

Appendix P

Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design Assessment

Cudgegong Road Station Precinct South



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Cudgegong Road Station Precinct South

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Executive Summary

AECOM has been engaged by Landcom to undertake a Crime Prevention through Environmental Design (CPTED) assessment for the proposed Cudgegong Road Station Precinct South, in the Northwest Growth Centre of Sydney. The precinct is a mixed use neighbourhood designed around the new Cudgegong Road Metro Station and sits within the Blacktown City Council LGA. The assessment is based on information provided by Landcom with a particular focus on the urban design prepared by Bennett and Trimble and the landscape concept design prepared by CLOUSTON Associates.

Key findings from the CPTED assessment include;

- Blacktown City is a rapidly growing city with an extremely diverse population of 350,000 residents. It has the largest population of urban Aboriginal and Torres Strait Islander people along with people from 188 different birthplaces speaking 182 different languages.
- The local economy sustains 116,000 jobs within city and home to around 18,000 businesses, however there are over 33,000 people living in low income households. In 2016 the unemployment rate was 7.3% which is 1.3% greater than the Sydney average.
- Blacktown City continues to have a higher than State average for a number crime offences with the most prominent being 'Assault – domestic violence', 'Assault – non-domestic related violence', 'Robbery without a weapon', 'Robbery with a weapon', 'Motor vehicle theft', 'Steal from motor vehicle' and 'Steal from person'.
- The urban and landscape design of the proposal demonstrates consideration for passive surveillance. This is evident in the street and pedestrian network pattern; orientation / location of buildings overlooking public and private open spaces; activated street / building frontages; a central park close to active areas such as retail, commercial and the station; landscaping that maintains sight lines and good visual surveillance.
- The CPTED assessment does not include individual buildings and their design but recommends establishing a set of building design guidelines that considers CPTED measures such as positioning and designing mailbox facilities that deters mailbox theft; clear and recognisable pedestrian and vehicle entry points; incorporation of interior gathering spaces such as lobbies and corridors to enhance natural surveillance; positioning of windows and balconies with views to public domain and private open spaces.
- In general the landscape and urban design concept plans adequately consider good CPTED principles and practices by advocating good passive surveillance, legibility and amenity for a diverse demographic of residents and users of the Metro Station.
- A more detailed assessment is recommended pending final detailed development applications to ensure the recommendations of this CPTED report have been considered.

1.0 Introduction

AECOM has been engaged by Landcom to undertake a Crime Prevention through Environmental Design (CPTED) assessment for the proposed Cudgegong Road Station Precinct South, in the Northwest Growth Centre of Sydney. The precinct is a mixed use neighbourhood located a short walk from the new Metro Station at the end of the Sydney Metro Northwest line. The study area sits within the Blacktown City Council LGA. CPTED is a crime prevention strategy that focuses on the planning, design and structure of mixed-use neighbourhoods to reduce opportunities for crime or antisocial behaviour.

This CPTED will consider principles and issues within the public domain such as accessibility, visibility, lighting, urban design, surveillance, amenity and pedestrian safety. This CPTED assessment will identify and report on potential issues associated with the proposed development and where negative impacts are identified, recommendations will be provided in accordance with professional standards to mitigate the impacts.



2.0 Sydney Metro Context

Cudgegong Road Station Precinct South is located in the Sydney North West in an area that is currently characterised by low density residential and semi-rural development. The introduction of the Sydney Metro Northwest currently in construction and a station at Cudgegong Road has been the catalyst for a paradigm shift in the potential development opportunities for the area.

The Sydney Metro Northwest will connect Cudgegong Road Station and the Northwest Growth Centre with Sydney's 'Global Economic Corridor' including Epping, Macquarie University, Macquarie Park, Chatswood, St Leonards, North Sydney and the Sydney CBD.

Cudgegong Road Station is currently the last station on the Sydney Metro Northwest line, however, future expansions to the line would further increase the connectivity of the area to future growth centres and employment zones in the Greater Sydney Region.

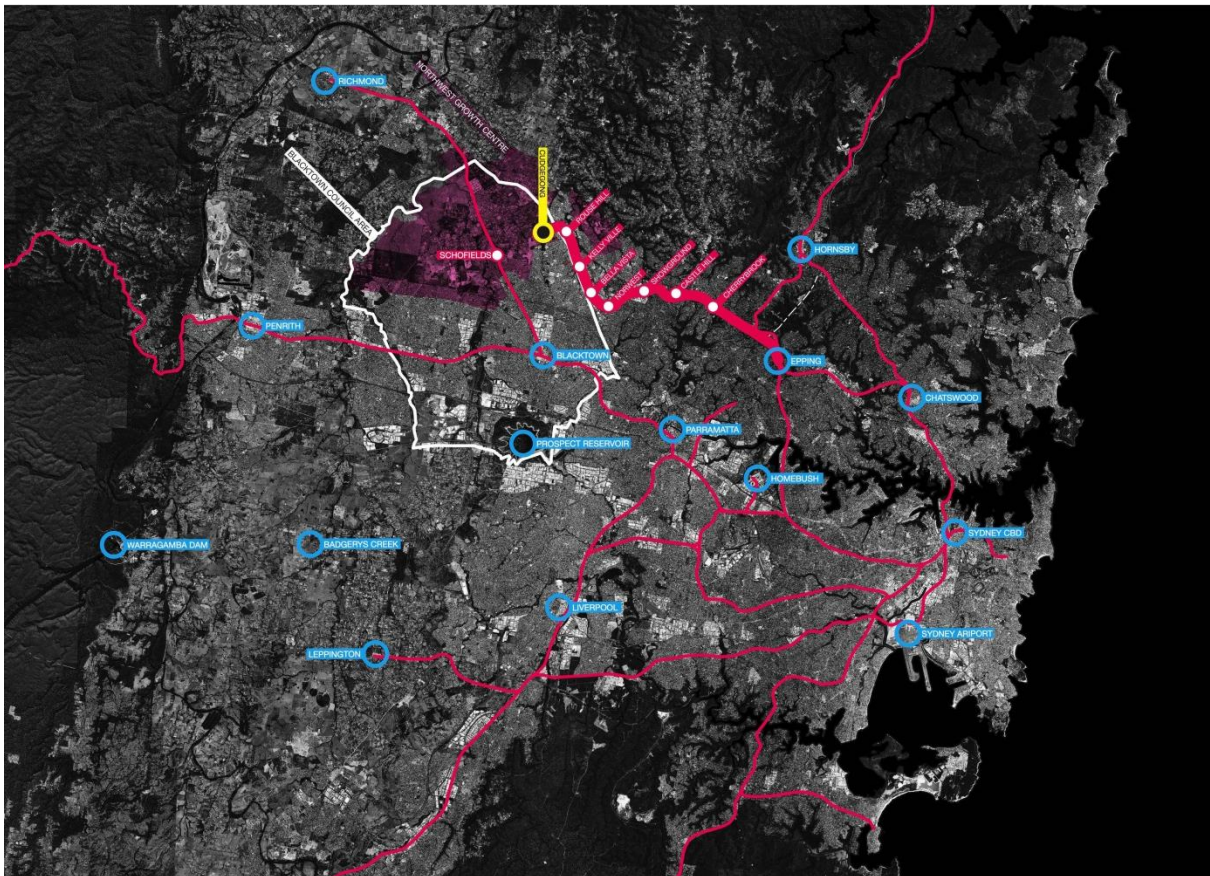


Figure 1 Sydney Metro Northwest Plan

3.0 Local Context

Cudgegong Road Station Precinct South sits within Blacktown City Council LGA and immediately adjacent to the Hills Shire Council. The local area is undergoing rapid transformation associated with the construction of the Sydney Metro Northwest and ongoing residential development.

The Ponds development to the south of the study area showcases recent changes to standard low density development and has introduced a variety of housing typologies such as town houses. It is anticipated that residents of The Ponds will be one of the primary users of the station due to its close proximity and proposed pedestrian / cycle links.

The Rouse Hill Town Centre is situated to the east of the precinct on the opposite side of Windsor Road and will be connected by the Sydney Metro Northwest line and future pedestrian / cycle links. It is anticipated that residents of the Cudgegong Road Station Precinct South will frequent this regionally popular shopping district enjoying the pedestrian focused streets and open air shopping.

To the north of the site the existing low density and semi-rural subdivisions are undergoing extensive change due to the imminent completion of the Sydney Metro Northwest. Numerous development applications for medium density residential and apartment buildings have been lodged or approved by Blacktown City Council, further evidence of the changing way in which development is being rolled out around transport infrastructure.

Future residential and employment centres are being planned to the northwest of the site in areas currently comprising semi-rural development.



Figure 2 Local context

4.0 The Development

The Cudgegong Road Station Precinct South development is designed to be an active and walkable neighbourhood with the Metro Station at its core. It will comprise a broad range of higher density housing, public domain including a central park and a series of mixed-use facilities within 300m of the new station.

The street pattern is arranged to create a rational and legible urban grid providing physical and visual connectivity through the site and beyond. A network of pedestrian and cycleway paths complementing the street grid pattern provide pedestrian focused links through the site and divides the developable areas into smaller blocks. These links extend through and connect the residential areas, the town centre, the Metro Station and adjoining neighbourhoods such as The Ponds.

A series of open spaces including a public park, plazas, tree-lined streets, landscape zones and communal open spaces are distributed throughout the site. These will create a series of connected open spaces providing amenity to the residents, visitors and employees. The spaces will be designed to support a variety of uses and activities.

Higher density housing is accommodated in buildings up to 8 storeys in height providing a variety of urban scale and built form within the development. Taller buildings have been located to consider overshadowing impacts to the public spaces and to concentrate density around the public domain amenities. Within this built form, a range of housing types will accommodate and foster a diverse community.

Mixed-use facilities such as retail, childcare, work hub and community spaces proposed for the ground and first floor areas will be situated in close proximity to the Metro Station and public park to activate the precinct centre.



Figure 3 Cudgegong Road Station Precinct South plan

5.0 Reference Documents

This section provides a review of relevant safety and crime prevention documents. Documents reviewed include:

- Draft Blacktown City Crime Prevention Plan, 2017 - 2021
- *Safer by Design – A Practical Guide to Crime Prevention Through Environmental Design* developed by the NSW Police Service

6.0 Demographic Profile

The following information and statistics have been sourced from Blacktown City website and the Draft Blacktown City Crime Prevention Plan, 2017 – 2021.

6.1 Regional Context

Blacktown City is an emerging Regional City located about 35 kilometres west of the Sydney Central Business District. The City is at the heart of western Sydney and is well serviced by employment lands, public transport and road access. It is supported by core health, education, recreation, cultural and leisure infrastructure. It is home to 15.7% of greater western Sydney's population.

Blacktown is the second largest Local Government Area in NSW with an estimated 350,000 residents and a projected population of 522,000 by 2036. Current growth is expanding into the North West Growth Centre. Blacktown City extends about 247 square kilometres and includes 48 existing and 9 new (soon to be named) suburbs.

6.2 Population diversity

- Blacktown City is an extremely diverse city with the following characteristics;
- 2.8% of people are from an Aboriginal or Torres Strait Islander background. They comprise the largest urban Aboriginal and Torres Strait Islander population in NSW
- People come from 188 different birthplaces. The top five countries of origin are The Philippines, India, New Zealand, Fiji and England.
- There are 182 languages spoken. The top five languages spoken include Tagalog, Hindi, Punjabi, Arabic and Filipino.
- The median age is 33 years.
- 22.8% are children aged between 0-14
- 20.2% are older people aged over 55.
- 55.5% are families with children.
- 3,500 people are over the age of 85

6.3 Economy and employment

The local economy sustains 116,000 jobs of which 44% are occupied by residents. The city is home to around 18,000 businesses of which 91% are small businesses. The local economy produces upwards of \$14.2 billion a year in gross regional product and has grown on average 3% a year for the past 5 years (2012-2017).

In 2016, 55% of people aged over 15 years had completed Year 12 schooling or equivalent. There were, however, 33,000 people in low income households living in the city. In 2016 there were over 151,000 people living in the city who were employed, of which 68% worked full-time and 30% part-time. The unemployment rate was 7.3% which is 1.3% higher than the Greater Sydney average of 6.0%.

6.4 Crime Profile

Most subject offences in the city are in line with NSW trends where they have been stable or trending down, the exception is 'Assault – domestic violence'. Blacktown City continues to have the highest number of recorded incidents of domestic violence related assault of any LGA in NSW. In 2016, with a rate of 608.9 incidents per 100,000, it had the highest rate of offence of any urban LGA in NSW and is significantly above the state average. Other subject offences that are significantly higher than the State average include 'Assault – non-domestic related violence', 'Robbery without a weapon', 'Robbery with a weapon', 'Motor vehicle theft', 'Steal from motor vehicle' and 'Steal from person'.

A Social Needs Assessment Report prepared by GHD (February 2018) included consultation with Senior Officers at Quakers Hill Police Area Command (PAC) regarding the provision of police services for the Cudgegong Station Precinct South development. The outcomes of the discussions are outlined in the table below.

Topic	Key Outcomes
Existing crime issues in the area relevant to this proposal	<ul style="list-style-type: none"> - Steal from motor vehicle offences has been recognised as an ongoing problem within Quakers Hill PAC. - Identity theft is a major and growing issue worldwide. Mail is often stolen, especially from unit complex mailbox facilities, to aid in identity theft. Mail theft is increasing in Quakers Hill PAC. Quakers Hill PAC encourages developers of large unit blocks, which are proposed for this area, to implement mailbox facilities within unit complex lobbies rather than on perimeter borders to try and minimise thefts.
Social needs of future population	<ul style="list-style-type: none"> - Due to the culturally and linguistically diverse backgrounds of new residents expected in the area, police strongly believe there is a need for the development of community hubs in the area. This will assist residents to cohesively integrate into the community. From a police perspective, these hubs assist residents in accessing support agencies and enhance the relationship between the police and the community. In turn, this helps to reduce crime in the area. - There is lack of recreational facilities and services for young people (teenagers) in the area. When young people/teens are living in an area where there is nothing for them to do, there is an increase in antisocial behaviour. Police are currently experiencing this in The Ponds. - Ensure roads within the area are of a width that allows emergency services vehicles/buses to effectively drive through. Police have experienced issues in suburbs such as The Ponds, where the streets are very narrow and makes it difficult for police to effectively drive through in cases of emergencies. The suburb of Colebee is currently dealing with the issues of school buses not being able to manoeuvre through the streets.
Understanding Quakers Hill Police Area Command plans for new infrastructure	<ul style="list-style-type: none"> - Quakers Hill PAC based at Riverstone Police Station will service this area, which has 104 police. This number may increase with the growth of the area. - There are no further police assets (police stations/shopfronts) planned for the area in the future.

(Cudgegong Road Station Precinct South, State Significant Development Application (SSDA) – Draft Social Needs Assessment – GHD, February 2018)

7.0 Crime Prevention through Environmental Design – Principles & Guidelines

7.1 Principles

There are four key principles associated with the application of best practice Crime Prevention through Environmental Design (CPTED). These include;

Natural Surveillance

Maximising opportunities for residents and the general public to observe the activities in an area (the safety in numbers concept). The real or perceived notion that someone is able to see the perpetration of a crime can be achieved through the considered design and placement of buildings, physical features, public domain layout and people movement through an area.

Access Control

Control of where people may enter, leave or move within an area through the implementation of legible paths, signage, physical barriers, cleared open space and the like to prevent the creation of undesirable areas with perceived dangerous and unsafe routes.

Territorial Reinforcement

A community is more likely to protect and care for a place they feel they have a sense of ownership and belonging. This can be expressed through community participation, public art and general upkeep of good maintenance and landscaping to provide a pleasant area to be proud of.

Space Management and Maintenance

A solid management and maintenance program will ensure that space is appropriately utilised and cared for. Space management and the maintenance strategies should include items such as activity coordination, site cleanliness, rapid repair of vandalism or graffiti, regular maintenance and rapid repair of lighting, the removal or refurbishment of decayed physical elements and the like so that high usage of space is encouraged.

7.2 Guidelines

The implementation of the CPTED principles will be reliant on the following set of guidelines as a minimum;

- Provision of lighting along nominated pedestrian routes as well as utilising spill over lighting from street lights and adjoining buildings. Additionally, ensure these routes are the most direct and logical routes between commonly visited areas.
- Provision of facilities in the public domain that allows for a range of activities in close proximity to promote high use that will increase the casual surveillance and the feeling of 'safety in numbers'.
- Use site features, building design / layout and pathways to channel pedestrians and vehicles into intended corridors.
- Avoiding the use of vegetation that at maturity will screen and conceal paths and obstruct clear lines of sight or create hiding places.
- Consider the mature growth canopies of trees to avoid conflicts with lighting and video cameras and smart technology features (e.g. 'smart poles')
- Avoiding the use of large, non-transparent structures such as solid walls, fences and shelters with enclosed spaces.
- Maintaining views into the parks, communal spaces and general public domain for the roads and buildings to enhance the casual surveillance.

- Clear delineation of boundaries between the public and private spaces through the use of low planting, fencing, change of landscape treatments / materials and signage to form physical or psychological separation of areas.
- Specify street furniture and landscape materials that is robust and of high quality and is readily available which may be less susceptible to vandalism and easily replaced.
- Street furniture and low walls to have anti-skate devices incorporated.
- Avoid specifying landscape materials that can be easily handled and used as 'missiles' such as small rocks.
- Provision of attractive focal elements, defined edges and comfortable places to sit and socialise to encourage interaction.
- Avoiding the use of materials and finishes that are obvious problems and attractive to vandalism such as soft textured walls finishes, glass and 'flimsy panelling'.



8.0 Crime Prevention through Environmental Design – Project Assessment and Recommendations

The assessment and recommendations are based on the public domain, communal spaces and spatial relationship of the buildings of the Cudgegong Road Station Precinct South. It does not include the buildings themselves or the Metro Station. Available plans of the proposed Cudgegong Road Station Precinct South have been assessed in accordance with the CPTED principles listed in Section 7 of this report.

It should be noted that design is only one component that incorporates mitigations to ensure a safe and secure environment. The level of actual or perceived crime is determined through the combination of design principles and ongoing management of the development. Design should support and accommodate good management practices.

Overall, the proposed development appears to have considered CPTED principles within its design. Road and pedestrian layouts, building aspects and the landscape design have combined to deliver a high level concept plan that at face value has adopted sound CPTED principles. However, a number of further measures can be undertaken during the design development phases to further improve safety across the development.

8.1 Landscape Design

The implications of safety for landscape design affect everything from plant species, material selection, landform, built structures, layout and signage. These elements combined well are among the building blocks of attractive and welcoming spaces, and can be powerful tools for enhancing safety. These features can be used to not only define or designate a space, but also to deter or prevent hostile and unauthorised access.

The landscape concept design prepared by CLOUSTON Associates demonstrates good CPTED practices by considering the following;

- The use of pedestrian / cycle paths to clearly delineate between private and public areas.
- The design intent of the central park to be ‘the meeting place’ by promoting social interaction through the design of the spaces.
- Utilisation of the landform to enhance surveillance across the park from the upper level.
- A children’s play space at the lower level that will attract families and will have good surveillance from the upper level of the park.
- Spacing of trees in the streets, plazas and park that maintains sightlines. The grid-like layout of the trees in the plaza provides flexibility in the use of the space such as market stalls and community events.
- The material and width of pavement in the central park caters for larger gatherings but also allows for passage of maintenance and emergency vehicles.
- The use of deciduous trees encourages year round use of the public spaces.
- The shade structure designs are not enclosed and provide good visibility into and out of the structures.
- The proposed materials and detailing of the seat walls are robust and will withstand a degree of vandalism.
- Lighting is proposed in the central park to complement the street and building spill over light.
- The use of low level planting to maximise sight lines.
- During the development of the concept design further CPTED measures should be considered such as;
- Design of private courtyard fences to be a combination of solid and open-style fencing to have a perceived frontage to the park, communal areas and streets.

- No mass planting of tall dense shrubs adjacent to the buildings or structures that can conceal or screen illicit behaviour.
- Prepare a detailed landscape maintenance program that outlines the importance of pruning / thinning vegetation to ensure sightlines are maintained.
- Ensure tree planting does not conflict or interfere with lighting, surveillance cameras, 'smart poles', communications and the like.

8.2 Urban Design

Good urban design present opportunities to provide vibrant places for people to live, work and play that are safe and secure without creating a sense of a fortress. The challenge is getting the balance right between the needs and comfort of the majority of users while still providing adequate functionality for safe operations. For example, the scale of the streetscape should be appropriate to its primary users and be a pleasant place to be while still creating a less inviting atmosphere for users with malicious intent. Although efficient pedestrian and vehicle circulation systems are important for day-to-day living, and downsizing the scale of the streetscape is desirable from a vehicle / pedestrian shared use perspective, they are also critical for emergency response, evacuation, and egress and adequate space and access is required.

The urban design concept plan prepared by Bennett and Trimble demonstrates sound CPTED principles by incorporating the following;

- A well connected precinct with a clear street network and hierarchy and a series of pedestrian and cycle links that extend through the site connecting key elements such as the Metro Station, parks, communal areas and residential blocks.
- An interconnected open space network of varying scales including a central park, urban plazas, communal areas and private open spaces such as podiums and rooftop gardens.
- A series of 'urban blocks' that provide a rational, legible and permeable urban footprint.
- Varying heights of buildings to create a variety of urban scale with height strategically located to alleviate overshadowing and concentrate density around amenity.
- A concentration of non-residential accommodation such as retail, cafes, childcare and work hubs in close proximity to the Metro Station and the central park to promote activation the core areas of the precinct.
- Building setbacks that are appropriate to the scale of the streetscape and not imposing to the general pedestrian.

Further CPTED measures that should be considered during the development of the urban design elements include;

- Ensure security measures do not impede access to public entrances or pedestrian / cyclist flow.
- Consider the location of landscape elements such as trees, light poles, gardens and the like to not only enhance the amenity but to direct, slow or restrict access to particular areas.
- The design of bollards, fences, light posts, and other streetscape and landscape elements should form an urban ensemble that helps to create a sense of unity and character.
- Truncate corner boundaries / buildings to improve sightlines at intersecting paths and streets.
- Locate street crossings directly in line with path alignments and most direct route between destinations.
- Conceal waste collection zones to avoid unsightly views of rubbish.
- Orientate buildings in order to eliminate or at least minimise areas that casual observers cannot see.
- Incorporate urban design elements and spatially arrange open space areas to ensure vehicles cannot access pedestrian only spaces.

8.3 Building Design

As previously stated this assessment does not include assessment of individual buildings or their design. However the following CPTED measures should be considered as minimum when developing the designs or establishing a set of building design guidelines for the precinct;

- Coordinate the interior design, adjacencies, corridors, windows and openings with the layouts of walkway and parking to support natural surveillance.
- Include intended gathering areas where practical to increase legitimate use of corridors and lobbies to enhance natural surveillance.
- Limit the number of pedestrian and vehicle entrances to a building. Design these limited entrance to be symbolic and easily recognised as the intended entrances.
- Clearly define public and private spaces and group spaces with similar activities together.
- Promote good natural surveillance by positioning of windows and balconies with views to public domain and private open space areas.
- Position cafes, retail and other commercial facilities outwardly facing to the public domain areas.
- Position and design the private mailbox facilities in the residential units for maximum surveillance and security to deter theft.

9.0 Conclusion

This CPTED assessment has considered the concept plans prepared by CLOUSTON Associates and Bennett and Trimble of the proposed Cudgegong Road Station Precinct South mixed use development with regard to CPTED principles and known site conditions. To improve the safety and potential crime outcomes for residents, visitors and the broader community, recommendations have been made to ensure that appropriate measures are included and/or considered during the design development phases and the final built outcome.

In general the landscape and urban design concept plans adequately consider good CPTED principles and practices. The plans advocate good passive surveillance, legibility and amenity for a diverse demographic that are expected to use the development and adjoining Metro Station. The assessment has been conducted on high-level concept plans with little specific detail. A more detailed assessment should be considered pending final detail development applications to ensure the recommended measures in this report have been considered.

CPTED principles that will be particularly important to consider include;

- Signage coordinated with landscape / urban design elements to show separation of public and private areas to assist with legibility of the site given its mixed use nature
- Landscaping to deter malicious damage, provide amenity and show ownership of all elements of the site
- Lighting to deter opportunistic crime and provide safety for residents and pedestrians at all times.
- Passive surveillance through the design and layout of the streets, park, plazas, buildings and private open spaces.
- Increased activation of open spaces to encourage year-round high use and community interaction

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