

CPTED ASSESSMENT

**CURL CURL NORTH PUBLIC
SCHOOL**

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EXECUTIVE SUMMARY

This CPTED Assessment was prepared by Urbis in relation to the State Significant Development Application (SSD 17_8310) for the redevelopment of Curl Curl North Public School. The development will accommodate 1,000 students from Kindergarten to Year 6, up from the current enrolment of 920 students.

A CPTED Assessment is an independent specialist study undertaken to identify and analyse potential improvements to design which may help to reduce crime and anti-social behaviour, as per NSW Government best practice guidelines. The four key principles to minimise the opportunity for crime are outlined below.

Table 1 – CPTED principles

Principle	Definition
Natural Surveillance	Natural surveillance is a by-product of well-planned, well-designed and well-used space. It involves maximising opportunities for passers-by and users to observe what happens in an area (the 'safety in numbers' concept). Higher risk locations can also benefit from organised surveillance, which involves the introduction of formal measures such as on-site security guards or CCTV.
Access control	Control of who enters an area so that unauthorised people are excluded, for instance, via physical barriers such as fences, grills etc.
Territorial reinforcement /ownership	People are more likely to protect territory they feel they own and have a certain respect for the territory of others. This can be expressed through installation of fences, paving, signs, good maintenance and landscaping. Territoriality relates to the way in which a community has ownership over a space.
Space management	Ensures that space is appropriately utilised and cared for. Space management strategies include: activity coordination (i.e. having a specific plan for the way different types of activities are carried out in space), site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out lighting and the removal or refurbishment of decayed physical elements.

CPTED ASSESSMENT AND RECOMMENDATIONS

Many of the crimes that affect schools are opportunistic and incidences of their occurrence can be minimised through the adoption of appropriate CPTED principles.

BOSCAR data indicates that Curl Curl North Public School is located in an area with relatively low levels of crime compared to NSW. Despite the lower crime levels, the application of *Safer by Design* guidelines will minimise the conditions that encourage crime.

The proposal has applied CPTED principles to maximise surveillance, access control, territorial reinforcement and space management, particularly in regards to:

External layout

The proposed U-shape design will result in a more compact layout than currently exists, maximising sight lines to playgrounds and the main pedestrian entry on Abbott Road. Palisade fencing will also ensure natural surveillance from the street to the school.

Outdoor areas

The proposal includes an extensive outdoor and playground area, which will be visible from the proposed buildings in the U-shape design. The proposed outdoor areas will be designed to invite people to gather, facilitating casual surveillance.

Entry and exit points

The proposed main pedestrian entry on Abbott Road will provide a formalised and well-defined entry point to the site, with the installation of a school sign. It is recommended that staff on duty should be in a position to conduct natural surveillance at this main entrance during school hours, with unrestricted views.

Internal layout

The proposal will reconfigure and internally refurbish the existing Block M and library. The internal spaces should provide passive surveillance to the external areas of the building and be locked after-hours.

Footpaths and laneways

The footpaths along Playfair and Abbot Road are attractive walking paths which encourage walkability. The laneway connecting the site to Ross Street requires maximisation of passive surveillance. The building facing this laneway should be designed to encourage clear sightlines to the laneway. Adequate signage should also be installed.

Carparking

The proposed car park should ensure safety for pedestrians walking along Abbots Road, especially during school hours, where staff should assist in maintaining pedestrian safety around the car park entry. Wayfinding and safe parking signage should also be installed throughout the car park.

Maintenance and management

Developments that are well maintained are less likely to attract criminal activity by creating a sense of ownership. The proposed waste pad area should be adequately locked when not in use. The School Plan of Management should also include maintenance and repair strategies.

Construction

The Construction Management Plan should include strategies and procedures to further minimise risks during construction.

CONCLUSION

The proposal has applied CPTED principles through the application of the NSW Police *Safer by Design guidelines*, to provide positive outcomes for crime prevention and passive surveillance. This report has outlined recommendations to enhance these outcomes.

1. INTRODUCTION

This Crime Prevention Through Environmental Design (CPTED) has been prepared by Urbis on behalf of the New South Wales Department of Education, in relation to the State Significant Development Application SSD 17_8310 for the redevelopment of Curl Curl North Public School.

A CPTED Assessment is an independent specialist study undertaken to identify and analyse potential improvements to design which may help to reduce crime and anti-social behaviour, as per NSW Government best practice guidelines.

1.1. THE SITE AND LOCAL CONTEXT

The site is located at Playfair Road (North Curl Curl), within the Northern Beaches Local Government Area (LGA). It comprises two lots legally described as Lot 1 DP 731454 and Lot 286 DP 752038. It is irregular in shape and has a total site area of approximately 27,982 sqm.

Appendix A includes photos of the existing site, taken during a site visit in May 2017.

Figure 2 – The Site



Source: Nearmap

1.2. EXISTING DEVELOPMENT

The existing Curl Curl North Public School accommodates a maximum of 920 students and includes the following facilities:

- Demountable classrooms and single-storey wooden classroom buildings
- Covered outdoor learning area (COLA)
- At-grade staff carpark containing 21 car spaces (including 1 disabled space)
- Outdoor sports court and playground
- Open sports field
- School library.

1.3. THE PROPOSAL

The development will accommodate up to 1,000 students from Kindergarten to Year 6. The following works are proposed to achieve this:

- Demolition of existing buildings (excluding Block M and library)
- Construction of multiple school buildings arranged in a U-shape, comprising:
 - Collaborative learning spaces
 - Classrooms
 - Offices for teachers and administrative staff
 - Library
 - Student canteen.
- Retention and reconfiguration of Block M and existing library block
- Construction of sports court and multiple handball courts
- Construction of new on-site staff carpark and associated vehicular access point off Abbott Road
- Associated site landscaping including new COLA, bush paths, central lawn and amphitheatre
- Augmentation and construction of ancillary infrastructure and utilities as required.

Figure 1 – Perspectives of the proposal

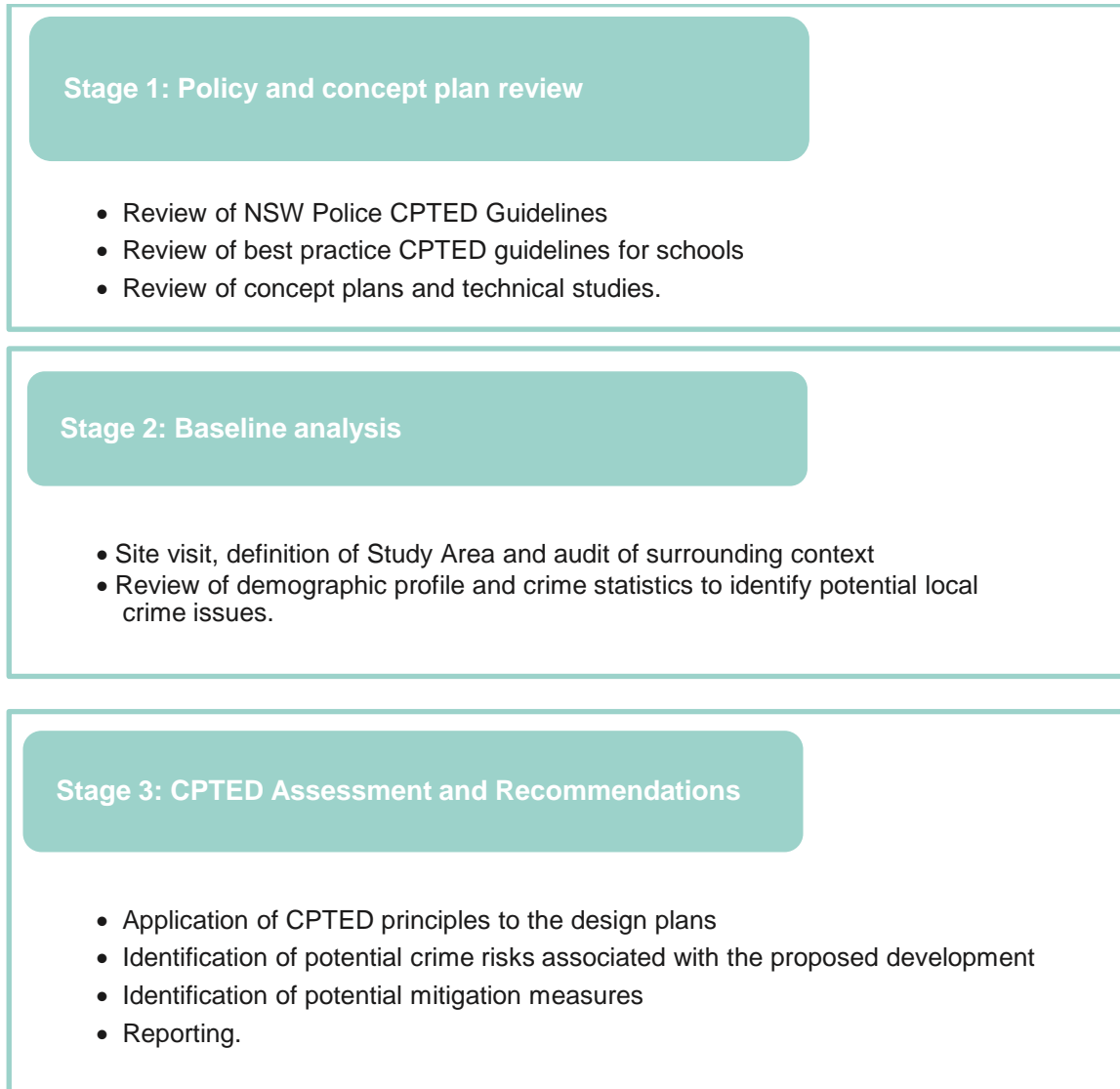


Source: TKD

1.4. METHODOLOGY

The following tasks were undertaken to inform the CPTED assessment.

Figure 2 – CPTED methodology



2. POLICY AND LITERATURE REVIEW

The following documents were reviewed to inform this assessment:

- NSW State Priorities
- Crime prevention and assessment of development applications (NSW Department of Planning)
- NSW Police Safer by Design Guidelines
- National and international best practice CPTED guidelines for schools (refer to Section 8.1).

2.1. NSW STATE PRIORITIES

The NSW Government, in its State Priorities *NSW: Making It Happen*, identifies the priority to create safer communities in NSW. Goals include:

- Reducing violent crime – LGAs to have stable or falling violent crime rates by 2019
- Reduce adult re-offending by 5% by 2019
- Reduce road fatalities by at least 30% from 2011 levels by 2012.

2.2. NSW POLICE SAFER BY DESIGN GUIDELINES

The *Safer by Design* evaluation process is used by NSW Police to identify and quantify crime risks. The evaluation measures statistical probability of crime, consequence, 'hotspots' analysis and situational opportunity. The four key principles to minimise the opportunity for crime are outlined below.

Table 2 – CPTED principles

Principle	Definition
Natural Surveillance	Natural surveillance is a by-product of well-planned, well-designed and well-used space. It involves maximising opportunities for passers-by and users to observe what happens in an area (the 'safety in numbers' concept). Higher risk locations can also benefit from organised surveillance, which involves the introduction of formal measures such as on-site security guards or CCTV.
Access control	Control of who enters an area so that unauthorised people are excluded, for instance, via physical barriers such as fences, grills etc.
Territorial reinforcement /ownership	People are more likely to protect territory they feel they own and have a certain respect for the territory of others. This can be expressed through installation of fences, paving, signs, good maintenance and landscaping. Territoriality relates to the way in which a community has ownership over a space.
Space management	Ensures that space is appropriately utilised and cared for. Space management strategies include: activity coordination (i.e. having a specific plan for the way different types of activities are carried out in space), site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out lighting and the removal or refurbishment of decayed physical elements.

2.3. CRIME PREVENTION AND ASSESSMENT OF DEVELOPMENT APPLICATIONS

The *Crime prevention and assessment of development applications guidelines* seek to influence building design assessed under the NSW Environmental Planning and Assessment Act (EPAA) 1979.

The EPAA requires consent authorities to ensure that developments provide safety and security to users and the community by:

- Increasing the perception of risk to criminals by increasing the possibility of detection, challenge and capture
- Increasing the effort required to commit crime by increasing the time, energy or resources which need to be expended
- Reducing the potential rewards of crime by minimising, removing or concealing “crime benefits”
- Removing conditions that create confusion about required norms of behaviour.

2.4. BEST PRACTICE CPTED GUIDELINES FOR SCHOOLS

Educational establishments may be targets for crime and vandalism because of their scale, variety of uses and landmark status. Specific design elements which may affect crime and vandalism in schools include:

- Schools often have multiple entry points
- They often have up to date (valuable) equipment
- They frequently back onto houses
- They have low levels of activity on weekends, school holidays and public holidays and after-hours.¹

Many of the crimes that affect schools are opportunistic and can be minimised through the adoption of appropriate CPTED principles.

The application of *Safer by Design* guidelines can reduce the potential for crime and minimise the conditions that encourage crime. Key questions used to assess CPTED considerations for schools include:

- Does the school's overall character and atmosphere inspire trust and respect among students and staff?
- Does the school have the ability to stop unwelcome visitors from entering the premises?
- Can the school be efficiently evacuated in case of an emergency?
- Does the school design promote natural surveillance, without staff members having to step into the hallway, through a set of double doors or around a corner?
- Are there design and management practices in place to prevent and minimise the incidence of issues such as graffiti, vandalism and bullying?
- Can students travel to and from school without encountering risks or obstacles?

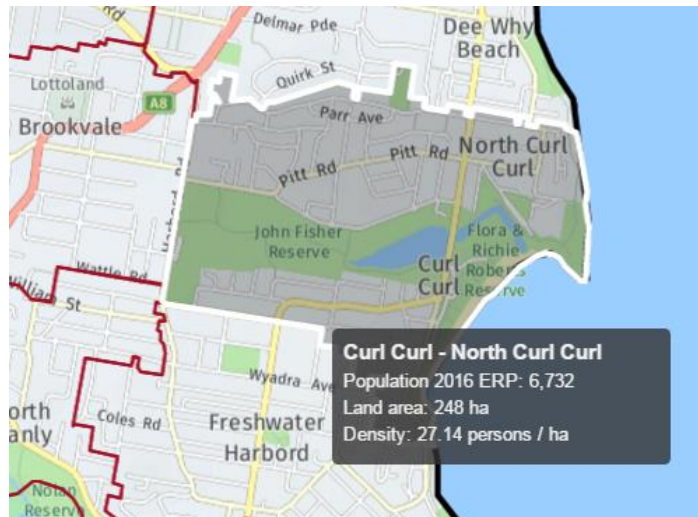
¹ *National Clearinghouse for Educational Facilities (2006) Safe School Facilities Checklist.*

3. DEMOGRAPHIC PROFILE

The community profile of Curl Curl-North/Curl Curl (study area) was reviewed to understand the local context for the proposal. Data used for this analysis is from Profile Id.²

A full demographic summary table is provided at **Appendix B**.

Figure 3 – Map of study area



Source: Profile Id.

Key findings for the study area:

- There are approximately 5,928 people living in the study area, which equates to 2.5% of the Northern Beaches LGA population
- The population density is 2,714 people per sq km, which is higher than for the Northern Beaches LGA (1,047 people per sq km)
- The average age is 37, compared to 39 years for the Northern Beaches LGA
- Almost one third (31%) of people have a bachelor degree or higher, compared to 29% for the Northern Beaches LGA
- Almost three quarters of people were born in Australia (75%), which is higher than for the Northern Beaches LGA (68%)
- The majority of people speak only English at home, consistent with the Northern Beaches LGA (82%)
- The average weekly household income is \$2,234 and the unemployment rate is 2.5%, which is lower than for the Northern Beaches LGA (3.0%)
- There is a higher proportion of family households (78%), compared to the Northern Beaches LGA (71%)
- There is a higher proportion of couple family with children (47%), compared to the Northern Beaches LGA (36%)
- A higher proportion of people live in separate houses (83%), compared to the Northern Beaches LGA (58%).

² <http://profile.id.com.au/warringah/about?WebID=160>

3.1. SEIFA INDEX

The Socio-Economic Indexes for Areas (SEIFA) has been developed by the Australian Bureau of Statistics (ABS) to provide an overview of social and economic wellbeing and welfare of communities across a range of spatial scales.

Four SEIFA indices have been developed, as follows:

- Index of Relative Socio-economic Disadvantage: focuses primarily on disadvantage, and is derived from Census variables like low income, low educational attainment, unemployment, and dwellings without motor vehicles
- Index of Relative Socio-economic Advantage and Disadvantage: is a continuum of advantage (high values) to disadvantage (low values), and is derived from Census variables related to both advantage and disadvantage
- Index of Economic Resources: focuses on financial aspects of advantage and disadvantage, using Census variables relating to residents' incomes, housing expenditure and assets
- Index of Education and Occupation: includes Census variables relating to the educational attainment, employment and vocational skills.

Scores: A lower score indicates that an area is relatively disadvantaged compared to an area with a higher score. The area with the lowest score is given a rank of 1, the area with the second lowest score is given a rank of 2 and so on, up to the area with the highest score is given the highest rank.

Table 3 – SEIFA Profile

Location	Advantage and disadvantage		Disadvantage		Economic resources		Education and occupation	
	Score	Decile	Score	Decile	Score	Decile	Score	Decile
North Curl Curl	1,120	10	1,096	10	1,118	10	1,103	10
Curl Curl	1,118	10	1,100	10	1,095	9	1,113	10
Former Warringah LGA	1,095	10	1,077	10	1,079	10	1,091	10

Source: SEIFA, 2013

SEIFA results indicate that the suburbs of North Curl Curl, Curl Curl and the former Warringah LGA are within the top 1% most advantaged suburbs in Australia.

4. CRIME PROFILE

Crime data from the NSW Bureau of Crime Statistics and Research (BOCSAR) was analysed to identify the crime profile of the study area.

4.1. TYPES OF CRIME

Table 4 outlines major offences that took place in the study area (Curl Curl/North Curl Curl) and former Warringah LGA, between January and December 2016. The data presented is based on crimes with the highest count rate (ratio of crimes per 100,000 people).

The study area has significantly lower levels of crime compared to the former Warringah LGA and NSW for most crime types. Additionally, North Curl Curl has lower rates of crime in general compared to Curl Curl.

The figures marked in red on the table show crime types with above average rates compared to NSW.

Table 4 – Crime rates per 100,000 people (Jan-Dec 2016)

Type of crime	(Rate per 100,00 population)			
	Curl Curl	North Curl Curl	Former Warringah LGA	NSW Average
Fraud	259.4	153.6	462.7	655.9
Malicious damage to property	852.2	358.5	400.8	823.1
Assault – domestic violence related	222.3	76.8	125.7	381.3
Assault - non-domestic violence related	111.2	204.9	167.8	414.0
Break and enter dwelling	74.1	76.8	185.7	389.3
Break and enter non-dwelling	185.3	51.2	88.1	153.4
Steal from retail store	74.1	0.0	242.5	307.5
Motor vehicle theft	37.1	25.6	60	172.0
Steal from motor vehicle	444.6	204.9	271.2	531.0
Steal from dwelling	148.2	102.4	159.5	279.7
Sexual assault	111.2	0.0	42.1	66.5
Indecent assault, act of indecency and other sexual offences	111.2	204.9	42.8	89.8

Source: BOCSAR

4.2. CRIME TRENDS

Table 5 below presents the 5 year trends (2012-2016) in the incident rates for key crime types in former Warringah LGA. Overall, this area has experienced declining crime rates, except for fraud, which has increased by 10.9% in the past 5 years.

Table 5 – Five-year crime trends

Crime	60-month trend (2012-2016)	
	Former Warringah LGA	NSW
Fraud	+10.9%	+3.4%
Malicious damage to property	-12.9%	-6.7%
Harassment, threatening behaviour and private nuisance	-7.2%	Stable
Assault – domestic violence related	-4.1%	Stable
Assault - non-domestic violence related	-7.9%	-3.0%
Break and enter dwelling	-7.0%	-7.6%
Break and enter non-dwelling	Stable	-8.0%
Steal from retail store	Stable	Stable
Motor vehicle theft	-7.1%	-8.0%
Steal from motor vehicle	-4.5%	-3.8%
Steal from dwelling	-3.3%	Stable
Sexual assault	Stable	Stable
Indecent assault, act of indecency and other sexual offences	Stable	+4.2%

Source: BOCSAR, 2016

4.3. CRIME HOT SPOTS

BOSCAR publishes 'hotspot' maps to illustrate areas of high crime density relatively to crime concentrations across NSW. A review of these hotspots indicates that the study area is not within a crime hotspot. Most crime activity is concentrated elsewhere, around Pittwater Road, Warringah Mall and Dee Why Town Centre

The maps in **Appendix C** show locations where these crimes are particularly prevalent in relation to the subject site.

4.4. IMPLICATIONS FOR THIS ASSESSMENT

BOSCAR data demonstrates that the proposal is located in an area with relatively low levels of crime compared to NSW. The application of *Safer by Design* guidelines will further minimise the conditions that encourage crime.

5. CPTED ASSESSMENT AND RECOMMENDATIONS

The following is a detailed assessment of the following CPTED priority areas:

- External layout
- Outdoor areas
- Entry and exit points
- Internal layout
- Footpaths and laneways
- Carparking
- Maintenance and management
- Construction.

5.1. EXTERNAL LAYOUT

About the development

The existing site includes prefabricated aluminium buildings and timber portable classrooms surrounded by open space areas and playgrounds. The proposal will maintain a comparable scale and layout, with multiple buildings arranged in a U-shape and retention and re-configuration of Block M and the library. This layout will connect outdoor areas with teaching spaces.

The existing site is surrounded by a low and transparent fence, which makes it highly visible from the street and adjacent residential properties. The proposal includes a 2.1m high palisade fence, which maintains existing levels of passive surveillance to the street.

The proposal will maximise passive surveillance between buildings through the U-shape arrangement and use of materials that complement the surrounding area, including prefinished fibre-cement sheet, bricks and glazed colour bricks.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- The existing site contains two murals, one on a building façade and another on the fence. In order to minimise the risk of graffiti, whilst maintaining the character of the site, it is recommended that:
 - Public art along other walls and solid fences is considered to maximise sense of ownership and embellishment, especially along areas with limited passive surveillance
 - A rapid removal of graffiti strategy is implemented
 - New buildings should be built with low maintenance and graffiti-resistant materials, wherever possible and in consideration to the school's community character
- The proposal's U-shape design will provide uninterrupted sight lines to the playground. It is recommended that:
 - External areas of the building are well lit, with sensors installed in key areas
 - Passive and informal surveillance is maximised from the upper levels of the buildings (windows)
 - Entrance and exit points are monitored by staff and/or CCTV, and are locked after-hours, as appropriate
 - Break-resistant materials should be considered for windows and access points where appropriate (e.g. plastic instead of glass, break resistant film on windows and shutters)
 - Play equipment should be located as far as possible from balcony areas
 - Balcony areas should include adequate screening to avoid accidents and objects falling to the lower levels, whilst maximising passive surveillance
- Best practice CPTED for schools indicates that sensor lights are more effective than permanent lighting for external areas. The 'surprise effect' of sensor lights discourages loitering. Sensor lights is recommended for external areas, assuming they do not cause discomfort to neighbouring residential areas, pedestrians and drivers
- Active surveillance and access control measures for the site could include alarms and locks.

5.2. OUTDOOR AREAS

About the development

Outdoor areas that are attractive and well-maintained will reduce opportunities for crime by encouraging people to feel responsibility for its use and condition. The proposal includes an extensive outdoor area with an internal courtyard. The outdoor play areas will have landscaped gardens, which will be visible from the proposed U-shape building design. Nearby residents and pedestrians will have visibility of the play areas north of the site due to the proposed palisade fence, providing natural surveillance from the street.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- It is important to ensure that no opportunities for concealment are created by the separation of the buildings with open space areas
- Windows at ground level will increase visual exposure
- Landscaping and signing will contribute to directing students and visitors to the appropriate areas where supervision is available, while maximising territorial control
- Ensure that children's play areas are clearly visible from surrounding properties and streets
- Install see-through/palisade fencing, where fencing is necessary
- Ensure that new lighting fixtures are sturdy and vandal-proof.

5.3. ENTRY AND EXIT POINTS

About the development

The proposal will contain four pedestrian access points and one vehicle access point, reducing the entry and exit points to the site. The main entry will be a formalised pedestrian entry south of the site on Abbott Road.

The school administration will be located adjacent to the main entrance and will have clear views to the main entrance, encouraging passive surveillance.

A school sign will be installed at the school's main entrance, providing a well-defined public face to the school along Abbott Road, creating a clear entrance to the site.

West of the site on Playfair Road is a proposed paved secondary pedestrian entry and emergency vehicle entryway. The proposed communal hall and existing home base will have views to the secondary entrance.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- Ensure that all entry/exit points are aesthetic, inviting and accessible. Signs should be installed to direct visitors to report at reception before accessing the building
- Pedestrian access should be clearly marked with 'zebra' crossings
- The main entrance should be the principal sign-in entrance for visitors to the school. Staff on duty should be in a position to conduct natural surveillance of this main entrance at all times, with unrestricted views. It is important to remove obstacles and expand visibility using windows and open space in this area
- Clear signage should be installed at the secondary entrance
- During school hours, access to the school by visitors should be restricted to main entry points which are monitored. Secondary entry points should be generally opened only for morning drop off and afternoon pick up
- Adequate lighting should be installed at all entry and exit points. Main entrances should be well-lit and visible at night-time. Sensor lighting around secondary entry points and emergency exits are recommended
- Ensure that all entry and exit points are accessible and optimised for wheelchair access (as per Australian Standards)
- Ensure all doors are built from resistant materials to prevent break-ins and vandalism

- Access control measures should not restrict building evacuation. Every occupied space should have at least two means of egress (including emergency exits).

5.4. INTERNAL LAYOUT

About the development

The proposal will reconfigure and internally refurbish existing Block M and library. Block M will be arranged in a U-shape connected by awnings and a continuous roof. The library will be re-configured to contain a special program classrooms and a proposed Out of School Hours (OOSH) service.

The interconnected school buildings will include key internal uses of an administrative office, communal hall, library, school canteen, utilities/service rooms, specified toilets for males, females and staff.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- The internal spaces of the school should provide passive surveillance to the external areas of the building. Blinds or curtains could be installed in rooms that require privacy at certain times of the day
- Teacher presence throughout the building is important to maximise passive surveillance and sense of ownership
- Rooms with restricted student access should have adequate signs and be locked when not in use. Similarly, emergency exits should be adequately labelled and students informed of their appropriate use
- Rooms with valuable equipment, including the library and administration, should be made physically secure. Locking of equipment when not in use is important to minimise the risk of it being taken out of the building, lost or stolen
- The school's Plan of Management should include procedures and strategies to manage internal access and evacuation, especially for activities that attract a large number of attendees (e.g. sporting events and performances)
- The Administrative office should be locked after-hours and there should be constant staff presence in this area during school hours
- Toilets are an important CPTED area. They should be located in visible areas and their design should encourage respect and inclusion among students and staff.
- Bins should be established throughout the home bases and common spaces to ensure the cleanliness of the building.

5.5. FOOTPATHS AND LANEWAY

About the development

The existing footpaths are attractive which encourages high people presence and promotes natural surveillance of the school along Abbott and Playfair Road. There is also pedestrian school access on Ross Street via a laneway.

It is expected that traffic wardens will be positioned at key crossing locations to ensure safety of students and staff. Traffic-calming devices will be installed near the school.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- Install adequate lighting throughout the site with a focus on pedestrian links, entry/exit points to the building and driveways, car parks
- Lighting should be considered near the entrance and exit of the laneway connecting the school to Ross Street to assist creating safer routes
- Ensure that footpaths are well-maintained and accessible by wheelchairs and other forms of physical disability

- The use of the OOSH service and the location of residential areas and the John Fisher Park in proximity to the site will ensure there are people on site for large periods of the day, providing greater natural surveillance of the school
- Appropriate public bins should be placed in high traffic pedestrian areas to ensure cleanliness of the school's surroundings
- Staff presence at the interface between the school and the bus stop on Playfair Road during peak hour is important to ensure safety. Traffic wardens at key crossing locations and traffic-calming devices contribute to pedestrian safety
- The Plan of Management for the school should ensure that strategies are in place to ensure the safety of students and pedestrians on nearby streets and footpaths
- Ensure the arrangement of buildings does not conceal passive surveillance to the laneway. Position windows to overlook the laneway access point to increase visibility of the laneway
- Public art or signage should be considered in the entrance of the laneway to reinforce territorial ownership of the school and for laneway activation

5.6. CARPARKING

About the development

The site is adjacent to high capacity on-street parking on Abbott Road. On street parking increases the presence of people on Abbott Road and natural surveillance.

A new on-site car park containing 16 spaces (including 1 accessible space) is proposed on the south-eastern boundary of the site, accessed via Abbott Road.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- Install adequate lighting throughout the car park, including at all car park entry/exit points
- Install wayfinding and safe parking signage throughout car park and at all car park entry/exit points
- An accessible path of travel should be provided to the building from any accessible car parking spaces.

5.7. MAINTENANCE AND MANAGEMENT

About the development

Developments that are well managed and maintained are less likely to attract criminal activity by creating a sense of community ownership for those who live and work close by. Proper maintenance can therefore assist in the prevention of crime.

The proposal encourages sense of ownership through landscape garden spaces, art murals and an internal court yard. A waste pad with a waste pick up and bins located throughout the school will also encourage cleanliness of the school. Building services will include metering on all major energy and water consuming equipment, providing the facility manager with information on system performance and allowing them to closely manage the resources on site.

Recommendations

In finalising the design, it is important to consider the following recommendations:

- The school Plan of Management should include maintenance and repairing strategies, complaint management measures, emergency procedures, waste removal procedures, evacuation procedures, safety procedures for large events, access and monitoring measures (etc.)
- Procedures and strategies should be in place to manage the locking of doors and equipment
- Cash management strategies should be in place as required, especially for money raised from fundraising activities
- A student involvement program could be implemented to encourage students to contribute to the maintenance and sustainable use of school facilities (e.g. student involvement in establishing projects around the school)

- It has been demonstrated that increased parental involvement with a school lessens the likelihood of vandalism, particularly amongst students whose parents participate in school-based activities. A School Watch program designed to encourage parents and people living near the school to report suspicious activities after normal school hours could be implemented
- Regular audits of the key system/electronic passes, should be conducted
- Safety and security induction for staff should be provided
- The school's curriculum and activities should inspire trust, respect and embrace diversity among students and staff.

5.8. CONSTRUCTION

About the development

The proposal is to be constructed over four stages in accordance with the Preliminary Construction Management Plan. The four stages involve: pre-construction, early works which includes demolition of all existing buildings (excluding Block M and the library), stage 1 works and stage 2 works.

Recommendations

- Ensure appropriate lighting of construction areas
- Ensure vacant construction areas are adequately secured in line with Australian Standards
- Ensure equipment is adequately secured (e.g. with fencing or sheds) in line with Australian Standards, so that it cannot be used for criminal activities such as vandalism, assault, break and enter or as opportunities for concealment
- Put in place active security measures during construction (e.g. CCTV and security staff)
- Ensure that construction that takes place after the commencement of operation of the school minimises impacts and risks to students and staff
- The Construction Management Plan should include strategies and procedures to further minimise risks during construction.

5.9. CONCLUSION

The proposal has applied CPTED principles through the application of the NSW Police *Safer by Design guidelines*, to provide positive outcomes for crime prevention and passive surveillance. This report has outlined recommendations to enhance these outcomes.

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DISCLAIMER

This report is dated 18 May 2017 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of TKD Architects Pty (**Instructing Party**) for the purpose of CPTED Assessment (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A

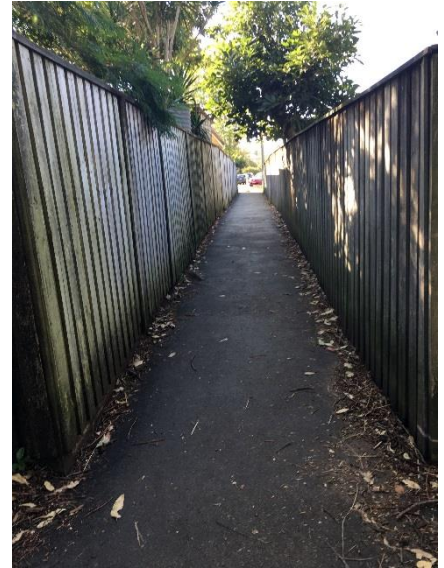
SITE VISIT PHOTOS



Pedestrian signage



Zebra crossing to site along Abbott Road



Laneway connecting Ross Street to the site



Mural on fence



Entrance from Playfair Road



Existing fence along Playfair Road

APPENDIX B DEMOGRAPHIC PROFILE

Table 6 – Demographic Summary Table³

Data item	Curl Curl- North Curl	Northern Beaches Council ⁴	Greater Sydney
Total population	5,928	237,709	4,390,956
Population Density (Persons per Sq.km)	2,714	1,047	355.0
Average per capita income			\$36,285
Age Distribution (%)			
Aged 0-4	8.2%	7.2%	6.8%
Aged 5-9	8.4%	6.7%	6.3%
Aged 10-14	7.8%	6.2%	6.1%
Aged 15-19	6.0%	5.5%	6.3%
Aged 20-24	5.0%	5.1%	7.0%
Aged 25-29	4.7%	5.7%	7.8%
Aged 30-34	4.7%	6.7%	7.6%
Aged 35-39	7.6%	8.2%	7.6%
Aged 40-44	10.0%	8.0%	7.3%
Aged 45-49	8.1%	7.6%	7.0%
Aged 50-55	7.3%	6.7%	6.6%
Aged 55-59	5.3%	5.8%	5.7%
Aged 60-64	4.6%	5.4%	5.1%
Aged 65-69	3.6%	4.5%	3.9%
Aged 70-74	2.6%	3.4%	3.0%
Aged 75-79	1.9%	2.6%	2.3%
Aged 80-84	2.3%	2.3%	1.9%
Aged 85+	2.0%	2.6%	1.8%
Primary school age (5 to 11 years)	11.7%	9.2%	8.7%
Median Age	37 (Curl Curl) 38 (North Curl Curl)	39 (Northern Beaches Statistical Area)	36
Dependency Ratio			32.1%
Country of Birth and Indigenous Identification (%)			
Australia born	74.5%	67.8%	63.7%

³ Note: Data from profile Id. Where data is unavailable for the combined study area separate data is included for the suburbs of Curl Curl and North Curl and for the Northern Beaches Statistical Area where aggregated data is unavailable for the Northern Beaches LGA.

⁴ Profile id. data <http://profile.id.com.au/northern-beaches>. Due to the recent amalgamation of the Northern Beaches Council, there are a number of data items that cannot be confirmed. These have been left blank in the table.

Data item	Curl Curl- North Curl Curl	Northern Beaches Council⁴	Greater Sydney
Overseas born	22.2%	27.7%	36.4%
United Kingdom	8.5%	9.2%	4.1%
New Zealand	2.3%	2.5%	1.9%
United States of America	1.0%	0.9%	0.5%
South Africa	0.8%	1.3%	0.8%
Ireland	0.8%	0.5%	0.4%
Italy	0.8%	0.9%	1.0%
Germany	0.5%	0.8%	0.4%
China	0.5%	1.0%	3.4%
Netherlands	0.5%	0.5%	0.2%
Canada	0.4%	0.5%	0.2%
Aboriginal and Torres Strait Island Population	0.4%	0.4%	1.2%
Language Spoken at Home (%)			
English only	88.4%	82.5%	65.7%
Italian	1.2%	1.5%	1.6%
German	0.8%	0.9%	0.4%
French	0.6%	0.7%	0.4%
Mandarin	0.6%	0.9%	3.0%
Weekly Household Income (%)			
\$Neg/Nil	1.0	1.1%	1.6%
\$1-\$199	0.8	1.1%	1.5%
\$200-\$299	1.2	1.5%	2.5%
\$300-\$399	3.0	3.9%	5.1%
\$400-\$599	5.3	6.1%	7.6%
\$600-\$799	4.9%	5.7%	7.1%
\$800-\$999	5.0%	6.2%	6.8%
\$1000-\$1249	5.8%	6.1%	7.3%
\$1250-\$1499	4.8%	6.3%	6.8%
\$1500-\$1999	9.6%	10.7%	11.3%
\$2000-\$2499	7.7%	8.4%	8.4%
\$2500-\$2999	13.9%	12.6%	9.5%
\$3000-\$3499	8.9%	7.4%	5.7%
\$3500-\$3999	4.7	4.7	2.9%

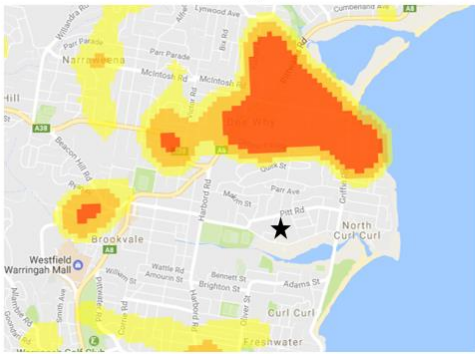
Data item	Curl Curl- North Curl Curl	Northern Beaches Council ⁴	Greater Sydney
\$4000 +	12.3%	7.8	5.5%
Median Weekly Household Income	\$2,120 (Curl Curl) \$2,234 (North Curl Curl)	\$1,812 (Northern Beaches Statistical Area)	\$1,447
Housing Status (%)			
Owner	38.1	33.4	31.1%
Purchaser	35.7	34.5	35.7%
Renter	20.8	25.6	32.4%
Public Renter	2.1	1.9	5.4%
Private Renter	18.3	23.1	27.0%
Household Structure (%)			
Family Households	77.8%	70.6%	73.1%
Non-Family Households	22.2%	29.4%	26.9%
Group	3.6%	3.6%	4.1%
Lone Person	14.6%	21.7%	21.5%
Family Composition (%)			
Couple family with no children	20.9%	25.4%	22.6%
Couple family with children	46.6	35.8%	34.8%
One parent families	9.4%	8.5%	10.8%
Families with children under the age of 15 years	37.7%	28.8%	28.2%
Labour Force (%)			
% Unemployed	2.5%	3.0%	5.7%
Labour Force Participation	33.4%	66.3%	65.6%
Occupation (%)			
Managers	18.5%	17.3%	13.5%
Professionals	28.5%	28.2%	26.0%
Technicians & trades workers	12.0%	11.9%	12.4%
Community & Personal Service Workers	8.9%	8.8%	9.0%
Clerical & Administrative Workers	13.9%	15.0%	16.5%
Sales Workers	9.2%	9.4%	9.2%
Machinery operators & Drivers	2.0%	2.8%	5.8%

Data item	Curl Curl- North Curl Curl	Northern Beaches Council⁴	Greater Sydney
Labourers	5.5%	5.0%	7.5%
White Collar (%)	79.0%	78.7%	74.3%
Blue Collar (%)	21.0%	21.3%	25.7%
Tertiary Education (%)			
Bachelor Degree or Higher	30.7%	28.9%	24.1%
Advanced Diploma or Associate Degree	11.5%	12.1%	9.0%
Undertaking Tertiary Education	6.4%	6.8%	6.5%
Highest Level of Schooling Achieved (%)			
Year 8 or Below	2.7%	2.5%	5.3%
Year 9 or Equivalent	3.8%	4.6%	5.3%
Year 10 or Equivalent	19.2%	18.8%	21.0%
Year 11 or Equivalent	4.5%	5.7%	4.7%
Year 12 or Equivalent	64.2%	61.1%	62.3%
Did not go to School	0.1%	0.4%	1.5%
Dwelling Structure (%)			
Separate House (%)	83.0%	58.0%	61.0%
Semi-detached (%)	11.7%	17.7%	12.8%
Flat, Unit or apartment (%)	4.7%	23.7%	25.8%
Other dwelling (%)	0.1%	0.5%	0.5%

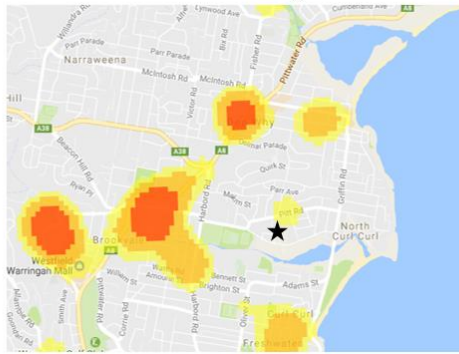
APPENDIX C CRIME HOTSPOTS

Figure 4 – Crime Hotspots

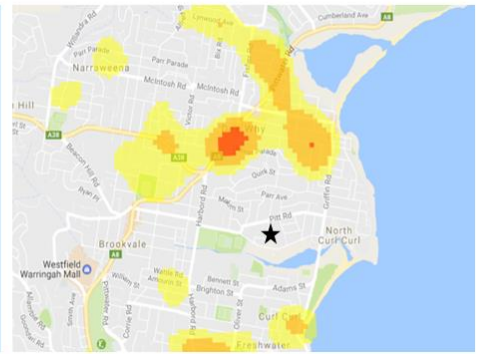
Break and enter – dwelling



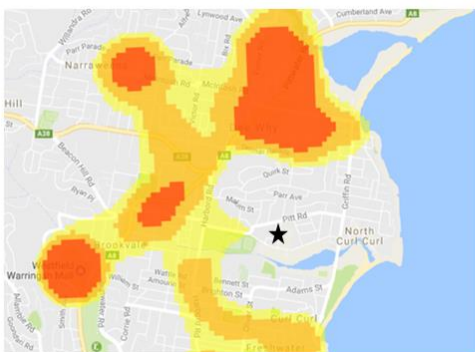
Break and enter – non-dwelling



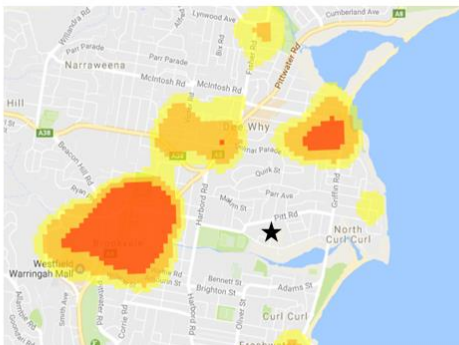
Domestic assault



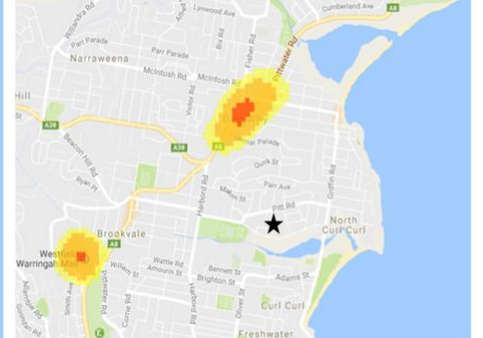
Malicious damage to property



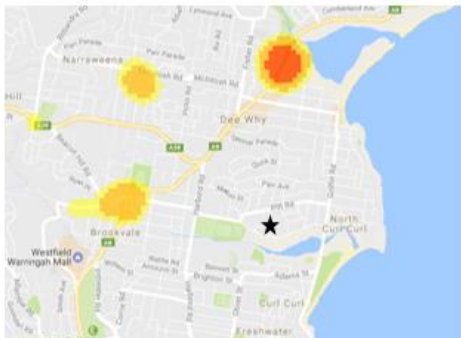
Motor vehicle theft



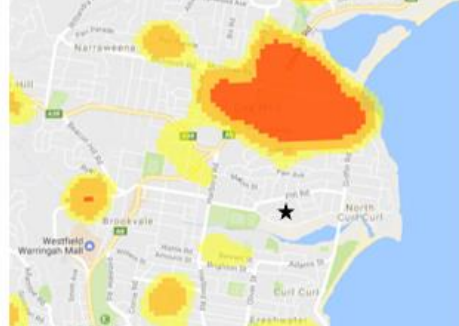
Non domestic assault



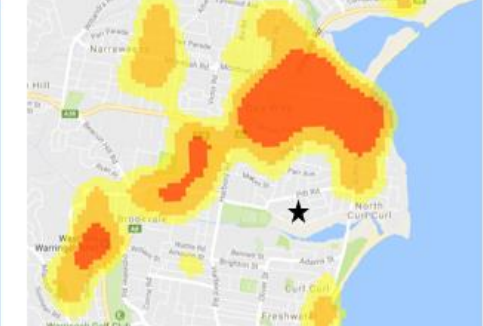
Robbery



Steal from dwelling



Steal from motor vehicle





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