

NEXTDC

D2 STAGE 1

DEVELOPMENT APPLICATION

DRAWING LIST - DEVELOPMENT APPLICATION SHEET NAME

COVER SHEET

PERSPECTIVE 4
PERSPECTIVE 5

AREA SCHEDULE AXONOMETRICS SHADOW DIAGRAMS LOWER GROUND FLOOR PLAN GROUND FLOOR PLAN

LEVEL 1 FLOOR PLAN LEVEL 2 FLOOR PLAN

LEVEL 3 ELOOR PLAN LEVEL 3 FLOOR PLAN LEVEL 4 FLOOR PLAN LEVEL 5 FLOOR PLAN

SECTIONS - SHEET 1 SECTIONS - SHEET 2

ELEVATIONS SHEET 1 ELEVATIONS SHEET 2

STREET ELEVATIONS

PROPOSED SITE PLAN PERSPECTIVE 1 PERSPECTIVE 2 PERSPECTIVE 3

NO.

00-0010 00-0020

00-0030 00-0031 00-0032 00-0033 00-0034

00-0100 00-0200

00-0300

00-3100 00-3101 00-3102

00-3103

00-6000

00-7000

00-7100



hitect HAMES SHARLEY AURECON DEITCHARD ERANC NEXTDC NEXTDC GPO Box 3219 Brisbane QLD 4001 T: +61 7 3177 4777 Hames D2 0101 D1.0004 Project Addres 2 RYKO CT (LOT 9704) & 6 RYKO CT(LOT 9704) & 6 RYKO CT(LOT 9703), DARWIN CITY, 8000, NORTHERN TERRITORY iect Name NEXTDC D2 STAGE 1 COVER SHEET Drawing Status SPATIAL COORDINATION FOR INFORMATION

Rev

D2-ARC-HSA-DRG-A-0100-0000 SPC-6



Dug no: Rev D2-ARC-HSA-DRG-A-0100-0010 SPC-6











Drawing Status SPATIAL COORDINATION FOR INFORMATION					
DRAINN HSA		Date 03/02/2025			
CHEOKED AD			Date 03/02/202	5	
APPROVED JLS			Date 03/02/2025		
Scale	Sheet	File Name			
	A1	D2-ARC-H5A-R24-A-0201-BUI		1-BUILDING	
Dwg no:				Rev	
D2-ARC-HSA-DRG-A-0100-0033			SPC-6		





Site Stage NEXTDC Project Nur D2 0101 D1.0004

 D2
 0101
 D1.0004

 Prijet Advess
 2
 RYKO CT (LOT 9704) &

 6
 RYKO CT (LOT 9703),

 DARWIN CITY, 8000,
 NORTHERN TERRITORY
 roject Name

NEXTDC D2 STAGE 1 Drawing Title PERSPECTIVE 5

Drawing Status SPATIAL COORDINATION FOR INFORMATION A1 Rev D2-ARC-HSA-DRG-A-0100-0034 SPC-6

NAME	Area	NAME	Are
LOWER GROUND		SHR	4 m
CIRCULATION	29 m²	SHR	4 m
FIRE TANK B	17 m²	STAIR 1	19 r
FUEL TANK A	79 m²	STAR 2	17 r
FUEL TANK B	79 m*	UAI	8 m
PARKING DOT WATED	/U/ m²	UNIVERSAL	6 m
PUL WATER	31111-	UNIVERSEL	191
PINC HV A	20 m²	WATER TANK A	911
WASTE BOOM	20 m	WATER TANK R	12 1
WATER TANK A	12 m ²	WATER TANK C	12 1
WATER TANK B	12 m ²	WATER TANK D	12 1
WATER TANK C	12 m ²	Instant D	1900
WATER TANK D	12 m ²		
	1081 m ²	LEVEL 1	
		AMB. WC	3 m
LOADING DOCK		BREAKOUT	19 r
BATT A	9 m ²	CIRCULATION	47 r
BATT B	9 m²	COMMS	8 m
BIKE PARKING	35 m²	DATA HALL	1091
CIRCULATION	16 m ²	LIFT	15 r
FIRE BOOSTER	3 m ²	LIFT	14 r
FIRE PUMP ROOM	43 m ²	LIFT LOBBY CORRIDOR	91 r
FUEL CORR.	8 m ²	RISER	4 m
GOODS TRAP	38 m²	SERVICES CORRIDOR	192
HV A	27 m ²	SERVICES CORRIDOR	173
HV B	27 m ²	STAIR 1	19 r
LIFT	15 m²	STAIR 2	17 r
LIFT	14 m ²		1692
LIFT	2 m ²		
LOADING	36 m²	LEVEL 2	
NDC STORAGE	48 m ²	AMB. WC	3 m
PUMP	9 m ²	BREAKOUT	19 r
PUMP	8 m ²	CIRCULATION	47 r
RISERS	23 m²	COMMS	8 m
STAGING	21 m ²	DATA HALL	1091
STAGING	21 m ²	LIFT	14 r
STAIR 1	19 m ²	LIFT	15 r
STAIR 2	17 m²	LIFT LOBBY CORRIDOR	91 r
STREET AIRLOCK	17 m²	RISER	4 m
IELCO RISER	3 m²	SERVICES CORRIDOR	1/3
UNPACK	29 m²	SERVICES CORRIDOR	192
	498 m-	STAIR 1	191
0001810 51 000		STAIR 2	1/ 1
GROUND FLOOR	1002		1692
CIDCULATION	210	10/0.2	
	210111-	LEVEL 3	2-
CI EANERS	27 III*	PREAKOUT	3 m
CLEANERS	0 == 2	CIDCULATION	191
CONCIEDCE	0 III"	COMME	4/1
CONTRACTOR RREAKOUT	26 m2	DATA HALL	1004
ENTRY AIRLOCK	20 m 23 m ²	LIFT	16.
FOT	14 m ²	LIFT	14 1
FEMALE	14 m ²	LIFT LOBBY CORRIDOR	91 r
FIRE TANK A	17 m ²	RISER	4 m
FIRE TANK B	17 m ²	SERVICES CORRIDOR	173
INTERCONNECT	25 m²	SERVICES CORRIDOR	192
INTERCONNECT	19 m ²	STAIR 1	19 r
LIFT	2 m ²	STAIR 2	17 г
LIFT	15 m ²		1692
LIFT	14 m ²		
LOBBY / ENTRY	109 m ²	LEVEL 4	
MALE	14 m ²	BATTERY ROOM	19 r
MCX MEETING	23 m ²		
MCX OFFICE	401 m ²		
MCX STORAGE	102 m ²		
MCX STORAGE	109 m ²		
NDC STORAGE	98 m²		
NEXTDC BREAKOUT	35 m²		
NEXTDC BREAKOUT (OUTDOOR)	38 m²		
NEXTDC MEETING	20 m ²		
NEXTDC OFFICE	108 m ²		
PINBALL / MASSAGE	14 m ²		
PLANT OAPU'S	67 m ²		
QU.RM.	6 m ²		
QU.RM.	6 m ²		
QU.RM.	6 m ²		
SEC. TRAP	10 m ²		
SEC. TRAP	5 m ²		
SEC WC	6 m ²		
020.110			

BATTERY ROOM 19 m CRULATION 37 m CRULATION 57 m CAMAS 9 m CAMAS 51 m CAMAS 9 m CAMAS 11 m CATERY ROOM 12 m UFT 14 m UFT 14 m UFT 14 m UFT 14 m UFT	NAME	Area
BATTERY ROOM 19 m BATTERY ROOM 29 m BATTERY ROOM 29 m BATTERY ROOM 29 m BATTERY ROOM 29 m BATTERY ROOM 21 m BATTERY 19 m BATTER		
BATTERY ROOM 19m CIRCULATION 20m BATTERY ROOM 19m CIRCULATION 20m CIRCULAT	BATTERY ROOM	19 m ²
BAT EER ROOM 19 m BAT EER ROOM 19 m RX / PUAPS	BATTERY ROOM	19 m ²
BAT TERY ROOM 19 m BAT TERY ROOM 19 m CIRCULATION 5962 (ERCULATION 597) (CIRCULATION	BATTERY ROOM	19 m ²
BAT LEY HOOM 19 m BAT LEY HOOM 19 m BAT LEY HOOM 19 m CREQUATION 28 m CREQUATION 29 m CREQUATION 29 m CASE DOTLE STORE A 51 m CASE DOTLE STORE B 91 m KV FPUMPS 31 m MOT STORAGE 60 m STAR 1 19 m STAR 2 17 m SWITCHROOM 72 m SWITCHROOM 72 m SWITCHROOM 72 m SWITCHROOM 72 m SWITCHROOM	BATTERY ROOM	19 m ²
LINGUALION 254 CINCULATION 37 m COMAS 17 E STORE 4 37 m COMAS 17 E STORE 4 35 m ACK PLANES TORE 5 35 m TAX PLANES TORE 5 31 m TAX PLANES TORE 5 31 m TAX PLANES 31 m TAX	BATTERY ROOM	19 m ²
LIRELATION 20 LIRELATION 20 CARAST ESTORE A CARTAT ESTORE A SWITCHROOM 72 m SWITCHROOM <t< td=""><td>CIRCULATION</td><td>552 m</td></t<>	CIRCULATION	552 m
LOADSOTLE STORE A 39 m LOADSOTLE STORE A 51 m RAX FURK 5 TORE 5 31 m RAX FURK 5 TORE 5 31 m RAX FURK 5 3	CIRCULATION	37 m
DAB BOTHL STORE 6 DT DAB BOTHL STORE 6 DT NX FPLAPS TI NV FPLAPS TI NUTT 15m UFT 15m NOC STORAGE 67m NOC STORAGE 15m STAR 11m STAR 11m SWITCHROOM 72m GO	COMMS	9 m*
Vix / Pubrics 1 Vix / Pubrics 31	GAS BUTTLE STORE A	53 m
TAX FPANPS 31 m UFT 16 m UFT OBBY 16 m NOC STORAGE 60 m RISSR 4 m² STAR 2 17 m SWITCHACOM 72 m	UV / DI MDC	21 m
TAC / PLAPES 31 m UFT 15 m UFT 15 m UFT 14 m UFT 14 m UFT 14 m UFT 14 m UFT (DB8Y 16 m NOC STORAGE 69 m RISSER 2 m² RISSER 2 m² STAR 1 19 m STAR 1 19 m STAR 1 19 m STAR 1 19 m SWICH-ROOM 72 m SWICH-ROO	HX / PLIMPS	31 m
IXI, PLAPES 31 m IVFT 15 m UFT 16 m IVFT.058V 16 m NOC STORAGE 19 m NOC STORAGE 60 m RISSR 2 m² STAR 2 11 m SWTCH-ROOM 72 m SWTCH-ROOM 73 m	HX / PLIMPS	31 m
TAC / PLAPES 31 m TAC / PLAPES 31 m UFT 19 m DC STORAGE 19 m NOC STORAGE 19 m NOC STORAGE 19 m STAR 1 19 m STAR 1 19 m STAR 1 19 m STAR 2 17 m SWTCHROOM 72 m SWTCHROOM	HX / PLIMPS	31 m
IXI, PUMPS 31 m IXI, PUMPS 31 m UFT 15 m UFT 16 m NDC STORAGE 19 m NDC STORAGE 60 m RISSR 2 m² STAR 2 17 m STAR 2 17 m SWTCHROOM 72 m GO 2 m² GO 2 m² GO 2 m² GEREBATOR ROOM 37 m GEREBATOR ROOM<	HX / PLIMPS	31 m
LEFT 15 million UFT 15 million UFT 15 million UFT 16 million UFT 16 million DIC STORAGE 10 million NOC STORAGE 20 million MSER 2 million MSER 2 million STAR 1 10 million SWTCHROOM 72 million	HX / PLIMPS	31 m
UFT 14 m UFT 15 m NDC STORAGE 19 m NDC STORAGE 90 m RISER 2 m ² RISER 4 m ² STAR 2 17 m SWITCHROOM 72 m GO 2 m ² GO 2 m ² GO 2 m ² GO 2 m ² <td< td=""><td>LIFT</td><td>15 m</td></td<>	LIFT	15 m
LFT LOBBY 15 DUC STORAGE 19 NOC STORAGE 90 RISER 2 m² RISER 2 m² RISER 2 m² RISER 2 m² STAR I 19 m STAR I 19 m STAR I 19 m² SWTCHROOM 72 m SWTCHROOM 72 m² GO 2 m² GO	LIFT	14 m ²
NDC STORAGE 19 NDC STORAGE 69 RISER 2 m² RISER 4 m² STAR 2 1 m² STAR 2 1 m² SWTCHROOM 72 m² GO 2 m² <td>LIFT LOBBY</td> <td>16 m²</td>	LIFT LOBBY	16 m ²
NDC STORAGE 69 m NDCS TORAGE 61 m RISSR 2 m RISSR 4 m RISSR 4 m RISSR 1 m RISSR 1 m STAR 1 19 m STAR 2 1 m STAR 2 1 m SWTCHROOM 72 m GO 2 m GO <td< td=""><td>NDC STORAGE</td><td>19 m²</td></td<>	NDC STORAGE	19 m ²
HISER 2 mf HISER 4 mf STAR 2 1 m STAR 2 1 m STAR 2 1 m SWTCHROOM 72 m GUE 54 MT A ANT A 9 mf ANT A 9 mf CHEU STORE 12 m CO 2 mf GO 2 mf GO 2 mf GUESENTOR ROOM 3 m GEREBATOR ROOM 3 m GO	NDC STORAGE	69 m ²
HISSR 4 mf HISSR 4 mf STAR 1 19 m STAR 1 19 m STAR 1 19 m STAR 1 19 m STAR 2 17 m STAR 1 19 m STAR 1 19 m STAR 2 17 m SWTCHROOM 72 m GO 2 mf GO 3 m GENERATOR R	RISER	2 m ²
STAR 1 19 m STAR 2 17 m SWTCHROOM 72 m GUE SUTCHROOM LEVEL 5 ANTA ANTA 9 m ² CHEU STORE 12 m CHEU STORE 12 m GE EMATOR ROOM 2 m GERESATOR ROOM 3 m GERESATOR ROOM <td>RISER</td> <td>4 m²</td>	RISER	4 m ²
STAR 2 17 m STAR 2 17 m STAR 2 17 m SWTCHROOM 72 m GO 2 m CO 3 m GENERATOR ROOM 3 m GENERATOR ROOM 3 m GOF SERVICS<	STAIR 1	19 m ²
SWITCHROOM 72 m GO 72 m CO 2 m UF<	STAIR 2	17 m ²
SWITCHROOM 72 m GUELS 9 m ANTA 9 m CHEN STORE 9 m CIRCULATON 25 m CO 2 m CO 3 m GENERATOR ROOM 3 m GO OF SERVICES 1202 <td>SWITCHROOM</td> <td>72 m²</td>	SWITCHROOM	72 m ²
SWITCH-ROOM 72 m GO 9 m² ANTA 9 m² ANTA 9 m² CO 2 m² CO 3 m GENERATOR ROOM 3 m GENERATOR ROOM 3 m² GENERATOR ROOM 3 m² UFT 15 m² UFT 16 m² UFT 16 m² UFT <td>SWITCHROOM</td> <td>72 m²</td>	SWITCHROOM	72 m ²
SWITCHROOM 72 m SWITCHROOM 70 m GO 9 mit CRULATION 25 m CO 2 mit CO 2 mit GENERATOR ROOM 61 m GENERATOR ROOM 37 m UFI 15 m UFI 15 m UFI 16 m GO 2 m GO 2 m GENERATOR ROOM 37 m GO 5 m GO 5 m GO 5 m GO <td>SWITCHROOM</td> <td>72 m²</td>	SWITCHROOM	72 m ²
SWITCH-ROOM 72 m SWITCH-ROOM 72 m SWITCH-ROOM 72 m LEVEL 5 1611 ANTA 9 m² ANTA 9 m² CHEU STORE 12 m² CO 2 m² CO 2 m² CO 2 m² CO 2 m² GEREANTR ROOM 81 m GEREANTOR ROOM 37 m GEREANTOR ROOM 97 m	SWITCHROOM	72 m ²
SWTCHROOM 72 m 1611 1611 1611 1611 1612 1627 1627 1627 1627 1627 1627 1627 1627 1627 17 1627 17 <t< td=""><td>SWITCHROOM</td><td>72 m²</td></t<>	SWITCHROOM	72 m ²
1611 LEVEL 5 ANTA 9 m² CO 12 m² CO 2 m² CO 2 m² GENERATOR ROOM 3 m GENERATOR ROOM 3 m² GENERATOR ROOM 3 m² GENERATOR ROOM 3 m² UFT 15 m² UFT 15 m² UFT 15 m² CO 2 m² TANT CAPU'S 46 m² CO 5 TAR 1 19 m² 1687 m² 1687 m²	SWITCHROOM	72 m ²
EVEL 5 ANTA 9 mt ANTA 9 mt CHEM STORE 9 mt CHEM STORE 10 mt CO 2 mt CO 2 mt CO 2 mt CO 2 mt GENERATOR ROOM 61 mt GENERATOR ROOM 37 mt GOT SERVICES 1202 STAR 2 17 mt STAR 2 17 mt STAR 2 17 mt		1611 п
INTA 9 m² INTA 9 m² OHEM STORE 9 m² CHEM STORE 12 m² CO 2 m² GENERATOR ROOM 97 m GENERATOR ROOM 37 m UFT 14 m UFT 15 m ROOF SERVICES 1202 STAR 1 19 m STAR 2 17 m 1687 n 1687 n	LEVEL 5	
ANT 9 9 ANT 9 9 OCHEM STORE 12 12 ORCULATON 25 12 CO 2 2 CO 2 12	ANT A	9 m ²
OHEM STORE 12 m OHEM STORE 2 m CO 2 m ² CO 2 m ² CO 2 m ² CO 2 m ² FIRE PUM RCOM 8 m GENERATOR ROOM 9 m GENERATOR ROOM 3 m UFT 1 m UFT 1 m UFT 1 m GOOF SERVICES 1202 STAR 2 1 m STAR 2 1 m	ANT B	9 m ²
CIRCULATION 25 m CO 2 m² CO 2 m² CO 2 m² FIRE PLMP ROOM 61 m GENERATOR ROOM 37 m UFT 16 m 17 LOBY 16 m 17 LOBY 15 m 17 AT LOAVUS 1202 STAR 1 19 m STAR 2 11 m 1867 1667	CHEM STORE	12 m ²
CO 2 m² CO 2 m² CO 2 m² ENERATOR ROOM 81 m GENERATOR ROOM 91 m UFT 14 m UFT 15 m ROOF SERVICES 1202 STAR 1 19 m STAR 2 17 m	CIRCULATION	25 m ²
CO 2 m² FRE PLMP RCOM 61 m GENERATOR ROOM 37 m UFT 14 m UFT ORAVIS 15 m UFT ORAVIS 15 m UFT ORAVIS 15 m UFT ORAVIS 15 m STAR 1 15 m STAR 2 17 m STAR 2 17 m	co	2 m ²
FIRE PUMP RCOM 61m GENERATOR ROOM 31m UFT 14m UFT 15m PLATUCAPU'S 16m ROOF SERVICES 1202 STAR 1 19m STAR 2 17m	co	2 m ²
EINERATOR ROOM 37 m EINERATOR ROOM 37 m EINERATOR ROOM 37 m EINERATOR ROOM 37 m GENERATOR ROOM 37 m GENERATOR ROOM 37 m GENERATOR ROOM 37 m UFT 14 m UFT 14 m UFT 15 m PLANT OR/US 46 m OOF SERVICES 1202 STAR 1 19 m STAR 2 17 m	FIRE PUMP ROOM	61 m ²
GENERATOR ROOM 37 m UFT 14 m UFT 14 m UFT 16 m OFOF SERVICES 1202 STAR 1 19 m STAR 2 17 m	GENERATOR ROOM	37 m ²
GENERATOR ROOM 37 m GENERATOR ROOM 37 m GENERATOR ROOM 37 m UF 14 m UF 14 m UF IT LOBBY 16 m PLANT OR/US 46 m STAR 1 19 m STAR 2 17 m	GENERATOR ROOM	37 m ²
GENERATOR ROOM 37 m GENERATOR ROOM 37 m GENERATOR ROOM 37 m UFT 14 m UFT 14 m UFT 15 m PLATLORVS 16 m PLATLORVS 16 m STAR 1 19 m STAR 2 17 m STAR 2 16 m	GENERATOR ROOM	37 m ²
GENERATOR ROOM 37 m UET 16 m UET 16 m UET 16 m UET 16 m VANT ORAVIS 16 m PLANT ORAVIS 16 m STAR 1 18 m STAR 1 18 m STAR 2 17 m 1667 r 1667 r	GENERATOR ROOM	37 m ²
IGENERATOR ROOM 37 m LIFT 14 m LIFT 15 m LIFT 15 m LIFT 15 m LIFT 16 m ROOF SERVICES 1202 STAR 1 19 m STAR 2 11 m STAR 2 17 m	GENERATOR ROOM	37 m ²
LIFT 14 m UFT 15 m UFT LOBBY 15 m PLANT 0APU'S 46 m ROOF SERVICES 1202 r STAIR 1 19 m STAIR 2 17 m 1667 r 1667 r	GENERATOR ROOM	37 m
LIFT 15 m LIFT LOBBY 16 m PLANT CAPUS 46 m ROOF SERVICES 1202 STAR 1 19 m STAR 2 17 m 166 r 166 r	LIFT	14 m
LIFT LOBBY 16 m PLANT CAPU'S 46 m ROOF SERVICES 1202 r STAIR 1 19 m STAIR 2 17 m 1667 r 1007 r	LIFT	15 m
PLANT OAPU'S 46 m ROOF SERVICES 1202 r STAIR 1 19 m STAIR 2 17 m 1667 r	LIFT LOBBY	16 m ²
ROOF SERVICES 1202 r STAIR 1 19 m STAIR 2 17 m 1667 r	PLANT OAPU'S	46 m ²
STAIR 1 19 m STAIR 2 17 m 1667 r	ROOF SERVICES	1202 n
STAIR 2 17 m 1667 r	STAIR 1	19 m ²
1667 r	STAIR 2	17 m ²
		1667 п







0900 JUNE 22ND 1:700



. . 2 0 10 0 RYKO COURT 1 9 18 HARVEY ST. nanan 00000 8 20000000 0.000 GARAMILLA BLVD.

1200 JUNE 22ND 1:700



0900 DECEMBER 22ND NTS



1200 DECEMBER 22ND NTS



1600 DECEMBER 22ND NTS



: 700 A1

Rev

D2-ARC-HSA-DRG-A-0100-0300 SPC-6

























design statement.



Hames

ENABLING COMMUNITIES TO FLOURIS

The proposed 6-megawatt data centre, located adjacent to the existing D1 facility on Ryko Court, Darwin, is designed to accommodate three levels of data halls.

The building integrates offices, indoor and outdoor breakout areas, with front-ofhouse components strategically along Ryko Court and Garamilla Boulevard. This maximises glazing along these frontages to create a dynamic and engaging streetscape.

At the ground level, visually permeable spaces foster passive surveillance and activate the extensive frontage along Garamilla Boulevard and Harvey Street.

An outdoor breakout terrace to the north establishes a meaningful connection to the surrounding landscape, offering occupants a functional and refreshing outdoor space.

To enhance pedestrian comfort and create a welcoming environment, an awning along Garamilla Boulevard provides shading for the ground floor office spaces while contributing to the building's human-scaled interface.

The façade employs patterned and coloured concrete to create an articulated aesthetic, subtly referencing the cladding of perforated aluminium on the existing D1 centre. Linear lighting highlights key architectural elements, while corporate branding and colours are used thoughtfully as wayfinding tools.

Vertical circulation elements are expressed from the primary building frontages, adding depth and articulation to the otherwise expansive facades.

The upper levels efficiently stack the data halls, with plant and equipment screened both acoustically and visually to minimize impact on neighbouring properties.

This design balances the functional requirements of a high-performing data centre with thoughtful architectural elements that enhance its urban presence, promote connectivity, and create a positive experience for both building users and the surrounding community.











P1 ISSUE - 16.01.2025

NEXT DC D2 STAGE 1

DEVELOPMENT APPLICATION - LANDSCAPE

SITE CONTEXT Ryko Court, Darwin

CONNECTION TO COUNTRY

We acknowledge the ancestral lands of the Larrakia people and pay respects to elders past, present and emerging.

Traditional Owners across Australia are the original custodians of our land and waters, and we recognise ongoing and unique care for country and a deep spiritual connection to it. The knowledge and wisdom of Traditional Owners has, and will, ensure the continuation of cultures and traditional practices and enrich our ongoing understanding and interpretation of place.

And, importantly, we hope this shared caring provides us with appropriate and considerate ways of working On Country in all our practice endeavours.



LOCATION

NEXT DC D2 STAGE 1 DEVELOPMENT APPLICATION - LANDSCAPE

Ryko Court, Darwin

KEY CONSIDERATIONS

NEXT DC D2 STAGE 1 DEVELOPMENT APPLICATION - LANDSCAPE HORK IN PROGRESS

Landscape Design

RYKO COURT

HARVEY TERRACE

T.C.L Hames SHARLEY

100000000

NEXTOC

OHA IN PROGRESS

- Balcony planter boxes with blade steel balustrades (by Architects).
- full depth proprietary planter soil to be specified by Landscape Architect
- drainage cells and waterproofing to be specified (by Architects)

- Drainage Swale to connect into (and match) Stage One Swale. Subject to Engineering design
- Tanks and Hardstand to be specified (by Others)
- Next DC Feature Fence. Continue along Garramilla frontage to match into Stage One.
- New planting to Garramilla frontage
- Make-good to 'Out of Scope' plantings along Garramilla frontage following construction

Scale: 1:250@A3

Landscape Design

RYKO COURT

T.C.L Hames SHATLEY

NEXT DC D2 STAGE 1 DEVELOPMENT APPLICATION - LANDSCAPE

<u> Plan - Basement</u>

Optional mesh climbing screen / vertical wires to support hardy climber growth (soften Ryko interface and service fascade)

PRA IN PROGRESS

Remove and re-use existing internal black palisade fencing panels

Equitable building access (>1:20) from via ramp from connect Stage Two to Stage One buildings.

Make-good to Stage One plantings

Remove and re-use existing internal black palisade fencing panels

Scale: 1:250@A3

Landscape Design

SPATIAL DIAGRAM

GROUND FLOOR & Planting Zones

SOFTSCAPE TAKE-OFF

— 12.2 m²

BASEMENT

Key

Planting

- 1 Entrance Planting
- 2 Street interface (Ryko/ Harvey)
- 3 Garramilla Interface
- 4 Terrace Planting

Hard Elements

- Steel Balustrade
- Broom finished concrete

T.C.L Hames SHARLEY

NEXT DC D2 STAGE 1 DEVELOPMENT APPLICATION - LANDSCAPE

<u>Key</u>

Softscape Areas

- A Harvey Frontage = $156.0 m^2$
- B Ryko Frontage = 87.9 m²
- C Balcony Planters = 7.6 m²
- D St1 / St2 Garden = 78.5 m²
- E Garramilla Frontage = 45.2 m²

TOTAL PLANTING AREA = 375 M²

NORK IN PROGRESS

Landscape Palettes

<u> PLANTING</u>

Syzygium Armstrongii

Melaleuca viridiflora, Broad-Leaved Paperbark

3 Garramilla Interface

Zoysia sp. Lawn

Gardenia psidioides, 'Glennie River'

Hibiscus tiliaceus rubra, Red Beach Hibiscus

Zoysia sp. Lawn

Molineria capitulata, NT Palm Grass

Leea novoguineensis, Bandicoot Berry

Triodia pungens, Soft Spinifex

Grevillea formosa, Mt Brockman

Gardenia psidioides, 'Glennie River'

Hymenocallis littoralis, Spider Lily

Vitex rotundifolia, Beach Vitex

Melaleuca incana 'Velvet Cushion', Honey-Myrtle Cultivar

Sansevieria zeylanica, Snake Plant

OH+ IN PROGRAMS

Stenochlaena palustris, Climbing Swamp Fern

Ipomoea pes-caprae, (Beach Morning Glory)

Capparis spinosa, Caper Bush

Landscape Palettes

HARDSCAPE ELEMENTS

Pavement

Continous Broom Finish to Concrete (to match Stage One)

Balustrade And Barriers

- Blade Wall (Solid) / Balustrade (to match Stage One)

Vertical planting elements

Compacted Rubble pathways

Black Palisade Security Fencing

Timber Battens on Concrete seating element with rubble pavement and tree plantings

Hardwood Timber Battens - New

Next DC Feature Fence (to match Stage One Garramilla fontage)

Mesh Screen with Climbers

Vertical Planting on wires

Garramilla Stone precedent

NEXT DC D2 STAGE 1 DEVELOPMENT APPLICATION - LANDSCAPE

ORT IN PROGRESS

Pre-cast Concrete Footings - Existing reused

Optional Mesh Screen TBC (to Ryko Court frontage services entrances)

NEXTDC D2 Stage 1

Acoustic Report NEXTDC Pty Ltd Reference: P526971 Revision: 2025-01-28

Document control record

Document prepared by:

Aurecon Australasia Pty Ltd

ABN 54 005 139 873 Aurecon Centre Level 8, 850 Collins Street Docklands, Melbourne VIC 3008 PO Box 23061 Docklands VIC 8012 Australia

- **T** +61 3 9975 3000
- **F** +61 3 9975 3444
- E melbourne@aurecongroup.com
- W aurecongroup.com

A person using Aurecon documents or data accepts the risk of:

- a) Using the documents or data in electronic form without requesting and checking them for accuracy against the original hard copy version.
- b) Using the documents or data for any purpose not agreed to in writing by Aurecon.

Docι	ument control	aurecon					
Repo	rt title	Acoustic Report					
Document code			Project number		P526971		
File path		Https://aurecongroup.sharepoint.com/sites/BuildingSciences/Shared Documents/Acoustics/04 Projects/NextDC D1/Reports/526971-0000-REP-MA-01[1] NEXTDC D2 Stage 1 DA Acoustic Report.docx					
Client		NEXTDC Pty Ltd					
Client contact			Client reference				
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver	
1	2025-01-28	Revision 1	CZ	НМ			
Curre	Current revision						

Approval					
Author signature	xpsy	Approver signature			
Name	Chris Zhang	Name			
Title	Acoustic Engineer	Title			

Contents

1 2	Introduction Existing environment					
	2.1	Existing	background noise levels	2		
3	Noise Regu	lation		4		
	3.1 Northern Territory noise management framework guidelines					
		3.1.1 3.1.2	Project intrusiveness noise level Project amenity noise level	4		
	0.0	3.1.3 T		ə		
	3.2 3.3 3.4	Emerge	operation and emergency testing	5 6 7		
	3.4	Constru	iction noise	7		
		3.5.1 3.5.2	Recommended standard hours of construction work Recommended construction noise levels	7 8		
		3.5.3 3.5.4	Project construction noise criteria Construction noise impacts	9 9		
4	Equipment	Schedul	les	10		
	4.1 4.2	Existing D1 Stage 1 noise emissions				
		4.2.1	Generator mitigation package	11		
5	Noise mode	elling		12		
	5.1	5.1 Methodology				
	5.2	Noise N	lodelling	12		
	5.3	Assump	otions and limitations	13		
	5.4	Results		13		
6	Conclusion			14		

Appendices

Noise Contours

Figures

Figure 1: Site overview Figure 2 Logger Location Figure 3 3D model of data centre building and surrounds

Tables

Table 3 Rating background level from NDY report Table 1 Minimum assumed RBLs and project intrusiveness noise levels Table 2 Recommended maximum assigned amenity noise levels Table 4 Project Specific Environmental Noise Limits

aurecon

Table 5 Recommended standard hours of work

Table 6 Recommended assigned construction noise levels for airborne noise at residential premises

- Table 7 Recommended assigned noise levels for airborne noise at commercial and industrial premises
- Table 8 Residential construction NML

Table 9 Non-residential construction NMLs

Table 10 D2 Stage1 Equipment Schedule

Table 11 Typical Operation noise emission predictions

Table 12 Generator Testing noise emission predictions
Executive Summary

Aurecon has been engaged by NEXTDC to undertake the design and environmental assessment of a proposed new data centre located at 2 – 6 Ryko Court, Darwin City, Northern Territory 0800. The project (NEXTDC D2 Stage 1) is located adjacent to the existing data centre (NEXTDC D1 Stage1) on 8 Ryko Court, Darwin City, Northern Territory 0800 however is located on a separate lot.

The site and nearest sensitive receivers are located within the Central Business Zone (Urban Residential Category). Land use in this surrounding area consists of residential apartment buildings and industry buildings.

Noise emissions from the proposed data centre have been assessed for two key operational scenarios as follows:

- Typical operation
- Emergency testing

Noise criteria have been established on the site based on the Northern Territory Noise Management Framework Guideline (NT Guideline). Typical operation of the site (including cooling and ventilation systems) is expected to be 24 hours per day 7 days per week, and therefore for normal operation compliance with the most onerous night period criteria is required. For routine generator maintenance and testing this would be scheduled to occur during the day only and therefore compliance with the day period criteria is required for the emergency testing operational scenario.

- Typical operation: a night criterion of 40 dBA would be the most stringent criterion and would dictate the noise mitigation for services plant equipment
- Emergency testing: emissions should achieve the day period criterion of 49 dBA.

A 3D computational noise model has been developed of the site and surrounding buildings using SoundPLAN v9.0. The model includes the neighbouring buildings and the topography of the surrounding area. The model incorporates the key items of noise generating equipment included in the design, such as cooling towers, fans and emergency backup generators. Noise emissions from the overall site has been predicted at the surrounding receivers based on the current concept design.

Based on the current design, compliance with the project specific environmental noise limits is predicted to be achieved. However, any future changes in noise emitting mechanical or electrical equipment selection or design will require additional acoustic assessment to be undertaken to ensure noise limits are met at all noise sensitive receivers at all time periods.

1 Introduction

Aurecon have been engaged by NEXTDC to provide acoustic design service on proposed D2 Stage 1 facility at 2 – 6 Ryko Court, Darwin City NT 0800. The project brief is for an 8MW IT data centre on the lot behind the existing D1 Stage 1 facility at 8 Ryko Court.

This report assesses the potential noise impacts from the operation of the proposed NEXTDC D2 Stage 1 site on nearby surrounding premises. The following scenarios are considered once the building is fully operational.

- Typical operation regular services in operation
- Generator testing regular services together with the testing of one generator and one load bank unit

2 Existing environment

The site is located at Ryko Court in Darwin City. The two closest noise receivers are residential apartment buildings as identified below:

- 3 Harvey St, Darwin City NT 0800
- 12-16 Harvey St, Darwin City NT 0800

An overview of the site is shown in Figure 1.



Figure 1: Site overview

2.1 Existing background noise levels

Noise logging was previously undertaken in the surrounding area by NDY as part of the NEXTDC D1 Stage 1 project (prior to the construction of the D1 datacentre). A noise logger was installed on the 24th of



August 2022 for two weeks to measure the background noise levels at a location representative of the nearest sensitive receiver at 12-16 Harvey St¹. The logger location is shown in Figure 2.



Figure 2 Logger Location

The Rating Background Level (RBL) for the following assessment periods is determined using the tenth percentile method:

- Day: Mon to Sat: 7am to 6pm, Sun & public holiday: 8am to 6pm
- Evening: Mon to Sun: 6pm to 10pm
- Night: Mon to Sat: 10pm to 7am, Sun & public holiday: 10pm to 8am

The summary of the rating background level (RBL) measured during the noise survey is shown in Table 1.

Table 1 Rating background level from NDY report

Period	Rating Background Level (RBL), L₀₀ (dBA)
Day:	
Mon to Sat: 7am to 6pm	44
Sun & public holiday: 8am to 6pm	
Evening:	44
Mon to Sun: 6pm to 10pm	44
Night:	
Mon to Sat: 10pm to 7am	41
Sun & public holiday: 10pm to 8am	

The existing substation to the south of the site is expected to be the dominant noise source in the area. Previous assessments from NDY report indicated that noise emissions from D1 stage 1 are expected to be below 36 dBA to the nearby residences. These measurements are therefore considered to be representative of the current noise environment on the site and appropriate to assess the background noise levels in the surrounding area for the purposes of assessing the potential impact of NEXTDC D2 Stage 1.

¹ NEXTDC Stage 1 Site Design Report (Acoustic Services), Revision 1, by NDY dated 26 September 2023

aurecon

3 Noise Regulation

3.1 Northern Territory noise management framework guidelines

The Northern Territory Noise Management Framework Guideline (NT Guideline) provides guidance to assign noise levels for various types of emissions. The project specific assigned noise level is derived by considering its two components: intrusiveness noise level and amenity noise level.

3.1.1 **Project intrusiveness noise level**

The intrusiveness noise level seeks to limit the degree of change a new noise source introduces to an existing environment. A noise source would generally be considered non–intrusive if the monitored average noise level (L_{Aeq}) for a period does not exceed the rating background noise level (RBL) by more than 5 dB(A) and is summarised in equation below. Intrusive noise levels are only applied to residential receivers.

Project Intrusiveness noise level L_{Aeq,15min}=rating background noise level+5 dB

Table 2 provides a summary of minimum assumed RBLs and project intrusiveness noise levels. This represents the lowest applicable project intrusiveness noise levels where background noise levels have not been measured on site.

Period	Min assumed rating background level (RBL), L₀₀ (dBA)	Min project intrusiveness noise level (L _{Aeq,15min}) (dBA)
Day: Mon to Sat: 7am to 6pm Sun & public holiday: 8am to 6pm	35	40
Evening: Mon to Sun: 6pm to 10pm	30	35
Night: Mon to Sat: 10pm to 7am Sun & public holiday: 10pm to 8am	30	35

Table 2 Minimum assumed RBLs and project intrusiveness noise levels

3.1.2 **Project amenity noise level**

To limit continuing increases in noise levels from application of the intrusiveness level alone, the ambient noise level within an area from all industrial noise sources combined should remain below the recommended amenity noise levels specified in Table 3 where feasible and reasonable.

For this project, all residential receivers have been identified as 'Urban' as they are in the Central Business (CB) zone. The recommended amenity noise levels are intended to protect against noise impacts such as speech interference, community annoyance and some sleep disturbance.

Since the night-time amenity noise criterion is the most stringent, it is the controlling time-period. To ensure that industrial noise levels remain within the recommended maximum assigned amenity noise levels for an area, a project specific amenity noise level applies for each new source of industrial noise as follows:

Project Amenity noise level L_{Aea.15min} = recommended amenity noise level - 5 dB

Table 3 Recommended maximum assigned amenity noise levels

Receiver	Noise amenity area	Time of the day	Recommended maximum assigned a menity noise level, L _{Aeq} ,dB A
Residential	Urban	Day	60
		Evening	50
		Night	45
Industrial premises	All	When in use	70

3.1.3 Establishing project specific assigned noise level

The project specific assigned noise level reflects the most stringent noise level requirement from the noise levels derived from both the project intrusiveness noise level and project specific amenity noise level. They set the benchmark against which noise impacts and the need for noise mitigation are assessed. Applying the most stringent requirement as the project specific assigned noise level ensures that both intrusive noise is limited, and amenity is protected.

3.2 Typical operation and emergency testing

Based on Section 3.1 and the measured RBLs in Section 2.1, a summary of the project specific assigned noise levels is derived in Table 4 below.

Period	Measured Rating Background Level (RBL), L₀₀ (dBA)	Project Intrusiveness Noise Level L _{Aeq,15min} (dBA)	Project Specific Amenity Noise Level for Industrial Development (dBA)	Project Specific Assigned Noise Level (dBA)
Day: Mon to Sat: 7am to 6pm Sun & public holiday: 8am to 6pm	44	49	55	49
Evening: Mon to Sun: 6pm to 10pm	44	49	45	45
Night: Mon to Sat: 10pm to 7am Sun & public holiday: 10pm to 8am	41	46	40	40

Table 4 Project Specific Environmental Noise Limits

Typical operation of the NEXTDC D2 Stage 1 datacentre facility will consist of all services plant equipment with the exception of the generators operating continuously 24 hours, 7 days a week. Therefore, the combined typical operational noise emitted by all equipment from the data centre facility should be designed to achieve the worst-case night period limit, i.e.: L_{Aeq} 40dBA at the adjacent residential boundaries.

Routine testing of the emergency backup generators would be scheduled to occur during the day period only. This would generally consist of the operation of a single generator unit together with a load bank unit. As this testing would be scheduled to occur during the day period, noise emissions should be designed to achieve the day period limit, i.e. L_{Aeq} 49 dBA.

aurecon

3.3 Emergency operation

The NT Noise Management Framework Guideline does not provide any guidance on expected criteria for noise emissions from back-up diesel generators that would only be used infrequently for maintenance and testing or in the event of a power failure.

The NSW Noise Policy for Industry (NPfI) which the NT Noise Management Framework Guideline is based on also does not provide criteria for the operation of generators used in the event of an emergency. As this type of event is rare and the impact would typically of short duration (less than one day), it is not 'feasible and reasonable' as defined in NPfI to design the noise emission from the generators to specific target noise levels.

The NPfl also notes that the criteria apply only to activities described in Schedule 1 of the Protection of the Environment Operations (POEO) Act. Under the 'Electricity generation' section, it states that the clause is not applicable to 'the generation of electricity by means of electricity plant that is emergency stand-by plant operating for less than 200 hours per year' which would apply in this case for generation during critical power failure.

On this basis it is considered that noise limits should not be applied to emissions during the emergency operation mode. However reasonable and practicable measures should be implemented to reduce noise emissions where feasible.

3.4 Recommended operational criteria

A review of the applicable NT regulations concerning environmental noise emissions has been undertaken. The following criteria are proposed for the three identified operational scenarios.

- For typical operational noise emissions, which does not include generator operation, a night criterion of LAeq 40 dBA would be the most stringent criterion and would dictate the noise mitigation for services plant equipment only.
- For generator testing, it is possible that a cumulative 200 hours of operational time per year may be exceeded. It is therefore recommended that testing should be limited to day periods only, and emissions should achieve the day period criterion of 49 dBA based on the methodology set out in NSW NPfI. We understand that testing would involve one generator at a time with a load bank.
- For emergency operations, it is proposed that the approach adopted in NSW is applied where no specific limit is applied to emergency operation. It is recommended that reasonable measures should be put in place to reduce noise from generators as far as is considered practical.

3.5 Construction noise

The Northern Territory Noise Management Framework Guideline (NT Guideline) applies to the management of construction noise in North Territory (NT). This guideline provides recommendations on standard construction hours and construction noise management levels (NMLs).

3.5.1 Recommended standard hours of construction work

Section 3.3.2 of the NT Guideline recommends standard hours for construction work as shown in Table 5:

Table 5 Recommended standard hours of work

Work type	Recommended standard hours of work	
Normal	Monday to Saturday: 7am to 7pm	
construction	and between 9am and 6pm Sundays or public holidays	
	Monday to Friday: 9am to 5pm	
Blasting	Saturday 9am to 1pm	
	No blasting on Sundays or public holidays	

NT Guideline notes that the recommended standard hours of work are not mandatory and acknowledge that some activities could be undertaken outside of the recommended standard hours of work, assuming all feasible and reasonable mitigation measurement are implemented to minimise impacts of surrounding sensitive land uses. These activities include:

- The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads
- Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm
- Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours
- Public infrastructure works that shorten the length of the project and are supported by the affected community, or
- Works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours



3.5.2 Recommended construction noise levels

Recommended assigned construction noise levels for residential and non-residential receivers are presented in Table 6 and Table 7 respectively.

Table 6 Recommended assigned construction noise	e levels for airborne noise at residential premises
---	---

Descriptor	Recommended assigned construction noise level at residences LAeq(15min)	How to apply
		The recommended assigned noise affected level represents the point above which there may be some community reaction to noise.
Monday to Saturday 7am to 7pm Sundays and public holidays 9am to 6pm	Recommended assigned noise affected level: RBL ¹ +10 dB	Where the predicted or measured L _{Aeq(15min)} is greater than recommended assigned noise affected level, proponents should apply all feasible and reasonable work practices to meet the recommended assigned noise affected level.
		Proponents should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details
		A strong justification would typically be required for works outside the recommended standard hours.
Outside recommended standard hours	Recommended assigned noise	Proponents should apply all feasible and reasonable work practices to meet the noise affected level.
		Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the recommended assigned noise affected level, proponents should negotiate with the community

1. RBL: Rating background level, L₉₀ (dBA)

Table 7 Recommended assigned noise levels for airborne noise at commercial and industrial premises

Land use	Management level dB(A) Leq(15min)
Industrial premises	75 dB (A)
Offices, retail outlets	70 dB (A)

3.5.3 **Project construction noise criteria**

The project-specific construction NMLs are detailed in Table 8 for residential receivers and Table 9 for nonresidential receivers. The NMLs have been calculated based on the RBLs from NDY report.

 Table 8 Residential construction NML

	Recommended standard hours NML L _{Aeq(15min)} dB	Outside of standard hours NML L _{Aeq(15min)} dB
All affected surrounding residential receivers	51	46

Table 9 Non-residential construction NMLs

Land use	Management level dB(A) Leq(15min)
Industrial premises	75 dB (A)
Offices, retail outlets	70 dB (A)

3.5.4 Construction noise impacts

At this stage a detailed construction methodology has not been established for the site. It is expected that the construction period would last for 18 months. Typical construction activities are expected on site which would be associated with standard commercial construction noise.

Once a detailed construction methodology is established it is recommended that a construction noise and vibration assessment is undertaken and a construction noise and vibration management plan established as required. The construction noise and vibration assessment would consider the expected construction activities and associated noise impacts together with recommended noise mitigation such as recommended methodologies, alternatives and any required scheduling.

It is expected that with typical construction noise mitigation and good work practices that the effects on the neighbouring properties from construction noise and vibration could be appropriately managed.

4 Equipment Schedules

4.1 Existing D1 Stage 1 noise emissions

The existing D1 Stage 1 site is located adjacent to the proposed D2 Stage 1 facility, however the two projects are considered to be separate and are located on separate lots. On this basis the two sites should be treated as separate developments and therefore cumulative noise for the two projects does not need to be considered. We highlight that the Project Amenity Noise Level criteria takes into consideration effects of cumulative noise from multiple nearby sites.

The noise impact assessment previously undertaken for D1 Stage 1 indicates that the predicted noise emissions to the nearby receivers is compliant with the applicable NT noise emission criteria.

4.2 Equipment Schedules

The D2 Stage 1 design includes the following key items of potentially noise generating equipment:

- Rooftop cooling towers
- OAP units
- Condensers
- Exhaust fans
- Roof top generator
- Load bank

Table 10 details the acoustic data utilised for the predictions based on the current mechanical and electrical specifications and design. The following operational scenarios have been assessed:

- Typical operation. Operational equipment includes: Cooling towers, OAP units, Exhaust fans, Condensers.
- Emergency testing. Operational equipment includes: Cooling towers, OAP units, Exhaust fan, one backup generator and one load bank, Condensers.

Should equipment selections change throughout the subsequent design stages, further acoustic review will be required to assess compliance with the applicable noise limits. Where equipment changes occur, additional acoustic mitigation may be required.

Table 10 D2 Stage1 Equipment Schedule

		Sound Power Levels (dB)					Total SWL			
Source	Number of items		Octave Band Frequency, Hz						dB(A)	
		63	125	250	500	1000	2000	4000	8000	
Cooling Tower ¹	6	75	75	70	64	65	66	58	51	71
Untreated Generator Exhaust ²	6	123	125	130	126	121	120	111	92	128
Untreated Generator engine surface noise ^{2,}		98	109	117	115	116	116	114	123	125
Client OAP unit ³	1	63	68	76	72	71	72	73	66	78
MCX OAP unit ⁴	2	64	70	71	70	67	68	67	60	74
Exhaust fan⁵	1	89	83	86	84	83	81	76	70	88
Load bank ⁶	1	100	97	95	91	91	90	88	81	97
Condenser ⁷	9	61	68	70	64	59	59	56	55	67

1. Cooling tower selection is BAC S3E-1424-07O/H.

2. Generator selection is MTU 16V4000 DS2500 G84F

3. Client OAP unit selection is Armcor XEP1200P3

4. MXC OAP unit selectin is Armcor DHP900P3

5. Exhaust fan selection is Fantech APPM080CP12/25

6. Load bank is 2MW unit is containerised within acoustic enclosure to reach 76 dB(A) at 1m. Unit used for generator testing and emergency mode only

7. Condenser unit selection is Daikin RXM95WVMA. Noise spectrum is from empirical condenser and scaled to reach 67 dBA sound power level.

4.2.1 Generator mitigation package

An acoustic treatment package shall be installed to the rooftop containerised generators. The treatment package should be designed by the generator container supplier (Parratech or similar) to ensure a sound pressure level of 68 dBA at 1m is not exceeded.

Indicative treatment will include:

- Two engine exhaust silencers in series
- Acoustic sound absorbing treatment to the inside of the container
- Acoustic louvres + acoustic attenuator to the container ventilation intake
- Two acoustic attenuators to the container ventilation discharge.

The engineering report for the generator container shall be reviewed by the project acoustic consultant during subsequent design stages to assess compliance with the environmental noise emission requirements. This may necessitate additional noise modelling.



5 Noise modelling

5.1 Methodology

Preliminary noise modelling of the NEXTDC D2 Stage1 site has been undertaken for the site to predict potential noise impacts to neighbouring premises.

The prediction methodology utilised is the International Standard ISO 9613-2: 1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of Calculation implemented using SoundPLAN v9.0 acoustics software package.

5.2 Noise Modelling

Calculations of noise emissions during the Typical and Emergency testing scenarios have been undertaken using SoundPLAN v9.0.

A 7-storey building is proposed on-site, consisting of a basement level, a ground floor, data halls on Levels 2 to 6, and Level 7 serving as the roof. Generators are proposed to be located on the roof in individual pre-fabricated containers with provisions for intake, discharge and exhaust ventilation with acoustic treatment. Cooling towers are also proposed to be located on the roof.

OAP fans are proposed to be located on the ground floor, and exhaust fans will be installed near the ceiling of the basement level. A load bank used during generator testing only is proposed to be on the ground floor next to the water tanks.



A 3D image of the modelled data centre building and surrounds is shown in Figure 3.

Figure 3 3D model of data centre building and surrounds

5.3 Assumptions and limitations

The following assumptions and limitations apply to the assessment:

- In all scenarios, all equipment operates at 100% capacity continuously
- For the generator testing scenario, a single generator will be operated independently. As a worst case scenario this has been assumed to be the generator located closest to the receiver on the Harvey Street side.
- Load bank is running during Generator Testing scenario, and is located on ground floor next to water tanks.
- The equipment has been assumed to not emit any acoustic characteristics that would result in penalties. Further review of equipment manufacturer data may be required during subsequent design stages to ensure no tonal penalties are required to be added to the predicted noise levels.
- Basement-level mechanical exhaust fans will be designed with spatial allowances for acoustic treatment and attenuators to emit noise levels that are negligible compared to the noise emission levels experienced by receivers from other equipment.

The following acoustics issues are beyond the scope of this study and have not been addressed:

- Noise emission from office building as this is not part of this project and inadequate information is currently available.
- Noise emission from UPS System, Kiosk Transformer etc. which are assumed to be negligible
- Noise emission from other smaller plant equipment or fans associated with the D2 expansion which have not been specified at this stage. The noise contribution from smaller plant is assumed to be negligible and equipment is readily able to have noise mitigation implemented during subsequent design stages.
- Cumulative overall environmental noise impact from both D1 Stage 1 and D2 Stage 1 as the projects are on different sites.
- Environmental noise impact during construction phase.

5.4 Results

Noise emissions from the site have been predicted based on proposed building layout and current plant selections at the nearest receivers to the NEXTDC D2 Stage 1 site.

5.4.1 Typical operation

The results of the noise prediction for typical operation are summarised in Table 11.

Table 11 Typical Operation noise emission predictions

Receiver	Predicted noise level Project noise limit, L _{Aeq} dB(A) L _{Aeq} dB(A)		Compliance?
Typical operation			
3 Harvey St	39	40	Y
12-16 Harvey St	38	40	Y

5.4.2 Generator testing

The results of the noise prediction for Generator testing scenario are summarised in Table 12.

 Table 12 Generator Testing noise emission predictions

Receiver	Predicted noise level L _{Aeq} dB(A)	Project noise limit, L _{Aeq} dB(A)	Compliance?
Generator testing			
3 Harvey St	49	49	Y
12-16 Harvey St	47	49	Y

6 Conclusion

The project specific requirements for environmental noise emissions have been determined for the surrounding area around the proposed NEXTDC D2 Stage 1 site situated in Darwin City.

A 3D computational model of the site has been developed to predict noise emissions to the surrounding premises. The model has been based on the current detailed design selections and plant layouts.

Noise mitigation has been developed for the site, which includes acoustic treatment to the emergency Generator containers, site layouts and the selection of appropriately low noise equipment. The noise mitigation measures have been coordinated with the various other disciplines including Mechanical Engineering, Electrical Engineering and Architecture.

The assessment has shown that noise emissions are predicted to comply with the applicable noise limits at the nearest noise sensitive areas with the current design for both the Typical and Generator Testing scenarios.

Appendix A Noise Contours

.





Document prepared by

Aurecon Australasia Pty Ltd

ABN 54 005 139 873 Aurecon Centre Level 8, 850 Collins Street Docklands, Melbourne VIC 3008 PO Box 23061 Docklands VIC 8012 Australia

T +61 3 9975 3000

F +61 3 9975 3444

E melbourne@aurecongroup.com

W aurecongroup.com







A better approach to traffic solutions



NEXT DC, 2 and 6 Ryko Court, Darwin Traffic Impact Assessment

Client // Hames Sharley (NT) Pty Ltd

Reference // 25T301

Date //30/01/2025

Next DC, 2 and 6 Ryko Court, Darwin- Traffic Impact Assessment

Document No:	25T301
Revision:	А
Date:	30/01/25
Client Name:	Hames Sharley (NT) Pty Ltd
Author:	Afshin Beigi

SJ Traffic Consulting	
ABN:	68 706 990 157
Mobile:	0451 501 408
Email:	af shin @ sjtraffic consuling.com.au

COPYRIGHT: The Concepts and information contained in this document are the property of SJ Traffic Consulting. Use or copying of this document in whole or in part without the written permission of SJ Traffic Consulting constitutes an infringement of copyright.

DISCLAIMER: SJ Traffic Consulting has prepared this report in accordance with the instructions of the Client. It is prepared solely for their specific use. It is non-assignable and SJ Traffic Consulting accepts no liability for its use by a third party.

Document History

Revision	Date	Description	Prepared By
А	30/01/25	Traffic Impact Assessment– Next DC, 2 and 6 Ryco	Afshin Beigi
		Court Darwin	

CONTENTS

1.0	INTRODUCTION	2
	1.1 BACKGROUND	2
	1.2 PROJECT SCOPE	2
2.0	EXISTING CONDITIONS	3
	2.1 SUBJECT SITE	3
	2.2 EXISTING ZONING	3
	2.3 SURROUNDING ROAD NETWORK	3
	2.4 PEDESTRIAN AND CYCLIST FACILITIES	4
	2.5 PUBLIC TRANSPORT	5
	2.6 TRAFFIC SURVEYS	5
3.0	PROPOSED DEVELOPEMENT	6
	3.1 DEVELOPMENT PROPOSAL	6
4.0	PARKING ASSESSMENT	7
	4.1 STATUTORY CAR PARKING REQUIREMENTS	7
	4.2 BICYCLE END OF TRIP FACILITIES	8
	4.3 LOADING BAYS	9
5.0	PARKING DESIGN REVIEW1	0
	5.1 CAR PARKING SPACE DIMENSION	0
	5.2 MOTORCYCLE PARKING 1	0
	5.3 PARKING FOR PEOPLE WITH DISABILITY	0
	5.4 BICYCLE PARKING LAYOUT 1	0
6.0	LOADING AND WASTE COLLECTION ARRANGEMENTS . 1	1
	6.1 LOADING AND WASTE COLLECTION	1
7.0	TRAFFIC IMPACT ASSESSMENT 14	4
	7.1 TRAFFIC GENERATION1	4
8.0	CONCLUSIONS AND RECOMMENDATIONS	5

1.0 INTRODUCTION

1.1 BACKGROUND

Hames Sharley (NT) Pty Ltd engaged SJ Traffic Consulting to prepare a traffic report to investigate the traffic impact of a proposed data centre at 2 and 6 Ryko Court, in Darwin City.

1.2 PROJECT SCOPE

This traffic report is intended to form part of a Development Application being prepared for submission to the Department of Infrastructure, Planning and Logistics (DIPL) and Darwin City Council and addresses the following issues:

- Assess the potential traffic impact of the proposed development on the surrounding road network
- The needs for all road users are accommodated in a safe and effective manner
- Proposed carpark layout and site access operates in a satisfactory manner and is designed in accordance with the standards

The report has been prepared in accordance with the Austroads document Guide to Traffic Management Part 12: Traffic Impacts of Developments (AGTM12).

In preparing this report, reference has been made to a number of background documents, including:

- Austroads, Guide to Traffic Management, Part 12: Traffic Impacts of Developments, 2009
- Austroads, Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections, 2009
- Roads and Traffic Authority. Guide to Traffic Generating Developments, Sydney, 2002
- NT Planning Scheme, Department of Infrastructure, Planning and Logistics, July 2020
- Australian Standards. AS2890 Parking facility Series: Part 1: Off-street car parking Part 6: Off-street parking for people with disabilities

2.0 EXISTING CONDITIONS

2.1 SUBJECT SITE

The subject site is located at 2 and 6 Ryko Court (Lot 9704 and 9703) in Darwin City. The subject site is currently unoccupied.

The subject site and surrounding road network are illustrated in Figure 1 below.

Figure 1 – Subject Site



2.2 EXISTING ZONING

The site is currently zoned CB (Central Business) in the Northern Territory Planning Scheme (NTPS).

2.3 SURROUNDING ROAD NETWORK

Ryko Court is a Council managed road which runs north from Harvey Street and terminates into a court bowl. It has a 5.5 m wide undivided carriageway with a northeast to southwest alignment. Kerbside parallel parking is permitted along the road. The default urban speed limit of 50 km/h applies to the road.

Figure 2 – Ryko Court



Harvey Street is a Council managed road which runs in a north-west to south-east direction. It connects from Garramilla Boulevard to the south-east and continues as Day Street to the northwest. Harvey Street provides a 10.4 m wide carriageway, accommodating two way traffic flow. Kerbside parallel parking is provided on both sides of the road for the majority of its length. A default speed limit of 50 km/h applies to Harvey Street.

2.4 PEDESTRIAN AND CYCLIST FACILITIES

Off-road shared paths are provided on both sides of Garramilla Boulevard, within 100 m of the site, providing convenient access for pedestrian and cyclists to the site.

An off-road shared path is also provided on the western end of Harvey Street, approximately 300 m west of the site.



Nexi DC, 2 ana o Kyko Couri, Darwin Traffic Impact Assessment

SJ Traffic Consulting

2.5 PUBLIC TRANSPORT

The closest bus stop to the site is located at the corner of Cavenagh Street and Garramilla Boulevard, approximately 550 m walking distance to the site.

Routes accessible from this stop include services linking to the Palmerston and Casuarina bus interchanges which provide access to further local services.

2.6 TRAFFIC SURVEYS

A traffic survey was undertaken at the intersection of Harvey Street and Garramilla Boulevard on 12 December 2024 between 7 am to 9 am and 3 pm to 6 pm. The peak hour traffic volumes are summarised in Figure 4 below.

Figure 4 – Peak hour traffic volumes



3.0 PROPOSED DEVELOPEMENT

3.1 DEVELOPMENT PROPOSAL

The proposal is to construct a five storey data centre with a lower ground level car park. The proposed facility will comprise of office areas on the ground floor, with switch rooms, data halls and services on the above ground levels.

We have been advised that the facility will operate 24 hours, 7 days a week, with up to 70 people at any one time, comprising of 40 staff and 30 customers.

The development will provide 12 x 90-degree angled car parking spaces on the lower ground floor (including one accessible space). Six motorcycle parking spaces and 27 bicycle parking spaces have also been provided.

A copy of the proposed development plans is included in Appendix A.

4.0 PARKING ASSESSMENT

4.1 STATUTORY CAR PARKING REQUIREMENTS

Statutory requirements for provision of car parking are set out in Clause 5.2.4.1 of Northern Territory Planning Scheme. The various components of the proposed development have been assessed based on the following:

- ground level office, including meeting rooms and breakout areas: office
- ancillary storage areas: warehouse
- data hall: the planning scheme does not provide car parking rates for a data centre. However, it is expected this area will not generate parking demand, and is treated as ancillary to the office component for this assessment.

On this basis, the parking requirements for the development is set out in Table 1 below.

Land use	Area m2	Parking rate	Parking requirement
Office	1,154	2 for every 100m2 of net floor area	23 spaces
Warehouse	309	1 for every 100m2 of net floor area	3 spaces
Total			26 spaces

Table 1: Parking requirements

The development has a statutory requirement of 26 spaces. The provision of 12 spaces on site therefore results in a parking shortfall of **14 spaces**.

Clause 5.9.1.12 outlines considerations that can be applied to reduce the number of car parking spaces required, subject to the consent authority.

Table 2 below summarises the reductions that can be applied to the car parking requirements.

Category	Description	Assessment	Parking Reduction
Motorcycle parking	Reduction of 1 car parking space for every 3 motorcycle parking spaces proposed, but only to a maximum of 1 motorcycle parking space for every 25 (or more) car parking spaces required by Clause 5.9.2.11	6 motorcycle parking spaces have been provided.	1 space
Bicycle parking	For any bicycle parking spaces proposed in excess of those required by the table to clause 5.3.7, a reduction of 1 car parking space for every 10 excess bicycle parking space	An excess of 23 bicycle parking spaces have been provided on site.	2 spaces

Table 2: Reduction in car parking spaces – Clause 5.9.2.12

Access to alternative	The development is located within 200 m	Off-road bicycle paths are	5 % (1 space)
transport options	of a dedicated off-road bicycle path or on-	provided along Garramilla	
	road bicycle lane	Boulevard, which is located	
		within 200 m of the site.	
Total parking reduction	n		4 spaces
Reduced parking requ	irement		22 spaces

Applying the above reductions, the reduced parking requirement is 22 spaces. The provision of 12 on-site parking spaces will therefore incur a shortfall of **10 spaces**.

4.2 BICYCLE END OF TRIP FACILITIES

Clause 5.3.7 of the NTPS specifies the requirements for end of trip facilities for new developments in Zones HR, CB, C, SC and TC. The development is located within a CB (Central Business) zone.

Table 5.3.7 outlines the minimum number of bicycle parking spaces and showers required. The various components of the proposed development have been assessed based on the following:

Component	Adopted use	Minimum number	Minimum number of
		of bicycle parking	showers
		spaces	
ground level office,	Office	1 space per 300m2	1 shower for up to
including meeting		net floor area	1500m2 net floor area,
rooms and breakout			plus 1 additional shower
areas			for up to every 1500m2
			thereafter.
ancillary storage areas	Non residential	1 space per 300m2	1 shower for up to 50
	building	net floor area	staff, plus 1 additional
			shower for up to every 50
			staff thereafter.

• data hall: the planning scheme does not provide bicycle parking rates for a data centre. However, it is expected this area will not generate bicycle parking demand, and is treated as ancillary to the office component for this assessment.

Land use	Area m2	Minimum number of bicycle parking spaces	Minimum number of showers
Office	1,157	4	1
Non residential building	309	1	1 (based on expected 40 staff)

Total 5 spaces 2 showers	I otal5 spaces2 showers	
--------------------------	-------------------------	--

Based on this, the proposed data centre will have a requirement of:

- 5 bicycle parking spaces
- 2 showers

27 bicycle parking spaces have been provided within the car park, within a secured storage area This provision is well in excess of the NTPS requirements, with an excess of 22 bicycle parking spaces.

Two showers have also been provided within the ground level, satisfying the requirement.

4.3 LOADING BAYS

Clause 5.2.5 to Part 5 of the NPTS outlines the loading bay requirements for new developments.

The minimum number of loading bays is specified under Table to Clause 5.2.5.

The various components of the proposed development have been assessed based on the following land uses:

- ground level office, including meeting rooms and breakout areas: office
- data centre: warehouse

Land use	Area m2	Minimum number of loading bays	Loading bay requirement
Office	1,154	1 loading bay for every 2000m2 of the total net	1
		floor area, or part thereof	
Data centre (Warehouse)	5,908	1 loading bay for a single occupation of a net floor	1
		area of 10 000m2 or less; and 1 loading bay for	
		every 5000m2 of net floor area or part thereof in	
		excess of 10 000m2	

Table 4: Loading requirements Table 5.2.5 of NTPS

Based on the above assessment, there is a requirement for 2 loading bays. However, as the facility will operate as a single occupancy, it is appropriate that a variation be sought to provide one loading bay for the proposed development.

A loading bay measuring 8.8 m x 2.5 m has been provided within the lower ground floor car park, satisfying the requirements of Clause 5.2.5.

5.0 PARKING DESIGN REVIEW

5.1 CAR PARKING SPACE DIMENSION

It is proposed to provide 12 x 90-degree angled car parking spaces (include one accessible space) within the lower ground floor car park. The proposed parking spaces have been provided at 2.5 m width and 5.5 m length, accessed via an aisle width of 6.6m, in accordance with Clause 5.2.4.4 of the Northern Territory Planning Scheme.

5.2 MOTORCYCLE PARKING

Six motorcycle parking spaces have been proposed within the lower ground floor car park. These have been provided with a width of 1.2 m and length of 2.5 m, in accordance with AS 2890.1-2004.

5.3 **PARKING FOR PEOPLE WITH DISABILITY**

One accessible space will be provided onsite. The proposed accessible space and adjacent shared area have been provided at a width of 2.5m and length of 5.5m, in accordance with AS2890.6:2009.

5.4 **BICYCLE PARKING LAYOUT**

27 bicycle parking spaces have been provided within the car park, within a secured storage area. The bicycle parking is provided in a combination of vertical wall racks and horizontal hoops, comprising of:

- 21 wall mounted racks, provided at 1.2m long and 500 mm wide, in accordance with AS 2890.3
- 6 horizontal bicycle hoops, provided at 1.8m long and 500 mm wide, in accordance with AS 2890.3.

The bicycle parking area is provided in a convenient location, easily accessible by staff.

6.0 LOADING AND WASTE COLLECTION ARRANGEMENTS

6.1 LOADING AND WASTE COLLECTION

Loading will occur within the lower ground level car park. The loading vehicle will access the site, reverse into the loading bay, and exit via the eastern exit point. Goods will be trolleyed between the loading bay and the delivery vehicle. Deliveries to the site is expected to be infrequent, undertaken with vehicles up to 8.8 m in length, and with arrivals managed by staff outside of business operating times.

A bin storage area will be provided on the north-eastern corner of the ground level car park. Waste collection will occur on site and will be undertaken by a 10.1m long waste collection vehicle. It is anticipated the 10.1 m long waste collection vehicle will be the largest vehicle servicing the proposed development.

A swept path assessment demonstrating the 10.1 m vehicle accessing the loading zone is shown below in **Error! Reference source not found.** to 7.

Figure 6 – Waste collection vehicle swept path





7.0 TRAFFIC IMPACT ASSESSMENT

7.1 TRAFFIC GENERATION

The NSW Roads and Maritime Services (RMS) (formerly Roads and Traffic Authority (RTA)) "Guide to Traffic Generating Developments" (the RTA Guide) provides trip generation rates for a variety of land uses. The RTA Guide does not provide trip generation rates for data centres. Therefore, the traffic generated by the development was determined empirically.

The following has been assumed:

- It is estimated there will be up to 40 staff on site at any one time
- Staff will all arrive within the AM peak hour and depart in the PM peak hour
- With the provision of bicycle parking and off-road shared paths in close proximity of the site, it is expected that a proportion of staff will cycle to work. For the purposes of this assessment, an estimation of 20 % of staff will cycle or walk to work
- No customers will arrive or depart the site during the AM and PM peak hours.

Based on this assumption, the development will generate 32 vehicle trips in the AM and PM peak periods.

It is anticipated that all vehicle movements will be arriving / departing to/from Garramilla Boulevard and Harvey Street.

The traffic generation of 32 trips per hour is minimal and will not impact the capacity of the surrounding road network and the level of service of the intersections in the area.

As such, there are no improvements required to the surrounding road network to accommodate for the additional traffic generated by the development.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis and discussions presented within this report, the following conclusions are drawn:

- 12 parking spaces will be provided on site. This represents a shortfall of **10 parking spaces**
- One loading bay has been provided within the lower ground floor car park
- The car park has been designed in accordance with AS 2890.1 and AS 2890.6
- Bicycle parking provision is in excess of the requirements, and have been designed in accordance with AS 2890.3
- Loading and waste collection will occur on-site within the carpark. The vehicle can enter and exit the carpark in a forwards direction.
- The development will generate up to 32 vehicle trips in the peak hours. This is negligible and will have minimum impacts to the surrounding road network. The anticipated traffic generation will not require improvements or upgrades to the surrounding road network.

APPENDIX A

Development Plans
NORTHERN TERRITORY OF AUSTRALIA

Planning Act 1999 - sections 54 and 55

DEVELOPMENT PERMIT

DP23/0213

DESCRIPTION OF LAND THE SUBJECT OF THE PERMIT

Lot 09702 Town of Darwin 8 RYKO CT, DARWIN CITY

APPROVED PURPOSE

To use and develop the land for the purpose of a Data Centre, in accordance with the attached schedule of conditions and the endorsed plans.

VARIATIONS GRANTED

Clauses 5.2.4.4 (Layout of Car Parking Areas), 5.2.5 (Loading Bays), 5.5.15 (Design in Commercial and Mixed Use Areas) and 5.5.16 (Active Street Frontage) of the Northern Territory Planning Scheme 2020.

BASE PERIOD OF THE PERMIT

Subject to the provisions of sections 58, 59 and 59A of the *Planning Act 1999*, this permit will lapse two years from the date of issue.

Digitally signed by Adelle Godfrey Date: 2023.09.01 13:31:22 +09'30'

ADELLE GODFREY Delegate Development Consent Authority 1 September 2023

DEVELOPMENT PERMIT DP23/0213

SCHEDULE OF CONDITIONS

CONDITIONS PRECEDENT

- Prior to the endorsement of plans and prior to commencement of works, amended plans to the satisfaction of the consent authority must be submitted to and approved by the consent authority. When approved, the plans will be endorsed and will then form part of the permit. The plans must be drawn to scale with dimensions and must be generally in accordance with the plans submitted with the application but modified to show:
 - Additional landscaping that achieves compliance with Clause 5.2.6.2 (Landscaping in Zone CB) of the NT Planning Scheme 2020.
- 2. Prior to the endorsement of plans and prior to commencement of works, a landscape plan to the satisfaction of the consent authority must be submitted to and approved by the consent authority. When approved, the plan will be endorsed and will then form part of the permit. The plan must be drawn to scale with dimensions. The landscaping plan must be generally in accordance with the landscape concept plan dated (May 2023) prepared by TCL and incorporate additional landscaping required under condition 1 of this permit. The plan must include a planting schedule of all proposed trees, shrubs and ground covers, including botanical names, common names, pot sizes, sizes at maturity, and quantities of each plant. All species selected must be to the satisfaction of the consent authority.
- 3. Prior to the commencement of works (including site preparation), an engineered plan completed by a suitably qualified civil engineer demonstrating the on site collection of stormwater and its discharge into the local underground stormwater drainage system, shall be submitted to, and approved by the City of Darwin, to the satisfaction of the consent authority. The plan shall include details of site levels, and Council's stormwater drain connection point/s and connection details.
- 4. Prior to the commencement of works, a traffic impact assessment report is to be prepared by a suitably qualified traffic engineer in accordance with the Austroads Document Guide to Traffic Management Part 12: Traffic Impacts of Developments, in the report structure provided as Appendix C of that document, with particular attention to vehicular, pedestrian, cyclist and public transport issues and opportunities. The Traffic Impact Assessment report is to also include swept paths for waste collection vehicles entering and exiting the site and identifying any necessary upgrades to the surrounding street network to the requirements of the City of Darwin, to the satisfaction of the consent authority.
- 5. Prior to the commencement of works (including site preparation), in principle approval is required for the crossover and driveway to the site from the City of Darwin road reserve, to the satisfaction of the consent authority.
- 6. Prior to the commencement of works (including site preparation), the applicant is to prepare a dilapidation report covering infrastructure within the road reserve to the requirements of the City of Darwin, to the satisfaction of the consent authority.

- 7. Prior to the commencement of works (including site preparation), a Waste Management Plan demonstrating waste disposal, storage and removal in accordance with City of Darwin's Waste Management Guidelines, shall be submitted to and approved by the City of Darwin, to the satisfaction of the consent authority.
- 8. Prior to the commencement of works (including site preparation), the applicant is to prepare a Site Construction Management Plan (SCMP) to the requirements of the City of Darwin, to the satisfaction of the consent authority. The SCMP should specifically address the impact to Council owned public spaces and include a waste management plan for disposal of waste to Shoal Bay, traffic control for affected City of Darwin roads, haulage routes, storm water drainage & sediment control, use of City of Darwin land, and how this land will be managed during the construction phase.

GENERAL CONDITIONS

- 9. The works carried out under this permit shall be in accordance with the drawings endorsed as forming part of this permit.
- 10. The owner of the land must enter into agreements with the relevant authorities for the provision of water supply, sewerage, electricity and telecommunication networks to the development shown on the endorsed plan in accordance with the authorities' requirements and relevant legislation at the time.

Please refer to notations 2, 3 and 4 for further information.

- 11 Any developments on or adjacent to any easements on site shall be carried out to the requirements of the relevant service authority to the satisfaction of the consent authority.
- 12.Stormwater is to be collected and discharged into the drainage network to the technical standards of and at no cost to the City of Darwin, to the satisfaction of the consent authority.
- 13 All works recommended by the traffic impact assessment are to be completed to the requirements of the City of Darwin, to the satisfaction of the consent authority.
- 14.The kerb crossovers and driveways to the site approved by this permit are to meet the technical standards of City of Darwin, to the satisfaction of the consent authority.
- 15.No fence, hedge, tree or other obstruction exceeding a height of 0.6m is to be planted or erected so that it would obscure sight lines at the junction of the driveway and the public street to the requirements of the City of Darwin, to the satisfaction of the consent authority.
- 16.Storage for waste disposal bins is to be provided to the requirements of the City of Darwin, to the satisfaction of the consent authority.
- 17.Upon completion of any works within or impacting upon existing road reserves, the infrastructure within the road reserve shall be rehabilitated to the standards and requirements of the City of Darwin and returned to the condition as documented in the dilapidation report.
- 18.Before the use or occupation of the development starts, the areas set aside for the parking of vehicles and access lanes as shown on the endorsed plans must be: a. constructed;

- b. properly formed to such levels that they can be used in accordance with the plans;
- c. surfaced with an all weather seal coat;
- d. drained;
- e. line marked to indicate each car space and all access lanes; and
- f. clearly marked to show the direction of traffic along access lanes and driveways to the satisfaction of the consent authority.

Car parking spaces, access lanes and driveways must be kept available for these purposes at all times.

- 19.The loading and unloading of goods from vehicles must only be carried out on the land and within the designated loading bays, to the satisfaction of the consent authority.
- 20 All substation, fire booster and water meter arrangements are to be appropriately screened to the requirements of Power and Water Corporation and NT Fire and Emergency Services, to the satisfaction of the consent authority. Any screening should soften the visual impact of such infrastructure and details will need to be resolved in consultation with the Power and Water Corporation, and NT Fire and Emergency Services.
- 21 All air conditioning condensers (including any condenser units required to be added or replaced in the future) are to be appropriately screened from public view, located so as to minimise thermal and acoustic impacts on neighbouring properties and condensate disposed of to ground level in a controlled manner to the satisfaction of the consent authority.
- 22 All pipes, fixtures, fittings and vents servicing any building on the site must be concealed in service ducts or otherwise hidden from view to the satisfaction of the consent authority.
- 23.The development must be designed and constructed to comply with the acoustic treatment recommendations of the Acoustics Spatial Co Ordination Report, dated 28 June 2023, prepared by Norman Disney and Young, and a statement from a suitably qualified acoustic engineer confirming compliance with Acoustics Report must be submitted prior to occupation of the development, to the satisfaction of the consent authority.
- 24.Before the use/occupation of the development starts, the landscaping works shown on the endorsed plans must be carried out and completed to the satisfaction of the consent authority.
- 25.The landscaping shown on the endorsed plans must be maintained to the satisfaction of the consent authority, including that any dead, diseased or damaged plants are to be replaced.

NOTES

- 1. The Authority advises the applicant that the building and façade must be constructed in accordance with the materials shown on Drawings numbered DA400(N) and DA401(L), dated 29/06/2023, prepared by Hames Sharley and the drawings endorsed through this permit.
- 2. The Power and Water Corporation advises that the Water and Sewer Services Development Section

(<u>waterdevelopment@powerwater.com.au</u>) and Power Network Engineering Section (<u>powerdevelopment@powerwater.com.au</u>) should be contacted via email a minimum of 1 month prior to construction works commencing in order to determine the Corporation's servicing requirements, and the need for upgrading of on site and/or surrounding infrastructure.

- 3. All developers, including owner builders, are required to comply with Commonwealth telecommunications requirements. Under Commonwealth law, developers are generally required to provide fibre ready pit and pipe in their developments at their expense. Developers may be able to access an exemption from these arrangements in some circumstances. For more information visit <u>www.infrastructure.gov.au/tind</u>
- 4. If you choose nbn to service your development, you will need to enter into a development agreement with nbn. The first step is to register the development via <u>http://www.nbnco.com.au/develop or plan with the nbn/new developments.html</u> once registered nbn will be in contact to discuss the specific requirements for the development. Nbn requires you to apply at least 3 months before any civil works commence. All telecommunications infrastructure should be built to nbn guidelines found at <u>http://www.nbnco.com.au/develop or plan with the nbn/newdevelopments/builders designers.html</u>
- 5. Transport and Civil Services Division, Department of Infrastructure, Planning and Logistics advises that surface stormwater run off from the development site onto the Garramilla Boulevard Road reserve is not permitted.
- 6. Any proposed works on/over City of Darwin property shall be subject to separate application to City of Darwin and shall be carried out to the requirements and satisfaction of City of Darwin.
- 7. Designs and specifications for landscaping of the road verges adjacent to the property shall be submitted for approval by City of Darwin and all approved works shall be constructed at the applicant's expense, to the requirements of City of Darwin.
- 8. Notwithstanding the approved plans, any proposed signage for the site shall be subject to a separate assessment in accordance with City of Darwin Policy Number 42 Outdoor Advertising Signs Code.
- 9. This development permit is not an approval to undertake building work. You are advised to contact a Northern Territory registered building certifier to seek a building permit as required by the *Northern Territory Building Act 1993* before commencing any demolition or construction works.
- 10 Any proposed works which fall within the scope of the *Construction Industry Long Service Leave and Benefits Act 2005* must be notified to NT Build by lodgement of the required Project Notification Form. Payment of any levy must be made prior to the commencement of any construction activity. NT Build should be contacted via email (info@ntbuild.com.au) or by phone on 08 89364070 to determine if the proposed works are subject to the Act.

























Drawing number <u>2023/0</u>228/13 Referred to in Permit No: DP23/0213

NOTES

DEMOLITION NOTES INCUTTOR NOTE: COMPLETE FULL DILAMDATION REPORT OF STEL KERBS, CROSS OVERS, FOOTPATHS, MILEDATE ROAD SUFFACES SUPERIOLISING THE STEL VERETATION MULCH LEVELS, SERVICES, MOR PAYNG, REPORT TO BE CIRCULATED TO CLEMT, PROJECT MANAGER ADD CONJUNTS PHON TO MAN REQUIRED COMMENS OF AN STEL.

2. EXTENT TO BE DEMOLISHED SHOWN IN RED

REFER TO GEOTECHNICAL SURVEY FOR SUB-SURFACE FEATURES.

ALL WORKS SUBJECT TO STRUCTURAL ENGINEER DESIGN & DETAIL AND SPECIALIST SUB-CONTRACTOR METHOD STATEMENT.

5. ALLOW FOR BREAKING UP AND REMOVAL FROM SITE ANY ITEMS NO LONGER REQUIRED.

REFER TO RELEVANT ENGINEER'S DRAWINGS FOR CAPPING & SEALING OF REDUNDANT EXISTING SERVICES. SERVICES TO BE CUT AND SEALED IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS.

8. CONTRACTORS TO INSPECT & CHECK ON SITE PRIOR TO DEMOLITION.

FOR INFORMATION ON OR ABOUT EXISTING SERVICES REFER RELEVANT CONSULTANTS DRAWINGS.

THIS DRAWING TO BE READ IN CONJUNCTION WITH SITE SURVEY, STRUCTURAL CIVIL AND SERVICES ENGINEERS DOCUMENTATION.

11. MAKE GOOD OR PROVIDE NEW AS REQUIRED TO ALL EXISTING ADJOINING SURFACES TO BE RETAINED, THAT ARE AFFECTED BY THE WORKS

12. ALL DEMOLITION UNDERTAKEN TO COMPLY WITH AS 2801

32 DEMOLTEND RAWINGS TO BE READ IN COMJUNCTION WITH THE ARCHTECTURAL DEMOLTENS SPECIFICATION AND OTHER RELEVANT CONSULTANT DOCUMENTATION A DISCREPANCY IS DEMOLTING CONSULT ARCHTECT PRIDE TO COSTING AND / OR PROCUREMENT.

EXTENT OF BUILDING / STRUCTURE

REFER TO SPECIFICATION AND MATERIALS SCHEDULE FOR DETAILS OF CEILING FINISHES AND ASSOCIATED FIXTURES.

AND ASSOCIATED PATORES 2. REFER TO ELECTRICAL, MECHANICAL, FIRE (WET AND DRY, IF APPLICASIE) DOCUMENTATION IN CONJUNCTION WITH THIS DRAWING TO COORDIVATE CELLING MOUNTED SERVICES, REFER TO ARCHITECT ANY DISOREPANCIES OR CLASHES BETWEEN SERVICES TO RE INSTALLED REFER TO INSULATION DIAGRAMS & SPECIFICATION FOR TOTAL INSULATION EXTENT. TO BE REVIEWED IN CONJUNCTION WITH SECTION J REPORT

GENERAL ARRANGEMENT PLANS NOTES

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE DEFORE COMMENCING ANY WORK ON SITE OR PRODUCING SHOP ORAWINGS WHICH MUST BE SUBMITTED FOR REVIEW BEFORE MANUFACTURING.

ASSEMBLE ALL WALLS IN ACCORDANCE WITH WALL STIFFENING AND SUPPORT DETAILS ON STRUCTURAL ENGINEER'S DRAWINGS.

ALL PRICESSIDE PROVIDED S DRAMMOSS A ALL PRICESSIDE APPLICABLE SERVICES OF EQUIPMENT AS SPECIFIED IN NOC 02.7 THAT ARE INSTALLED ALONG PATH OF EGRESS TO NOLDUE SMOKE SEALS TO DORGE AND NOC COMPUTING SEALS TO DORGE AND NOC COMPUTING SEALS TO DORGE AND NOC COMPUTING SEALS DO DORGE AND PROCEED. REFER DOOR SCHEDULE, DOOR HARDWARE AND SPECIFICATION FOR DEFAILS.

LOUVRE NUMBER

WALL TYPE WALL HEIGHT

CAR001 CAR001 MATERIAL / ITEM-

PNT001 SELECTED FINISH-REFER SCHEDULES

MATERIAL / ITEM SCHEDULE

CELING NOTES

KEYNOTE LEGEND

GLAZING SYSTEM NUMBER

NI-01A ROOM NUMBER + DOOR LETTER

WALL HEART CODE: A - FULL HEIGHT TO UNDERSIDE OF STRUCTURE B - WALL TOOM ABOVE CE ING HEIGHT C - WALL TO UNDERSIDE OF CEILING D - REFER TO NOMINATED DETAIL E - REFER TO ELEVATIONS

LEGEND

ELEVATION NOTES

1. ROOF ACCESS AND FALL ARREST SYSTEMS SHOWN ON DRAWINGS ARE FOR DESIGN INTENT DALY, FPAL SYSTEM TO BE DESIGNED AND SUPPLIED BY ACCESS SAFETY CONSULTANT.

WALL SCHEDULE NOTES 1. STUD SPACING FOR ACOUSTICALLY RATED WALLS TO NOT BE REDUCED FROM 60mm CTS UNLESS NOTED OTHERWISE. MINIMUM STUD GAUGES FOR ACOUSTICALL RATED WALLS IS 0.55 BMT UNLESS NOTED OTHERWISE

DOORS NOTES

1. REFER TO 3000 PLAN SERIES FOR DOOR LOCATIONS

2. REFER TO DOOR SCHEDULE DRAWINGS FOR DOOR ELEVATION DIAGRAMS. THIS DRAWING IS INTENDED AS GENERIC QUIDE FOR DOOR FURNITURE AND HARDWARE SET OUTS, NOT ALL FURNITURE IS SHOWN OR REQUIRED.

3. THIS SCHEDULE IS TO BE READ IN CONJUNCTION WITH SPECIFICATIONS, DOOR HARDWARE SCHEDULE PROVIDED BY ASSA ABLOY IN THE ARCHITECTURAL SPECIFICATIONS AND OTHER RELEVANT CONSULTANT DOCUMENTATION, IF DISCREPANCY IS DENTIFIED CONSULT ARCHITECT PRIOR TO COSTING AND J OR PROCUREMENT.

REFER TO MECHANICAL ENGINEERS DRAMINGS FOR UNDERCUT OR VENTILATION GRILLES TO DOORS.

REFER TO SECURITY CONSULTANT DRAWINGS FOR SECURITY CONTROLLED/ MONTORED DOORS DETAILS, ALL HARDWARE REQUIRING SECE APPROVAL, MUST BE CONFIRMED THAT APPROVALS ARE VALD AT THE TIME OF COSTINUA AND PRIOR TO PROCUREMENT.

ALL DOORS ARE TO BE PROVIDED WITH ALL COMPONENTS AND ACCESSORIES TO MEET ALL ACOUSTIC, FIRE, DDA AND SECURITY REQUIREMENTS

PROVIDE ALL SECONDARY STEEL FRAMING TO SUPPORT DOOR LEAFS AND HARDWARE COMPONENTS.

FORCE TO OPEN REQUIREMENTS NOT TO EXCEED 20NM FOR DDA USE AND 110NM FOR GENERALUSE.

EXTERNAL DOORS OPENING OUT SHALL BE OTTED WITH DRIP SEALS COUNTAL ENT TO

RAVEN RP67 TO STOP WATER POOLING ON TOP OF THE DOOR IN WET WEATHER, ALL EXTERNAL DOORS SHALL HAVE DRIP SEALS

11. 30% LUMINANCE CONTRAST REQUIRED BETWEEN LEAF & WALLIFRAME/ARCH TRAVE IN ACCORDANCE WITH AS 1428-1-2009

12. DOORS TO DATA HALLS AND MECHANICAL SERVICES CORRIDORS SHALL BE FITTED WITH APPROPRIATE HARDWARE TO ASSIST WITH OPENNIG WHERE OFFERBATAL PRESSURES OCCURS BETWEEN THE ROOMS. THE REQUIRED FORKET TO HOLD AND OPEN A DOOR DOES NOT EXCEED XM AND DOOR

DOOR DOES NOT EXCEED 201 AND DOOR CONTROLS COMPLY WITH CLAUSE 13.5 of AS1428.12009.COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL FORCE CALCULATIONS.

13. LATCH DEVICE AND OPERATION OF DOORS IN RECURED EXITS (FORMING PART OF A RECURED EXITS (FORMING PART OF A TO A RECURED EXIT) WILL BE SELECTED AND INSTALLED IN ACCORDANCE WITH BACAD2.21 AND MOUNTED AT A HEIGHT BETWEEN 900-1100MM.

10. LOCKSMITH MUST BE SCEC APPROVED.

PARTITION TO BE INSTALLED IN ACCORDANCE WITH MUNUFACTURERS REQUIREMENTS UNLESS NOTED OTHERWISE

MAKE ALLOWINGE FOR ADDITIONAL NOGGINGS AND PLYWCODISTEEL SHEET SUBSTRATE BBH/ND PLASTERBOARD WAL UNINGS AS STRUCTURAL SUPPORT FOR NISTALLATION OF AVECUMENT. REFER NISTALLATION OF AVECUMENT. REFER NTERIOR ELEVATIONS FOR LOCATIONS.

REFER TO SECURITY CONSULTANT DRAWINGS FOR FURTHER SPECIFIC DETAILS & REQUIREMENTS FOR PHYSICAL SECURITY & REQUIREMENTS FOR PHYSICAL SECUR WALL TYPES, POSITION STRUCTURAL PLYWOOD/STEEL SHEET SHEETING EXTERNALLY TO THE SECURE ROOM OR

CONFIRM WITH SECURITY CONSULTANT WHEN MULTIPLE SECURE ROOMS ADJA 6. STEEL STUDWORK BMT CALCULATIONS AS PER MANUFACTURERS SPECIFICATION UNLESS OTHERWISE NOTED IN THE WALL SCHEDULE BELOW, WHERE STRULATED TO MEET SECURITY REQUIREMENTS.





NOTE: REFER TO FACADE ENGINEER'S DOCUMENTATION FOR EXTERNAL GLAZING U VALUES.





E = =] DENOTES CONCRETE WALLS / COLUMNS

CNJ

_T.M.I

D.G.

EW

OF.

DENOTES SLAB EDGE DENOTES CONSTRUCTION JOINT, REFER TO STR ENG DETAIL

DENOTES TEMPORARY MOVEMENT JOINT, REFER TO DETAIL

25mm DRIP GROOVE

FLOOR WASTE OUTLET

OVERFLOW OUTLET

C.N.J.

т.м.ј.

FW

OF

DENOTES CONSTRUCTION JOINT, REFER TO DETAIL

DENOTES TEMPORARY MOVEMENT JOINT, REFER TO DETAIL

FLOOR WASTE OUTLET

OVERFLOW OUTLET

CONCRETE PROI	FLE PLINTH & COLUMN SETOUT	CELING	EGEND
77771600_	SLAB SET-DOWN IN mm	2700	- CELING TYPE - REFER CELING LEGE - CELING HEIGHT ABOVE FLOOR LEVEL
FEI 9.000m	ENISHED FLOOR LEVEL	•	CEILING GRID SETOUT POINT
		AP	600x600 CELING ACCESS PANEL
SSL 9,000m	STRUCTURAL SLAB LEVEL		2HR FIRE RATED CEILING
	DENOTES BONDEK SLAB TO STR. ENGINEER'S DETAILS	\square	VENTILATION DIFFUSER 600x600 MM
2.002	DENOTES INSITU REINFORCED	1 940	RETURN AIR GRILLE
5 A	CONCRETE SLAB TO STR. ENGINEER'S DETAILS		FIRE SPRINKLER- SEMI RECESSED
	DENOTES EXTENT OF 100MM	Ø	FIRE SPRINKLER - NO CEILING
	TOPPING, POUSHED	\ ☆	SINGLE STROBE
~ ~ ~ ~	oononere	88	DUAL STROBE
∞	SLAB SETDOWN	6	HEAT DETECTOR
XXX		0	RECESSED SPEAKER
	DENOTES PLINTHS 200mm MINIMUM ABOVE HIGHEST	Ø	SURFACE MOUNTED SPEAKER
	FALL POINT. @SSL71.505	ß	SMOKE DETECTOR
	DENOTES PLINTHS 200mm MINIM M ABOVE HIGHEST	0	MOTION SENSOR
	FALL POINT. @SSL71.515	Ř	EMERGENCY EXIT SIGN
	DENOTES PLINTHS 200mm		BATTEN LIGHTING
	FALL POINT. @SSSL71.545		EMERGENCY BATTEN LIGHTING
	DENOTES PLINTHS 200mm		EMERGENCY LIGHTING
	MINIMUM ABOVE HIGHEST	0	DOWNLIGHT
	PALE POINT. @BOLT 1.000	0	TEMPERATURE/HUMIDITY SENSOR
	DENOTES PLINTHS 200mm MINIMUM ABOVE HIGHEST	函	GAS SUPPRESSION NOZZLE
	FALL POINT, @SSL/1.805		SECURITY CAMERA
	DENOTES PLINTHS 200mm MINIMUM ABOVE HIGHEST FALL POINT. @SSL71.665		
	DENOTES PLINTHS 250mm MINIMUM ABOVE HIGHEST FALL POINT. @SSL71.690		
==]	DENOTES CONCRETE WALLS / COLUMNS		

966600 D ТЕСНИСКОВИ-ТИК. 260600 C 1970 260700 D 10 ТЕСНИСКОВИ-ТИК. 260700 D 10 ТЕСНИСКОВИ-СИМИТ 260700 L 10 ТЕСНИСКОВИ-СИМИТ 00000 L 20070100 DATE NG. REVEND HISTORY DRW. С.Н. С
NOTE 1. ALL DUANINGS TO BE READ H 3. ALL DUANINGS TO BE READ SECURICATION 2. DO NOT SCALE FROM RAWINGS 3. DO SHIFT ALL READ READERS OF SITE 4. DO SHIFT ALL READ READERS OF SITE 5. DOUST READERSON ANY DERCREMENTS 5. DOUST READERSON ANY OTHER TRADES ON SITE
PRINCIPAL CONSULTAINTS Architect HAMES BHARLEY Services NDY Structural PRITCHARD FRANCES
PRINCIPAL CONTRACTOR
CUBY CUBY N E X T D C NETO: NETO: Bitime (0) 400 1:41 2017 470
[Contractor / Consultant / Document Author] Hamesshares Shaarceau + 61 8 5381 0200
Locument Author Hoped Number
Sile Stage NEXTDC Project Number D1 S1 D1.001
Project Auguléss

2 HARVEY STREET, DARWIN, 0800, NT

> Project Name NEXTDC D1 - LOT 9702

GENERAL NOTES

wing Tible

Drewing Status TECHNICAL DESIGN - DRAFT						
CRAWN Author	DRAWN Author			0x0 08/09/2023		
CHECKED Checker	CHECKED Checker			0x0 08/08/2023		
Approver Approver	ADERCHED Approver			Date 08/09/2023		
Scale As indica	Sheet ted A1	File Name				
Dwg no:	Rev					
D1-AR	D					



LEGENDS:



D





Ð

DIAL BEFORE

08.09.2023

s shown @ A1

P3

Drawing No.

L005

Scale:





Drawing number 2023/0228/19

Referred to in Permit No: DP23/0213

PRELIMINARY LANDSCAPE SURFACES, FURNITURE & FIXTURES TYPE SCHEDULE

This schedule is to be referred to when reading the TCL documentation drawings.

Contraction advices private statewent information provided in this Schedule with Reference Mo. Generation: Generation: Generation: Detail Type Description Location Potelling Size / Profile Finish / Colour Notes PV01 Integraily Coloured Concrete DDA / Main pedestrain access areas - Refer Sufces Plan LO03 120mm alab, with thickened edge private / State / Profile July Epose Aggregate - finish to achieve PS not-soils / State / State / Profile Specification to satisty PS not-soils / State / State / State / Profile Specification:	Supplier - TCL Comment Supplier: Boral Darwin Contact: 08 6947 0480 ttps://www.boral.com.au/producta/concrete/decc vec.norete/c0/oues/concrete Upplier: NT Bitumen Contact: 08 6943 3269
Deal Type Description Location Poter Star / Pontie Finish / Colour Notes SUPFACES Supface Star / Star	Supplier - TCL Comment Supplier: Boral Darwin Contact: 08 8947 3480 tive=Concretelecoloured-concretel Supplier: NT Bitumen Tontact: 08 693 3298
SUMP-ACCES Integrally Coloured Concrete DDA / Main padeatinan access areas - Refer Surface Plan L003 D/L005 120mm alab, with thickende dega prolia. Refer Engineer's documentation landscare ruling. To be integrally coloured to match ethnical tacks ruling. To be integrally coloured to match ethnical landscare rules. To be integrally coloured to match ethnical landscare rules. To be integrally coloured to match ethnical landscare rules. The rules abject to continnation of above 3 x 30035000m mample participants to be whether to parement bandy - Refer Surfaces Plan L003 Integrally Coloured Concernitiation landscare rules. The rule rules are rules are rules. The rules are rules are rules are rules. The rules are rules are rules. The rules are rules are rules are rules. The rules are rules are rules. The rules are rules are rules. The rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules are rules are rules are rules. The rules are rules are rules are rules are rules are rules are rules. The rules are rules are rules are rules. The rules are r	Supplier: Boral Darwin Zontact: 08 6947 3480 tips://www.boral.com.au/products/concrete/decc ive-concrete/coloured-concrete supplier: NT Bitumen tontact: 08 6963 3299
PV01 Integrate Conductor Dote / Mar (Lobes at lates - Peer Surfaces Plan LOO3 01/LOO3 Dote / Mar (Lobes at lates - Peer Surfaces Plan LOO3 01/LOO3 PV02 Asphalt Pavement Dote / Mar (Lobes at lates - Peer Surfaces Plan LOO3 Refer Engineer's documentation of Lobes / Mar (Lobes at lates - profile, Pebra and Lobes / Mar (Lobes at lates / Mar (Lobes at lates - profile, Pebra and Lobes / Mar (Lobes at lates / Mar (Lobes at lates - profile, Pebra and Lobes / Mar (Lobes at lates - pebra and Lobes / Mar (Lobes at lates / Mar (Lobes at lates - profile, Pebrofile, Pebrofile, Pebra and Lobes / Mar (Lobes at late	Supplier: Drait Dawini Contact: 08 8947 3480 vttps://www.boral.com.au/products/concrete/decc ive-concrete/coloured-concrete Jupplier: NT Bitumen Sontact: 08 6983 3298
PM02 Asphalt Pavement Driveway & DD Pavise - Refer Sufaces Plan LOO3 Refer Engineer's NA Refer Engineer's Documentation Starting Refer Engineer's Documentation Starting PV03 Inorganic Gravel Pavement Cover Garden (nsubled gravel surrounds to pavement bands) - Refer Sufaces 02/L005 PM220 Quartzle Quarty Rubble Sample for Approval by Landscape Ref Architect Sample for Approval by Landscape Ref Architect Sample for Approval by Landscape Ref Cor http ED01 Steel Edge - Raised 100mm Invest Garden / GB01 Interface - Herer Sufaces Plan LO3 Q4/L005 Samm W typical Profile - installed (up 10) 400mm above FSL Refor / Rusted Finish Install to manufactures specifications Installed (up 10) 400mm above FSL Refor / Rusted Finish Install to manufactures specifications Installed (up 10) 400mm above FSL Refor / Rusted Finish Install to manufactures specifications Installed (up 10) 400mm above FSL Refor / Rusted Finish Install to manufactures specifications Installed (up 10) 400mm above FSL Refor / Rusted Finish Install to manufactures specifications Installed (up 10) 400mm above FSL Refor / Rusted Finish Install to manufactures specifications Installed (up 10) 400mm above FSL ED03 Steel Edge - Flash Fombose Redcor Lower Garden Bd (GB00) & Lower Garden Bd (GB00) & Lower Garden Bd (GB00) A Lower Garden Bd (GB00) A Lower Garden Bd (GB00) A Lower Garden Bd (GB10) A Lower Garden Bd (GB10) A Lower Garden Bd (GB10) A Lowe	Supplier: NT Bitumen Sontact: 08 8983 3298
PV03 Inorganic Gravel Pavement Lower Garden (cushed gravel survauid) to pavement band) - Refer Surfaces Plan L003 PM220 Quartizite Quary Rubble Sample for Approval by Landscape Architect Survey Flan ED01 Steel Edge - Raised 100m Formboss Redoor Lower Garden (GB0) Interface - Refer Surfaces Plan L003 04/L005 250mm H x 2.5mm W typical Polle- installed (up to) 400m above FSL Redoor Rusted Finish Install to manufacturers specifications Atter Corr Here Surfaces Plan L003 ED02 Steel Edge - Raised 400m Pormboss Redoor Lower Garden / GB01 Interface - Refer Surfaces Plan L003 06/L005 250mm H x 2.5mm W typical Polle- installed (up to) 400m above FSL Redoor Rusted Finish Install to manufacturers specifications Atter Corr Install (up to) 400m ED03 Steel Edge - Flash Formboss Redoor Lower Garden Bed (GB00) 8 Lisem / Garden Bed (GB00) R Lisem / Garden Bed (S01 / (GB00) Interface Refer Surfaces Plan L003 06/L005 800m H x 2.5mm W typical Polle- Installed Rush Redoor Rusted Finish Install to manufacturers specifications Atter Corr Interplace ED03 Steel Edge - Flash Formboss Redoor Lower Garden Bed (GB00) R Lisem / Garden Bed (S01 / (GB00) Interface Refer Surfaces Plan L003 06/L005 100mm H x 2.5mm W typical Polle - Installed Rush Redoor Rusted Finish Install to manufacturers specifications ED04 Concrete Kerb Edoing / Waterfable - R	.ttp://www.ntbitumen.com.au/
ED01 Steel Edge - Flailed Conver Garden / GB01 Heterace - Formboss Redcor 04/L005 20mm H x 2 5mm W typical Polife - installed (up to) 40mm above FSL Redcor Rusted Finish Install to manufacturers specifications Attention ED02 Steel Edge - Flailed 400mm Lower Garden / GB01 Hetrace - Refer Surfaces Plan L003 06/L005 250mm H x 2 5mm W typical Polife - installed (up to) 400mm above FSL Redcor Rusted Finish Install to manufacturers specifications Attention ED02 Steel Edge - Flailed 400mm Lower Garden / GB01 Hetrace - Refer Surfaces Plan L003 06/L005 S50mm H x 2 5mm W typical Polife - installed (up to) 400mm above FSL Redcor Rusted Finish Install to manufacturers specifications Attent Con Integration ED03 Steel Edge - Fluish Formboss Redcor Concrete Kerb Edoing / Watertable - Refer Surfaces Plan L003 04/L005 Install form W x 20 mw W typical Polife - installed Concrete Kerb Edoing / Watertable - Refer Surfaces Plan L003 04/L005 Refer Surfaces Plan L003 Install to manufacturers specifications Refer Surfaces Plan L003 ED03 Concrete Kerb Edoing / Watertable - Refer Surfaces Plan L003 Refer Surfaces Plan L003 Refer Surfaces Plan L003 Refer Surfaces Plan L003 Refer Surfaces Plan L003	Supplier: Rural Garden Supplies (Humpty Doo) Contact: 06 8988 5880 https://www.ruralgardensupplieshumptydoo.com/
ED02 Steel Edge - Raised 400mm Lower Garden / GB01 Interface - Refer Surfaces Plan L003 06/L005 S80mm H x 2.5mm W typical Poblic- installed (up to) 400mm above FSL Redeor Rusted Finish Install to manufacturers specifications Atte Corr Intp ED03 Steel Edge - Flush Formboss Redoor Lower Garden Bed (GB03) & Lawn / Garden Bed (SL01 / GB02) Interface - Refer Surfaces Plan L003 04/L005 100mm H x 2.5mm W typical Poblie - installed flush Redoor Rusted Finish Install to manufacturers specifications Atte Corr Intp ED03 Steel Edge - Flush Formboss Redoor Lower Garden Bed (SL01 / GB02) Interface - Refer Surfaces Plan L003 04/L005 100mm H x 2.5mm W typical Poblie - installed flush Redoor Rusted Finish Install to manufacturers specifications Finish ED04 Concrete Keb Edolan / Waterfable - Kerb Edolan / Waterfable - Kerb Edolan / Waterfable - Kerb Edolan / Waterfable / Born Refer Environers I00mm H x 230 (waterfable) / 80mm Colour to match PV01, Finish TBC Refer Environers Samm	
ED03 Steel Edge - Flush Formboss Redcor Lower Garden Bed (SB03) & Lawn / Garden Bed (SL01 / GB02) Interface - Refer Extraces Plan L003 04/L005 100mm H x 2.5mm W typical Profile - installed flush Redcor Rusted Finish Install to manufacturers specifications ED04 Concrete Keb Edolin / Watertable - Keb Edolin / Watertable - Keb Edolin / Watertable - Keb Edolin - Keb Edol - Refer Environmers Before Finish Install to manufacturers specifications Refer Finish	Itternate Supplier: Top End Steel Supplies Sontact: 0488 856 885 https://topendsteelsupplies.com.au/
ED04 Concrete Kerb Edging / Watertable - Kerb Edge - Refer Engineer's 110mm H x 230 (watertable) / 80mm Colour to match PV01. Finish TBC Refer Engineer's Sum	5. TWO 2. 10 ST 1. 10. 1777
Cast in-situ Refer Suffaces Plan L003 (kert) W (typical)	Supplier: APJ Concrete Sontact: 08 6953 1939 https://www.apjconcrete.com.au/
ED05 Trench Grate Refer Surfaces Plan L003 Manufacturers To be nominated by Civil SB Heelsefe Anti-Skip grate Install to manufacturers specifications Su grate Law Control Strengthere Architect Architect Control Strengthere Architect Control Strengthere Control Stren	supplier: Contractor to nominate for approval by andscape Architect Contact: https://www.acodrain.com.au/oroducts/klassikdra
MU01 Organic Mulch ALL Garden Beds N/A 75mm D Forest Mulch Specification to satisfy AS4419. Support Con https://www.news.action.com/https://wwww.news.action.com/https://www.news.action.com/https://w	Supplier: Rural Garden Supplies (Humpty Doo) Contact: 08 6968 5980 https://www.ruralgardensupplieshumptydoo.com/
Detail Type Description Location Detail Reference No. Size Finish Notes	Notes
FIXTURES	
FX01 Wheelstop Carpark NA 100mm H x 1630mm L x 150mm W Precast concrete Install to comply ASNU2 3800.12004. Sample, Protopy Layout, Sample, Totopy Layout, Sample, Totopy Layout, Sample, Totopy Layout, Sample, Totop Layout, Sample, T	iupplier: Contractor to nominate for approval by andscape Architect Contact:
FX02 Tactile nosing Strip Latham Arcsstolia Terrace Steps NA 10mm H x L (to match steps) x 50mm Luminance contrast in a range of 20% to 00% to 10b Install to comply ASNL 218.3: 2000 Step Step NA 10mm H x L (to match steps) x 50mm Luminance contrast in a range of 20% to 00% to 0	upplier: Contractor to nominate for approval by andscape Architect Contact:
FX03 Tactile pawers Terrace Steps and Kerb Ramp N/A 40mm H x 300mm L x 300mm W Lam Urbansone Engineered Tactile pawer	upplier: Contractor to nominate for approval by andscape Architect Contact:
Tree Planting Tree Stakes Garden Beds 05/L007 1800mm H x 50mm W & Sawn Stakes to be straight, and fee of major Super Stakes to be straight, and fee of major Super Stakes to be straight, and splits Contract of the state of the straight of the state of the straight of the state of the straight of the state of the state of the straight of the s	Supplier: Rural Garden Supplies (Humpty Doo) Contact: 08 8988 5880 https://www.ruralgardensupplieshumptydoo.com/
Detail Type Description Location Obtail Reference No. Size Finish Notes	Notes
FURNITURE	
Encode Upger Tarase Law (Proprietary) NA Upger Tarase 180mm L x 39mm D x 104e8 Blackbut batters with Zin primad ponder-coated Story drawings for Approval by support Story drawings for Approval by the support of th	

SOIL SCHEDULE

P2 26.05.23 PRELIMINARY40% SSUE P1 22.05.23 40% CO-ORDINATION SSUE

Rev Date Revision Details

This schedule is to	be referred to when read	ing the TCL documentation drawing	38.								
Detail Types direc	tly reference the drawing o	letails.									
Contractor to advi	se any discrepancies betv	ween information provided in this So	hedule with Referenced details, price	or to ordering of materials.							
Detail Type Description Location Detail Reference No. Size / Profile					Notes Supplier - TCL Comment						
TYPE A	Imported Top Soil -	Garden Beds (GB01-GB04)	N/A	Garden Blend - Premium Super Soil Mix. S		Specificatio	on to	Supplier: Rural Garden Supplies (Humpty Doo)			
	Type A					satisfy AS4	419, and	Contact: 08 8988 5880			
						'Soil Type'	as	https://www.ruralgardensupplieshumptydoo.com/			
						specified b	elow				
TYPE B	Imported Top Soil -	Garden Beds (GB01-GB04)	N/A	Type A Top Soil (Proprietary name)		Specificatio	on to	Supplier: Rural Garden Supplies (Humpty Doo)			
	Туре В	& Turf Lawn (SL01)		Screened sandy loam top soil		satisfy AS4	419.	Contact: 08 8988 5880			
								https://www.ruralgardensupplieshumptydoo.com/			
Soil Type	рН	Salt Content	Additives	Drainage rate	Fertiliser	I		1			Notes
Imported Top Soil	nH (water) 5.5.7.5	/FC1:5 soil:water)	(non-fertilizer) by volume 20%	as measured by saturated	Super Phosphate 250	Incited Part	+	Micromax Trace Element Mix	Magnesium sulnhate	Slow release fertilizer 12	Sample Testing Data for Approval
imported rop con	(unless otherwise	<0.6 dS/m [or equivalent	composted organic matter by	hydraulic conductivity, after	a/m ³	PastureBoo	sta	300 g/m ³	400 g/m ³	14 month release rate	by Landscape Architect
	specified)	measure of total dissolved salts	volume (To AS4454 - 2003)	additives incorporation: Not	o	(or similar)				80 g/sg m after planting	-,
		(TDS)]	,	less than 60mm/hr and no		600 g/m ³					
		0		greater than 120mm/hr. Test as							
				per AS4419-2003							



08.09.2023

Rev. P4

1

Scale: N/A

Drawing No. L002

NEXT DC D1 LANDSCAPE WORKS TZ GL DS DH GL DS DH DH DS DH GL DS BH Chk App 40% DOCUMENTATION SSUE 40% DOCUMENTATION SSUE



ERROR: undefined OFFENDING COMMAND: eexec

STACK:

/quit -dictionary--mark-

ERROR: undefined OFFENDING COMMAND: eexec

STACK:

/quit -dictionary--mark-