



CPTED Design Assessment

RIDBC Centre of Excellence

Revision P2

2nd October 2020

Melbourne

Level 2
616 St Kilda Road
Melbourne, VIC 3004
P (03) 9230 5600

Sydney

Level 4
73 Walker Street
North Sydney, NSW 2060
P (02) 9157 0570

Brisbane

Level 9
490 Upper Edward Street
Spring Hill, QLD 4000
P (07) 3831 3300

Perth

72 St Georges Terrace
Perth, WA 6000
P (08) 9242 5857

Canberra

Ground Floor, Block E
34 Thynne Street
Bruce, ACT 2617
P 0475 750 608

Revision Information

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Prepared By	LCI Consultants Sydney Office Level 4, 73 Walker Street North Sydney 2060
Author	Allan Woolmer – Principal Security Consultant

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1 Introduction

LCI Consultants have been engaged to conduct a CPTED Design Assessment of the proposed RIDBC Facility at the corner of Gymnasium and Culloden Roads, Macquarie Park, NSW 2113.

1.1 Project Description

The RIDBC is Australia's largest non-government not-for-profit provider of therapy, education and cochlear implant services for children and adults with vision or hearing loss. Established in 1861 as a school with residential facilities, the RIDBC moved to North Rocks in 1961, where the main campus is still located. The RIDBC Mission is to provide quality and innovative services, to achieve the best outcomes for current and future generations of Australians with vision and/or hearing loss.

RIDBC provides a broad range of specialist services which include:

- Early Intervention;
- Allied Health & Therapy;
- Cochlear Implant Program;
- Schools (pre-school, primary to secondary programs);
- Research & Professional Education;
- School support; and
- Paediatric Audiology

The services provided are delivered by a broad group of professionals including teachers, speech pathologists, occupational therapists, audiologists, orthoptists, psychologists, social workers, technology consultants, physiotherapists, Ear, Nose and Throat (ENT) surgeons and more.

As part of the RIDBC's 2016-2020 Strategic Intent it will relocate its school and clinical services activities from North Rocks to a purpose-built Centre at Macquarie University (MQU). The new Centre of Excellence will further strengthen the relationship between MQU and the RIDBC, benefit the Australian Hearing Hub, and reinforce the cluster of research, audiology, and healthcare which already exists on the campus, which also includes the Cochlear Global headquarters.

The Centre of Excellence will serve a diverse range of employees, students, users, and visitors who will visit the Centre for diagnostic services, therapy and rehabilitation, research, education, and co-related services. The Centre will provide an intricate design response to the needs of the users, in particular children and adults with vision and hearing loss and other cognitive impairments.

The proposed development generally seeks consent for the construction and operation of the new purpose-built 1-3 storey (including basement level) Centre of Excellence across two interconnected pavilions at the corner of Culloden and Gymnasium Road within the MQU Campus.

The development includes:

- Pre-School and School accommodation for up to 80 pre-school children and up to 120 school children in a single storey pavilion addressing Culloden Road; and
- The main RIDBC building, accommodating approximately 260 staff used for:
 - Public areas for staff and visitors;
 - RIDBC Renwick Centre classrooms (doubling also as conferencing facilities) and a business hub;
 - Medical Facility for various clinical services; and
 - RIDBC Renwick Centre resources used between RIDBC Renwick Centre staff, clinicians, and pre-school / primary school teaching staff.

1.2 CPTED Guidelines and Security Standards

The CPTED Design Assessment has considered CPTED Guidelines and Security Standards, including, but not limited to:

- Crime Prevention through Environmental Design (CPTED);
- Defence in Depth Security Principles;
- Designing Out Crime, Australian Institute of Criminology;
- Australian Government - Protective Security Policy Framework;
- The Department of Urban Affairs and Planning's Crime Prevention and Assessment of Development Applications;
- Australian Standards AS/NZS 2201 – Security Access Control;
- Australian Standard AS4806 – Security Cameras.
- Australian Standards AS/NZS 1158 – Security Lighting

1.3 Review of Architecture Drawings

LCI Consultants have reviewed the following WMK Architectural Drawings:

- Architecture Drawing Number, A010 – Site Plan
- Architecture Drawing Number, A100 – Overall Plan - Basement
- Architecture Drawing Number, A101 – Overall Plan - Ground
- Architecture Drawing Number, A102 – Overall Plan - Level 1
- Architecture Drawing Number, A110 – Zone 1 – Basement
- Architecture Drawing Number, A111 – Zone 1 – Lower Ground
- Architecture Drawing Number, A112 – Zone 2 – Upper Ground
- Architecture Drawing Number, A113 – Zone 1 - Level 1

2 Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design (CPTED) has been considered and used throughout the planning and design of the RIDBC – Centre of Excellence.

CPTED uses design and space management principles in order to influence human behaviour and is a crime prevention strategy based on the proper planning, design and structures to create an effective use of the environment, which can lead to a reduction in the fear and incidence of crime, as well as an improvement in quality of life.

The design of a particular space has to ensure that the intended activity can function properly, as well as directly support the control of behaviour, in order to reduce the opportunity for crime.

CPTED comprises of four key principles:

- 1. Natural Surveillance;**
- 2. Access Control;**
- 3. Territorial Reinforcement;**
- 4. Space Management.**

Natural Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective electronic and natural surveillance. Good surveillance means that people can see what others are doing and is an effective deterrent to criminals from committing crimes in places that are well supervised.

Natural surveillance is a by-product of well-planned, well-designed, and well-used spaces. This is achieved when normal space users can see and be seen by others. The RIDBC facility has effective building layouts, orientation, site location, landscaping and security lighting.

Electronic surveillance will be achieved through the use of Security Cameras, Video Recordings, and Intercoms. The strategic positioning of the security lighting and cameras is a major factor for deterring criminal behaviour and the prevention of anti-social behaviour.

Access Control

The RIDBC buildings have applied electronic access control measures that will restrict, channel, and encourage people into, out of and around the facility, combined with way-finding signage and formal / informal routes, that will reduce criminal activity.

Natural access control includes the tactical use of landforms, design measures including building configuration; formal and informal pathways, landscaping, fencing and gardens.

By making it clear where people are permitted to go or not go, becomes difficult for potential offenders to reach and victimise people and their property. Poor boundary markers and confusing spatial definition make it easy for criminals to make excuses for being in restricted areas.

Effective access control can be achieved by creating effective:

- landscapes and physical locations that channel and group people into supervised areas;
- restricted access to internal areas or high-risk areas;
- mechanical access control includes the deployment of security counter-measures.

Territorial Reinforcement

Community ownership of public space sends positive signals. People often feel comfortable in and are more likely to visit places which feel owned and cared for. Well frequented places also reduce opportunities for crime whilst increasing the level of risk to criminals.

Community ownership also increases the likelihood that people who witness crime will respond by quickly reporting it or by attempting to prevent it.

Territorial reinforcement can be achieved through:

- designs that encourages people to gather in public space and to feel some responsibility for its use and condition;
- design with clear transitions and boundaries between public and restricted spaces;
- clear design cues on who is to use a space and what it is to be used for.

Space Management

Space management involves the formal supervision, control, and care of the development. Popular public spaces are often attractive, well maintained and well used spaces.

The RIDBC has effectively used the principle of space management in their designs, that ensures that the space is appropriately utilised and will be well cared for.

All space, even well planned and well-designed areas need to be effectively used and maintained to maximise community safety, places that are infrequently used are commonly abused.

Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, replacement of faulty security lighting and the removal or refurbishment of decayed physical elements.

3 RIDBC Property Location

The new RIDBC Buildings will be located:

- At Latitude: -33.7717318 and Longitude: 151.109510, near the intersection of Culloden and Gymnasium Road at Macquarie Park.
- The RIDBC property borders:
 - Gymnasium Road – a minor road on the eastern side of the property;
 - Culloden Road – a minor road on the northern side of the property,
 - West Precinct Road – a minor road on the southern side of the property;
 - Macquarie University Car Park (P5) - on the western side of the property;

4 Macquarie Park – Local Crime Statistics

LCI have reviewed the Local Government Area Crime Statistics January 2015 - December 2019

Category	2015	2016	2017	2018	2019	60 Month Trend
Murder	0	1	0	1	0	Stable
Domestic Violence	169	207	206	258	295	Up
Non-Domestic Violence	223	262	240	237	259	Stable
Sexual Assault	31	34	47	56	25	Down
Indecent Assaults	79	49	81	80	77	Stable
Robbery without a weapon	10	5	8	12	16	Up
Robbery with a firearm	0	0	2	3	0	Down
Break and Enter Dwelling	309	295	361	286	278	Down
Break and Enter Non-dwelling	112	50	98	79	85	Stable
Steal from Motor Vehicle	306	390	363	303	419	Up
Motor Vehicle Theft	72	73	86	80	104	Up
Steal from Retail Store	367	317	542	369	398	Up
Steal from Person	49	50	39	54	31	Down
Fraud	1206	792	860	814	797	Down
Malicious Damage	474	480	573	461	515	Up

The Macquarie Park/Ryde LGA crime figures revealed that the crimes of theft and violence increased over the past 5 years, this can be attributed to the development of the Macquarie Park Business Park.

Due to the location of the RIDBC Facilities, the increases of local crime in the area should not have any adverse effect on the RIDBC – Centre of Excellence Project.

5 Site images



Image 5.1 - Macquarie University Western Car Park 5 – Looking South



Image 5.2 – West Precinct Road – Looking in an easterly direction.



Image 5.3 – The Sport and Aquatic Centre



Image 5.4 – West Precinct Road – Looking in a westerly direction.



Image 5.5 – Proposed entry to the RIDBC Basement Car Park off West Precinct Road.



Image 5.6 – Proposed drop-off area into the RIDBC Clinical building from Gymnasium Road.



Image 5.7 – Intersection of Culloden Road and Gymnasium Road.



Image 5.8 – Culloden Road – Looking in a Westerly direction.



Image 5.9 – Proposed entry to drop off area at the RIDBC School off Culloden Road.



Image 5.10 – Proposed location of the RIDBC Clinical Building and School – looking in a westerly direction.



Image 5.11 – Proposed location of the RIDBC Clinical Building and School – looking in an easterly direction.






Image 5.12 – Macquarie University – Car Park 5 – looking in a westerly direction.

6 CPTED Design Assessment








On the 22nd September 2020, LCI Consultants attended the RIDBC Site at Macquarie Park and made observations of the surrounding area. Most of the immediate area consist of residential buildings to the north along Culloden Road. Macquarie University have car parking areas (P5/6) to the east and west and the Sports and Aquatic Centre is located to the south of the RIDBC property.














The following CPTED Design Assessment has been completed by addressing each of the key elements of Crime Prevention through Environmental Design Principles and rating the compliance to each element.

Legend













-  Addresses the requirements of CPTED Design Principles.
-  Requirements have been met but needs to be reviewed as the project nears completion.
-  Does not comply with CPTED Design Principles

6.1 NATURAL SURVEILLANCE & LIGHTING








#	Site Elements	Compliance	Comments
1	Does the Clinical building orientation and position allow for natural surveillance?		There appears to be good external surveillance through windows along Gymnasium and West Precinct Road.
2	Does the RIDBC School building orientation and position allow for natural surveillance?		There appears to be good external surveillance along Culloden Road. The eastern and northern side of the building has some natural bushland. A further review should be made prior to the completion of the project.
3	Are public entry points clearly defined by walkways and signage?		Entry points into both buildings will be well defined and managed.
4	Will the property be well maintained and managed to provide good visibility around the building?		There will be maintenance staff to maintained and managed the buildings and outdoor areas.
5	Are trees and vegetation trimmed to eliminate potential concealment of offenders?		There will be limited trees around the Clinical Building. The RIDBC School will have a Bush Fire Zone created around the northern, eastern and western buildings.
6	Are there any features that provide access onto the roof or upper levels of the building?		There is no direct access onto the roof areas of both buildings.
7	Will barriers been utilised to control pedestrian movement where appropriate?		Landscaping and walkways have been designed to channel pedestrians around both buildings.

8	Are restricted internal areas easily distinguishable from public areas?		Yes, the restricted areas will be well defined by signage and access-controlled security doors.
9	Are the external boundaries of the property well defined with adequate fencing and security warning signage?		The areas around both buildings are "open" with no security fencing. Security warning signs will be installed. A further review should be made prior to the completion of the project.
10	Are entry points into restricted areas under constant security camera surveillance?		Security cameras will be installed to monitor restricted areas and security doors in both buildings.
11	Are entries / foyers to public restrooms under video surveillance?		Entry points into restrooms will be under constant video surveillance.
12	Is there any evidence of graffiti within 200 metres of the facility?		There was no graffiti visible around the Site at the time of the inspection.
13	Is the security lighting along walkways and paths adequate?		There appears to be allowances for adequate lighting along walkways. A further review should be made prior to the completion of the project.
14	Is there a Security Room at the facility?		There will be Security Room located in the Clinical Building Basement Car Park.
15	Are the security camera images stored for a minimum of 30 days?		The video recording system will be designed to retain recorded security images for 30 days.
16	Will security cameras been strategically positioned to cover Work, Health and Safety issues?		Security cameras have been strategically positioned to cover any potential areas of risk.
17	Will intercoms be installed at entry doors?		Intercoms will be positioned in strategic locations in the car park and at security-controlled entry doors.
18	Will security cameras be positioned at above 4 metres above the ground?		Security cameras will be positioned at a minimum of 4 metres above the ground to prevent tampering.
19	Will security cameras be installed with tamper-proof housings?		All security cameras will be Rated IK-10 tamper resistant. Also, IP66 weather resistant rating.
20	Will security camera warning signage been installed?		Security camera signage will be installed as per AS4806. after the building is completed.







6.2 ACCESS CONTROL



1	Do entry and exit points have adequate signage?		There will be adequate signage to direct people to the correct areas in and around the building.
2	Will restricted areas be adequately sign posted to keep out unauthorised persons?		There will be adequate signage in place.
3	Will access control readers be installed to all security doors?		Access control readers will be installed to nominated security doors.
4	Will there be sufficient security hardware on external doors?		There will be adequate security controls on external doors. Locking tongue guards will be installed to external doors
5	Will there be sufficient security at the front of the building for the safety of pedestrians. (Protection Bollards)		There will be protection bollards installed at the entrances and at drop off areas.
6	Will pedestrian crossings be clearly painted and well-lit at night?		Pedestrian crossings will be clearly painted, well maintained and well-lit at night A further review should be made prior to the completion of the project.
7	Are there potential areas of intrusion?		The buildings do not appear to have any potential areas of intrusion (except by breaking glass or doors) A further review should be made prior to the completion of the project.
8	Will all external doors have reed switches installed?		External doors will be installed with monitored recessed reed switches.
9	Will all security doors have access control readers installed to prevent unauthorised access?		Access Control Readers will be installed to all nominated security doors.
10	Will the building have the ability to be locked-down electronically in the event of an emergency.		External security doors will be able to be lockdown in an emergency situation.
11	Will the access control system adequately secure and meet the required operational functions of the facility?		The access control system for both buildings meets the requirements of the RIDBC
12	Will all electrical and communications rooms be secure?		Electrical and Communications rooms will be secure with security locks, card readers and monitored reed switches.

6.3 TERRITORIAL REINFORCEMENT

1	Will security officers provide 24-hour coverage at the facility?		No - random patrols will be made by contracted Security Staff at night. Macquarie University Security staff also patrol the immediate area.
2	Will all access points for public and staff areas be clearly marked?		Wayfinding and security warning signage will be applied to RIDBC buildings.
3	Will security zones be applied to prevent movement between public and restricted areas?		The Clinical Building has 3 security zones which are controlled by security card readers. The School has 2 security zones from the public reception foyer to the back of house classrooms.
4	Will there be any staff that could be vulnerable when working at night?		Most Staff work in secured areas. Cleaners may be working after-hours but will not be working alone.
5	Will buildings have security intruder alarms and are they monitored?		Security intruder alarms will be installed and monitored externally.
6	Is the duress alarm system regularly tested?		Security procedures will be developed to test the duress alarm system every 7 days.
7	Is there a reputation of any criminal activity in the immediate area (within 2kms)?		There is no known criminal activity in the immediate area.

6.4 SPACE MANAGEMENT

1	Will employee and public areas be clearly defined at the facility?		The building will have clearly defined signage in and around the facility and security doors to ensure areas are well defined.
2	Will there be adequate security and access procedures in place for the management of contractors and visitors?		There will be a Visitor / Contractor Management System in place in reception.
3	Is there a procedure in place to collect keys and access cards?		Policies and Procedures will be in place to manage the access control system.
4	Will there be a restricted key system?		There will be a restricted master key system in place.
5	Will staff that handle cash, work in a secure area?		Any cash handling will be in a secured back of house areas. Cash handling will be limited.
6	Will duress alarm buttons be installed in High Risk Areas?		Yes, duress alarm buttons will be installed in the reception

			areas and any other areas of risk.
7	Will staff areas be secured away from the general public?		Staff will be working in secure back of house areas
8	Will local Police be advised of all criminal and events occurring at the facility?		All criminal activity will be reported to the local Police.

7 CPTED Design Rating

Section	Total Questions	Satisfactory Responses	CPTED Rating
Natural Surveillance and Lighting	20	17	85 %
Access Control	12	10	83 %
Territorial Reinforcement	7	6	85 %
Space Management	8	8	100 %
CPTED Design Rating			88.25 %

8 CPTED Design Evaluation

CPTED Design Rating	Risk Rating	RIDBC SCORE
Under - 60%	HIGH RISK	
61 - 80 %	MEDIUM RISK	
81-100 %	LOW RISK	88.25 %

9 Findings

9.1 NATURAL SURVEILLANCE

The RIDBC buildings have glass doors and windows which will allow for natural external surveillance from within the building. There will be clear lines of sight around the building and the area will be well lit at night.

Security Cameras will be installed to record pedestrian movements, monitor access control points and cover any black spots around the buildings.

9.2 ACCESS CONTROL

Public access into the RIDBC School will be off Culloden Road and the access into the Clinical Building will be from Gymnasium Road. Access control readers will be installed at all entry points to allow access for authorised persons into the buildings. The Clinical Building basement car park will be restricted for RIDBC "fleet vehicles" only entry via a card reader.

9.3 TERRITORIAL REINFORCEMENT

Building entrances will be clearly marked to define areas and public spaces.

9.4 SPACE MANAGEMENT

Regular maintenance strategies will be put in place for cleaning and to ensure that rubbish and any graffiti are removed, and the quality of the buildings are well maintained.

The buildings will be managed by applying good security and CPTED principles:

- Security camera surveillance will be installed around the building perimeters and at all entry points, lift lobbies and pedestrian walkways.
- Clear and visible directional and cautionary signage will be installed at entrance and exit points and at other key locations.
- Access control into the basement car park will be maintained at all times and under constant security camera surveillance.

4. Summary

- RIDBC buildings have been designed and are consistent with good CPTED Principles and demonstrates that the building designers have included CPTED and security measures, around the building and in public and staff circulation areas.

The RIDBC has been designed:

- to provide good natural surveillance from within the buildings;
- to provide circulation areas that have wide corridors with clear and unobstructed lines of sight;
- vehicle drop-off areas have been provided at the front of each building;
- for safe and secure circulation routes for staff and members of the public;
- with a substantial amount of glass, this allows good external surveillance;
- with restricted destination-controlled lifts that provides authorised access to staff work areas;
- with strategically located low level plants and trees that will ensure clear lines of sight;
- for authorised fleet vehicle parking with an access-controlled roller shutter;
- for public entry points that have wayfinding signage applied to identify the intended entrance;
- to provide car parking, which is available in the Macquarie University P5 and P6 parking areas.

Yours faithfully,



Allan Woolmer
Principal Security Consultant
Security Licence (2A) 407807535

LCI Consultants

allan.woolmer@lciconsultants.com.au

M: +61 423 622 966