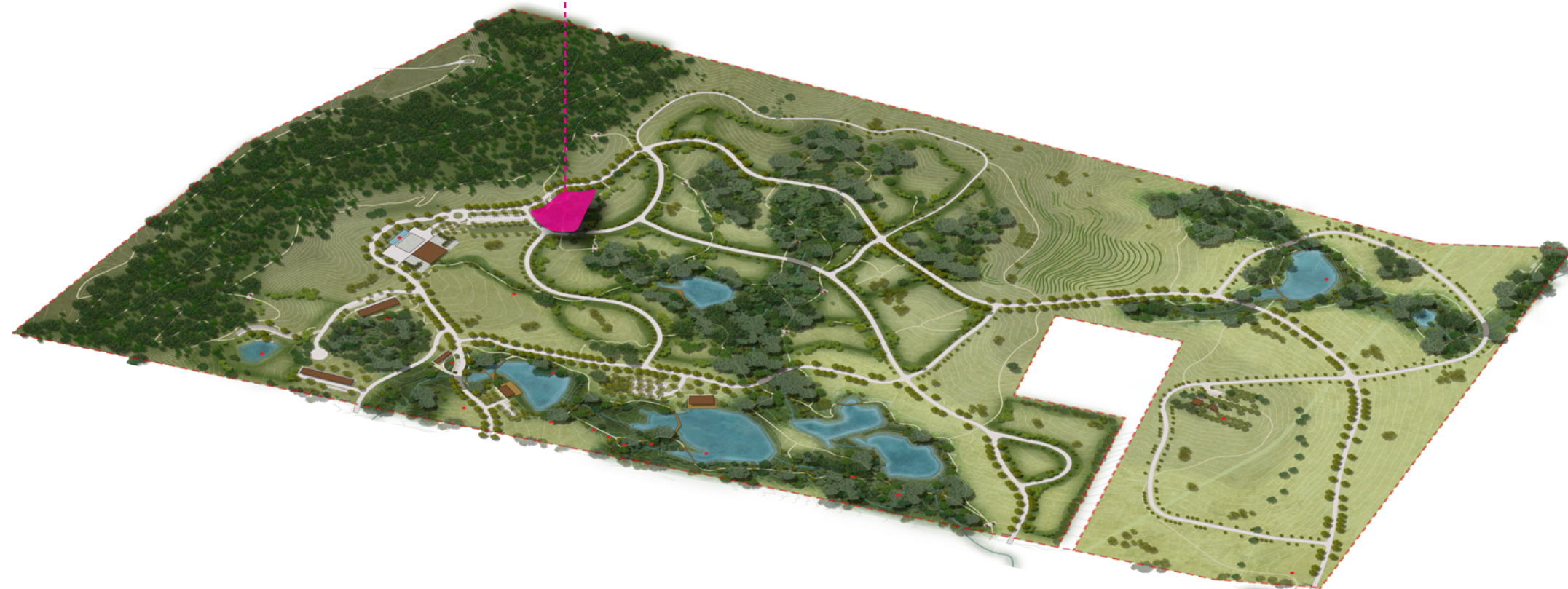
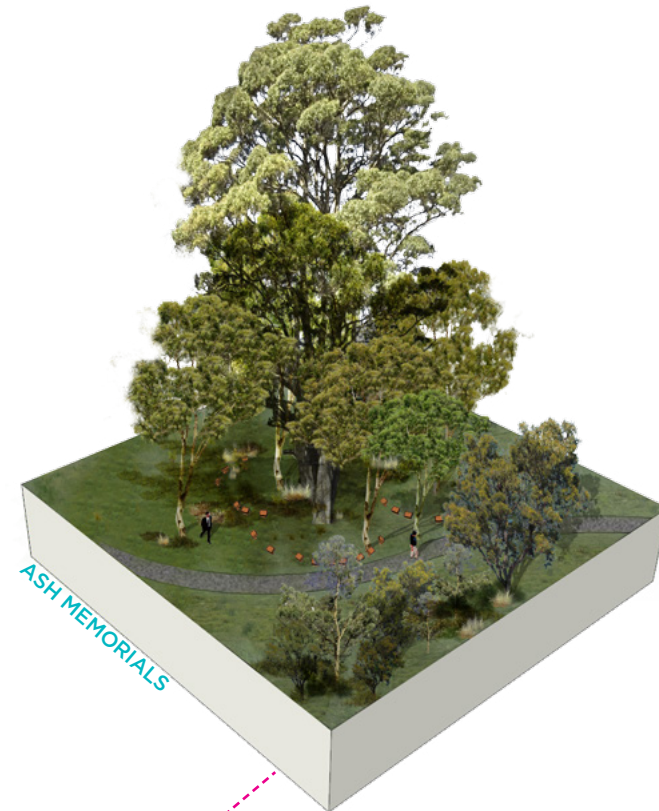
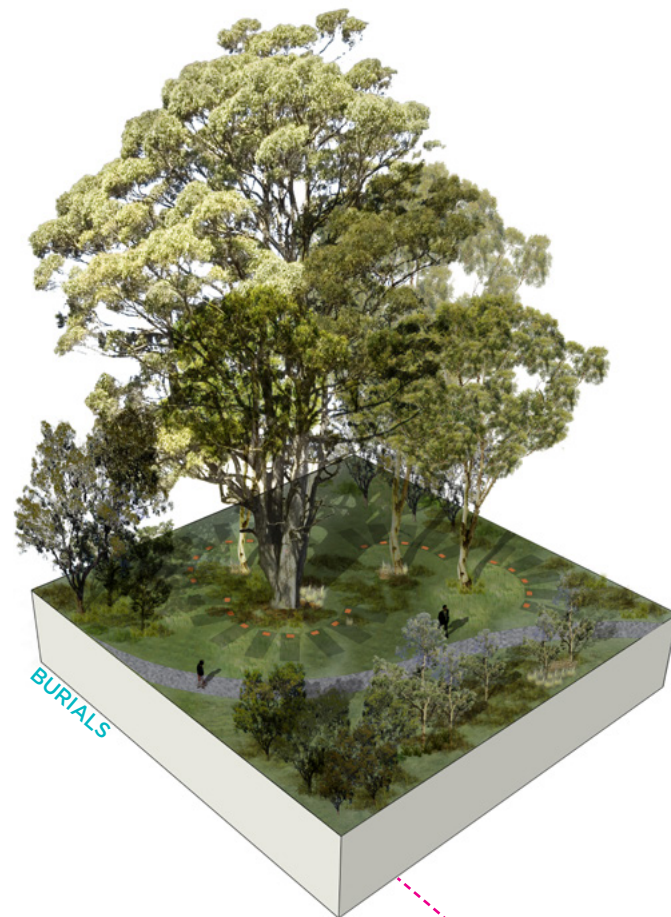
7. DESIGN ELEMENTS

7.5 LAWN BURIALS



7. DESIGN ELEMENTS

7.6 NATURAL BURIALS



DESIGN PRINCIPLES

- Unique
- Contemporary
- Respect visual quality of the site
- Respect mourning process
- In harmony with the environment

RATIONALE

- Chemical free and 100% biodegradable coffin or shroud.
- Biodegradable grave markers (wood) or none.
- Grave location to be recorded and marked with steel pegs in the ground (traceable with metal detector).
- Double depth of burial allowed.
- Set within an existing pocket of Cumberland Plain Woodland (CPW).
- First natural (green) burial set in CPW.
- Low impact on existing root space system.
 - Grave plots to radiate out of the SRZ to minimise root damage (running in same direction as structural roots). Only 5 burials allowed around each tree per 5 years period to allow for root regeneration.
 - Ash interment to be limited in numbers and buried in the Structural Root Zone (SRZ). Only requires a small 300mm deep hole.
- Restore grave surface with site topsoil and plant species.
- Bushland setting with denser perimeter plantings for privacy.

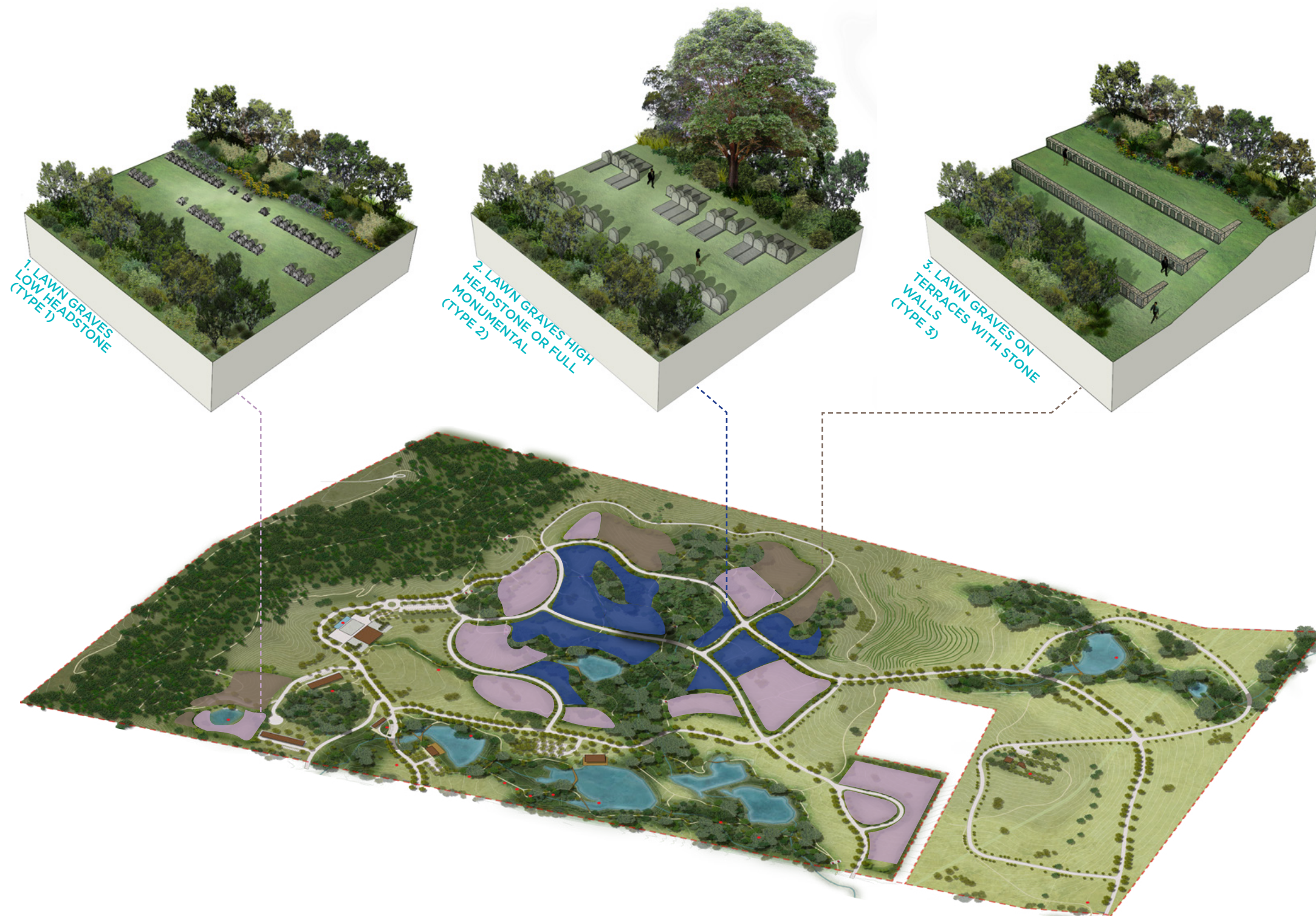
7. DESIGN ELEMENTS

7.6 NATURAL BURIALS



7. DESIGN ELEMENTS

7.7 BURIAL ROOMS



DESIGN PRINCIPLES

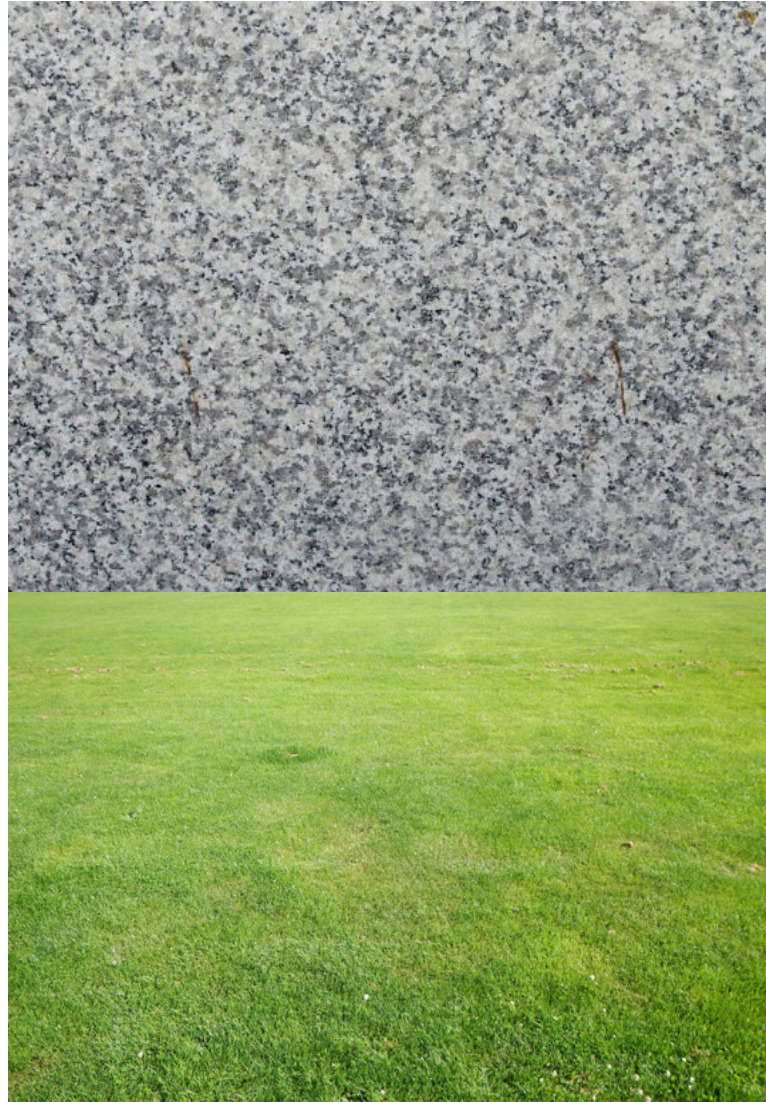
- Unique
- Contemporary
- Respect visual quality of the site
- Respect mourning process
- In harmony with the environment

RATIONALE

- Minimise visual impact of cemetery from the main internal and external roads, Campbelltown township, Varroville house and Hume highway.
- Create “burial rooms” to conceal all headstones and memorialisation from the main roads and Varroville house.
- Provide screening in the form of native planting of varying height, ensuring the planting blends into the existing rural and CPW landscape.
- Avoid using exotic tree species which may clash with heritage landscape.
- Set the “burial rooms” against the backdrop of the existing and future CPW zones.
- Provide 3 types of “burial rooms”:
 1. Lawn graves
Low headstones (700mm max) on concrete beams in a lawn setting (Type 1).
 2. Lawn graves
High headstones (1.2m high max) on concrete beam or full monumental (Type 2).
 3. Lawn graves on terraces
Stone retaining walls with headstones recessed into wall face (Type 3).
- Provide ash memorialisation options within each “burial room”, typically located along the edge of the screen planting (internally only). (Refer to Ash Interments for more details)

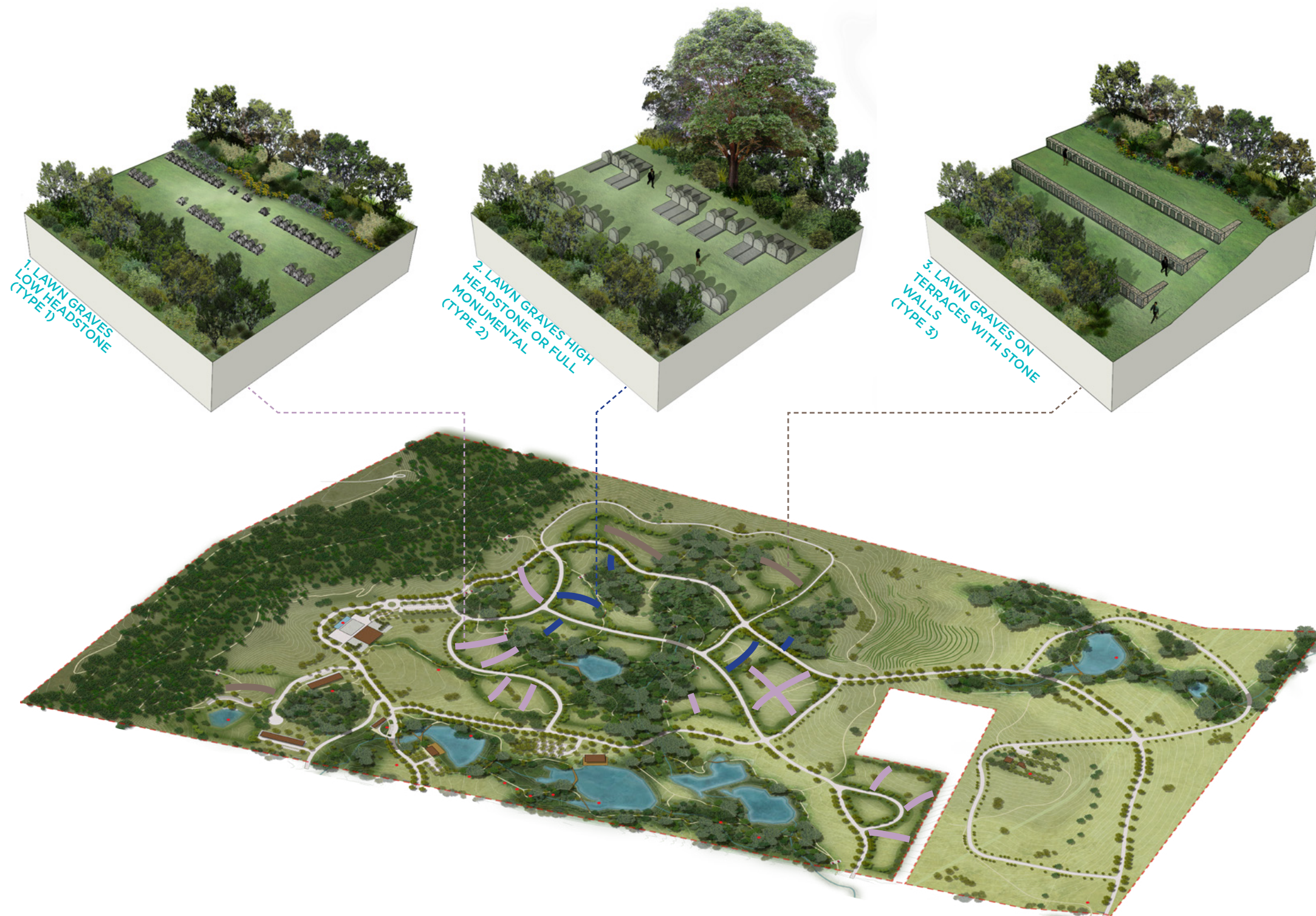
7. DESIGN ELEMENTS

7.7 BURIAL ROOMS



7. DESIGN ELEMENTS

7.8 BURIAL SUB-ROOMS



DESIGN PRINCIPLES

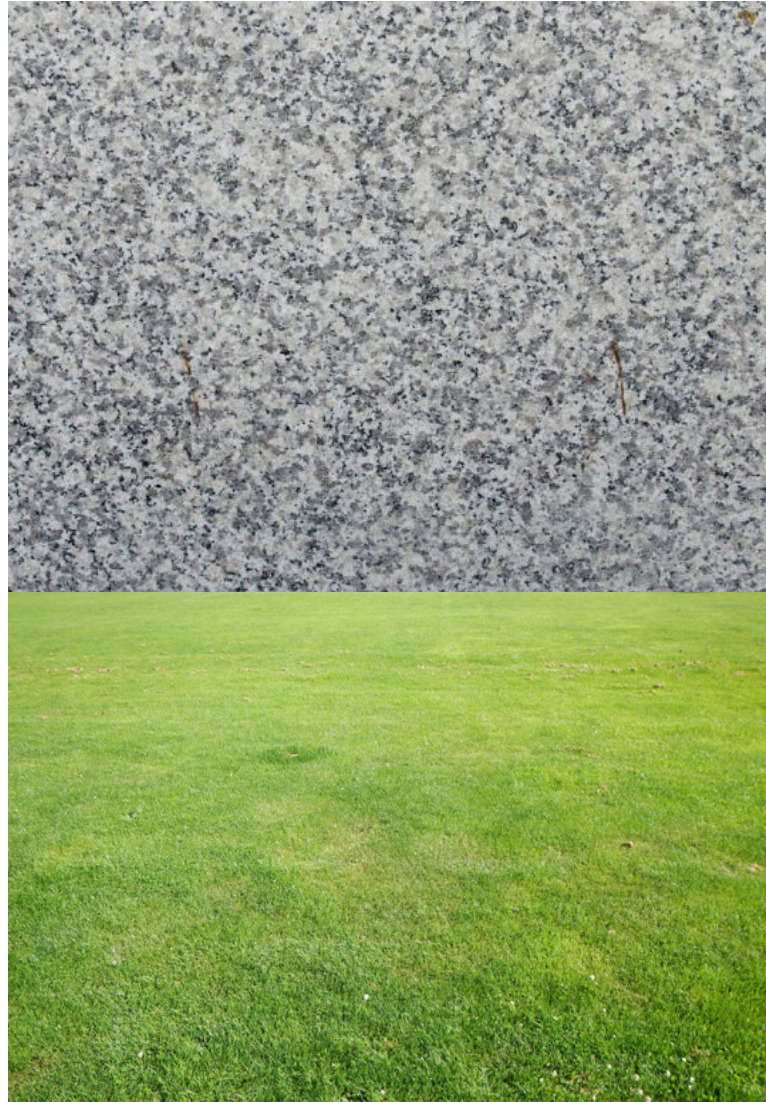
- Unique
- Contemporary
- Respect visual quality of the site
- Respect mourning process
- In harmony with the environment

RATIONALE

- Within each burial room, sub-divide into small spaces using separation planting of max 1.8m height.
- Provide privacy for mourners in a smaller, more human scale space.
- Allow views through in places for passive policing.
- Each sub-burial room will host between 750 and 1200 grave positions.
- Allocation of room to each cultural or religious group will be dependent on demand over the 150 years life of the cemetery.

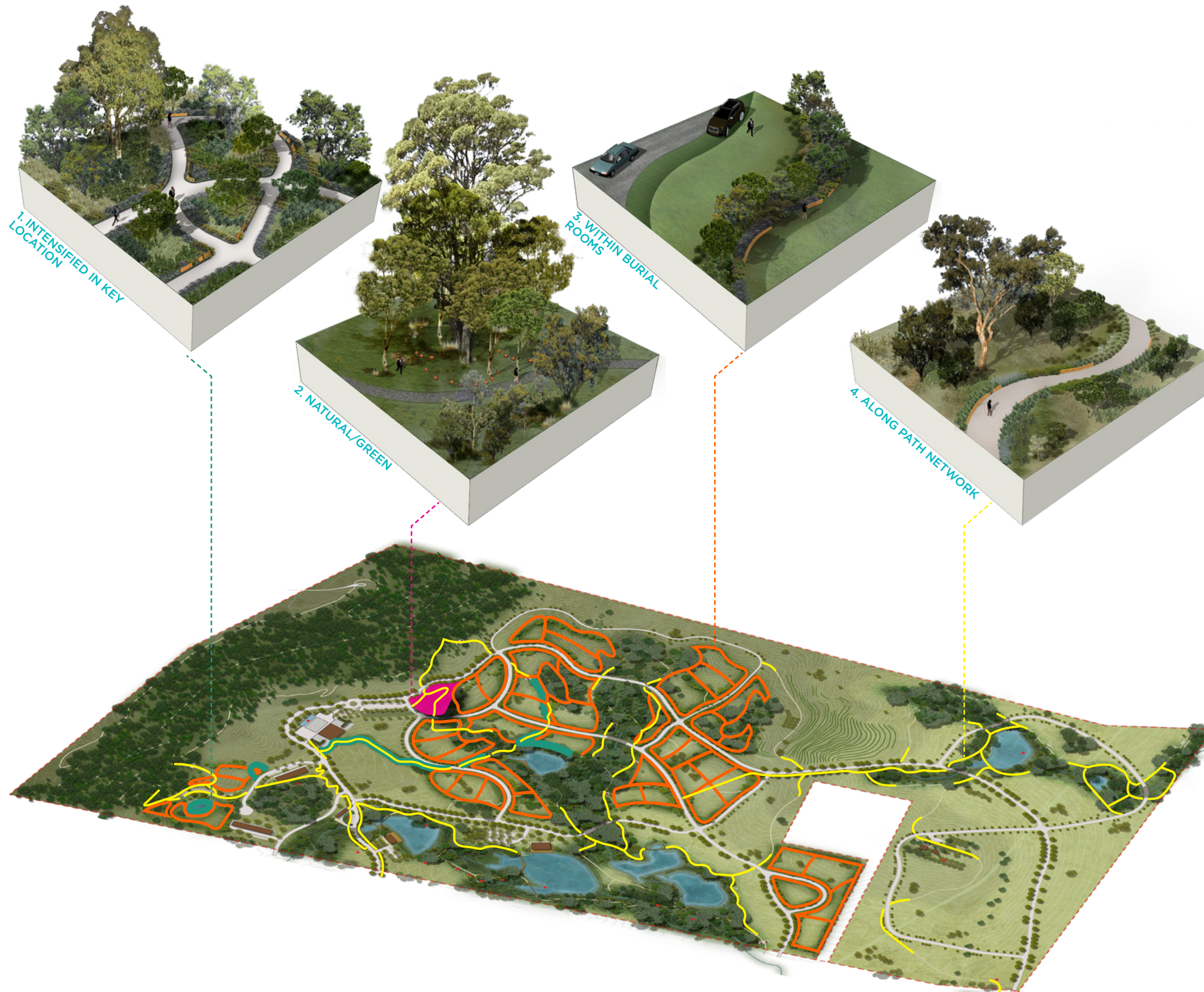
7. DESIGN ELEMENTS

7.8 BURIAL SUB-ROOMS



7. DESIGN ELEMENTS

7.9 ASH INTERMENTS



DESIGN PRINCIPLES

- Unique
- Contemporary
- Respect visual quality of the site
- Respect mourning process
- In harmony with the environment
- In line with design narrative
- Sculptural

RATIONALE

- Minimise visual impact of cemetery from the main internal and external roads.
- Provide new and sculptural designs in keeping with design rationale.
- Complimentary to the 'Park-like' setting and public activities within.
- Provide a variety of 'Ash interment option' varying in prices, aesthetics and cultural relevance:
 1. Within 'Memorial Gardens' which are more compactly laid out. Memorialisation will be more intensified in key location. Each garden will have a theme.(native, colour, scented, music...)
 2. Natural/green burial, biodegradable markers, set only within the Structural Root Zone (SRZ) of existing and proposed trees.
 3. Within the burial rooms and sub-rooms, typically located along the edge of the screen planting's garden beds (internally only). Along all path networks which are within 50m of a road. Memorialisation will be more sculptural to compliment the 'park-like' setting as these paths will also be used for recreation.
 4. Along all path networks which are within 50m of a road. Memorialisation will be more sculptural to compliment the 'park-like' setting as these paths will also be used for recreation.

7. DESIGN ELEMENTS

7.9 ASH INTERMENTS



RATIONALE

5. Associated with a tree
This is particularly appealing to families and couples and ensures long term funding of tree maintenance and replacement.
 6. Associated with a sculpture
This is particularly appealing to families and assists with the long-term maintenance funding.
 7. Associated with seating
 8. Associated with heritage items
Memorialisation is part of an integrated design response to significant heritage items and forms part of the site's adaptive re-use. As such, it ensures a continuing maintenance of these items by allowing income generation within key elements.
- In general, cremation are kept in standard plastic urns and buried in the close proximity of the memorial plaque(behind, in front or below).

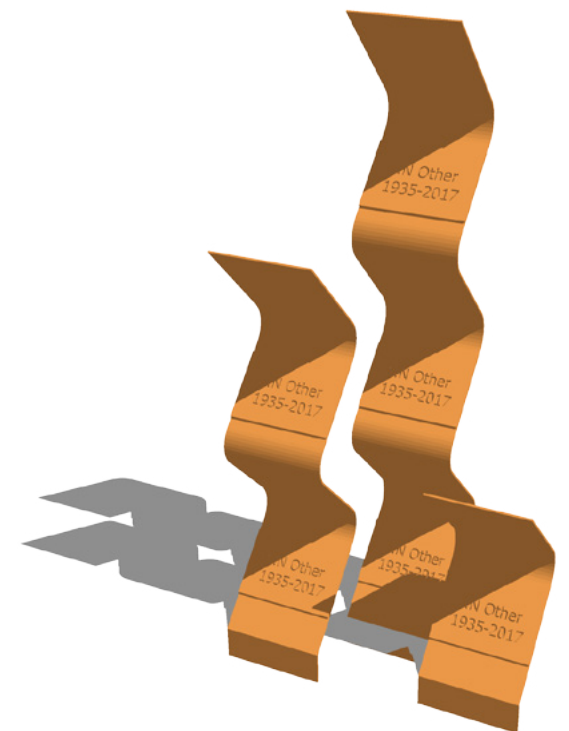
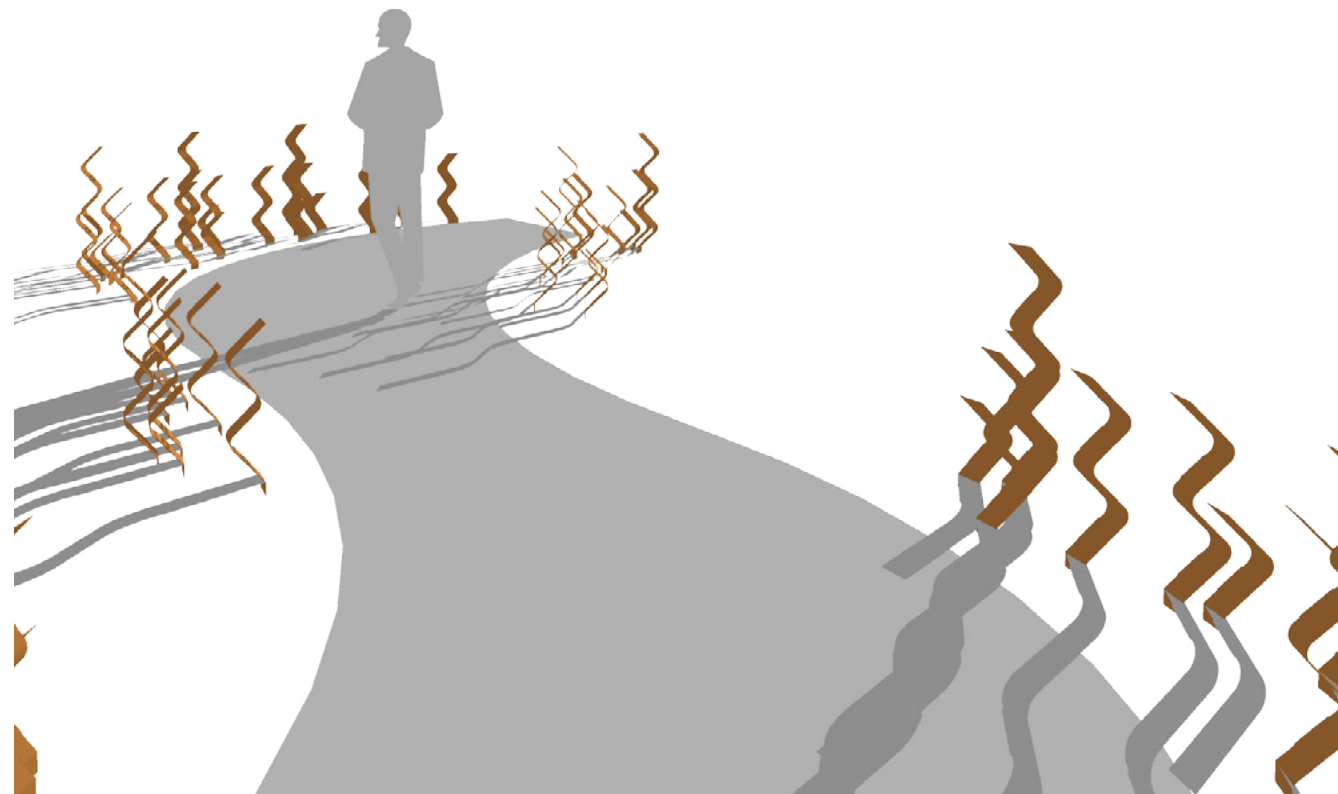
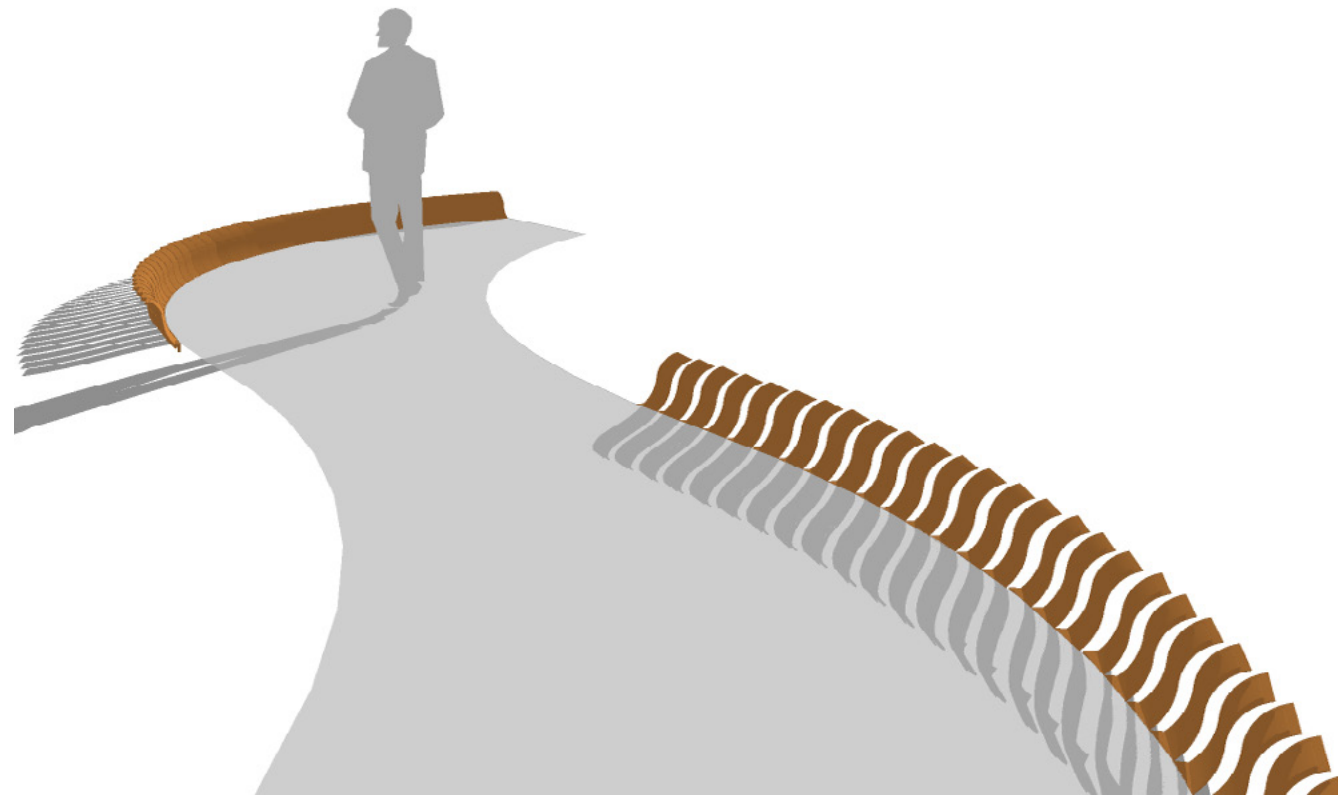
7. DESIGN ELEMENTS

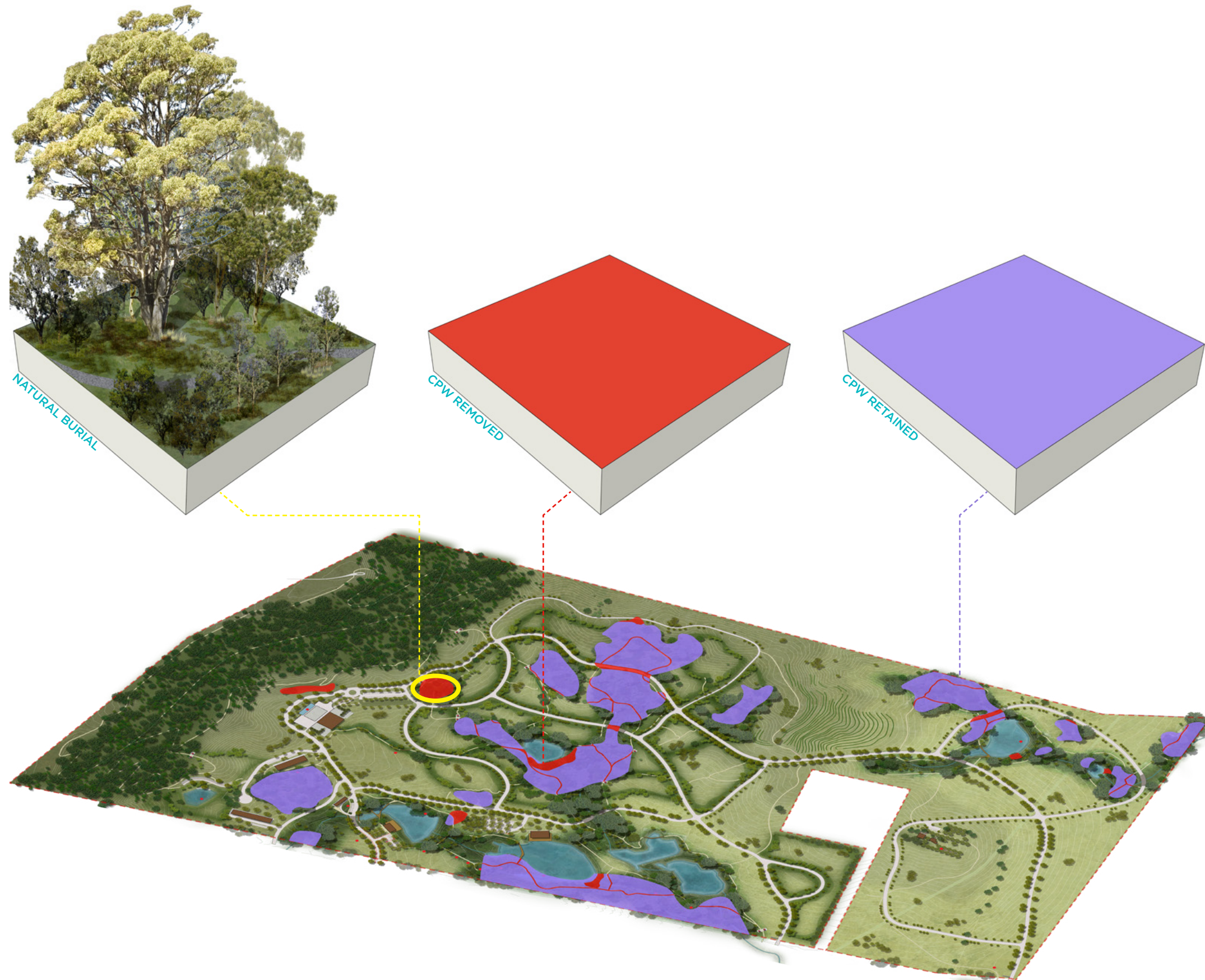
7.9 ASH INTERMENTS



7. DESIGN ELEMENTS

7.9 ASH INTERMENTS





DESIGN PRINCIPLES

- Respect visual quality of the site
- Respect environmental quality of site
- In harmony with the environment
- Minimal impact

RATIONALE

- Retain CPW wherever possible.
- Remove trees only where unavoidable (Dangerous ones, roads and dam edges)
- Provide natural burial area within a selected pocket of lower quality CPW and offset as required.
- Incorporate some paths within the CPW so the public can experience it.
- Provide buffer zone along all above mentioned paths and offset impact as required.
- Minimise impact on CPW by meandering paths, avoiding existing trees' Structural Root Zones (SRZ).
- Fence all CPW outer boundaries with post and wire fencing to prevent pedestrian traffic within.
- Minimise impact onto the ground by using boardwalks in wetter areas.
- Provide interpretive signage and plant identification tags in strategic locations in keeping with Arboretum concept.
- Provide additional habitat and CPW where possible.
- Protect all existing habitats (land snails, habitat trees etc...) and enhance with additional logs salvaged from tree removal.
- Link CPW "pockets" with riparian and additional CPW vegetation where possible to create green corridors and better connection between existing habitats.
- Keep roads' cut and fill to a minimum for minimal impact on CPW.
- Refer Vegetation Management Plan (by Ecologist)

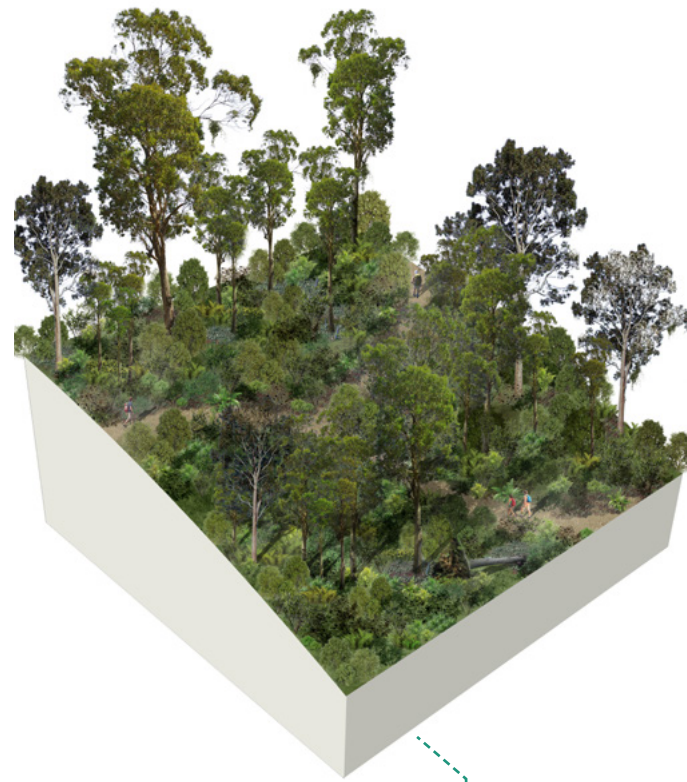
7. DESIGN ELEMENTS

7.10 CUMBERLAND PLAIN WOODLAND



7. DESIGN ELEMENTS

7.11 MOIST SHALE WOODLAND



DESIGN PRINCIPLES

- Respect visual quality of the site
- Respect environmental quality of site
- In harmony with the environment
- Minimal impact

RATIONALE

- Retain moist shale woodland on slopes.
- Remove all weed species over time and revegetate with MSW species.
- Establish mulched walking tracks where natural gaps in vegetation occur, intended mainly for recreational walkers.
- Provide interpretive signage in strategic locations and some plant identification tags for educational purposes.

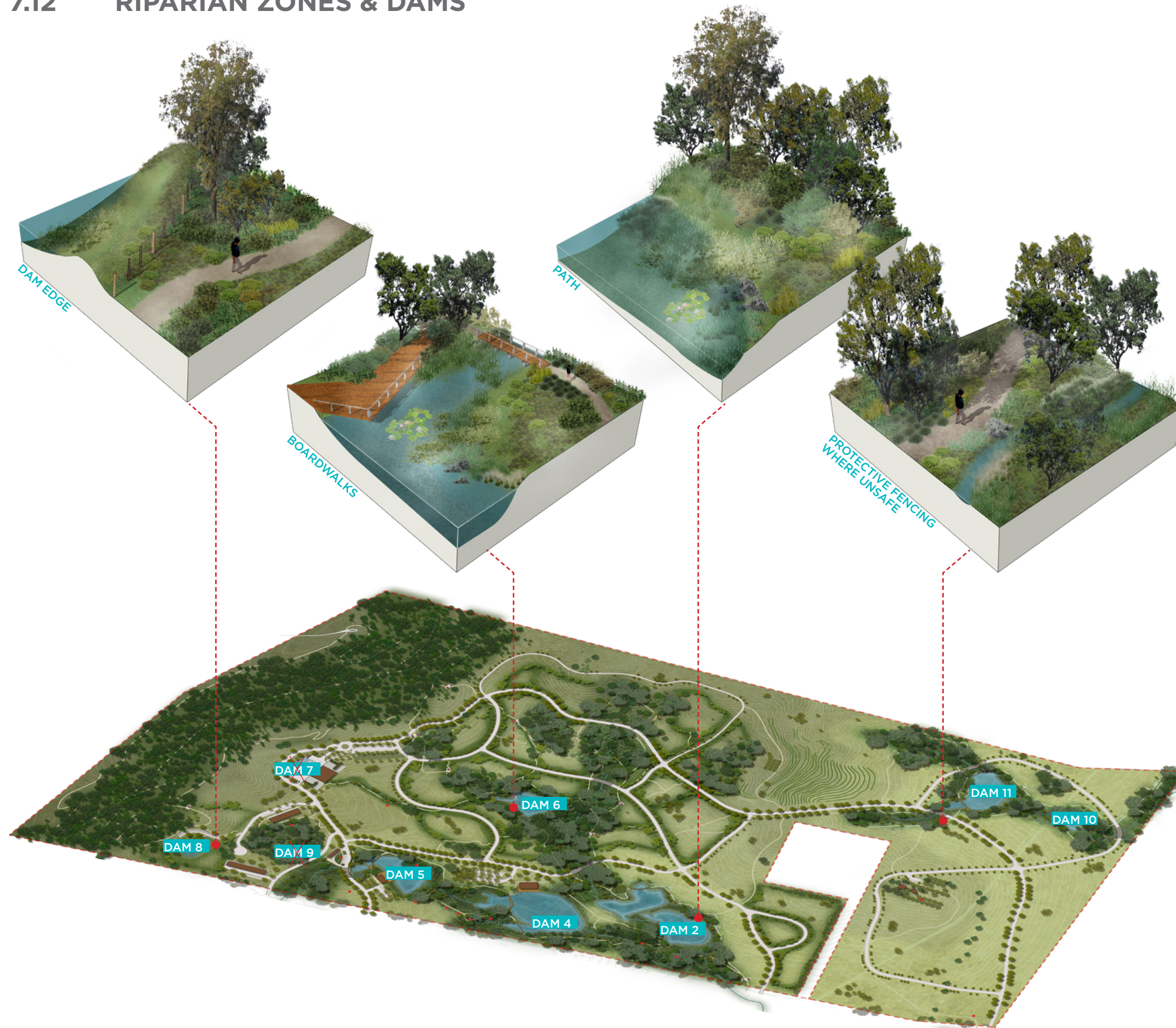
7. DESIGN ELEMENTS

7.11 MOIST SHALE WOODLAND



7. DESIGN ELEMENTS

7.12 RIPARIAN ZONES & DAMS



DESIGN PRINCIPLES

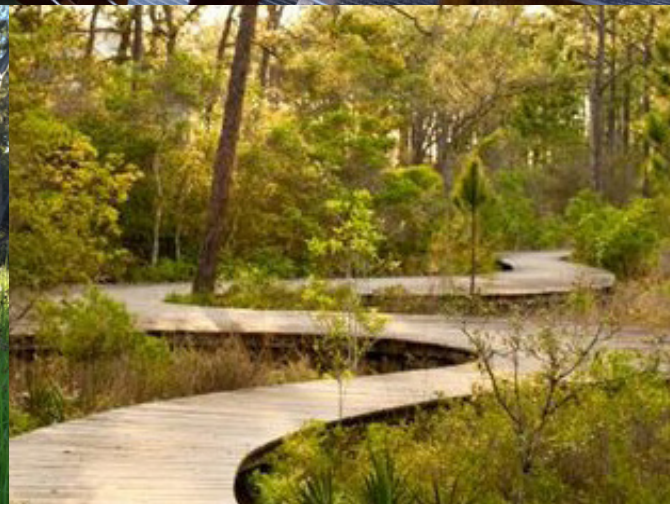
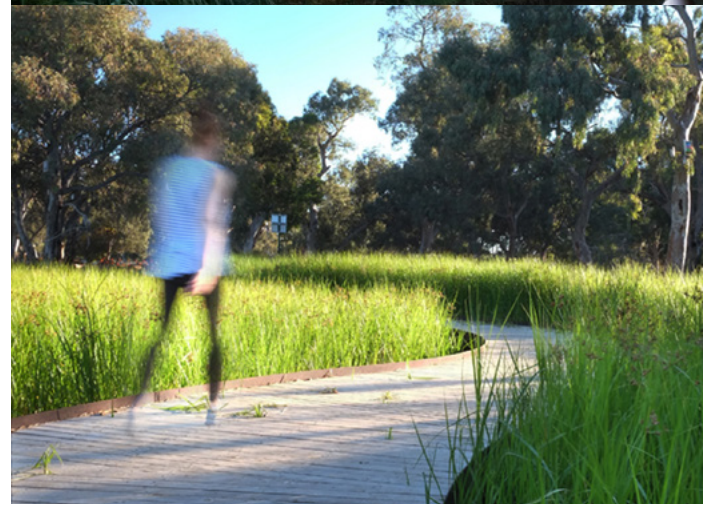
- Respect visual quality of the site
- Respect environment
- In harmony with environment
- Minimise environmental impact
- Enhancing habitat

RATIONALE

- Provide riparian zones along all validated watercourses to the required widths.
- Revegetate with indigenous species.
- Provide habitat for fauna and enhance with extra logs salvaged from tree removal.
- Limit plant height where views onto water or buildings are encouraged.
- Use riparian zones to link pockets of CPW which are currently isolated, hence providing better habitat.
- Encourage visitors to experience the riparian zones by creating a scenic pedestrian network, especially around the dams, as part of the passive recreation activities.
- Minimise impact on the riparian zone by:
 - Confining paths and structures to the outer half of the riparian zone
 - Using elevated boardwalks and bridges where wet or crossing over watercourses and drainage lines.
- Offset impact onto Riparian zone as required (refer ecologist report)
- Retain eight dams (2-6, 8,10,11) and remove two small ones (7,9)
- Modify dam edges to ensure safety bench compliance (1:5 above NWL and 1:8 below as per RLSS's Guidelines for Water Safety in Urban Water Developments).
- Fence off all dam edges and dam walls where compliance is not possible.
- Plant water's edge for water quality purpose and to hide possible draw down.
- Add wetland vegetation in selected shallow areas for WSUD treatment (Refer WSUD report)
- Provide bird hides near the water's edge in selected locations to observe the newly established fauna attracted to the newly created habitats.

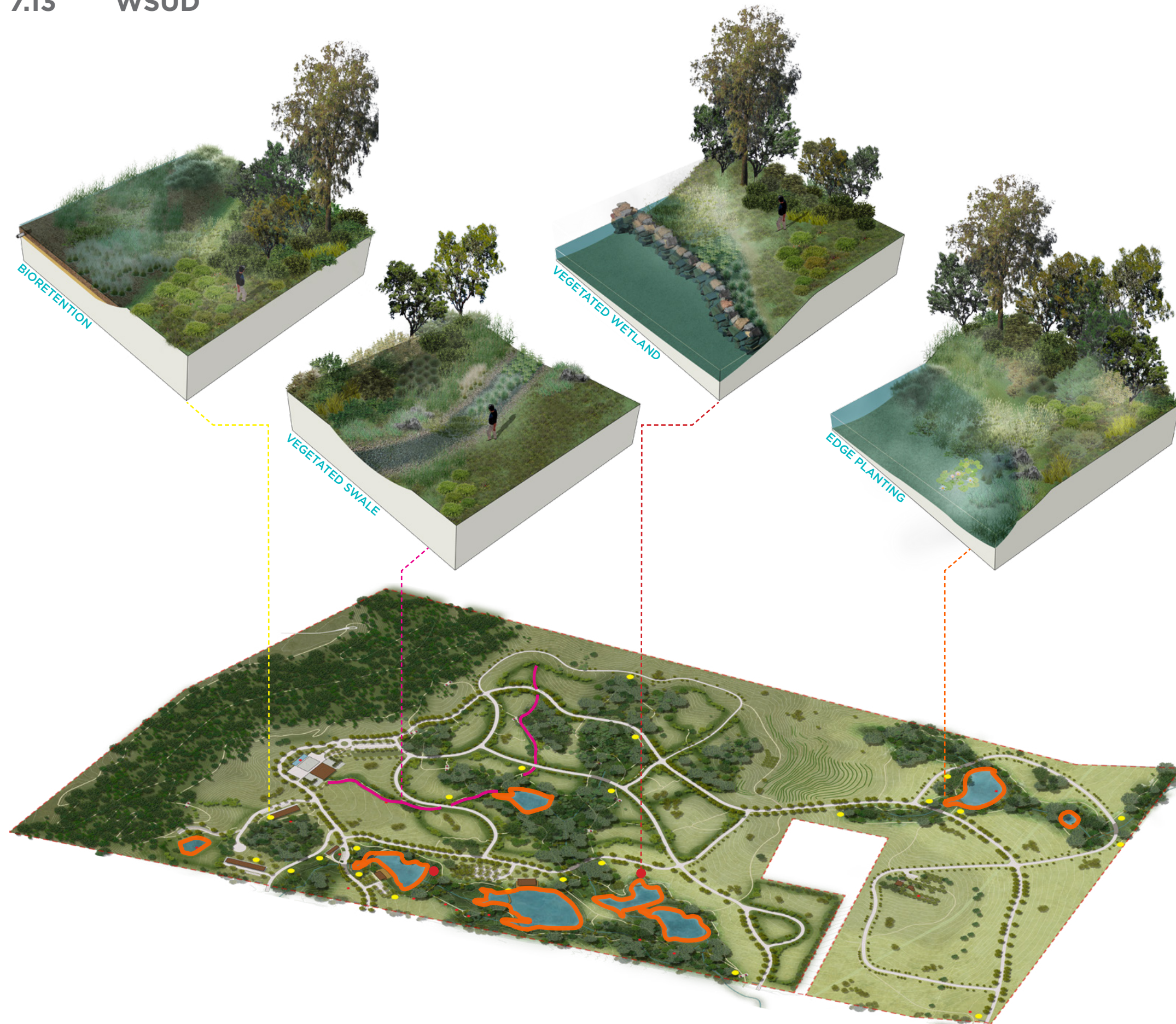
7. DESIGN ELEMENTS

7.12 RIPARIAN ZONES & DAMS



7. DESIGN ELEMENTS

7.13 WSUD



DESIGN PRINCIPLES

- Respect of the Ecology of the site
- Respect of the waterway
- Promote sustainable water management
- Follow best practice
- Promote education on WSUD

RATIONALE

- Capture of road run-offs and treatment of pollutants to Best Practice requirements
- Bio-retention beds for water treatment.
- Vegetated swales for water treatment.
- Wetland planting to dams edges for water treatment and erosion control.
- Dams of suitable size and depth to limit potential for algae bloom.
- Safe batter treatment around all dams or fencing to prevent access to unsafe edges.
- Reshaping of dam #4 to limit stagnant areas and potential for algae bloom.
- Passive irrigation where possible
- Water retention on site, within the dams for irrigation purposes.

(refer to Stormwater Report by WSP for further details)
(refer to report by Alluvium for further details)

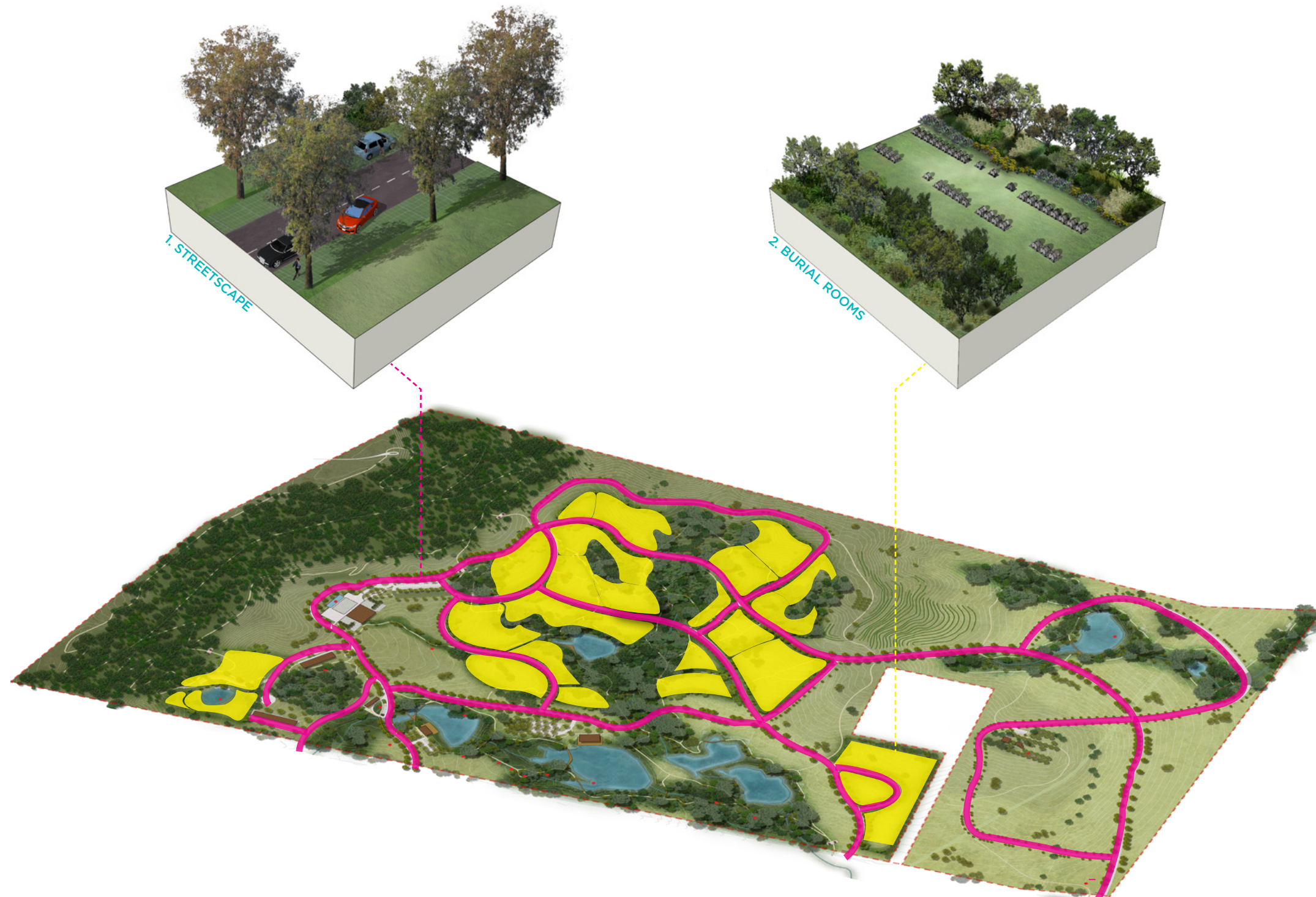
7. DESIGN ELEMENTS

7.13 WSUD



7. DESIGN ELEMENTS

7.14 PLANTING PHILOSOPHY



DESIGN PRINCIPLES

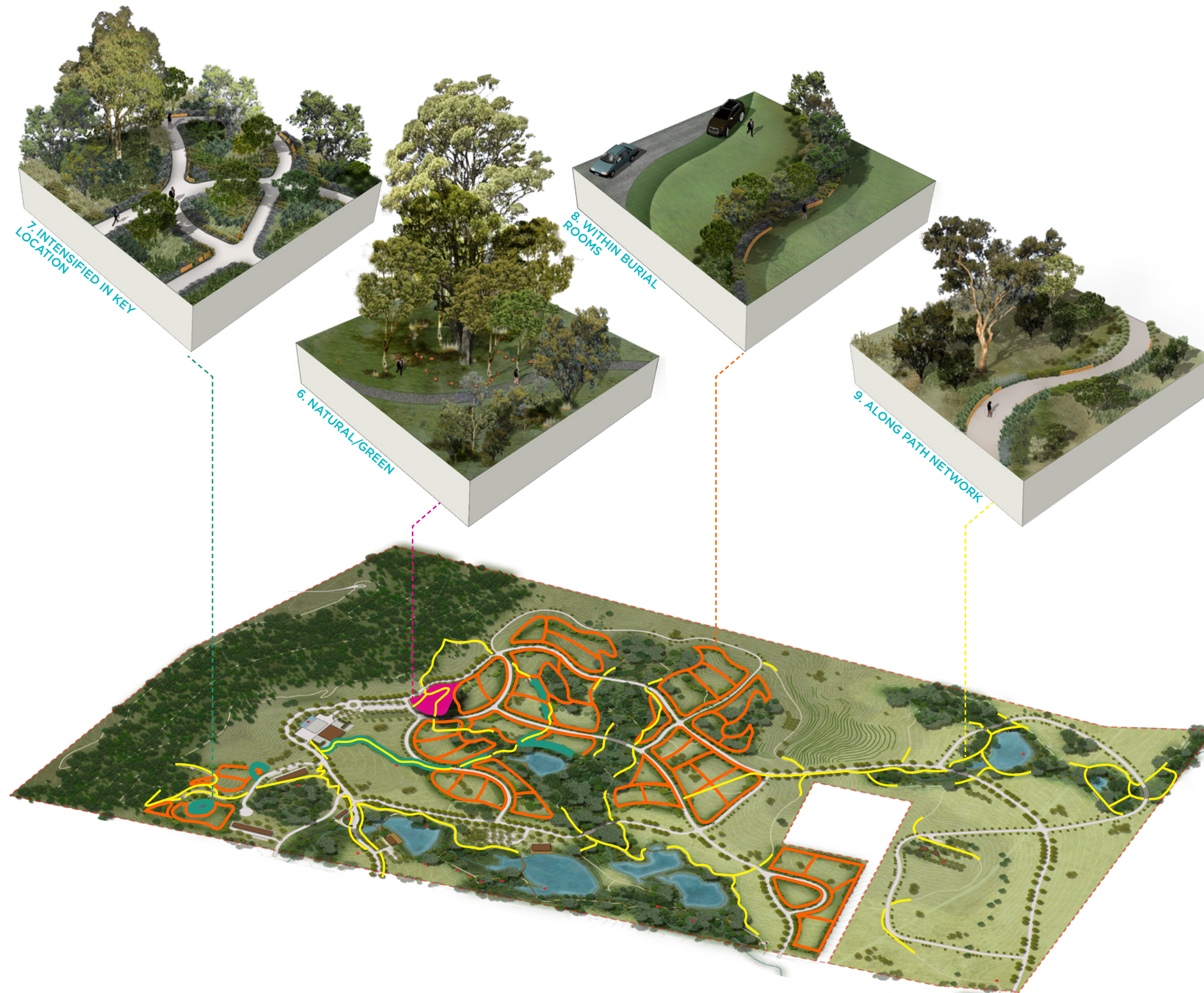
- Respect visual quality of the site
- Respect environment
- In harmony with environment
- Minimise environmental impact

RATIONALE

- Blending into the existing landscape character of grassed hills amongst native vegetation.
 - Recessive in appearance to respect the heritage plantings associated with Varroville House.
 - Predominantly native with limited use of exotics plants for reasons mentioned above.
1. Streetscape:
 - Providing shade to road side parking.
 - Generally more formal between main entrance and main buildings to provide a sense of arrival as part of the ceremonial process.
 - Informal elsewhere.
 - Randomly spaced for better integration into the natural and rural character of the site.
 - Generally irrigated when required (refer irrigation strategy).
 2. Burial room screening:
 - Designed and created to respond to the visual sensitivities of the site and the perceived visual impact of a cemetery.
 - Computer 3D modelling has been used to determine the necessary height of the screen planting at any given location.
 - Screen planting has been designed to ensure minimal visual impact of headstones from the main internal roads, St Andrews Rd and Varroville House.
 - Screen planting to provide privacy for mourners whilst retaining some views in and out for passive policing.
 - Screen planting to provide shade for road side parking.
 - Screen planting to be supplemented with tree planting where screen is lower than 4m.
 - Generally informal and natural in character for better integration in the CPW landscape.
 - Predominantly native and drought resistant.
 - Some occasional small exotic trees and shrubs for seasonal effect and ease of wayfinding.
 - Planting to be more ornamental on the inside of burial rooms, where less visible from the main road network. (refer "Burial Rooms" herein).
 - Each room to be given a planting scheme relating to its name (eg. Banksia lawn) in keeping with the Arboretum concept (refer Interpretation Strategy for details)
 - Generally irrigated when required.

7. DESIGN ELEMENTS

7.14 PLANTING PHILOSOPHY

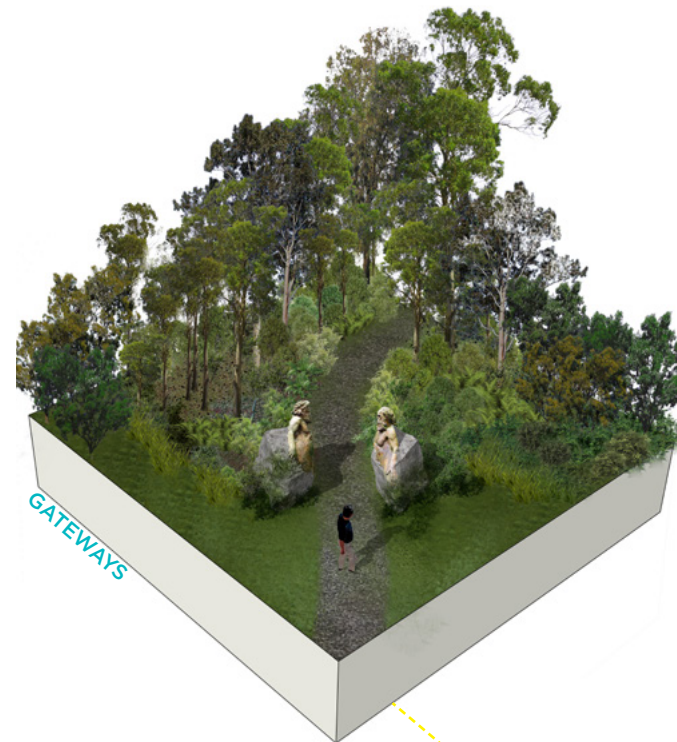
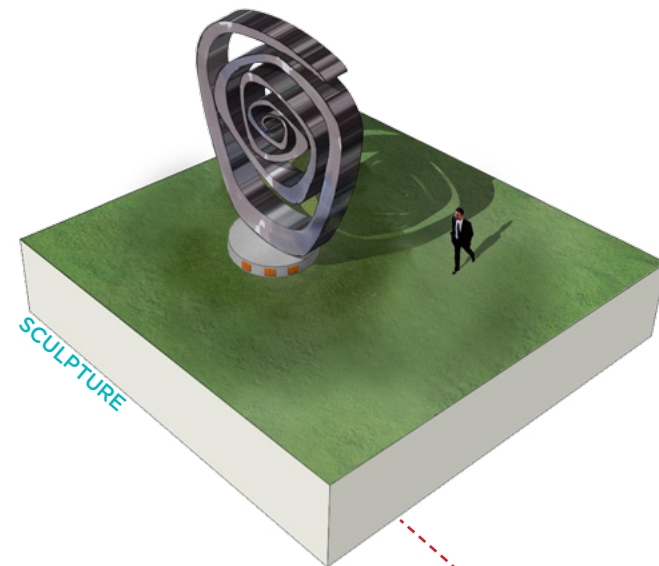


RATIONALE

- 3. Riparian:
 - (refer "Riparian zones" chapter 7.12)
 - (refer vegetation Management Plan)
- 4. Cumberland Plain Woodland (CPW):
 - (refer "Riparian zones" chapter 7.12)
 - (refer vegetation Management Plan)
- 5. Building surrounds:
 - Limited to prescribed vegetation/canopy coverage, layout, distances, plant types and sizes in the buildings' Asset Protection Zones (APZ).
 - Generally minimalist, in keeping with Architectural narrative.
- 6. Memorial Gardens in natural/green burial areas:
 - All indigenous.
 - Encouraging regeneration and habitat.
 - Promoting sustainability.
 - Promoting sustainability and 'life cycle' concept.
- More ornamental and low (less than 2m), when associated with Memorial Gardens (with ash interments).
- 7. Intensive Memorial Gardens in key locations:
 - May have a planting theme which relates to the name, cultural relevance or sensory focus of the garden.
 - Incorporate more colour, texture and specie variety.
- 8. Memorial Gardens in burial rooms:
 - As above.
- 9. Memorial Gardens along path network (often in riparian zones, MSW and CPW):
 - Mostly indigenous, relevant to EVC, with accent more ornamental flowering, plants compact and directly relating to memorial placement.

7. DESIGN ELEMENTS

7.15 SCULPTURES & GATEWAYS



DESIGN PRINCIPLES

- Respect visual quality of the site
- Respect environment
- In harmony with the environment
- Minimise environmental impact

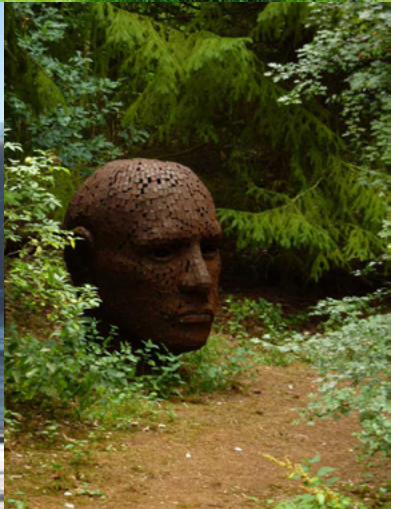
RATIONALE

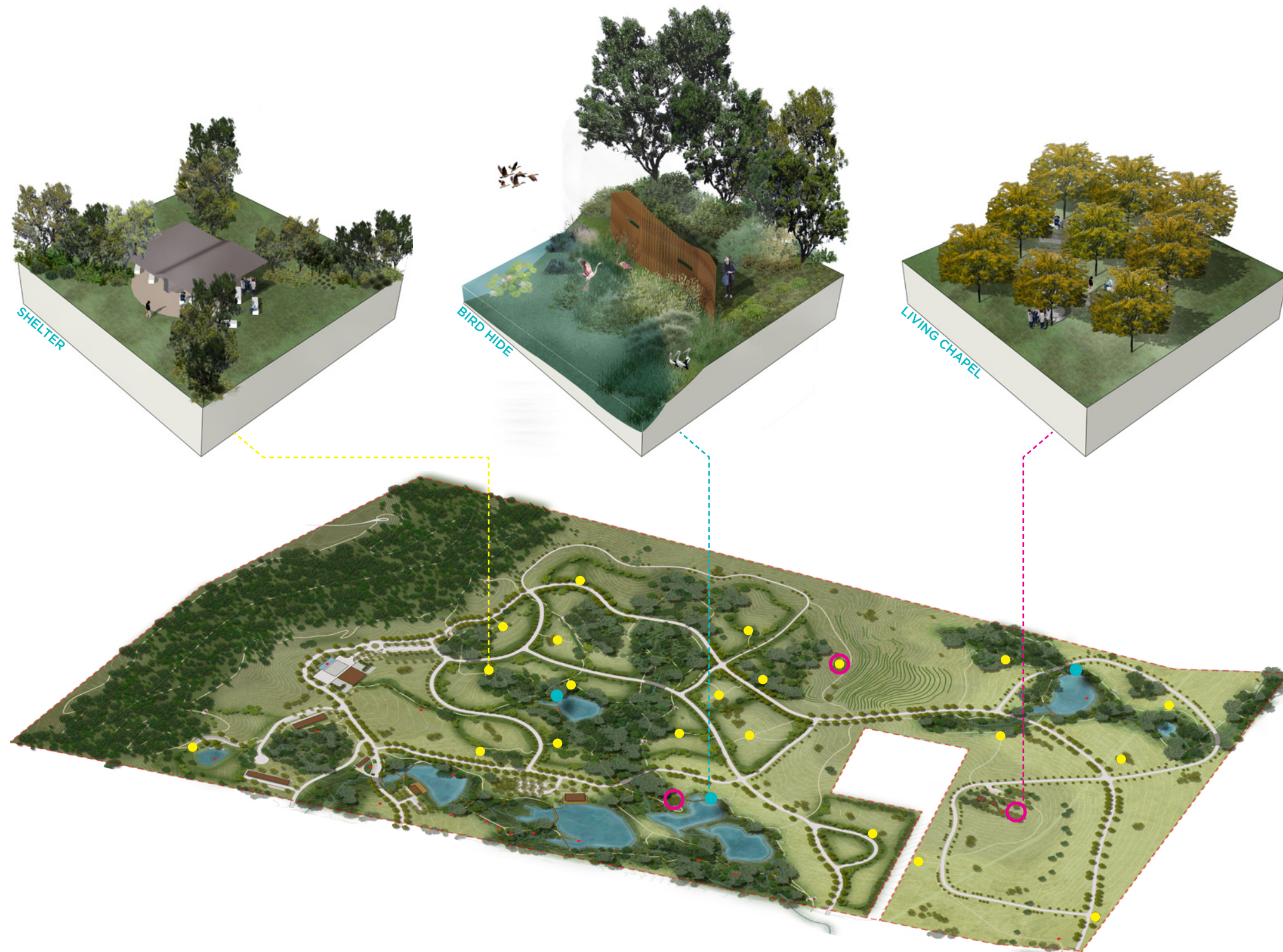
- Offering quality permanent artwork throughout the park as part of the open space provision.
- Art collection to be built up over time.
- Sculptures may be associated with memorialisation.
- Gateways are sculptural elements which mark the threshold of the ecological areas (CPW and MSW), where paths enter the Woodland.
- Gateways may also as a shelter or an interpretation point in selected locations.
- Refer Public Art Strategy.



7. DESIGN ELEMENTS

7.15 SCULPTURES & GATEWAYS





DESIGN PRINCIPLES

- Respect visual quality of the site
- Respect environment
- In harmony with the environment
- Minimise environmental impact

RATIONALE

- Shelters, bird hide and Living Chapels offer contemplative respite areas for both mourners and recreational visitors.
- Shelters:
 - Provide shade from the sun, shelter from rain and drinking fountain facility.
 - Facilitate flower preparation and include water supply.
 - Offer opportunity for memorialisation.
 - Provide a quiet semi-private place for contemplation and remembrance.
 - Enable small or modest sized gathering for a service, celebration, grave-side ceremony or ash interment.
 - Visually semi-permeable to allow passive policing.
 - Permeable for air cooling.
 - Generally located at the junction of burial rooms as a shared facility.
 - Generally, in 3 sizes accommodating from 5 to 40 people.
 - Distinctive in appearance to reference them in the landscape.
 - Reflecting both the architecture (vertically) and landscape (horizontally) narratives.
 - Constructed in robust materials in recessive colours.
- Bird Hides:
 - Provide views onto water habitat without being seen.
 - Located close to selected dams.
 - Contemporary in style and with sculptural quality.
 - Reflecting the concept narrative.
- Living Chapels:
 - Consisting of a grove of distinctive trees to reference them in the landscape.
 - Reflecting the concept narrative.
 - Inspired from the Orchard (possible previous site use) with its grid-like pattern.
 - Generally located to take advantage of commanding views.
 - Provide shade from the sun but not shelter for heavy rains.

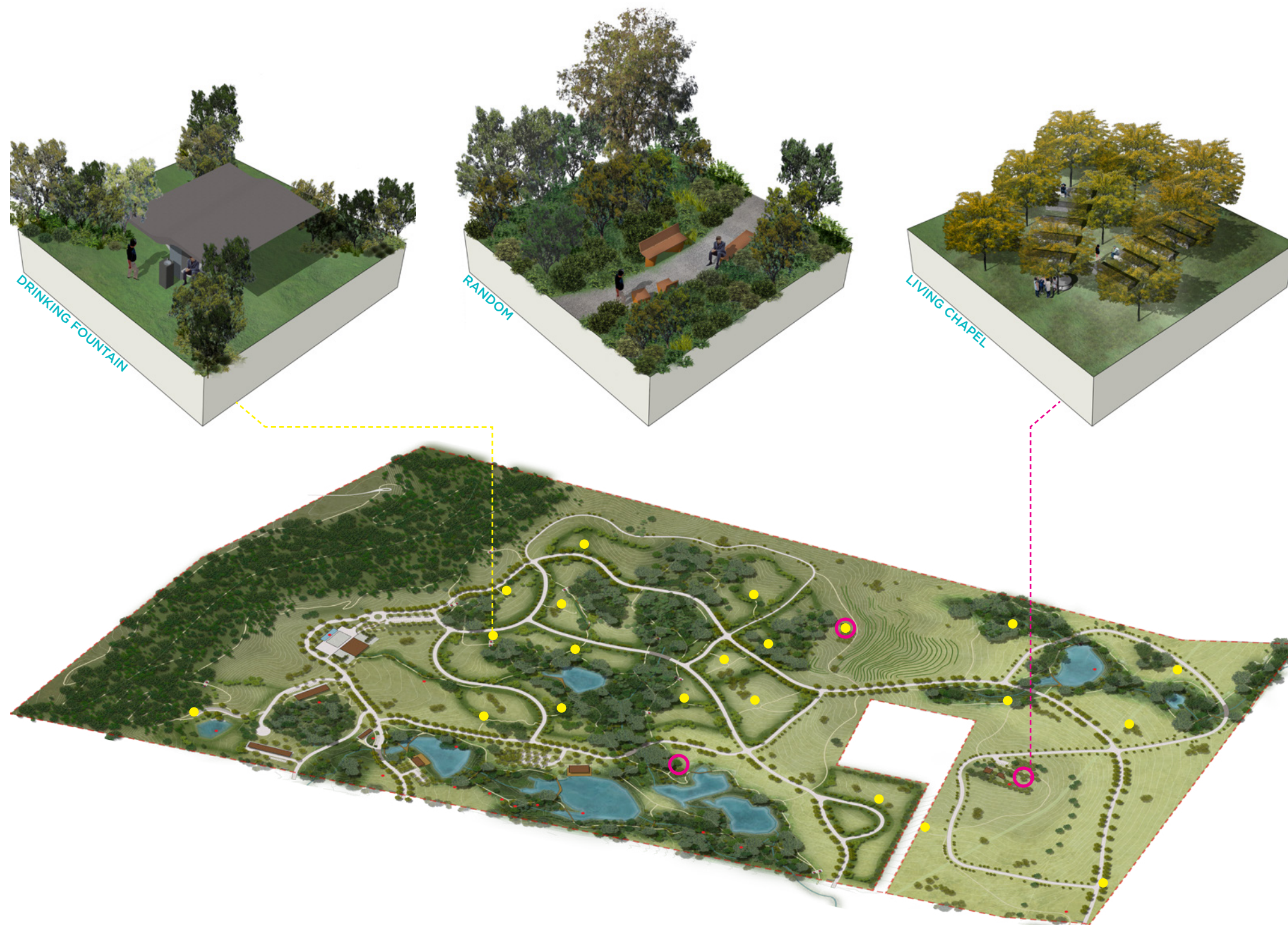
7. DESIGN ELEMENTS

7.16 SHELTERS, LIVING CHAPEL & BIRD HIDE



7. DESIGN ELEMENTS

7.17 FURNITURE



DESIGN PRINCIPLES

- Respect visual quality of the site
- Respect environment
- In harmony with environment

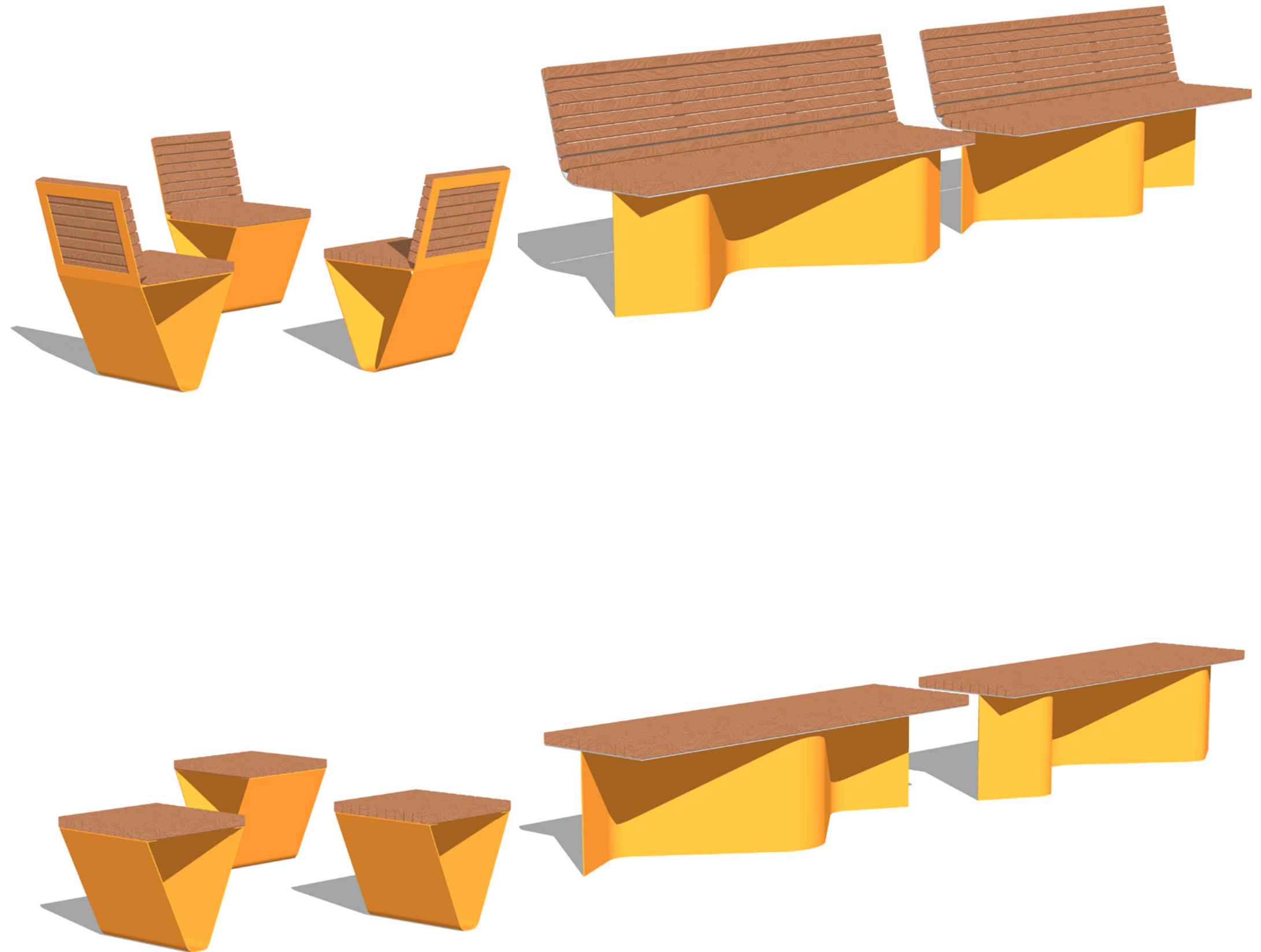
RATIONALE

- Responding to Environmentally Sustainable Design philosophies for the site
- Using sustainable materials, long lasting with minimal maintenance.
- Materials to be quick drying in winter and cool in summer.
- Seating:
 - For respite of mourners (in burial areas) and recreational visitors (in Open Space areas)
 - Generally more formal in style and in keeping with Architecture narrative near buildings.
 - Generally more organic and random in the landscaped areas.
 - Reflecting the concept narrative and design principles
 - Constructed of robust materials.
- Responding to ESD philosophies for the site
- Using sustainable materials, long lasting with minimal maintenance.
- Materials to be quick drying in winter and cool in summer.
- Drinking Fountains:
 - One per shelter.
 - Contemporary design style and materials.
 - Utilitarian yet aesthetic
- Taps and pins.
 - Reflective the concept narrative.
- Refer Water Stations herein

7. DESIGN ELEMENTS

7.17 FURNITURE





7. DESIGN ELEMENTS

7.18 PLAY AREA

7



DESIGN PRINCIPLES

- Unique
- Contemporary
- In harmony with environment
- Respectful of other patrons
- Sculptural

RATIONALE

- Provide a play area suitable to entertain children of all ages.
- Passive play only (not exercise based), contemplative or exploratory or sensory in nature.
- Safe with appropriate plant and material selection and away from water.
- Recessive colours
- Sculptural
- Set in a natural setting
- Shaded

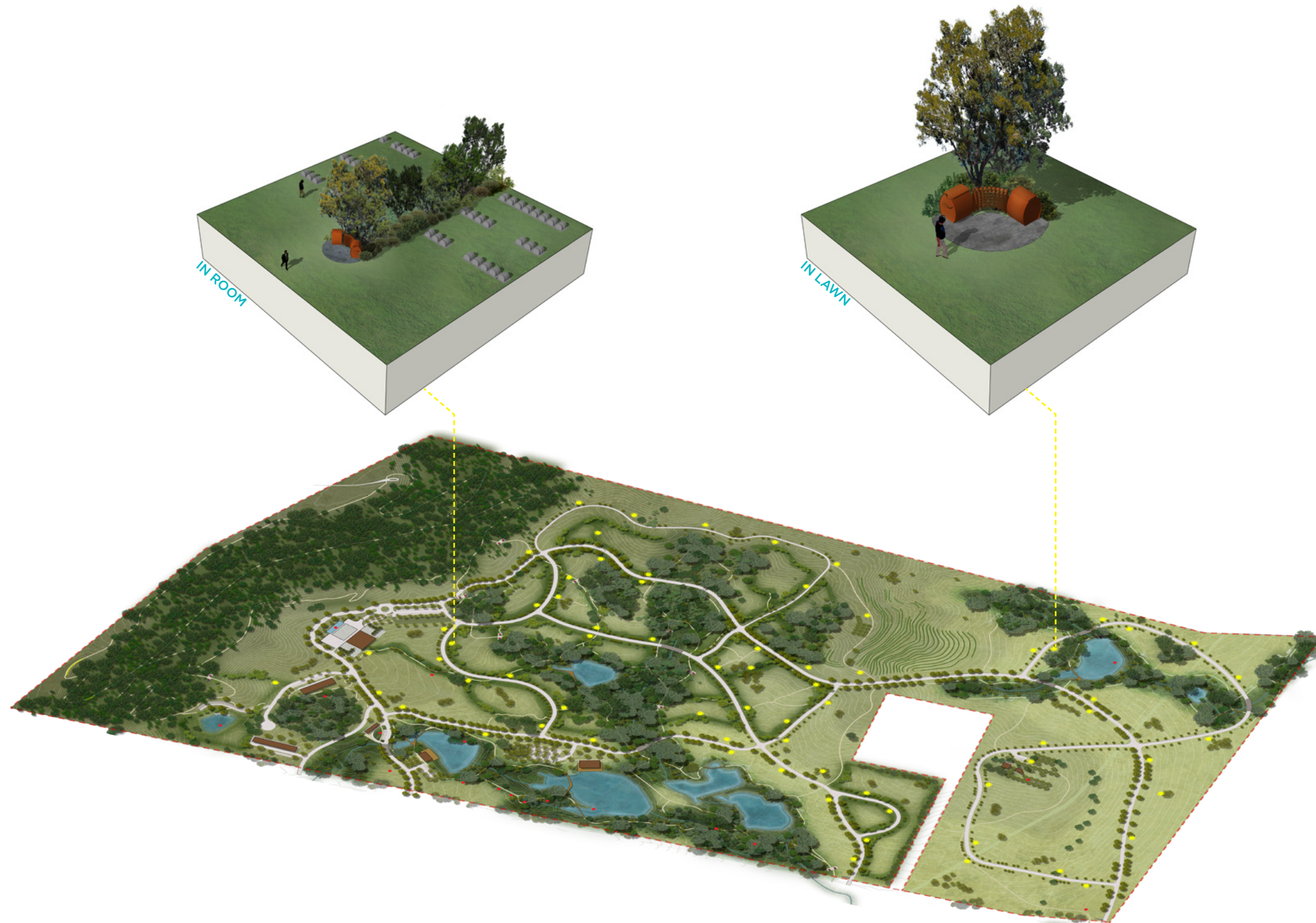
7. DESIGN ELEMENTS

7.18 PLAY AREA



7. DESIGN ELEMENTS

7.19 WATER STATION



DESIGN PRINCIPLES

- Respect Visual quality of the site
- Respect environment
- In harmony with environment
- Minimise environmental impact

RATIONALE

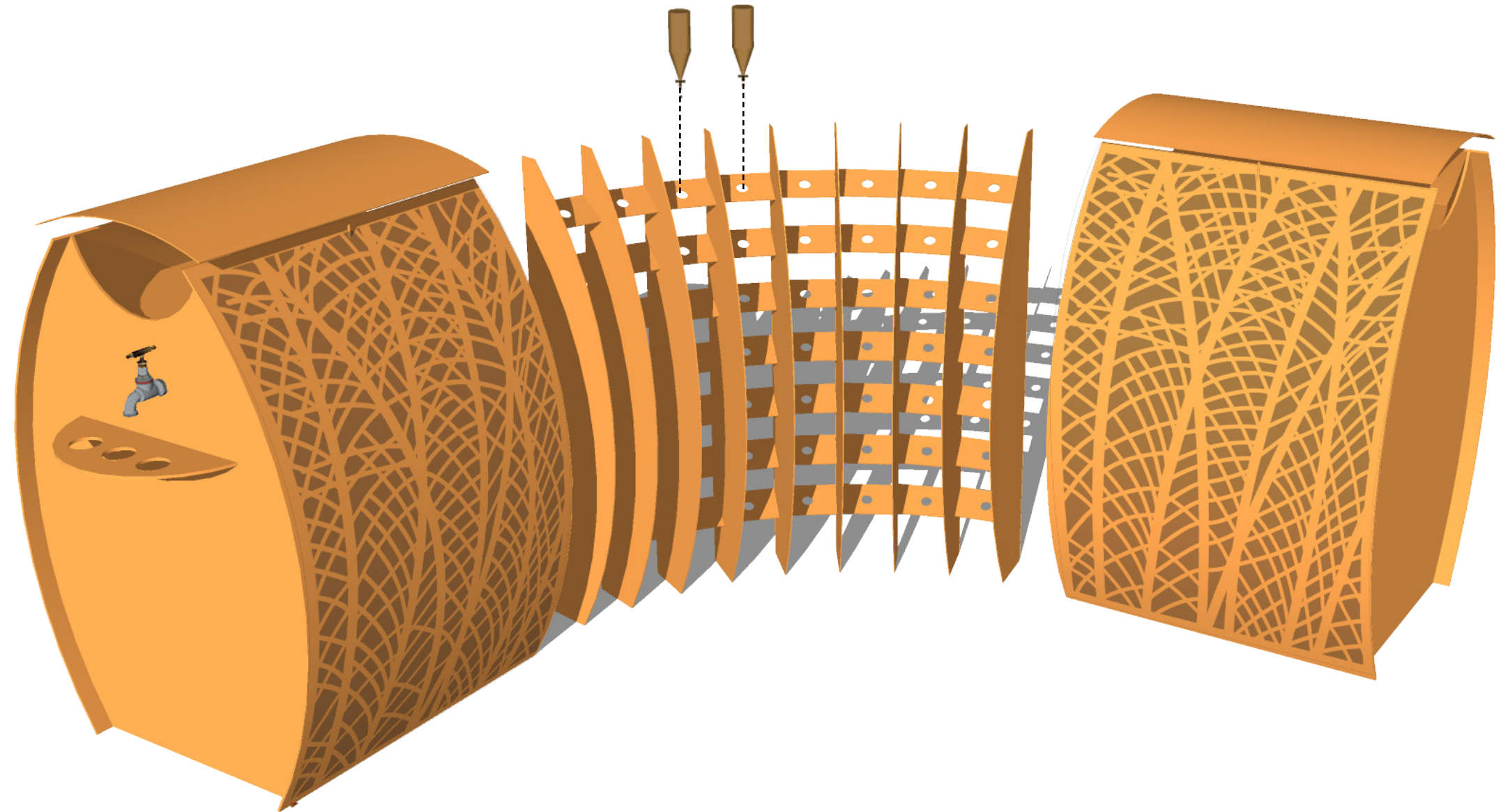
- Provide the following facilities:
 - Tap with potable water
 - Standard plastic flower vases and holding rack
 - Wheeled bin for compostable material
 - Wheeled bin for general waste
- Bins to be wheeled to kerb side by staff on collection day.
- Contemporary design style and materials.
- Utilitarian yet aesthetic.
- Reflecting the site narrative.
- Iconic and distinctive in appearance for ease of finding.

7. DESIGN ELEMENTS

7.19 WATER STATION

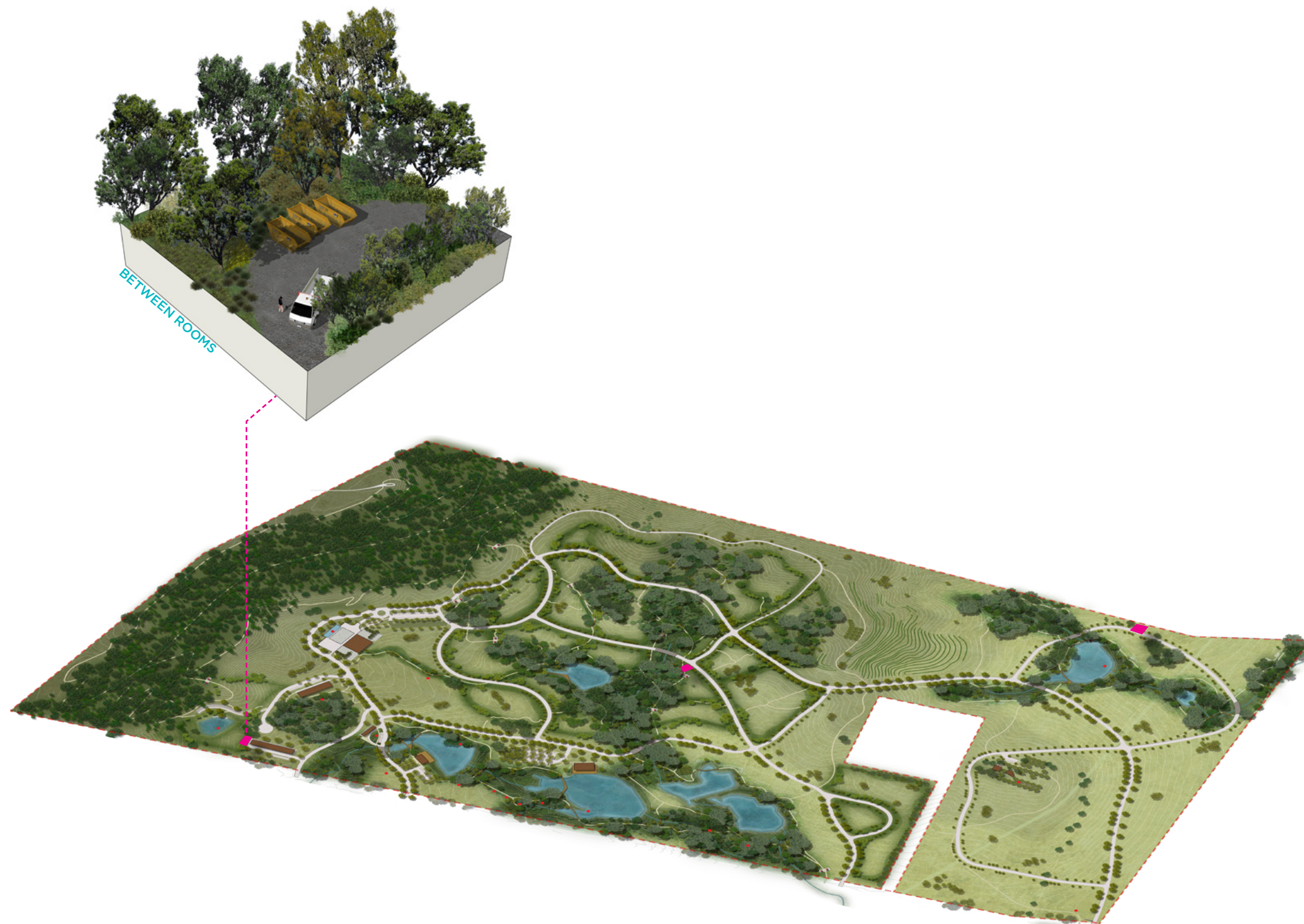


7. DESIGN ELEMENTS
7.19 WATER STATION



7. DESIGN ELEMENTS

7.20 SOIL DEPOTS



DESIGN PRINCIPLES

- ESD principles
- Respect visual quality of site
- Respect mourning process

RATIONALE

- For the temporary storage of digging equipment and carting bins during an interment. Soil will be returned to the grave for backfill after interment, as removal of spoil during funerals/interments provides a more sensitive service for the mourners at the grave site and is an important part of the business model.
- One main depot at Workshop area and two satellite secondary depots, evenly located throughout the site in key locations.
- Multiple depots minimise impact of digging equipment onto the road, therefore minimising sediment load onto roads and ultimately into receiving WSUD elements.
- Multiple depots minimise impact on environment by minimising travel distances, energy and pollution associated with transport.
- Minimise visual impact on the site with screen planting.

7. DESIGN ELEMENTS

7.20 SOIL DEPOTS



8. RESPONDING TO

8.1 THE CONSERVATION MANAGEMENT PLAN (CMP)

Alignment with CMP and its policies:

Policy	Description	Alignment
POLICY 8	The future conservation and management of the place should be carried out in accordance with the principles of the Burra Charter, which advocates a cautious approach to change: do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained.	The concept proposes to retain the alignment of the original driveway, the original contoured trenches (vineyards) , the existing dams. It interpret them with minimal disturbance.
POLICY 16	The Scenic Protection Zoning should be retained to maintain the scenic landscape values of the site and the setting of the homestead. The zoning and land uses of the subject property should retain the rural landscape setting, with any new development designed to minimise adverse visual impacts on the landscape setting of “Varroville”	The visual impact of the cemetery use has been minimised by providing lawn graves in all open views and screening headstones in “burial rooms” elsewhere. Views which have been deemed as historically significant have been retained and protected. The impact of the development onto views external to the site have been mitigated or demonstrated as insignificant.
POLICY 17	The original topography and open landscape character of the site must be retained and conserved and must be dominant feature of the site	All landscaped areas follow the original topography. The team has modified the road layout to achieve the least cut and fill. (refer grading plans) Vegetation (grass and trees) remain the dominant feature on site.
POLICY 18	Significant views to, from and within Varroville should be retained and conserved. This includes views between the house and Bunbury Curran Hill and long distance views between the house and other significant homesteads as identified in section 5.7. Identified distant views to other homesteads should be subject to further assessment.	View lines have been retained. “Burial rooms” which may interfere with these views have been removed and replaced with lawn graves. (refer 1:2500 site plan).
POLICY 19	The dense stand of African olive below the summit of Bunbury Curran Hill should be controlled to open up the main views to the east and south.	Removal of Olive is planned over time (refer Vegetation Management Plan) and will be replaced with MSW vegetation. Views are to be retained (Refer Bunbury Curran Hill Interpretation Plan – Interpretation Strategy)
POLICY 20	Development in the immediate vicinity of Varroville house and significant outbuildings should have regard to the heritage significance of the place and/or individual elements and should enhance the setting of the site.	A 10m non-burial zone has been applied all around the Varroville House property boundary. Graves are limited to lawn or low headstones within the vicinity of the house (50-100m). Views have been tested to ensure no headstone will be visible from Varroville homestead and its immediate surrounds. All graves around the Outbuildings are to be lawn graves to retain the pastoral quality of the site. New plantings are in keeping with the existing rural character.
POLICY 21	Development and the placement and selection of larger specimen trees should be carefully planned to avoid impacting or obscuring identified significant views and should not impact on the pastoral character or cultural landscape	No specimen trees have been placed in identified significant views. It should be noted, however, that Cumberland Plain Woodland will naturally establish in the riparian zones and will continue to have an impact on the views.
POLICY 22	There should be no further subdivision of the estate, to maintain the rural character.	None proposed.

8. RESPONDING TO 8.1 THE CONSERVATION MANAGEMENT PLAN (CMP)

Policy	Description	Alignment
POLICY 23	Any development should be below the main ridgeline from Bunbury Curran Hill and should not impact significant views or the overall appreciation of the rural setting. The 'main ridgeline' refers to the ridge on the eastern side of the property running south from Bunbury Curran towards Varroville House.	No built elements are proposed along the "main ridgeline". Any plantings have been carefully placed to retain appreciation of the rural landscape.
POLICY 25	All future planning, management, works and impact assessment must be guided by the statement of significance and the significant spaces, landscape, fabric and building elements identified in this CMP together with any additional detailed research and assessment. The significance assessment should be used to identify the contribution that individual elements make to the significance of the site collectively. Individual elements should not be assessed in isolation.	Our response to Policy 24 together with the Public Art Strategy, the Interpretation Strategy and the Landscape Design Response demonstrate a pervasive and cohesive approach and contribution to the significance of the site.
POLICY 26	Significant aspects of the natural topography and landforms should be retained, this includes the primary ridges and valleys and undulating slopes. Development is to respond to the topography.	The Bunbury Curran Hill top is being retained, cleared of African Olives and enhanced to reinstate his prominence in the landscape. The main ridges, valleys and undulating forms of the landscape are all being retained. Cut and fill for roads has been minimised and is localised. (refer engineer's "cut and fill" drawing)
POLICY 27	The significant rural and pastoral character of the estate should be retained and conserved.	The visual impact of the cemetery use has been minimised by providing lawn graves in all open views and screening headstones in "burial rooms" elsewhere. The plantings are generally random and native in keeping with the existing landscape character.
POLICY 28	The remnant significant endangered ecological communities, specifically Cumberland Plain Woodland (CPW) and Moist Shale Woodland should be retained and conserved in the majority and subject to ecological advice.	90% of CPW has been retained and conserved, expanded and enhanced. 2% of CPW has been retained but turned into a Natural Burial area. Only 8% has been removed. All of the MSW is proposed to be retained. The remainder of the hillside is proposed to be restored to MSW in lieu of the African Olive which has currently invaded. Refer to Vegetation Management Plan by Travers.
POLICY 29	Those dams identified and assessed by archaeological or other detailed physical investigation to have been formed in the Sturt period are regarded as being of heritage significance and should be retained and conserved where possible, and used for ongoing water management of the subject property. Dams should be managed in accordance with dam safety guidelines, geotechnical advice, ecological and riparian requirements. Geotechnical advice should be sought in regard to any dam failure, seepage or landslip event. Where dams are to be retained, the profile of said dams should be maintained where possible.	All dams identified as significant have been retained. Modifications to the dam edges are proposed but only to the following extents: -to ensure water quality (removal of stagnant corners) and -to achieve safety benching standards for public use. (subject to further archaeological investigations)

8.

RESPONDING TO

8.1 THE CONSERVATION MANAGEMENT PLAN (CMP)

Policy	Description	Alignment
POLICY 30	Remnant timber post and rail fencing should be retained and conserved where possible. Repairs and replacement should be sympathetic in material and style whilst being able to be identified as new work. There is little early fencing remaining, generally located in proximity to the outbuildings group.	Remnant timber post and rail fencing are present around the outbuildings and along the existing driveway leading to the outbuildings. These are proposed to be salvaged and reused in the proximity of the outbuildings. Refer to Interpretation Strategy and Outbuildings preliminary Concept (subject to archaeological investigations)
POLICY 31	The plantings along the c1950s driveway to the outbuildings from St Andrews Road are of little significance and are dominated by two species which are invasive (African olive) or have structural problems as they age (coral tree). Where the driveway is proposed to be retained, consideration should be given to replanting this driveway with more suitable species (preferably native species that are part of the original vegetation community or non-invasive exotic species that are sympathetic to the historic landscape). Where the plantings are proposed for removal, the driveway would not be required to be retained.	It is proposed to retain the driveway in the short term to gain access to the outbuilding’s “educational precinct” together with the progressive removal of its African Olives and Coral trees. In the medium to long term, the driveway is proposed to be removed and specimen trees randomly planted along its alignment to provide a visual cue and historical reference in the landscape.
POLICY 33	Extant significant building elements, spaces and fabric, both internally and externally should be retained and conserved, in accordance with the levels of significance identified in this CMP and in accordance with particular actions specified in specific policies of this CMP.	
POLICY 36	The timber barn is identified as being of moderate heritage significance however is in extremely poor condition and would likely require a full reconstruction should it be proposed to be retained. Demolition is considered appropriate, subject to a detailed archival recording, incorporating detailed measured drawings including plans, elevations and scaled drawings of any significant detailing.	
POLICY 37	The schedule of Conservation works (Table 12) should be undertaken as a priority as part of long term management and maintenance of the property and to stabilise the outbuildings.	
POLICY 39	The future conservation and maintenance of the place should be carried out with a cautious approach to change; i.e. to do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained.	
POLICY 43	A program of regular monitoring of significant dams should be undertaken in conjunction with appropriate dam safety guidelines, and incorporated where relevant into management decisions.	Noted. Dam edges are proposed to be modified in places to comply with safety guidelines where possible, or fenced-off elsewhere. Fencing shall be recessive, unobtrusive farm fencing concealed in plantings.

8. RESPONDING TO

8.1 THE CONSERVATION MANAGEMENT PLAN (CMP)

Policy	Description	Alignment
POLICY 44	Water must be maintained in the dams and monitored to ensure that the dams are never emptied (except where undergoing maintenance works or in conjunction with approved construction, for either adaptation, modification or perimeter civil works) to protect dams from cracking.	Noted. Refer above comment.
POLICY 45	Any proposed new use of the Varroville Estate should be compatible with the nature and identified significance of the place. A cemetery use is considered appropriate, where the required associated development and landscaping works are able to maintain the natural character of the Scenic Hills and the significant character of the cultural landscape.	The character of the proposed cemetery is of grassed lawn and native informal plantings whilst retaining the natural topography of the site, hence retaining the natural character of the Scenic Hills and the cultural landscape,
POLICY 46	The use of the property as a cemetery should not require any significant changes to landform (including primary ridges, valleys and undulating slopes), which would be seen as inappropriate to the relatively natural overall topography of the site and its rural character.	The main ridges, valleys and undulating forms of the landscape are all being retained. Cut and fill for roads has been minimised and is localised. (refer engineer's "cut and fill" drawing)
POLICY 47	The use should not necessitate substantial built form development and in fact should minimise development to maintain the open and scenic rural character. Furthermore, development should be sympathetically located, to minimise impacts on significant views ad vistas.	There are only 6 buildings on site, 2 of which are invisible from public views. These have been carefully sited to minimise visual impact. Refer to Architectural Design Response.
POLICY 49	Whilst the conceptual Memorial Park is consistent with the retention of a grassy and open character for the landscape; detailed design of the cemetery and further staged development should consider nominated significant view lines, vistas, landmarks and cultural landscape features. Reference should be made to the site description in section 2 and significance assessment in section 5, in particular sections 5.6, 5.7 and 5.8.	Noted. Refer to individual responses herein.
POLICY 50	New development associated with the cemetery use should be controlled to minimise the required built form development to mitigate impacts to views from the public domain, and ensure the retention of the overall rural character. As a guide to the potential location of buildings, the concept Master Plan is consistent with visual impact assessment and traditional siting of buildings.	There are only 6 buildings on site, 2 of which are invisible from public views. These have been carefully sited to minimise visual impact. Refer to Architectural Design Response.
POLICY 52	Detailed design of the future cemetery should be subject to close assessment of the specific areas to be used in different ways, for example burial areas, commemorative gardens, sculpture park and public recreation areas, are to be located in a manner which considers their appearance, visibility, potential for effects on heritage values and the intended landscape character.	Consideration has been given to the visual impact of the cemetery onto the existing landscape character by providing lawn graves in all open views, screening headstones in "burial rooms" elsewhere and siting buildings carefully. Views which have been deemed as historically significant have been retained and protected. The impact of the development onto views external to the site have been mitigated or demonstrated as insignificant. The placement of contemporary sculptures is compatible with the site heritage significance. A number of interpretation responses to the heritage significant items have carefully considered their impact on the heritage values of the site. Proposals are respectful and reflective of the heritage narrative either through its layout, plant selection or interpretive mater.

8. RESPONDING TO CONSERVATION MANAGEMENT PLAN (CMP)

8.1

Policy	Description	Alignment
POLICY 53	The master plan and future development should provide for public access to the main eastern ridge of Bunbury Curran Hill so that the significant view over the main Campbelltown valley to the East Edge Scenic Protection Lands and beyond; and to the south over the distant hills of Mount Sugarloaf, Mount Annan, Badgally Hill, Kenny Hill and the intermediate landscape can be appreciated.	The proposals include an outlook platform, accessible via the Council reserve at the end of St Davids Rd, rising over the tree tops to enjoy the commanding views from Bunbury Curran Hill, whilst providing interpretation of the Aboriginal significance of the ridge. It is envisaged that the surrounding peaks and landmarks would be described on interpretative displays.
POLICY 54	Planting schedules, location, density and identity of plant species should be subject to detailed design development as part of future development applications, to ensure that the prevailing natural and rural character of the site is retained. Preference should be given to locally indigenous plant species and those non-invasive exotic species traditionally grown on the property.	Noted. Refer to Planting lists and plans.
POLICY 55	Burial markers and conventional headstones are to be located in areas where their visibility does not lead to a perception of a significant change to the existing rural character. Specific controls regarding height, colour, materials etc. must be applicable, to mitigate visual impacts on the rural character.	The visual impact of the cemetery use has been minimised by providing lawn graves in all open views and screening headstones in “burial rooms” elsewhere. Each “burial rooms” has its own maximal height for headstones which has been tested in the site’s 3D model to ensure it is not visible from the internal main roads, St Andrews Rd and Varroville Homestead.
POLICY 56	No structure that may break or compromise the skyline, in either close or distant views formed by the main ridgeline should be permitted. The ‘main ridgeline’ refers to the ridge on the eastern side of the property running south from Bunbury Curran towards Varroville House.	None proposed.
POLICY 57	New works would need to recognise the need to maintain the landmark character of the garden vegetation of Varroville House and the distinctiveness of any significant informal vegetation in choice of species, locations, densities and distribution of areas of any new vegetation. Any new vegetation needs to be of appropriate scale and species and distributed in space and at densities and future heights that do not conflict with the Varroville House or with significant views. Preference should be given to locally indigenous plant species and those non-invasive exotic species traditionally grown on the property.	Buffer vegetation proposed along the western boundary of Varroville Homestead is proposed to be less than 2m and predominantly native. Buffer vegetation to the north of the Varroville ‘s driveway is proposed to be 2-3m high with occasional small trees, in keeping with other existing plantings between the Homestead and St Andrews Rd, which are associated with farm fencing and paddock sheltering. These planting are also proposed to be predominantly native. Plantings around the Outbuildings are also distinctively different, sparse and much smaller than those of Varroville to avoid screening significant views and confusion with the Heritage Landscape.
POLICY 58	The alignment of the original drive/ carriageway should be reinstated or interpreted.	The original driveway is proposed to be interpreted: -Road 9 (leading to the Out buildings) has been aligned with the original driveway. -Shortly after the intersection of Road 9 and Road 1, the original alignment becomes a walking path. -Where the paths runs into an existing clump of CPW, the original alignment becomes the invert of the existing watercourse and access is not possible. Its alignment with then be interpreted with more formal riparian planting. -For its entire length the original driveway’s alignment will be flanked on one side with distinctive formal tree planting as a visual cue in the landscape. (subject to further archaeological investigations)

8. RESPONDING TO

8.1 CONSERVATION MANAGEMENT PLAN (CMP)

Policy	Description	Alignment
POLICY 59	Modifications to identified significant dams are permissible for safety and compliance or for minor adaptation in conjunction with use of the area as public open space.	All dams identified as significant have been retained. Modifications to the dam edges are proposed but only to the following extents: -to ensure water quality (removal of stagnant corners to minimise the occurrence of Algae bloom) and -to achieve safety benching standards for public use. (subject to further archaeological investigations)
POLICY 60	Remnant vineyard terracing to the east and north east of Varroville House and the outbuildings group, has been identified as being of high significance, with as much of the terracing as possible to be retained and conserved. This would not preclude development in this area; however development should be more restricted and should be subject to detailed design development as well as heritage and potential archaeological assessment.	As part of the adaptive re-use of the vineyard areas: -The remnant “contour trenches” identified as in the best condition (ie. on the steeper southern slopes of the “main ridge” leading to Varroville Homestead) are to be retained and conserved. A portion will be re-planted with grapevines to the purpose of wine production and memorialised for ash interment. (species selection and vine support design will be informed by further archaeological investigations) -The remnant “contour trenches” identified as in the poorer condition (on the slopes between the outbuildings and Dam 10) will be interpreted through the alignment of the lawn graves. Plaques will be generally aligned with the existing trenches but the lawn will be regraded to remove any ruts which may be a tripping hazard. (subject to further archaeological investigations)
POLICY 61	New works within the terraced area should provide for the interpretation of the current extent of the terraced areas.	Interpretation is proposed in the vicinity of the reinstated Vineyard on the way to the Living Chapel (refer to Interpretation Strategy)
POLICY 62	New roads and tracks should be minimal, maintain a rural character and incorporate appropriate surfaces with low reflectivity and visually recessive finishes.	The visual and environmental impact of roads has been carefully considered: -Road layout has been kept to the appropriate operational and RFS minimums. -Road widths have been negotiated down from the standard RFS requirements to an approved and compliant width. -Road impervious surfaces have kept to a minimum and limited to the road carriageway. They are to be asphalt for its recessive colour. -Parking shoulders are proposed as reinforced grass to further minimise the visual impact of roads. -Roads within the southern portion of the site have sited in collaboration with Dr Richard Lamb, to minimise their visual impact onto the Scenic Hills and the slopes below the house. They are sited at the base of the slopes where practical or in the shadow of the CPW or behind existing ridges or sunken. Cut and fill has been minimised with carefully siting and by keeping close to existing grades Refer report by road engineers (WSP) for more detail.
POLICY 92	Efforts should be made during the design process to avoid impacts to Aboriginal objects and to conserve areas of high archaeological sensitivity. However, if Aboriginal sites are to be impacted by the proposal an area based AHIP would be required prior to impacts.	TBC

8. RESPONDING TO CONSERVATION MANAGEMENT PLAN (CMP)

8.1

Policy	Description	Alignment
POLICY 94	Should the wool press be acquired by CMCT, further research should be undertaken into its provenance and the press retained and interpreted at the site.	It is proposed to house the wool press under shelter, under the restored barn, hence becoming part of the educational displays.
POLICY 95	An interpretation strategy should be prepared for the site that interprets the significant use and historical values of the site in sympathetic and culturally appropriate ways. Interpretive themes and devices should take into account all periods of development and also consider the early agricultural history and uses of the site as part of the Townson's original grant and place the site in its broader context of colonial and 19th century farming and agricultural development in the Cumberland Plain.	A preliminary Interpretation Strategy has been prepared which respond to all items of significance on the site. It also puts the site in a broader Timeline context, starting from its geology and ecology, Aboriginal occupation and then European influence. (Refer to Interpretation Strategy for more detail)
POLICY 96	Heritage interpretation should also consider the historical archaeological resource and interpret any remains or findings from test excavation and further site assessment.	TBC
POLICY 97	A Heritage Interpretation Plan (HIP) should be prepared for the study area in consultation with Aboriginal stakeholders. This plan would include methods of incorporating identified Aboriginal heritage values into the design process, such as use of native vegetation in replanting, use of local Aboriginal place names and interpretive signage providing information on Aboriginal land-use within the study area and surrounding area.	The Landscape Design narrative is largely inspired from the Dharawal's totem animal, the Lyrebird. It is also propose to name some of the roads within the site after significant Aboriginal names. Interpretation material is expected in a number of significant areas on site. (Subject to further consultation with Aboriginal stakeholders and further archaeological investigations)
POLICY 98	The highest form of interpretation is the retention and conservation of significant fabric, spaces and relationships and accordingly significant elements should be retained, exposed and interpreted.	A number of significant items, spaces around them as well as those connecting them have be retained. In summary: All salvageable significant out buildings are proposed for restoration and conservation (refer report by Heritage Architects) The footprint of other buildings are being retained, sometimes hosting new structures (eg. new toilet block) and/or interpreted into the landscape (refer interpretation strategy-"concept for outbuilding precinct"). The remnant "contour trenches" identified as in the best condition (ie. on the steeper southern slopes of the "main ridge" leading to Varroville Homestead) are to be retained and conserved. A portion will be re-planted with grapevines to the purpose of wine production and memorialised for ash interment. (species selection and vine support design will be informed by further archaeological investigations) (Refer to interpretation strategy for details)
POLICY 104	There is an opportunity to investigate lost elements such as the original garden layout, locations of paddocks and fence lines, previous orchards, previous development etc. to inform understanding of the site's history and significance. The results of further analysis and all new evidence uncovered during works to the place should be recorded to provide an on-going resource and added to the existing archive on the place or incorporated into a report or addendum to this Conservation Management Plan, as appropriate.	

8. RESPONDING TO

8.2 ESCARPMENT PRESERVATION AREA

The landscape proposals respond to the objectives of the Planning Controls for the Escarpment Preservation Area (Clause 13) by:

- Complying with the requirements for recessive-colours, low reflective materials which blend into the landscape.
- By actively removing weedy trees (such as African Olives which are invading the site) (refer to VMP by Travers Bushfire & Ecology P/L)
- By limiting the removal of existing native vegetation (less than 10%) (refer to VMP by Travers Bushfire & Ecology P/L)
- By carefully laying roads to avoid significant trees and areas of high and medium conservation value and habitat trees) (Refer tree removal plan by Travers Bushfire & Ecology P/L)
- By limiting regrading on site (Refer to Civil engineering plans)
- By offsetting any removed significant native vegetation within the site. (refer to VMP by Travers Bushfire & Ecology P/L)



Figure 17. Scenic Hills

8. RESPONDING TO

8.3 CUMBERLAND PLAIN WOODLAND (CPW) REQUIREMENTS

The proposals fully respects the existing threatened vegetation present on site:

- Less than 10% of the CPW is being removed as:
 - The roads generally traverse the CPW area at its narrowest part.
 - Paths are kept to a minimal width (1.5m) and limited in extent and carefully positioned in degraded or bare patches of moderate or low quality. However, we believe that the CPW should be experienced from the inside, with limited impact, to be truly appreciated and are therefore prepared for any compensating measures which may be required. (refer to VMP by Travers Bushfire & Ecology P/L for details)
 - An area of CPW of moderate quality has been set aside for retention as a Natural Woodland Burial zone. Although all trees are retained and the lower vegetation strata which has been damaged by years of grazing will be restored, we understand that the use is not compatible with the aim of CPW conservation and are prepared for any compensating measures which may be required. (refer to VMP by Travers Bushfire & Ecology P/L for details)
- More than 90% of the CPW vegetation is to be retained, with limited disruptions as:
 - Roads are in the alignment of existing tracks
 - Road alignment avoids existing trees and Habitat trees wherever possible.
 - Road width has been kept to the minimum allowable by RFS (6.5m carriageway in most places and 8m on perimeter roads + parking verges), after negotiation down from the standard width (refer Bushfire report)
 - Parking verges have been reduced in the proximity of CPW to minimise impact of cut and fill.
 - Paths are kept narrow (1.5m)
 - Paths avoid all existing trees
 - Boardwalks are used extensively to limit ground disturbances
- The riparian zones will provide a link between the CPW areas which are currently isolated, hence offering better habitat opportunities and the creation of green corridors.

(refer to VMP by Travers Bushfire & Ecology P/L for details)



Figure 18. Cumberland Plain Woodland

8. RESPONDING TO

8.4 WATER SENSITIVE URBAN DESIGN (WSUD) PRINCIPLES

The landscape proposals incorporate the following WSUD principles:

- Capture of road run-offs and treatment of pollutants to Best Practice requirements
- Bio-retention beds for water treatment.
- Vegetated swales for water treatment.
- Wetland planting to dams edges for water treatment and erosion control.
- Dams of suitable size and depth to limit potential for algae bloom.
- Safe batter treatment around all dams or fencing to prevent access to unsafe edges.
- Reshaping of dam #4 to limit stagnant areas and potential for algae bloom.
- Passive irrigation where possible
- Water retention on site, within the dams for irrigation purposes.

(refer to Stormwater Report by WSP for further details)



Figure 19. WSUD Examples

8.

8.5

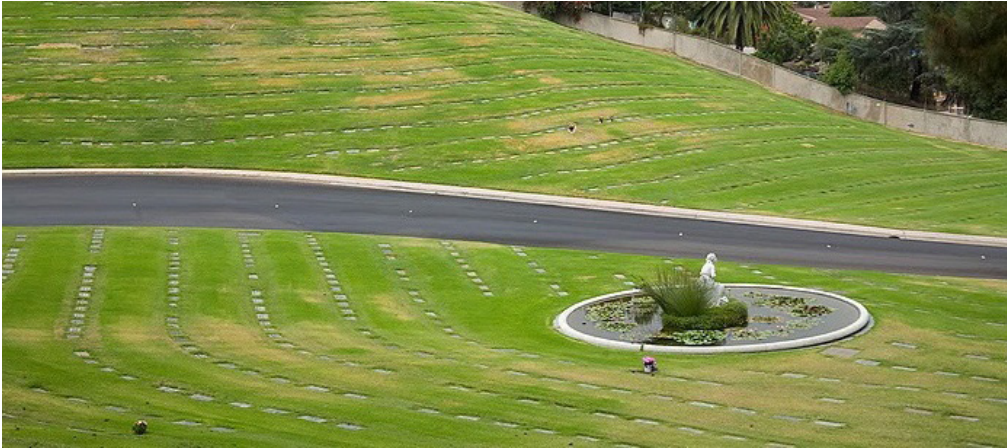
RESPONDING TO
PUBLIC CONSULTATION FEEDBACK

The Community Information and Feedback Sessions were held on Thursday 22nd and Saturday 24th June at the Campbelltown Catholic Club, 20-22 Camden Road, Campbelltown.

The following table is an extract of the table provided in the Urbis –“Macarthur Memorial Park Community Consultation Summary of Outcomes Report” which details the feedback received either verbally or in writing though the above process.

Our response below is limited to the items relating the Landscape Design.

It demonstrates our efforts to incorporate the feedback and comments wherever possible and where changes have been made as a direct response to the above process (bold and underlined).

Category	Details	Response/ Comments
Burial design	<ul style="list-style-type: none">Comment against the use of horizontal lawn plaques.Comment in support for a crematorium on site	<ul style="list-style-type: none">Horizontal plaques installed on concealed beam are the least visually intrusive. 
Roads and Traffic	<ul style="list-style-type: none">Concern that the masterplan does not indicate the proposed road network within the site.Concern regarding the proximity of roads to Varroville House.	<ul style="list-style-type: none">All roads are shown on the Masterplan.3 options were explored for the road proposed to the east of Varroville house (refer civil engineer’s report). <u>Adjustments have since been made to the proposed levels to minimise visual impact.</u>Further options were explored for the road proposed to the south of Varroville House. Due to Bushfire limitations on dead-end roads and visual impact of roads on the grassy slopes below the homestead from external views, the road has been made RFS compliant and positioned for least visual impact behind an existing ridge running between the current Outbuildings’ driveway and Varroville House’s driveway, based on the advice of Dr R. Lamb and Travers Bushfire P/L. <u>Adjustments have since been made to the move it away from the homestead boundary, within the limitations of existing CPW trees and historical items..</u>
Parking and access	<ul style="list-style-type: none">Comment that the masterplan does not indicate parking areas.Comment that motor car access to the site is not indicated on the masterplan	<ul style="list-style-type: none">The Masterplan does indicate parking areas.<u>Access points have been made clear on the DA documents.</u>

Category	Details	Response/ Comments
Landscape design	<ul style="list-style-type: none">▪ Support for the proposed gardens and incorporation of open space.▪ Support for the landscape design which is considerate of the environment of the Scenic Hills region.▪ Support for the lawn burials, waterways and landscaped recreational areas.▪ Preference for native fauna in the planting design.▪ Comments that the design is not in line with the rural setting of the area	
Sculptures	<ul style="list-style-type: none">▪ Comment against the visual design of the sculptures.▪ Suggestion for good seating and toilet facilities.▪ Comment that the masterplan does not detail the location and design of proposed sculptures and monuments	<ul style="list-style-type: none">▪ The sculptures have not been designed yet. They will be sited to complement the landscape and be in scale with their surroundings.▪ Park-style seating and few shelters will be provided throughout. As the park is large and reliant on car access, toilet facilities will be limited to key areas and generally associated with buildings.▪ <u>Sculptures' proposed locations and maximal sizes have been added to the DA documentation.</u>

8. RESPONDING TO ENVIRONMENTALLY SUSTAINABLE DESIGN PRINCIPLES

A number of key sustainable principles have been integrated into the landscape proposals.

The sustainability strategy addresses a broad range of areas, including sustainability and environmental management, community integration, sustainable and active transport promotion, energy, water, materials and waste efficiency and optimisation.

- Water Efficiency Measures:
 - Minimise demand by appropriate selection of plants and grass species which do not have high water needs.(indigenous and Native)
 - Efficient distribution with efficient systems where irrigation is required.
 - Efficient drinking water fountains.
- Sustainable Materials:
 - Use locally sourced materials
 - Re-use material from site
 - Select low embodied energy materials or materials which can be re-used or recycled.
- Waste Management:
 - Decentralise burial spoil depots to reduce vehicle movement, pollution and energy consumption.
 - Composting of vegetable matter (flowers and garden clippings) to improve soils.
 - Provide clear waste disposal units for visitors and a 2 bin-system (refer water stations herein) to minimise litter throughout the site.
- Stormwater Management:
 - Water harvesting in dams for irrigation
 - Bio-retention swales and wetland planting for water treatment (WSUD)
 - Passive irrigation from hard surfaces on vegetation.
- Climate Change:
 - Plants selected to resist increased periods of high and low temperatures, drought and heavy rains.
 - Wind breaks to reduce impact or severe weather onto visitors.
 - Shelters at regular intervals for protection from weather.
- Community Development:
 - New park for the community
 - Educational material and interpretation opportunities throughout the site.

For more detailed information refer Steensen Varming - ESD report.



8. RESPONDING TO

8.7 CEMETERIES' WORLD TRENDS

As old, traditionally granite rich cemeteries fill up, they not only lock land out for other use, they also become forgotten as visitation ceases whilst turning into an economic burden as income generating activities stop.

- The worldwide trend has been to:
 - Promote cremation over burial
 - Change legislation to incorporate renewal and other forms of land re-use.
 - Find more sustainable and environmentally friendly solutions.
 - Generate more income by widening the uses on site (weddings, art galleries, sculpture temporary exhibitions, concerts, movies...)
 - Better integrate cemeteries into the community so they continue to be relevant when full.
 - Design them as parkland so they continue to be green even when full.
- The following significant cemeteries have been of particular inspiration to us when establishing our Vision for the site:
 - Skogskyrkogården, Stockholm, Sweden
A cemetery which blends nature and architecture seamlessly.
A UNESCO's World Heritage listed place since 1994 and the only listed cemetery. This cemetery has greatly influenced cemetery design throughout the world.
 - Forest Lawn, LA, USA
A scenic cemetery, the creation of Dr Hubert L. Eaton in 1906, "a great park, devoid of misshapen monuments.... But full of towering trees, sweeping lawns..." as is described in his "Builder's Creed".
 - Pinnaroo Memorial Park, Western Australia
A scenic lawn cemetery, set in protected bushland where kangaroos are left to roam and co-habit.
 - Chiltern Woodland Park, UK
Designed by John DeJardin, who worked on this project, it is a natural/green burial park with a deep understanding and respect for the ecological processes and values of the site.
 - Oslo Cemetery, Norway and Nieuwer Oster Cemetery, Amsterdam, Netherlands
Common in Northern Europe and Scandinavia is the concept of cemeteries set in forests and sub-divided into small "burial rooms", where both contemplation and privacy are paramount.



Chiltern Natural Burial - UK



Forest Lawn - Parkland, USA



Stockholm cemetery - Sweden



Oslo Cemetery - Norway



Forest Lawn - Museum, USA



Stockholm cemetery - Sweden



Pinnaroo Cemetery - WA



Nieuwer Oster Cemetery - Amsterdam, Netherlands



Nieuwer Oster Cemetery - Amsterdam, Netherlands

9. STAGING

The development of the cemetery will occur over many years. Typically each stage represents a few decades' worth of burial demand. This burial demand will be responsible for the slow extension of the cemetery's footprint, implemented one manageable portion at a time.

It is important that each stage of the development caters for all forms of interment, to enable an uninterrupted supply.

The following represents the estimated staging of the cemetery, based on the current and short-term forecast of the burial demand:

- 80 burials in the first year, then increasing by 8% each year for the next 10 years, then 15% for the following 5 years, down again to 8% until it reaches an estimated demand of 500 burials per year in 20 years' time.
- For the following years, an expected 1% increase is assumed. It is important to note at this point that the trend for burial shows a decrease whilst cremation is on the rise, as more people choose this form of interment and have been doing so over the last 20 years or more.
- Based on these calculations and our analysis of available burial land on this site, it is expected that the site will host approximately 130,000 plots.
- Stage 1 is uncharacteristically large due to the State's requirement to accommodate all faiths on the site. The ethnic diversity of Sydney's population requires an allocation of burial grounds to a large number of cultural/religious groups.
- It is expected that the northern part of the site (North of Varroville House) will reach capacity in over 100 years.
- It is expected that the site will reach full capacity in approximately 150 years.
- The above numbers are based on the assumption of one person per grave. Should the trend for double interments continue, these numbers could double (half capacity in 200 years and full capacity in 300 years)
- The above numbers are based on the assumption of perpetuity on each grave. Should the public embrace the new limited tenure laws or should the NSW Government cease to offer perpetuity in the future, these numbers will also increase.

9. STAGING

STAGE 1 (From 2019 to 2104)

- All buildings and services constructed.
- Outbuildings restoration.
- Entrances A to C.
- All roads within Stage 1 only (to the extent permissible under Bushfire Regulation).
- All landscaping and furniture within Stage 1.
- Shelters as required.
- The rest of the site remains UNCHANGED.

STAGE 2 (From 2105 to 2130)

- All roads within Stage 2 only
- All landscaping and furniture within Stage 2.
- Shelters as required.
- The rest of the site remains UNCHANGED.

STAGE 3 (From 2131 to 2140)

- All roads within Stage 3 only
- All landscaping and furniture within Stage 3.
- Shelters as required.
- The rest of the site remains UNCHANGED.

STAGE 4 (From 2141 to 2155)

- All roads within Stage 4 only
- All landscaping and furniture within Stage 4.
- Shelters as required.
- Entrance D
- The rest of the site remains UNCHANGED.

STAGE 5 (From 2156 to 2170)

- All roads within Stage 5.
- All landscaping and furniture within Stage 5.
- Shelters as required.

The above stages are based on current statistical information and projections.

