LANDSCAPE STRATEGY REPORT

For

MARSDEN PARK PUBLIC SCHOOL

Prepared for

Schools Infrastructure NSW

Date: 05 August 2019

NBRS&PARTNERS PTY LTD

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1.0 INTRODUCTION

This Landscape Strategy Report has been prepared by the Landscape Architecture studio of NBRSArchitecture on behalf Schools Infrastructure NSW (SINSW) (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD-9809) for the Marsden Park New Primary School.

The school is to be located at the corner of Northbourne Drive (to the east) and a proposed future road (to the north) within the Elara Estate, Marsden Park (the site).

The site is legally described as Lot 2889 in Deposited Plan 1230906. The development footprint does not include a portion of the site to the west as this is reserved for a future alternative use.

The Marsden Park New Primary School will cater for 1,000 primary school students at completion.
The proposal seeks consent for:

- Construction Stage 1 (Temporary School): a temporary school facility constructed within the western portion of the development site located on the future sports grounds. This temporary school facility is to accommodate a maximum of 500 students at any given time. Should the permanent school progress as per the program, the temporary school will not be required.
- Construction Stage 2 (Construction of Permanent School Facility): a permanent consolidated two storey courtyard building with capacity to accommodate a maximum of 1,000 students. This new school building is to comprise
  - 40 teaching spaces;
  - A canteen;
  - Library;
  - Multipurpose hall;
  - Office and administration space;
  - Staff and student amenities; and
  - Out of school hours care accommodation.
- Multi-purpose sporting facilities and outdoor play spaces;
- Associated site landscaping and public domain improvements;
- An on-site car park for 48 vehicles including one accessible space and a drop-off and pick-up area; and
- Construction of ancillary infrastructure and utilities as required.

This report seeks to describe the landscape design proposals and compliance to the relevant planning controls, development standards and guideline documents, associated with a new school development.

Response to SEARs

The Landscape Strategy Report is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD-9809. This table identifies the SEARs and relevant reference within this report.

Table 1 – SEARs and Relevant Reference

SEARs Item	Report Reference
1. Statutory and Strategic Context *Development Standards* Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	**Refer Section 6.0** Landscape Design – response to Blacktown City Council (BCC) requirements Refer Appendix B BCC recommended plant species list
4. Built Form and Urban Design Provide a detailed site-wide landscape strategy, including consideration of equity and amenity of outdoor play spaces, and integration with built form, security, shade, topography and existing vegetation.	**Refer Section 3.0** Landscape Strategy / Design Proposals
Provide details of any digital signage boards, including size, location and finishes.	**Refer Appendix C**
Clearly demonstrate how design quality will be achieved in accordance with Schedule 4 Schools – Design Quality Principles of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 and The GANSW Design Guide for Schools.	**Refer Section 4.0** Landscape Design Quality – response to GANSW Design Guide for Schools **Refer Section 5.0** Environmental Design – response to GANSW Environmental Design In Schools
Address CPTED Principles.	**Refer Section 7.0** Landscape Design CPTED Principles
Plans and Documents Landscape architectural drawings showing key dimensions, RLs, scale bar and north point, including: o integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed including articulation of playground spaces o plan identifying significant trees, trees to be removed and trees to be retained or transplanted	**Refer Appendix A**

2.0 SITE CONTEXT AND LANDSCAPE ANALYSIS

The site is located in a new residential sub-division know as Elara Estate, within the suburb of Marsden Park. The local government authority is Blacktown City Council. The previous land use prior to the sub-division being developed was rural land, used for grazing, cropping or market gardens. The Marsden Park New Primary School (MPPS) site is a greenfield site as a result of the sub-division works.

The Marsden Park Precinct DCP mapping identifies the following:

1. The site does not fall within areas of Environmental Conservation or Environmental Management, nor is it impacted by trunk drainage channel or water quality basin;
2. The school site is not flood prone;
3. The school site is not identified to be within an area of potential soil salinity issue;
4. The site is not within bushfire prone land;
5. The site is not identified as requiring additional contamination investigation;

The surrounding residential sub-division to the east, west and south is described as low density, with medium density permitted to an area to the north of the site. Within the eastern portion of the site is an area of surplus land described as "future education/community use that is yet to be determined".
An area of land directly south of the site is described as public open space, being a future park area.

A collector road adjoins to the site to the north and to the east. Other roads to the west and south are described as local roads.

Site Topography
The site falls from the south to the north with a high point of approximate RL 24.95 to a low point of approximately RL 17.73 in the northern boundary towards the north western corner. Falls across the site are generally even with a drainage swale created towards the northern boundary.

The existing site levels are a result of the subdivision works, with further modification to occur along the eastern and northern boundaries to marry site levels to proposed new roads.

Soils
The geological map of Penrith (1:100,000) the Marsden Park area to have soils with the following characteristics:

- Fine grained sand, silt and clay
- Clay patches of ferruginised (containing Iron), consolidate sand
- Conglomerate, matrix supported

The soils generally are considered to be underlain by shale and would be subject to erosion and waterlogging.

Vegetation
The endemic vegetation (no longer on site) would have been a part of the Cumberland Woodland that is made up of made up of Dry Sclerophyll woodlands and forests. The Cumberland Plain Woodland community is listed as an Endangered Ecological Community under the *Threatened Species Conservation Act 1995.* Land clearly for rural, industrial and residential uses has of time significantly threatened this community. The characteristic of this group is for open canopy trees with low grasses and occasional shrubs to the understorey. It is expected that the Marsden Park site would have accommodated Shale gravel transition forest where soils low in fertility with shale-influenced sandy soils

that support a constituents of ironstone gravels. This type of forest would have an understorey that could deviate between dense shrubs and a low thin shrub with an abundant ground cover of grasses.

The dominant canopy tree species of the Cumberland Plain Woodland are

- Grey Box (Eucalyptus moluccana)
- Forest Red Gum (Eucalyptus tereticornis),
- Narrow-leaved Ironbark (Eucalyptus crebra),
- Spotted Gum (Corymbia maculata).

These species are included in the Blacktown City Council recommended species list.

Climate

The site enjoys a northern aspect with favourable sun exposure through summer and winter. The open and undeveloped nature of the area to the south and west means unfavourable cold winter winds impact the site, with calmer westerly winds occurring during summer. Potential cooling winds from the east will also reach the site.

Access

The school has very good access being bounded by local roads to the, west and south and bordered by a collector road to the north and east.

Aboriginal and Cultural Heritage

Aspects of Aboriginal and Cultural heritage as found near the school site are described in specific reports as prepared by other consultants.

3.0 LANDSCAPE STRATEGY / DESIGN PROPOSALS

The landscape design has been undertaken in conjunction with the Architects, and consulting team in order to ensure an integrated design is achieved that respects the existing site qualities and adjoining land uses. The following landscape design objectives have been followed:

IDENTITY

- Establish a strong identity and **sense of place** through an understanding of the sites local context
- Emphasise the sites natural assets
- Ensure the landscape design is well **integrated** with the architectural proposals

COMMUNITY

- Ensure the landscape design presents a welcoming, inclusive and safe environment
- Understand the site uses that can be enjoyed by the broader school community, visitors and community groups

LEARNING

- Maximise outdoor learning opportunities
- Provide spaces that are pleasant to be in year-round considering, sun, shade, and wind protection

SOCIAL INTERACTION

- Provide spaces that encourage social interaction for students, staff and community

ACTIVE and PASSIVE USES

- Provide for active and passive uses with clear definition between the two
- Active play areas for health, team sport and learning
- Passive use areas for group work, retreat and quiet space for individual learning

LOW MAINTENANCE

- Create a sustainable landscape to assist with thermal comfort, water use and considered material selections
- Select plants that are known to thrive under local conditions and have low maintenance requirements
- Select robust and hardy materials that are fit for purpose

4.0 LANDSCAPE DESIGN QUALITY

Taking into account the analysis of the site and the landscape design process undertaken in conjunction with the Architects the Design Principles of the State Environmental Planning Policy (Education and Child Care Facilities) 2017 have been addressed as outlined below:

Design quality will be achieved for the new landscape and open space areas at Marsden Park by meeting the Education Design Quality Principles as noted below

Principle 1: Context, built form and Landscape

Landscape should be integrated into the design of school developments to enhance onsite amenity, contribute to the streetscape and mitigate negative impacts on neighbouring sites.

The landscape design of the school site will enhance the sites context and surrounds as well as providing onsite amenity.

The design proposes landscape buffer zones to its boundaries as well as street tree planting. The buffer zone will contain native canopy trees with street trees to be selected in conjunction with Blacktown City Council. The subdivision area is currently devoid of tree planting. Areas within the site will also feature tree planting to enhance amenity by providing summer shade to seating and play areas as well as softening building facades. Shade tree planting is proposed to car park areas.

The open space areas of the school are well connected to the building form. The large central courtyard space is accessed from multiple areas including the main entrance, library and circulation spaces. The school hall opens to a covered space to the north and an open terrace to the south. The northern covered space is open to the north and west connecting to sports courts and a sports field. Break out spaces to the east and north are directly accessed from learning spaces.

The areas of native trees, shrubs, grasses, groundcovers and trees will occur throughout the school as a resource for learning (science and visual arts).

Principle 2: Sufficient Efficient and Durable

Schools should be designed to minimise consumption of energy, water and natural resources…

The landscape design is to incorporate materials and fixtures that are robust, fit for purpose, readily maintainable and have a proven track record of use within a school environment.

Durable coloured concrete pavements are proposed throughout the campus.

Plant species have been selected with the knowledge of their suitability to local site conditions.

Existing overland flow paths between dams have been retained.

All landscape areas are into deep soil including planting in the central courtyard.

Deciduous tree planting in front of north facing facades provides summer shading (cooling) of buildings and pavements and allows winter sun access for warming.

Principle 3. Accessible and Inclusive

School buildings and grounds should provide good wayfinding, be welcoming, accessible and inclusive to people with different needs and capabilities. School should actively seek opportunities for their facilities to be shared with the community and cater for activities out of hours.

The arrangement of paths, stairs and ramps has been undertaken in a manner to accommodate direct movement between key site areas and facilities. Circulation paths are clearly defined and distinct to areas of play, passive recreation or other use, through changes in materials and colour. A specific purpose courtyard adjoins the special needs learning spaces.

DDA compliant ramp access connects all landscape areas.

A hierarchy of spaces has been created to cater for a variety of uses, from whole of school assembly, to outdoor performance, to group activity, and spaces where individuals can feel comfortable but remain connected.

The school with SINSW approval could share a number of facilities for community use including:

1. Hard surfaced games courts x 2 with terraced spectator seating
2. Sports field with terraced spectator seating
3. School hall
4. School Canteen
5. Car park

All these facilities are concentrated to the western side of the site and are well connected meaning large community groups could occupy all areas for special occasions, with SINSW approval, such as:

1. Market days
2. School Fete / Fundraising events
3. Festivals
4. Indoor group activities i.e. yoga, martial arts, dance classes and the like.

Principle 4: Health and Safety

Good school development optimises health, safety and security within its boundaries and the surrounding public domain and balances this with the need to create a welcoming and accessible environment.

Readily accessible, flexible and inviting landscape open spaces will contribute the health of the students and users by providing spaces for learning, passive and active recreation. As described above the building has a generous outdoor areas directly connected to the building.

The landscape design seeks to provide well defined circulation, play and gathering spaces, that are open, legible and welcoming.

Change in site levels have been mitigated by utilising terraced walls and inclined gardens. Planting arrangements will avoid creating places of concealment by selecting low growing shrubs, grasses and groundcovers and having tree canopies maintained above head height.

Student bike parking spaces are provided in two locations within the site, directly adjacent to the secondary entry points. Provision of this facility will encourage students to use bikes to travel to and

from school, engaging them in a healthy activity and reducing traffic congestion on roads during key pick up and drop of times.

Principle 5: Amenity

Schools should provide pleasant and engaging spaces that are accessible for a wide range of education, informal and community activities, while also considering the amenity of adjacent development and the local neighbourhood.

The design accommodates out door learning in the form of formal activity areas, informal activities and play spaces.

The topography of the site has been used to create terraced seating areas where students can gather outside for formal class learning as we as informal learning and performance. Dedicated play spaces have been created where informal play can occur with space provided for fixed play equipment (to be provided by the school) and open unencumbered space.

Formal play and learning can occur on the hard court spaces as well as the sports field.

A dedicated space for food production (herb, vegetable and bush tucker) is also described in the design.

Garden areas close to the building and main circulation paths will feature native planting and allows for student observation of a variety of plant species and the birds and insects they attract.

The benefit of the landscape zones to the schools perimeter and its enhancement of the local neighbourhood has been described previously under principle one.

Schools located near busy roads or near rail corridors should incorporate appropriate noise mitigation measures to ensure a high level of amenity for occupants.

A future collector road is planned to the north and east (Northbourne Drive) of the site. This road is slightly lower in elevation to the school. The site planning allows for a vegetative buffer between the boundary adjoining the road and the open space areas incorporating free play and games court areas. The planting will reduce the visual intrusion of passing traffic. With the building located to the southern boundary any fixed noise mitigation measures such as acoustic fencing is not considered necessary.

School should include appropriate, efficient stage and age appropriate indoor and outdoor learning and play spaces, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage and service areas

The sites main landscape open spaces enjoy a northerly aspect. Summer shade will be provided by tree planting as well as covered areas integrated within the building. The use of deciduous tree planting will allow students to enjoy winter sun access. The use of natural materials including local rock, endemic native trees, shrubs, grasses and groundcovers will enhance the outdoor spaces. Year round interest will occur in the landscape with plants form, foliage and floral habits changing through the seasons.

The built form, incorporating the large central courtyard will allow student to enjoy outdoor play whilst being protected from the unfavourable and cold southerly winds in winter months.

Principle 6: Whole of Life, Flexible and Adaptive

School design should consider future needs and take whole of life cycle approach underpinned by site wide strategic and spatial planning. Good design for schools should deliver high environmental performance, ease of adaptation and maximise multi-use facilities.

The landscape design has taken consideration of the analysis of site conditions. The landscape will replenish lost native canopy trees and introduce new native shrubs, grasses and groundcovers, to the benefit of local flora and fauna.

Principle 7: Aesthetics

School buildings and their landscape setting should be aesthetically pleasing by achieving a built form that has good proportions and balanced composition of elements. Schools should respond to positive elements from the site and surrounding neighbourhood and have a positive impact on the quality and character of a neighbourhood.

The built form should respond to the existing or desired future context, particularly, positive elements from the site and surrounding neighbourhood, and have a positive impact on the quality and sense of identity of the neighbourhood.

The school will be creating a positive impact for the site as a new development in a new suburb. The desired future context of the site surrounds being a suburban residential area will benefit from the school site being extensively landscaped to its boundaries and within the site.

All elevations of the building will be softened by canopy trees, and the landscape areas presenting with the building as an integrated solution. The open spaces of the school related to the surplus land to the west.

The two school entries are located close to the public park directly to the south of the school.

Materials have been selected to give context to locality through the use of local rock, coloured concrete and a range of native and ornamental trees, shrubs, grasses and groundcovers typical of the Marsden Park area.

5.0 Environmental Design – response to GANSW Environmental Design In Schools

The development of the Marsden Park School landscape will bring much benefit to the children and community within the immediate vicinity as this is a newly established suburb lacking any retained "green infrastructure" as the sub-division works and past land-use has seen the clearing of Cumberland Plain Woodland.

The new school landscape will:

- Include tree, shrub and groundcover planting that enhances opportunity for play and learning in relation to native species as well as learning through the growth, maintenance and harvesting of herb and vegetable gardens as well as bush tucker species.
- The landscape will improve the amenity of the school grounds as well as adjacent land-uses. The adjacencies will benefit from canopy tree planting and street tree planting utilising native endemic species and offer an extension of canopy and habitat to other planting in the area
- Maximise soft surface areas for the benefit of rain water recharging groundwater.
- Maximise deep soil planting
- Include areas of passive and dynamic play for a range of age groups with dedicated sports field, games courts, fixed play equipment zone (play equipment to be provided by the school) and smaller free play zone.
- Provide access to all areas for all users of the site, with DDA compliant ramps
- Have welcoming, visible and distinct entry spaces
- Have good connectivity to local footpaths and onsite bike parking facilities in order to support safe walking and cycling to and from school
- Incorporate CPTED principles in relation to planting, fence and walls
- Provide a diversity of open spaces to facilitate informal and formal uses with stepped terraces offering small group seating or performance, with seating areas beneath shade trees, with the internal courtyard and open covered space providing a range of use
- Provide buffer planting within the site to soften building facades and reduce the visual impact of the new structures
- Integrate the landscape and building design through thoughtful connections to open space and use of complimentary materials.

The local community can benefit from the sharing of the schools open spaces this could include the sports field, the two games court, the school hall and covered learning area and central courtyard space. Space has been provided for herb / vegetable and bush tucker gardens. This could be expanded to become a community garden, depending on need.

Light coloured pavements are proposed in order to reduce heat loading and reduce the heat island effects caused by dark surfaces. Tree planting within pavements and adjoining paved areas will also shade pavements further reducing heat loading.

The students will benefit from the extensive tree coverage proposed for the school, with outlook to tree canopies from classrooms as well as enjoying playing amongst them. Deciduous trees will announce change in season and provide interest through change in foliage colour as well as spring floral displays.

The importance of trees for this site is well understood. Past land clearing and the development of the new subdivision have cleared all endemic native forest species from the site. The new landscape will feature Cumberland Plain Woodland species to reinstate appropriate species. These species will then

form part of a green network to areas of native planting in the locality, that can be utilised by native birds and attract native insects.

The placement of tree planting will consider EFSG requirements and will also incorporate deciduous trees (non native) to areas of the school that would benefit from winter sun access such as outdoor seating areas and north facing building facades.

Tree species selection will be in accordance with Blacktown City Council recommended plants.

Tree maintenance and inspections will be arranged by the school with a qualified arborist at the appropriate time, to minimise unexpected limb drop.

6.0 LANDSCAPE DESIGN – response to Blacktown City Council requirements

The Marsden Park Public School is located within the Blacktown City Council local government area.

Blacktown City Council Growth Centres Precincts Development Control Plan 2016 -Schedule 6 outlines specific controls for the Marsden Park Precinct and requirements for non-residential development in residential zones.

The location of the future Marsden Park Public School is well considered in that it does not directly adjoin residential boundaries. As described previously the site is adjoined by roads to the north and east and open space to the west and south. The location will assist in lessening impacts in relation to noise and privacy.

Site planning has allowed for adequate space to the north, south and eastern boundaries where landscape setbacks can accommodate appropriate planting for trees, shrubs, grasses and groundcovers. This planting will enhance streetscape appearance and provide a visual softening of the building facades, lessening the visual impact of the building mass.

The Blacktown DCP requires the relevant standards of the Education Facilities Standard & Guidelines (EFSG) – Landscape be incorporated in the design of the school. IN relation to tree planting on the site we note the following EFSG requirements have been respected:

Site planting should:

- *Create a strong visual framework*
- *Define major functional units on the site and integrate the whole while acknowledging the pre-development patterns of vegetation*
- *Take into account wind protection and excessive overshadowing of playing fields, plus the more obvious amenity of summer shade*
- *Help define movement and circulation*

The EFSG also requires that tree species selection will be made in accordance with Blacktown City Council recommended tree species which lists both native and exotic tree species. Refer Appendix C for this list.

Tree species selection will also make reference to the EFSG requirements for recommended tree species and their preferred location. For example, proximity to buildings, a preference is given for native canopy trees to be located within buffer planting zones and perimeter areas where student circulation is minimal in order to reduce risk associated with sudden limb drop.

Blacktown City Council also requires all developers to install streetscape works including footpaths, verges and street tree planting. The landscape design illustrates proposed footpaths and street trees generally at 10.0 metres spacings and adjusted where needed to respect sightlines to intersections, pedestrian crossings, school entry points and driveway crossovers.

Streetscape detailing and street tree species will be made in consultation with Blacktown City Council.

7.0 LANDSCAPE and CPTED PRINCIPLES

The following elements will be incorporated into the landscape to achieve objectives of Crime Prevention Through Environmental Design (CPTED). The overarching objective are:

- To implement principles of design that eliminate opportunities for crime;
- To ensure the siting and design of buildings and spaces decreases the opportunities for committing crime through casual observance;
- To ensure that the development encourages people to use streets, parks and other public places without fear of personal risk
- To encourage a sense of community ownership of open and public spaces through the adequate and continuing maintenance of the built environment and the appropriate design of publicly accessible areas.

In relation to the site we note the following design elements:

(a) Fencing: the site will be fenced to meet SINSW requirements. Typical fencing types is a metal palisade fence that allows observation and surveillance from the street to the school buildings and open space areas. Solid walls are only to be used where there is full surveillance or no possibility of people to conceal themselves.

(b) Blind corners: circulation zones in and around the site are to be open, wide and uninterrupted to allow clear sightlines, pathways offer direct connection from the street to building entries and are permeable at the sides, to allow for lateral movement, should a threat be apparent.

(c) Natural surveillance of the open space areas can occur from the building

(d) The main site entrance is legible, with wide open pavements leading directly to the building entry

(e) Secondary entries are logically positioned and give direct access to the building

(f) Planting arrangements will occur such that low growing shrubs, and groundcovers occur in conjunction with high canopied vegetation / trees with clear trunks in order to allow for natural surveillance.

(g) Planting around playgrounds, car parks and along pedestrian pathways will allow for open surveillance

(h) Canopy trees are setback sufficiently from buildings and other roofed structures to prevent climbing and access to buildings and roofs.

(i) Maintenance activities shall occur to present a landscape that looks well cared for and keeps foliage, branches and sightlines open, through regular pruning. Graffiti is to be removed in a timely manner.

8.0 SERVICES

Site planning and design has adequately provided space for services within the landscape namely, garbage collection, school maintenance stores and hardstand area.

(a) Garbage collection space has been included in the carpark accessed from the south local street. The bins are to be in a semi enclosed space (in accordance with SINSW requirements), readily accessible by a large collection vehicle and set well back from the street.

(b) To the north of the proposed sports field with access from the northern collector road area is proposed for school maintenance stores and a hardstand yard. These stores will allow for secure store of garden maintenance equipment and supplies and access for maintenance vehicles to mow the sports field.

9.0 SIGNAGE

The landscape design indicates the proposed identity signage strategy for the school. In summary this includes:

1. Column type signage integrating electronic signage adjacent the main school entry.
2. Wall / Fence signage with school name adjacent to the main school entry
3. Wall / Fence signage adjacent to the secondary entries to the north, north east and south of the site.

Refer to Appendix B for indicative signage types, as described in the Secondary Schools Renewal Plan, Signage Guidelines document prepared for the Department of Education.

Internal wayfinding and statutory signage will be installed in accordance the education standard and BCA requirements.

APPENDIX

A. Landscape Drawings for SSD

PROPOSED MAJOR ROAD

PICK UP/
DROP OFF BAY

MAINTENANCE YARD

MAINT STORE

MAINT STORE

SPORTS STORE

SPORTS COURT

PROPOSED NORTHERN PEDESTRAIN CROSS OVER

NORTH ENTRY

BIKE STORE

BIKE STORE

PLAY GROUND

PLAY EMBANKMENT

PLAY EMBANKMENT

NORTH EAST ENTRY GATE LOCKED FOR SPECIAL EDUCATION ACCESS ONLY

SOCCER FIELD

SPECIFIC PURPOSE COURTYARD

CLASS BREAKOUT

CLASS BREAKOUT

CLASS BREAKOUT

CLASS BREAKOUT

CLASS BREAKOUT

PROPOSED SCHOOL SITE

CARPARK

HALL BREAKOUT AREA

BIKE STORE

ENTRY CANOPY

SOUTH ENTRY

SOUTH EAST ENTRY

SERVICES

PROPOSED SOUTHERN PEDESTRAIN CROSS OVER

PROPOSED EASTERN PEDESTRAIN CROSS OVER

ENMORE STREET

NORTHBOURNE STREET

PICK UP/ DROP OFF BAY

STAFF SOUTH WEST ENTRY

LEGEND KEY

1. SPORTS FIELD WITH AMPHITHEATRE STYLE SEATING
2. SPORTS COURT WITH AMPHITHEATRE STYLE SEATING AND LUSH PLANTING TO PERIMETER
3. LEARNING BOARDWALK THROUGH LUSH PLANTING
4. AMPHITHEATRE BREAK OUT SPACE
5. NORTHERN ENTRY WITH BIKE STORAGE
6. PLAYGROUND AREA FOR NATURE PLAY ELEMENTS
7. OPEN FREE PLAY TURF AREA
8. VEGGIE GARDENS IN RAISED PLANTERS
9. CLASS BREAKOUT SPACES WITH RAISED PLANTERS AND SEATING
10. RUBBER SOFTFALL ENBANKMENT WITH CLIMBING PLAY ELEMENTS
11. HALL BREAKOUT SPACE WITH LOW SEATING WALLS
12. SOUTHERN ENTRY WITH BIKE STORAGE
13. MAIN ENTRY WITH PLANTING AND FEATURE CANOPY
14. CLASS BREAKOUT SPACES WITH DENSE SHADE TREES AND SEATING
15. INTERNAL BREAKOUT SPACES WITH SYNTHETIC TURF, RAISED PLANTERS AND LOW SEATING WALLS

Issue

No.	Date	Description	Chkd
A	02/07/2019	PRELIM ISSUE FOR INFO	CB
B	04/07/2019	PRELIM ISSUE FOR COORD	CB
C	07/07/2019	PRELIM ISSUE FOR COORD	CB
D	09/07/2019	PRELIM ISSUE FOR COORD	CB
E	15/07/2019	PRELIM ISSUE FOR COORD	CB
F	15/07/2019	PRELIM ISSUE FOR COORD	CB
G	16/07/2019	ISSUED FOR SUBMISSION	CB
H	14/08/2019	ISSUED FOR SUBMISSION	CWP
I	26/08/2019	ISSUED FOR SUBMISSION	CB
J	04/09/2019	ISSUED FOR SUBMISSION	CWP

LEGEND

- SITE BOUNDARY
- 2.1m PALISADE FENCE
- 1.8m DECORATIVE SCREEN FENCE
- COLOURED CONCRETE BLOCK RETAINING WALLS
- TURF
- SYNTHETIC TURF
- MASS PLANTING
- COLOURED CONCRETE
- SPORTS COURTS
- AMPHITHEATRE
- ASPHALT
- BARK SOFTFALL
- RUBBER SOFTFALL SLOPE
- LARGE TREE PLANTING REFER SCHEDULE
- MEDIUM TREE PLANTING REFER SCHEDULE
- SMALL TREE PLANTING REFER SCHEDULE
- INDICATIVE STREET TREES AS PER SUBDIVISION PLAN

Drawing Title
SITE ARRANGEMENT PLAN

Project
MARSDEN PARK PUBLIC SCHOOL

Location
MARSDEN PARK NSW

Client
SCHOOLS INFRASTRUCTURE NSW

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Date 04/09/2019
Scale 1:200 @ A0
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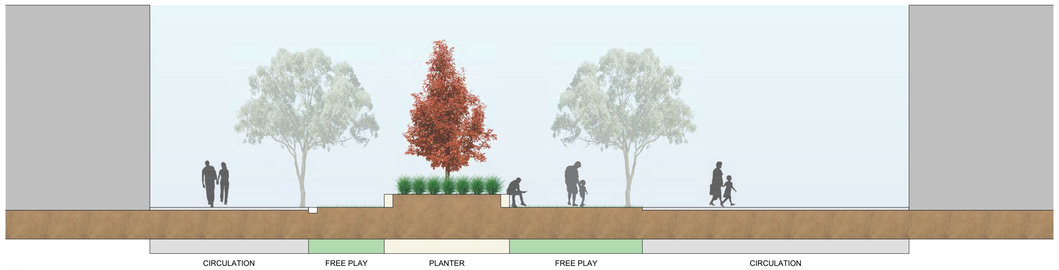
Project No. 19154
Sheet No. LDA100
Revision No. J

SECTIONS

1 SITE SECTION 1
1:75



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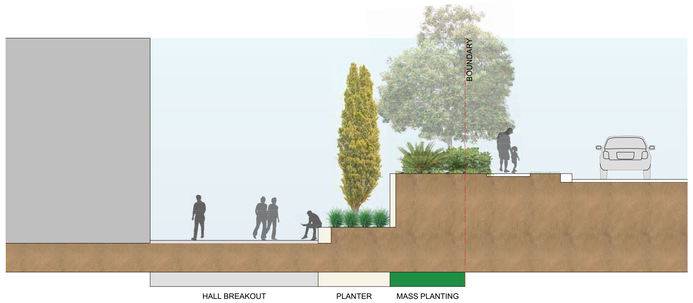


3 SITE SECTION 3
1:75

4 SITE SECTION 4
1:75

5 SITE SECTION 5
1:75

MATERIALS PALETTES

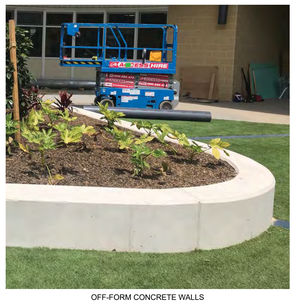
COLOURED CONCRETE - CCS PEWTER

COLOURED CONCRETE - CCS BLUE GUM

COLOURED CONCRETE - CCS ONYX

SYNTHETIC TURF

RUBBER SOFTFALL

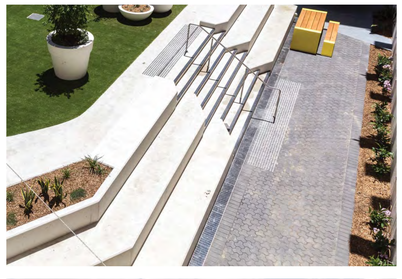


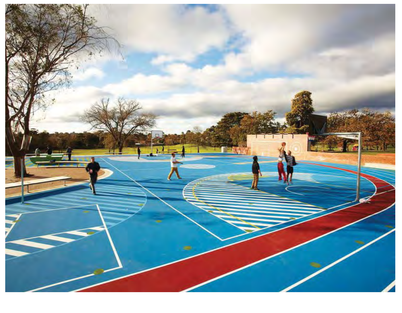
OFF-FORM CONCRETE WALLS

PLANTING PALETTE

Botanical Name	Common Name	Pot Size	Density	Height	Width	Comments
Large Tree						
Lophostemon confertus	Brush Box	200lt		15m	10m	
Flindersia australis	Crows Ash	200lt		15m	8m	
Syncarpia glomulifera	Turpentine	200lt		20m	12m	
Eucalyptus crebra	Narrow-leaved Ironbark	75lt		25m	10m	Positioned outside high activity zone
Eucalyptus moluccana	Grey Box	75lt		25m	10m	Positioned outside high activity zone
Eucalyptus tereticornis	Forest Red Gum	75lt		25m	10m	Positioned outside high activity zone
Jacaranda mimosifolia	Jacaranda	100lt		20m	8m	
Medium Tree						
Glochidion ferdinandi	Cheese Tree	200lt		12m	6m	
Harpulia pendula	Tulip Tree	200lt		12m	6m	
Syzygium australe	Lily Pily	200lt		10m	5m	
Tristaniopsis laurina	Water Gum	200lt		10m	6m	
Cupaniopsis anacardioides	Tuckeroo	200lt		8m	5m	
Waterhousia floribunda	Weeping Lily Pily	200lt		8m	5m	
Cyanthea cooperi	Fern Tree	75lt		15m	2m	
Melaleuca linariifolia	Snow in Summer	100lt		10m	4m	
Melaleuca stypheloides	Prickly Paperbark	100lt		10m	3m	
Banksia integrifolia	Coastal Banksia	100lt		15m	5m	
Small Tree						
Buckinghamiana callcisima	Ivory Curl Tree	100lt		6m	4m	
Bursaria spinosa	Native Blackthorn	100lt		5m	4m	
Melaleuca nodosa	HoneyMyrtle	75lt		4m	2.5m	
Acacia implexa	Hickory Wattle	100lt		8m	7m	
Acer buergeranum	Trident Maple	100lt		6m	3m	
Sapium sebiferum	Chinese Tallow Tree	100lt		7m	3m	
Grasses						
Dianella longifolia	Flax Lily	140mm		0.6m	0.5m	
Themeda australis	Kangaroo Grass	140mm		0.5m	0.5m	
Carex inversa	Knob Sedge	140mm		0.6m	0.4m	
Lomandra longifolia	Mat Rush	140mm		0.7m	0.6m	
Lomandra tanika	Mat Rush Cv	140mm		0.7m	0.6m	
Juncas usitatus	Rush	140mm		0.6m	0.5m	
Poa labillardieri	Poa	140mm		0.6m	0.6m	
Pennisetum alopecuroides	Fountain Grass	140mm		0.8m	0.8m	
Liriope muscari	Turf Lily	140mm		0.6m	0.6m	
Groundcovers						
Dichondra repens	Kidney Weed	140mm				
Banksia spinulosa 'Birthday Candles'	Creeping Banksia	140mm		0.5m	2m	
Grevillea 'Bronze Rambler'	Grevillea	140mm		0.4m	1.5m	
viola hederacea	Native Violet	140mm		0.3m	1m	
Aspidistra elatior	Cast Iron Plant	140mm		0.6m	0.6m	
Trachelospermum jasminoides	Star Jasmine	140mm		0.3m	1m	
Shrubs						
Syzygium australe	Lily Pily	45lt		5m	4m	
Dodonaea viscosa subsp. cuneata	Sticky Hop Bush	200mm		4m	3m	
Hardenbergia violacea	False sarsaparilla	200mm		1.5m	2m	
Acacia falcata	Sickle Wattle	200mm		4m	4m	
Hibbertia diffusa	Guniea Flower	200mm		2m	3m	
Indigofera australis	Australian Indigo	200mm		2.5m	3m	
Westringia fruticosa	Coastal Rosemary	25lt		1m	1m	
Crinum pedunculatum	Crinum Lily	25lt		1.5m	1.5m	
Phormium tenax	NZ Flax Lily	25lt		1.5m	1.5m	
Bursaroa spinosa	Tasmanian Christmas Bush	25lt		8m	6m	
Doryanthea excelsa	Gymea Lily	25lt		2m	2m	

PRECEDENT IMAGES





Issue

No.	Date	Description	Chkd
A	16/07/2019	PRELIM ISSUE FOR COORD	CB
B	17/07/2019	ISSUED FOR SUBMISSION	CB

Drawing Title
LANDSCAPE SECTIONS

Project
MARSDEN PARK PUBLIC SCHOOL

Location
MARSDEN PARK NSW

Client
SCHOOLS INFRASTRUCTURE NSW

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Date 17/07/2019
Scale 1:75 @ A0

Project No. 19154
Sheet No. LDA101
Revision No. B

APPENDIX

B. Blacktown Council Plant Species List

1 Prescribed Trees and Preferred Species

1. A prescribed tree is identified as:
    - having more than 4 metres in height and having a trunk diameter of more than 200 millimetres when measured at height of 1 metre from the ground.
    - a tree identified as one of the species listed in **Table 1**.
2. Consent is not required:
    - for clearing species listed in **Table 2** or any other species which have been declared as noxious plants under the *Noxious Weeds Act 1993*;
    - for the removal of torn limbs or dead wood, such as individual branches, but not including whole trees, or
    - for pruning of less than 10% of the canopy or root system up to once every growing season and only of branches less than 100 millimetres in diameter, or
    - for pruning of more than 10% but less than 25% of the canopy, where the work will be undertaken by a suitably qualified person and Council has been notified of the work, and up to once every growing season, or
    - when inserting root barriers, when this will result in less than 10% of the root system being removed and up to once every growing season,
3. Pruning of prescribed trees is only acceptable if:
    - all work complies with the Australian Pruning Standards AS 4373-1996, and
    - any pruning will not result in harm to the health of the tree.

Table 1: Preferred Species

Scientific Name	Common Name	Mature Height	Mature Spread	Native
Prescribed Trees				
Acer buergeranum	Trident Maple	**6m**	**3m**	**X**
Agonis flexuosa	Willow Myrtle	**14m**	**6m**	√
Angophora floribunda	Rough Barked Apple	**20m**	**6m**	√
Banksia integrifolia	Coastal Banksia	**20m**	**6m**	√
Casuarina glauca	Swamp She-Oak	**15m**	**5m**	√
Corymbia maculata	Spotted Gum	**30m**	**8m**	√
Eucalyptus amplifolia	Cabbage Gum	**30m**	**5m**	√
Eucalyptus crebra	Narrow Leafed Red Ironbark	**30m**	**8m**	√
Eucalyptus microcorys	Tallow-wood	**40m**	**8m**	√
Eucalyptus moluccana	Grey Box	**30m**	**8m**	√
Eucalyptus tereticornis	Forest Red Gum	**40m**	**4m**	√
Fraxinus ‘Raywoodii’	Claret Ash	**20m**	**8m**	**X**
Jacaranda mimosilfolia	Jacaranda	**20m**	**8m**	**X**
Melaleuca linarifolia	Snow In Summer	**10m**	**4m**	√

Scientific Name	Common Name	Mature Height	Mature Spread	Native
Melaleuca nodosa	Ball Honeymyrtle	**4m**	**2.5m**	√
Melaleuca stypheloides	Prickly Paperbark	**10m**	**3m**	√
Melia azedarach	White Cedar	**15m**	**5m**	**X**
Sapium sebiferum	Chinese Tallow Tree	**7m**	**3m**	**X**
Shrubs				
Agapanthus orientalis	Agapanthus	**0.75m**	**0.4m**	**X**
Acemena smithii 'Hedge Master'	Lilly Pilly	**2m**	**1m**	√
Anigozanthos flavidus	Tall Kangaroo Paw	**2m**	**1m**	√
Banksia spinulosa	Hairpin Banksia	**3m**	**2m**	√
Brunoniella australis	Blue Trumpet	**0.3m**	**0.4m**	√
Bursaria spinosa	Tasmanian Christmas Bush	**10m**	**6m**	√
Callistemon linariifolius	Narrow-leaved Bottlebrush	**3.5m**	**2m**	√
Crinum pedunculatum	Crinum Lily	**2.5m**	**2.5m**	√
Dietes bicolor	Fortnight Lily	**1.0m**	**0.75m**	**X**
Doryanthes excelsa	Gymea Lily	**3m**	**2m**	√
Dodenea viscose	Giant Hop Bush	**3m**	**3m**	√
Gardenia augusta	Common Gardenia	**1.5m**	**1.0m**	**X**
Grevillea poorinda "Royal Mantle"	Grevillea	**1.5m**	**1.5m**	√
Hakea sericea	Silky Hakea	**6m**	**3m**	√
Kunzea ambigua	Tick Bush	**2.5m**	**2m**	√
Micromyrtus ciliata	Fringed Heath Myrtle	**0.15m**	**1.5m**	√
Phormium tenax "Purpureum"	NZ Purple Flax	**1.0m**	**1.0m**	**X**
Thryptomene saxicola	Rock Thryptomene	**1m**	**0.5m**	√
Westringia fruticosa	Coastal Rosemary	**2.0m**	**1.5m**	√
Ground Cover				
Aspidistra elatoir	Cast Iron Plant	**1m**	**0.8m**	**X**
Brachycome multifida	Cut Leaf Daisy	**0.3m**	**1m**	√
Dichondra repens	Kidney Weed	**0.1m**	**0.3m**	√
Grevillea 'Bronze Rambler'	Grevillea cultivar	**0.3m**	**0.4m**	√
Hardenbergia violaceae	Purple Coral Pea	**climbs to 1.5m**	**1.5m**	√
Trachelospermum jasminoides	Star Jasmine	**climbs to 6m**	**1.5m**	**X**
Viola hederacea	Native violet	**0.2m**	**0.5m**	√

Scientific Name	Common Name	Mature Height	Mature Spread	Native
Wahlenbergia gracilis	Australian Bluebell	**0.3m**	**0.25m**	√
Grasses				
Aristida ramosa	Wire Grass	**0.5m**	**0.5m**	√
Danthonia tenuoir	Wallaby Grass	**0.3m**	**0.3m**	√
Imperta cylindrica	Cogon Grass	**0.5m**	**0.5m**	√
Liriope muscari	Turf Lily	**0.6m**	**0.5m**	**X**
Microlaena stipoides var. stipoides	Microlaena	**0.5m**	**0.3m**	√
Ophiopogon japonicus	Mondo Grass	**0.35m**	**0.3m**	**X**
Pennisetum alopecrroides	Fountain Grass	**1m**	**1m**	√
Poa labillardieri	Poa	**0.4m**	**0.25m**	√
Themeda australis	Kangaroo Grass	**1m**	**0.3m**	√
Sedges/Rushes				
Carex appressa	Tall Sedge	**1m**	**0.5m**	√
Dianella caerulea	Flax Lily	**0.5m**	**0.3m**	√
Dianella revolute	Flax Lily	**1m**	**1m**	√
Gahnia aspera	Saw Sedge	**1m**	**0.4m**	√
Isolepis nodosa	Nobby Clubrush	**1m**	**1m**	√
Lomandra longifolia	Mat Rush	**0.7m**	**1m**	√
Lomandra multiflora	Many Flowered Mat Rush	**0.7m**	**0.7m**	√
Juncus usitatus	Common Rush	**1m**	**0.4m**	√
Turf				
Cynodon dactylon	Couch (improved types)	-	-	X

Note: It is important to note that this plant list is indicative only to provide a guide on the range of suitable plants for the region with consideration of functional, aesthetic, salt tolerance and horticultural requirements. The selection of species is expected to vary over time as a result of species availability, site conditions, and plant viability.

APPENDIX

C. Signage Details

Terrigal High School
Freestanding sign
LED full colour

EXAMPLE ONLY. REFER SCHOOL SPECIFIC DOCUMENTATION

Overall size: 3860 x 1600 x 120mm

2.4 Street entrance – alternative high risk fence sign

Type

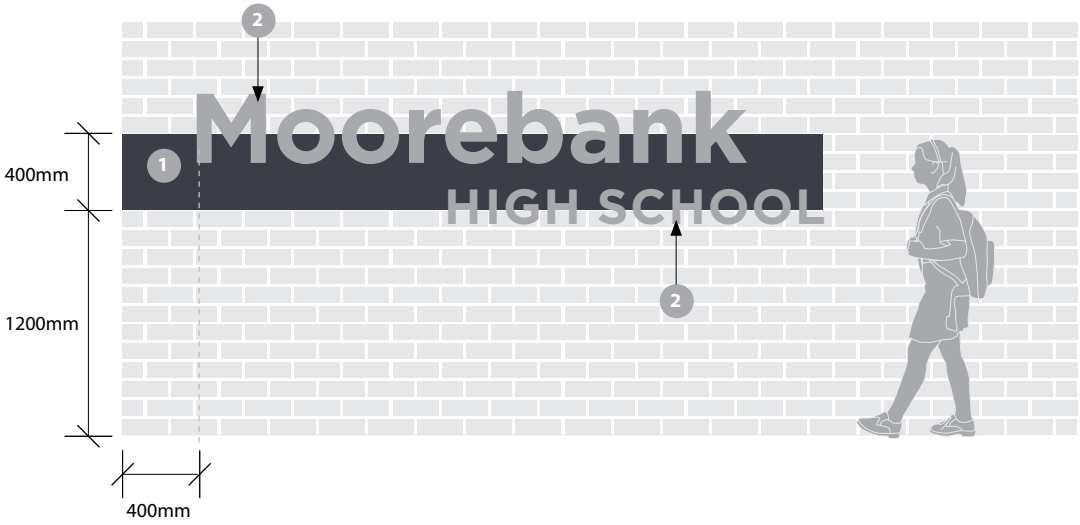
1. **School name:** 740pt Gotham Bold u/lc
2. **High school:** 370pt Gotham Bold uc

Type layout

Scale: 1:20

Colour

Scale: 1:40



2.5 Street entrance – wall sign

The same structure as the fence sign can be applied to a brick or rendered wall.

Colour

1. **Panel:** Grey 3.
2. **Type:** Natural satin stainless steel finish.
3. **Wall:** Grey 2.

See page 5 for colour details.