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CONSULTANT ADVICE NOTE

PROJECT:	Newcastle Airport
PRINCIPAL:	Cristian Gonzalez Diaz (Cox Architecture)
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SUBJECT:	Newcastle Airport Capacity Enhancement (ACE) project – Premium Carpark Security Treatments - DA

Dear Cristian,

NAPL Terminal Expansion – Premium Carpark – Security Treatments

1. INTRODUCTION

As discussed during our conversation on 7th March 2022, please see the detail of this CAN describing the expected Electronic Security treatments in the Premium Carpark space for inclusion in your DA submission.

1.1 Relevant Standards

The Electronic Security Systems in the Premium Carpark will be designed in accordance with the following relevant standards:

STANDARD	TITLE DESCIRPTION
AS/CA S009	Installation requirements for customer cabling (Wiring Rules)
AS/NZS 1049	Telecommunication Cable – Insulation, Sheath and Jacket
AS/NZS 1170.2	Structural design actions, Part 2: Wind actions
AS/NZS 1345	Identification of the Contents of Pipes, Conduits and Ducts
AS/NZS 1768	Lightning Protection
AS/NZS 1798	Lighting poles and bracket arms – preferred dimensions
AS/NZS 1882	Earth and Bonding Clamps
AS/NZS 1939 (IEC 60529)	Degrees of protection provided by enclosures for electrical equipment (IP Code)
AS/NZS 2053	Conduits and fittings for electrical installations
AS/NZS 61000	Electromagnetic Compatibility (EMC)
AS/NZS 3000	S.A.A. Wiring Rules
AS 11801	Information technology – Generic cabling for customer premises
AS/NZS 62676	Series – Video surveillance systems for use in security applications
	NSW Workplace Surveillance Act 2005

STANDARD	TITLE DESCIRPTION
Other Documents	
	NAPL – Transport Security Plan

1.2 Video Management System

The Video Management System (VSS) proposed for the Premium Carpark will extend the existing Avigilon system installed onsite at NAPL.

1.2.1 Cabling and Infrastructure

New CCTV cameras in the Premium Carpark will be hosted on the existing NAPL network infrastructure, which shall be extended to suit the new CCTV requirements.

Camera cabling will utilise the existing Communications and Power pit/pipe infrastructure, which will be adapted to suit the new Premium Carpark requirements.

Lightning protection devices shall be installed on external copper cabling.

1.2.2 CCTV Resolution and Performance

The purpose of CCTV cameras differ throughout the site and different cameras will have different resolution performance requirements. The table below describes minimum performance requirements for cameras nominated as specific Coverage Grades:

COVERAGE GRADE	RESOLUTION AT TARGET (HEIGHT)
Monitor (M)	80mm/pixel
Detect (D)	40mm/pixel
Observe (O)	16mm/pixel
Recognise (R)	8mm/pixel
Identify (I)	4mm/pixel

Table 1: Camera Resolution Performance Objectives (from AS NZS 62676.4.2020 Part 4 Section 6.7)

Camera resolution, type, illumination and FOV are all factors that determine a camera's ability to meet the above Performance Objectives. Compliance to a single attribute, e.g. resolution, does not automatically translate into the successful end goal of the camera. The different aspects affecting video and image quality shall all be considered as a whole, and cameras shall be chosen to achieve the Performance Objective in consultation with other trades, such as lighting.

1.2.3 Camera Objectives

The following table describes the minimum CCTV Camera Objectives nominated for specific areas of the Premium Carpark. These requirements are determined by the NAPL Transport Security Plan (TSP) and the expected movement of pedestrians and cars within the Premium Carpark area:

LOCATION	PURPOSE	TARGET SPEED	OBJECTIVE
Premium Carpark	Monitor	20-40km/h	General monitoring of people and vehicles in the carpark area
Vehicle access points (i.e. Boomgates)	Recognise	20-40km/h	Recognition of Number Plates and general vehicle make/model
Pedestrian Access Routes	Monitor	Walking Speed	Monitoring of pedestrians on main circulation pathways around the carpark area

Table 2 - Camera Objectives

The location of cameras will be finalised during future design revisions to produce the optimal coverage in line with the objectives nominated above.

1.2.4 Lighting Levels

The following lighting levels are recommended for general CCTV applications in carpark areas, noting these will be influenced by CPTED considerations and feedback from the lighting designer regarding implementation and standard practice at NAPL.

The following lighting level are recommended where there is a camera located:

- For every CCTV camera it shall be provided with 15-30 lux (horizontal) illumination evenly spread.
- Perimeter and street lighting shall have a minimum of horizontal and vertical operation illumination level of 10 lux
- Vehicle and pedestrian entrance lighting shall have an operational illumination of 150 lux
- Vehicle and pedestrian circulation areas shall have an operational illumination of 50 lux
- Car parking areas shall have an operational illumination of 30 lux

1.2.5 Camera Mounting

New cameras installed in the Premium Carpark will be mounted on structures as required to meet the coverage objectives noted above. These structures may include:

- Awnings
- Lighting Poles
- Dedicated CCTV camera poles/posts

The final mounting structure will be designed in accordance with the VSS standards to minimise any camera deflection resulting in possible ‘shaky’ images, during high wind events.

1.3 Parking Management System

The Parking Management System proposed for the NAPL Premium Carpark may include Number Plate Recognition (NPR) CCTV cameras to record and replay the number plate details of vehicles entering and exiting the carpark.

COX Note: The Parking Management System will be designed by others as it does not interface with the Security System onsite.

Yours sincerely,

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