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Tanner Kibble Denton

CURL CURL NORTH PUBLIC SCHOOL

Playfair Road, North Curl Curl
NSW 2099

Urban Design Report

For

NSW Department of Education

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Project No. 161029

Tanner Kibble Denton Architects Pty Ltd
ABN 77 001 209 392

NSW Nominated Architects
Robert Denton Registration No 5782
Alex Kibble Registration No 6015

PO Box 660 Darlinghurst NSW 1300 Australia
52 Albion St, Surry Hills NSW 2010 Australia
T +61 2 9281 4399
F +61 2 9281 4337
www.tkda.com.au

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1.0 Introduction

This Urban Report has been prepared by Tanner Kibble Denton Architects on behalf of the New South Wales Department of Education (DoE). It accompanies an Environmental Impact Statement (EIS) prepared in support of State Significant Development Application SSD 8310 for the redevelopment of 'Curl Curl North Public School' at Playfair Road, North Curl Curl (the 'site').

The site is located within the Northern Beaches Local Government Area (LGA). It is irregular in shape and has a total area of 28,083.9m^2. It includes a 133m street frontage to Abbott Road to the south, and a 220m street frontage to Playfair Road to the west.

The capacity of Curl Curl North Public School (the 'School') is proposed to be increased in response to local population projections currently forecast by the DoE. The school's existing demountable stock, and the majority of its existing buildings will be replaced by new high quality classrooms, collaborative learning spaces, open play spaces, sports courts and associated facilities.

The purpose of this Urban Design Report is to analyse the existing urban character of the school and provide a summary of the urban design response and strategies incorporated into the proposed development detailed within the EIS.

2.0 Project Background

2.1 Location

The site is located at Playfair Road, North Curl Curl, NSW 2099 and located over the following sites:

> Lot 1 DP 731454 and Lot 286 DP 752038

North Curl Curl is located 20km north of the Sydney central business district.

2.2 General Project Description

The objective of this project increase the capacity of the existing school, and improve its facilities to meet current educational planning principles. With the proposed redevelopment, the school's capacity will increase from its current population of 920 students to 1000 students, and from 66 staff to 69 staff. This represents an increase of 80 students and 3 staff (equivalent to an increase of 8.7% and 4.55% respectively).

2.3 Background

The school was first established in the 1950s, and subsequently extended in the 1960s, 70s and 90s. The most recent building constructed was a block of 6 homebases constructed via the BER program. The original school buildings are still in use today but have been supplemented by a large number of demountable and MDR classroom blocks. The current school comprises Kindergarten classes and classes catering for students from grades one to six.

The key drivers of this project are to:

a) Meet future projected enrolment growth to 2031
b) Meet the requirements of the DoE's educational planning principles
c) Improve the performance of the school assets
d) Achieve the best value for money by maximising functionality of existing assets
e) Maximise existing infrastructure to satisfy asset requirements

Key stakeholders through a Project Reference Group (PRG) developed the following Project Educational Planning Principles aligned to DOE's over-arching responsibilities:

a) Connect students to their natural environment
b) Authentic outdoor learning
c) Support a personalised learning approach
d) Support collaboration across groups of different sizes
e) Vibrant student culture, promote student engagement and celebrate student achievements
f) Support a diverse curricular and extra-curricular program
g) Providing mobile integrated technologies that support collaboration and creativity
h) Comfort and well-being
i) Technology rich library facility that will be a destination space
j) Reflect the school's relaxed, community-focused identity and preserve the school's sense of openness
k) Support a professional community of practise

3.0 Site Analysis

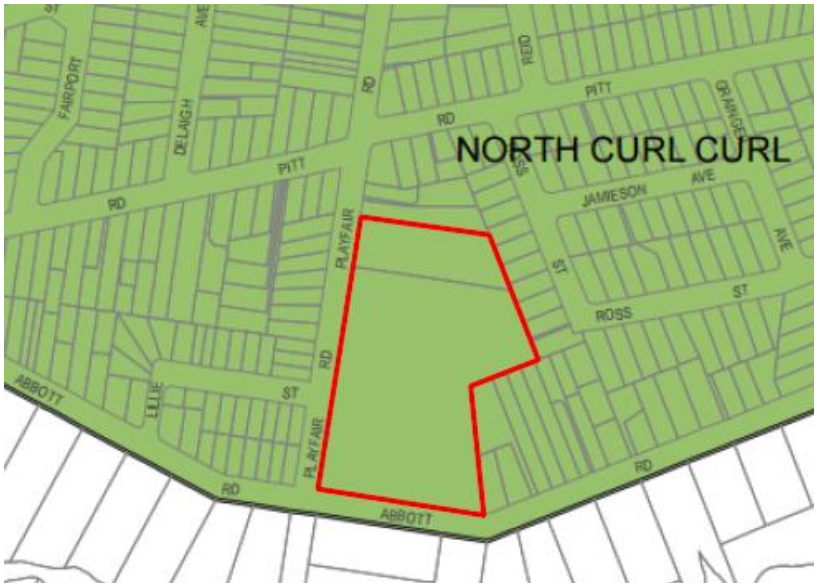
3.1 Existing Urban Character

The site is located at the intersection of Abbott Road and Playfair Road, Curl Curl North. Immediately to the south is John Fisher Park - a series of large Council owned playing fields and netball courts that sit beside Curl Curl Lagoon. To the east, north and west are low scale residential dwellings, typically 1-2 storeys in height.

The main pedestrian and vehicular access into the school grounds is from Playfair Road and Abbott Road. There is a secondary pedestrian entrance via a laneway connecting to Ross Street.

The existing site consists largely of grassed paddocks spread below remnant native canopy trees with minimal understorey planting

The area surrounding the site is low density residential, with significant areas of open space across Abbott Road.



The surrounding area is low-rise, with a height limit of 8.5m

3.2 Landform

The school currently has open informal play space to the north with a synthetic playing field and shade structure. Smaller garden play spaces and vegetable gardens are interspersed amongst the existing demountable and classroom blocks. An existing staff car park is situated in the middle of the site. To the south is an open playing field which has some grass in poor condition and play equipment located in the south eastern corner. The site falls with 7m fall from north to south with an even gradient to the low point on the SE corner of the site.

The surrounding landscape plays an important part of the existing school character and the school has very well defined edges with significant mature trees along the boundaries with adjoining properties and the street. There is also a mature Morten Bay Fig tree at the centre of the school.

Courtyard play area adjacent to the original 'Bristol' school buildings

Informal seating and play areas at the north of the site

Block M, flanked by demountables.

3.3 Street Network

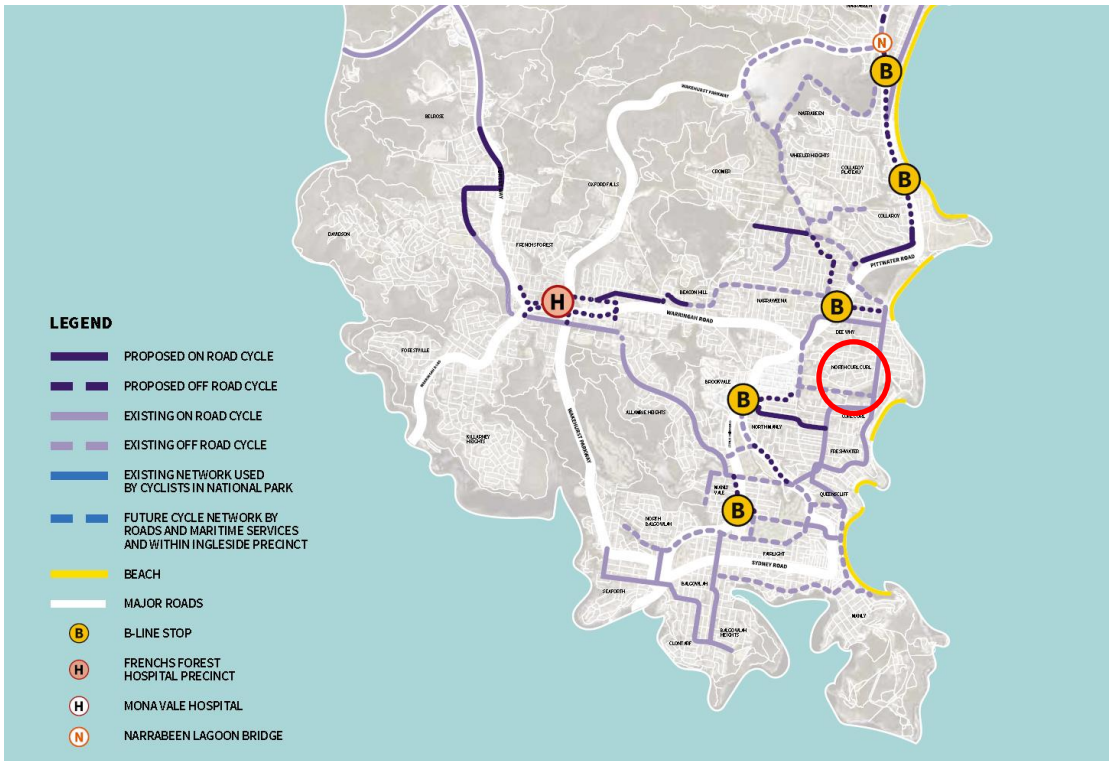
Abbott Road is approximately 12m wide, and carries a single lane of traffic in both directions, with unrestricted street parking on both sides.

Playfair Road is a local road which runs in a north-south direction between Pitt Road to the north and Abbott Road to the south. Playfair Road carries a single lane of traffic in both directions. Playfair Road currently accommodates pedestrian access via three school entrances on Playfair Road, special school bus services/zones, pick-up/drop-off facilities and vehicular access to the existing on-site car parking and waste servicing areas. There is pedestrian school access on Ross Street via a laneway between No.17 and No.19 Ross Street.

Northern Beaches Council is developing a "Connecting the Northern Beaches" initiative with the following objectives:

a) Physical connections between Northern Beaches' towns and villages via walkways, cycleways and shared paths
b) Integrate with the B-Line, providing great pedestrian and cycleway access to faster public transport
c) Increased use and convenience of facilities and services, as well as community health benefits, with active transport options

Under the initiative, existing active transport routes in the vicinity of the school will be connected to neighbouring areas.



Extract from the Northern Beaches Council "Connecting the Northern Beaches" initiative map. The school's location is indicated by the red circle.

4.0 Opportunities & Constraints

4.1 Opportunities & Constraints

Based on the analyses of the site provided below, the following urban opportunities and constraints have been identified:

- > The local area is predominantly one and two storeys in scale
- > Abbott Road and Playfair Roads have characters distinct from one another
- > The Abbott/Playfair Road corner is prominent and highly visible
- > Existing, well-used site entrances
- > Existing sewer easement to the north
- > Significant trees provide a green perimeter around the site
- > Desirable connection between the school and John Fisher Park

The site is on the edge of residential development and open space. The north-south orientation of the site provide opportunities for capturing natural light and breeze

Existing Urban Design Opportunities
- Multiple neighbourhood connections
- Significant trees
- Prominent street corner at Playfair and Abbott Roads
- Relationship to John Fisher Park

Existing Urban Design Constraints -
- Sewer easement to the north
- Overland flow paths running north-south through the site

5.0 Concept Design Options

In consideration of the Urban Design opportunities and constraints identified, a number of concept design options were tested.

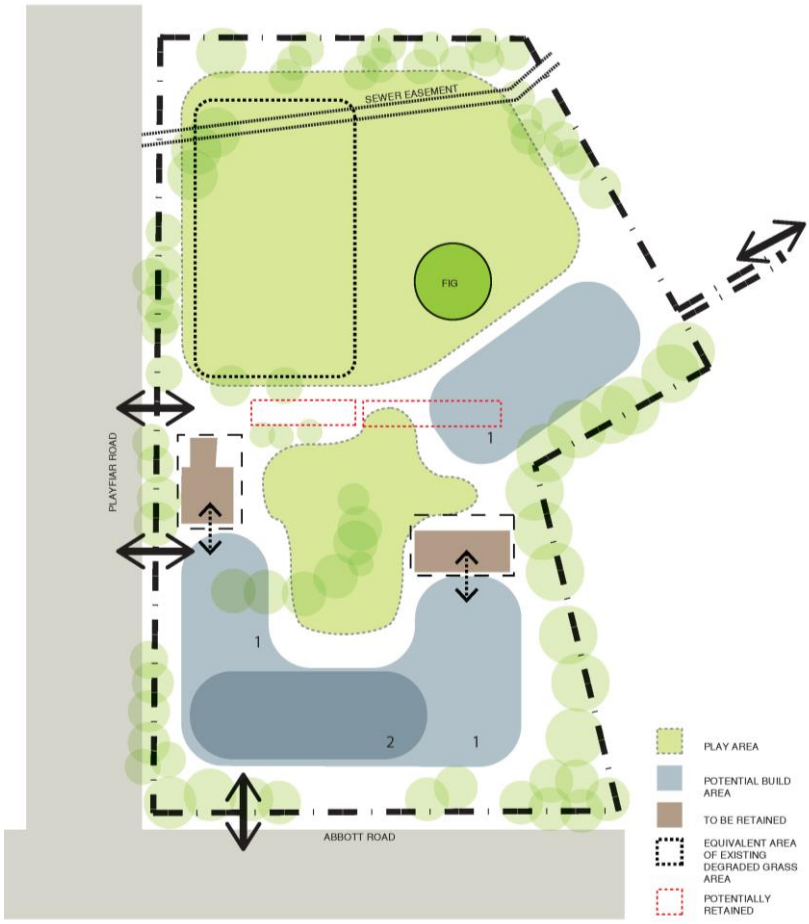
5.1 Option 1

This option consolidates the school at the south of the site.

The following advantages and disadvantages were identified for this option:

- The built form provides a well-defined public face to the school along Abbott Road
- The proposed buildings are kept distant from residential neighbours, reducing the chance of overshadowing and privacy issues
- Play space is maximised in area
- Solar access is maximised to play areas and teaching spaces
- The buildings are located in an area of the site which needs to consider flood and overland flow

For the advantages described above, Option 1 was determined to respond best to the urban design opportunities and constraints and provide the best educational outcomes for the school. This design is what was submitted for SSDA in 2017. Feedback from authorities and the public was received on this option, and it has been revised to respond to these comments.



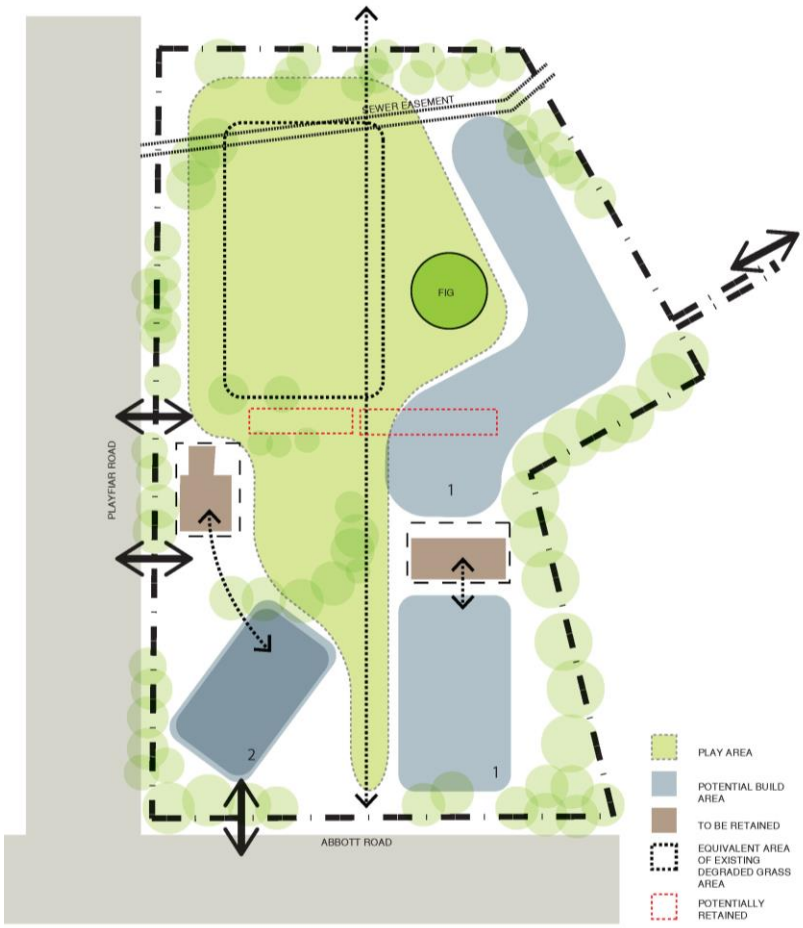
Site Plan – Option 1

5.2 Option 2

This option is almost completely single storey, with the exception of a prominent corner building.

The following advantages and disadvantages were identified for this option:

- The lower scale of this option retains the neighbourhood's low density aesthetic
- Many opportunities for indoor/outdoor connections
- The two storey building is located on a primary street corner with good community presence
- A strong connection is created between the outdoor play space and John Fisher Park
- Buildings spread across the site limits potential for future expansion of the school, if required
- North-south orientation of buildings is environmentally challenging
- The street edge is poorly defined
- Homebases located distant from one another may limit interaction between classes and sense of school community
- Bulk of the proposal bounds the residential boundary so may be viewed negatively by neighbours



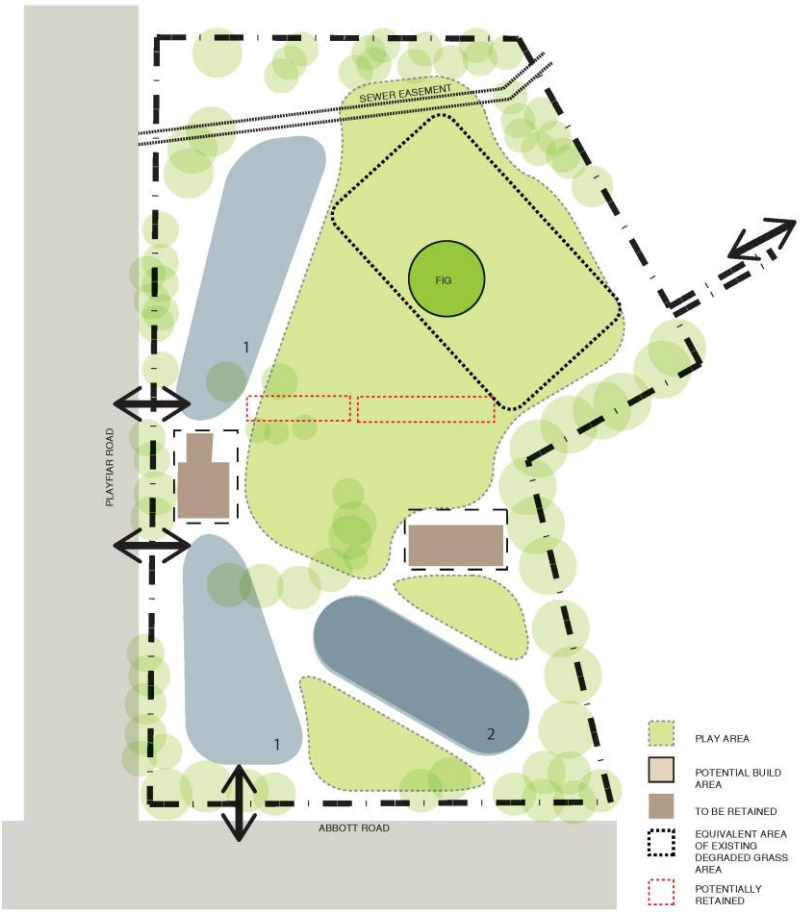
Site Plan – Option 2

5.3 Option 3

This option locates single storey buildings along Playfair Road.

The following advantages and disadvantages were identified for this option:

- The lower scale of this option retains the neighbourhood's low density aesthetic
- Many opportunities for indoor/outdoor connections
- Smaller scale outdoor spaces along Abbott Road provide a connection is created between the school and John Fisher Park
- Buildings spread across the site limits potential for future expansion of the school, if required
- North-south orientation of buildings is environmentally challenging
- The Abbott Road street edge is poorly defined
- Homebases located distant from one another may limit interaction between classes and sense of school community



Site Plan – Option 3

5.4 Option 4

This option locates the buildings towards the north of the site, but clear of the existing sewer easement.

The following advantages and disadvantages were identified for this option:

> Many opportunities for indoor/outdoor connections
> Green spine running the length of the site and connecting to John Fisher Park across the road
> Existing southern playing field is retained
> North-south orientation of buildings is environmentally challenging
> The Abbott Road street edge is poorly defined

Site Plan – Option 4

5.4 Option 5 (Preferred Option – Response to SSDA comments)

This option is a new option developed in response to SSDA feedback received from authorities and the public. The design has been adjusted to address recommendations by authorities concerning:

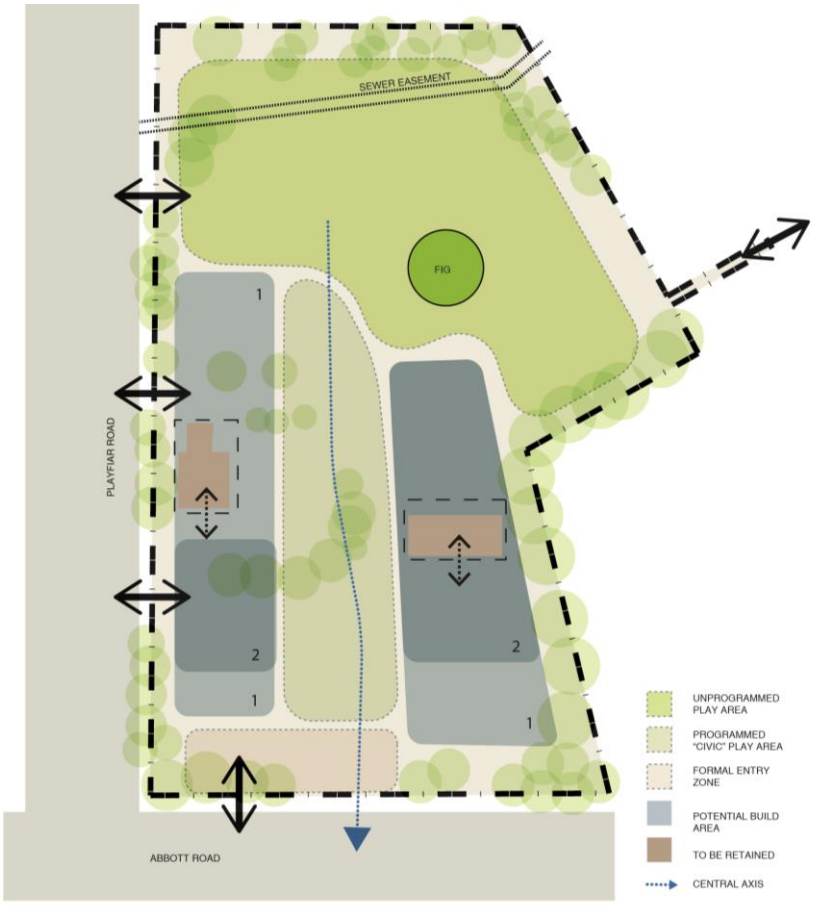
- Bulk, scale and enclosure on the Abbott Road frontage
- The need for visual connections through the site to John Fisher Park and the lagoon
- Privacy of residences on Playfair Road
- Stormwater management

To address these concerns, a central axis of open space has been made continuous through the length of the site. The built form is divided into two fingers aligned down the east and west site boundaries, in place of the U-shaped building previously proposed. Building heights have been reduced where possible, by stepping the buildings down the slope, and single storey elements introduced along the Abbott Road frontage.

The openness through the centre of the site also allows for a simpler overland flow and stormwater strategy than previously proposed.

The following advantages and disadvantages were identified for this option:

- A central “civic” axis that can be programmed with a range of play and outdoor learning opportunities
- Easy visual and physical connection between homebases and the central axis.
- Easy visual connection between the school and John Fisher Park across the road.
- The north of the site remains at a scale suitable for unprogrammed play, and sports.
- The north-south orientation of buildings is environmentally challenging, but can be addressed using verandah spaces and external shading.
- Departing from the previously proposed U-shape means that not all homebases are connected to one another, and to the hall and library. This will need to be addressed by the inclusion of a central linking bridge at level 1.



Site Plan – Option 5

6.0 Design Proposal

6.1 Conceptual Urban Design Principles Incorporated into the Proposal

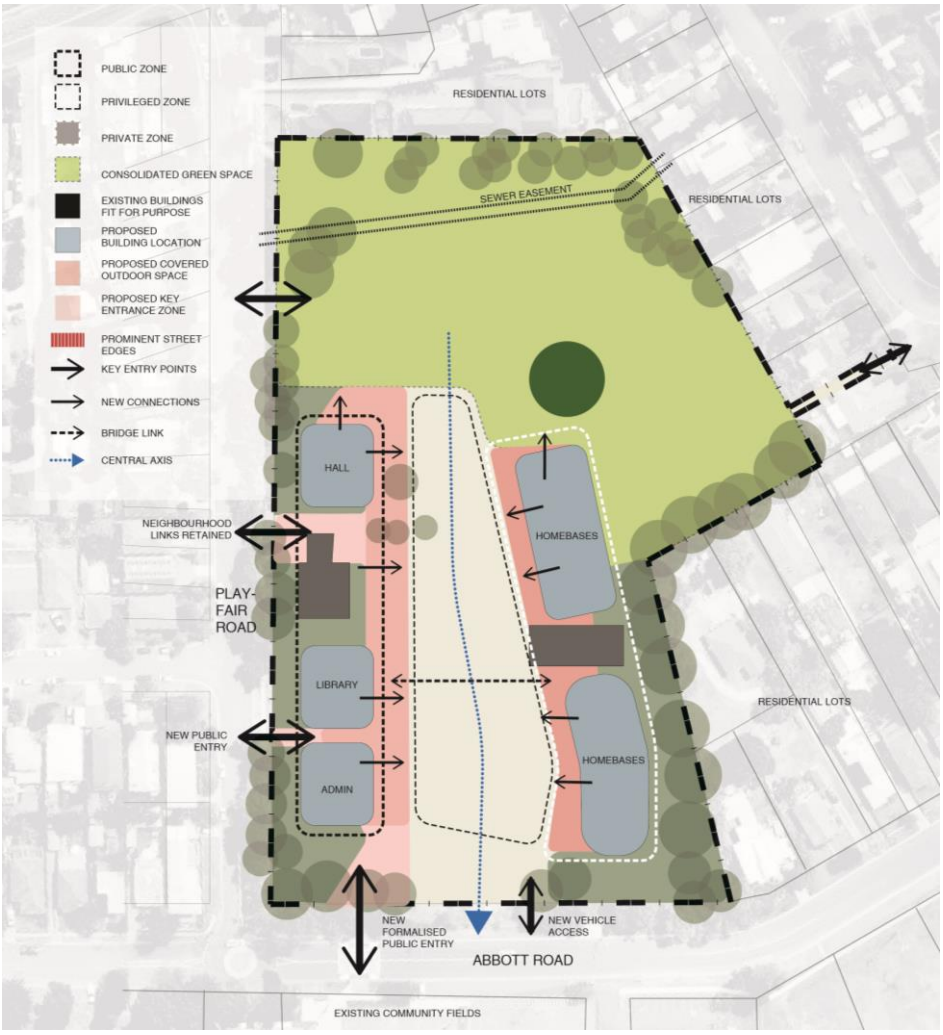
The Design Proposal incorporates the following Urban Design considerations:

- The main school entry is accessed from Abbott Road via a formal entry
- A series of informal entries are provided along Playfair Road.
- The school buildings are located to the perimeter of the site as a visual and acoustic buffer to the school's play areas
- Existing buildings are fully integrated into the new development
- Existing site access points are retained
- Construction is kept clear of the significant fig tree

Conceptual Urban Design Principles

6.2 Detailed Urban Design Principles Incorporated into the Proposal

- The building is primarily two storeys in scale, which is in keeping with the predominant scale of the surrounding development.
- Verandah spaces (shaded in red below) provide a transition zone between indoor and outdoor spaces
- The built form is broken into smaller components to allow permeability between buildings for pedestrians, natural light and ventilation
- There is clear delineation between the public face of the school, the zones available for community use, and zones for the exclusive use of enrolled students and staff



Detailed Urban Design Principles

6.2 Facade Design and Materials

Materials have been selected based on their quality, durability, and for their coastal aesthetic. A mix of fibre-cement sheeting and metal cladding is proposed for the larger façade areas. Powder-coated aluminium screens and sunshading devices articulate the façade in key areas, such as at building entrances, external stairs and along the level 1 link bridge.

High quality, openable glazing is proposed, including large sliding doors. The spaces within the building are naturally ventilated and the building width has been minimised to encourage good cross ventilation. Windows have been maximised to provide good levels of natural light and high level operable louvres incorporated for ventilation.

North-facing sunshades have been incorporated outside homebase areas to protect the building from direct sun penetration.

6.3 Response to Education SEPP: School Design Quality Principles

Principle 1—context, built form and landscape

The school is designed to respond to the positive qualities of its setting. This is achieved by the following strategies:

- The siting and massing create a defined street edge to the school's key street frontages, and a low scale, neighbourhood feel to its residential neighbours.
- The impact of the redevelopment on the established trees at the site perimeter has been restricted to small areas near to building entrances, so that the existing leafy site boundary is largely retained.
- The built form allows landscape to be integrated into the scheme as an important part of the teaching spaces.
- The built form is broken into smaller parts to allow cross-ventilation, solar access, and pedestrian permeability throughout the school.

Principle 2—sustainable, efficient and durable

The environmental sensitivity of the proposal has been maximised at four key levels.

- The siting, orientation, mass and scale of the buildings discussed above were defined with environmental site conditions as a basis. The consolidation of the school also allows for possible future expansion, thereby improving the longevity of the school.
- The built form was configured for enhanced thermal performance, with pitched roofs (to allow for insulated roof spaces and optimum solar PV orientation), deep verandah spaces on east and west facades, and regular breaks in the built form that maximise opportunities for natural cross-ventilation.
- The building fabric and materiality has been selected to be durable and readily available. Glazing has been located at varied locations and heights, and specified as openable awning and louvre types.
- The civil, mechanical, and electrical systems have been designed with environmental responsiveness in mind, with consideration for existing overland flow and stormwater paths, maximisation of solar PV capacity on the roof, and natural ventilation pursued instead of air conditioning.

Principle 3—accessible and inclusive

The proposal vastly improves the accessibility, inclusivity and legibility of the school. Key strategies include:

- The new main entrance provides a formal, highly visible face for the school at the corner location.
- The library and the hall are located along the street frontages, with teaching spaces more privately located behind (or at the upper level).
- School entrances are designed to meet accessibility and security standards, including new signage and adjustments of the pick-up/drop-off zones in accordance with recommendations outlined in the Traffic Impact Assessment that is included with this SSDA.
- Connections into the school, and within the school, will comply with AS1428.1 (2009) and the Educational Facilities Standards and Guidelines (EFSG).

Principle 4—health and safety

The proposal addresses existing health and safety issues present on the site, particularly with regard to contamination.

- A Remediation Action Plan (RAP) has been prepared, that will be audited by an external auditor, and remediation carried out in accordance with the recommendations agreed within the RAP.

- School entrances have been assessed for pedestrian safety, and the Traffic Impact Assessment has addressed potential pedestrian/vehicular interactions.
- The design has been reviewed by a BCA consultant and the EFSG has been applied.
- An external lighting strategy will be included in the Detail Design stage for visibility and surveillance outside school hours.

Principle 5—amenity

Amenity for school users and neighbours is addressed in the proposal via the following measures:

- Teaching spaces, presentation spaces, withdrawal, practical activities, and outdoor learning have been co-located to ensure useability and accessibility.
- The environmental considerations outlined under Principles 1 and 2 provide amenity with regard to solar access and air circulation.
- The landscape strategy defines dedicated playing fields, courts, COLAs, quiet play and outdoor learning spaces, allowing the specific needs of age groups and abilities to be met.
- A service area is defined on Playfair Road, with the Operational Waste Management Plan and Traffic Impact Assessment informing its configuration.
- Storage areas have been provided in accordance with the EFSG.
- Potential noise impacts on neighbours have been addressed by locating teaching spaces along the eastern boundary, and the hall (with its noisier uses such as performances and rehearsals) on Playfair Road.

Principle 6—whole of life, flexible and adaptive

Much of the school's current accommodation is unsuitable for contemporary teaching methodologies, and there are twenty demountable classrooms in use. The proposal will lengthen the life and improve the useability of the school via the following:

- The proposed spaces have been designed based on the Future Focused Learning model.
- Varied and flexible spaces that are adaptable for the specific needs of each class and reflect the latest teaching methodologies.
- Consolidation of the school into a mix of 1 and 2 storey buildings frees the remainder of the site for school expansion in the future.

Principle 7—aesthetics

The proposed aesthetic is inspired by the coastal context, and provides a clear identity for the school.

- The mix of 1 and 2 storey building heights is in keeping with the neighbourhood scale
- The distinctive roof form provides a playful interpretation of residential hipped roofs.
- A colour palette of blues, greens, yellows, greys and whites responds to the seaside locale.
- The materials palette of integrally-coloured fibre cement and steel cladding is durable, low maintenance and timeless.

6.4 Crime Prevention through Environmental Design (CPTED)

The following environmental design features have been incorporated to minimise crime:

- The internal spaces of the school are open and visible from the surrounding public street network, providing good natural surveillance.
- Building alcoves and areas for hiding in the landscape have been minimised.

6.5 Integration of Services

Services have been integrated into the building design and have minimal impact. A summary of the main building services is provided below:

Electrical

- The existing ampage provided to the site is to be upgraded.
- The main switchboard and electrical distribution boards have been located in cupboards and integrated into the building design.

Mechanical

- There is no air conditioning proposed, except for the relocation of the school's existing equipment for the administration building.
- Mechanical exhaust is provided where required to toilets and is integrated into the building design
- Gas flued heaters are provided to occupied spaces and are integrated into the building design

Hydraulic

- Fire hydrant booster is required to service the site and has been located on Abbott Road.
- Rain water collection tanks exist on the site and these will be retained.
- Water supply, drainage and sewer will all be integrated into the building design.

Civil

- A central swale is used to manage overland flow and provide an attractive landscape feature within the central axis.
- Stormwater pits and grates will be located around the site to manage site stormwater. The stormwater system drains into the main street stormwater system located along Abbott Drive.
- Overland flow paths have been considered and incorporated into the landscape and civil design
- Flood risk has been considered, and has determined the minimum RL of the proposed buildings
- Buildings are located away from the main flood risk area, which is located in the south-eastern corner of the site.

7.0 Conclusion

Curl Curl North Public School will be upgraded to serve anticipated population growth and to meet the DoE's Educational Planning Principles. In preparing this design proposal, the existing character of the local area has been extensively considered to ensure the redevelopment capitalising on the positive aspects of its context, and ameliorates the negative aspects.

The key urban design strategies consider important street frontages, privacy, acoustic impacts, site remediation, safety for school users and the community, aesthetics, and the longevity of the school. These considerations will continue to inform the proposal through Detail Design and Construction phases.