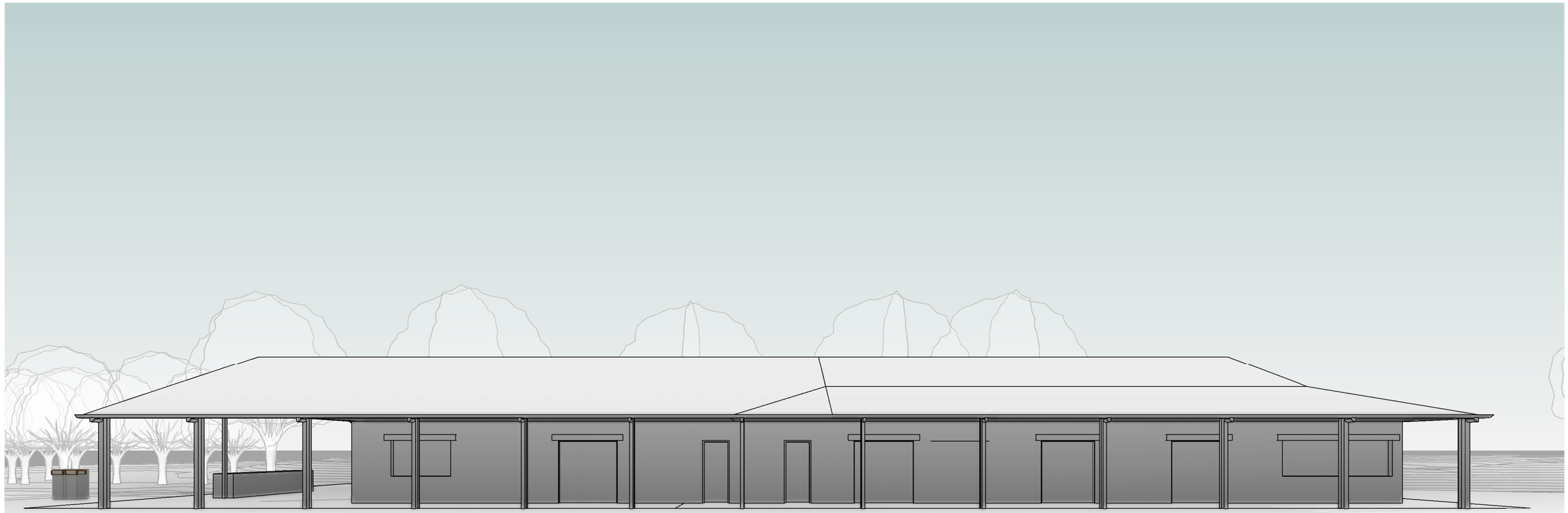
APPENDIX A. CONCEPT PLANS PREPARED BY CONYBEARE MORRISON INTERNATIONAL PTY LTD



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Bill Morrison NSW ARB No 2447

ISSUE		JOB	TITLE	JOB NO.	DRAWN	DRAWING NO.	REV:
A ISSUED FOR REF	10.05.19	**CINTRA PARK NETBALL COURT AMENITIES** CRANE STREET, CONCORD, NSW	**COVER** **DATE** 10/05/2019 3:18:11 PM	19023	AL	REF 0000	A

DRAWING LIST

SHEET NO.	SHEET NAME	REVISION
REF 0000	COVER	A
REF 0001	DRAWING LIST	A
REF 0010	SITE PLAN	A
REF 1001	GROUND FLOOR - FLOOR PLAN	A
REF 1003	ROOF PLAN	A
REF 2001	ELEVATION - NORTH	A
REF 2002	ELEVATION - SOUTH	A
REF 2003	ELEVATION - EAST	A
REF 2004	ELEVATION - WEST	A
REF 9001	PERSPECTIVE - GAME OBSERVATION SPACE	A
REF 9002	PERSPECTIVE - UNDERCOVER BBQ AREA	A

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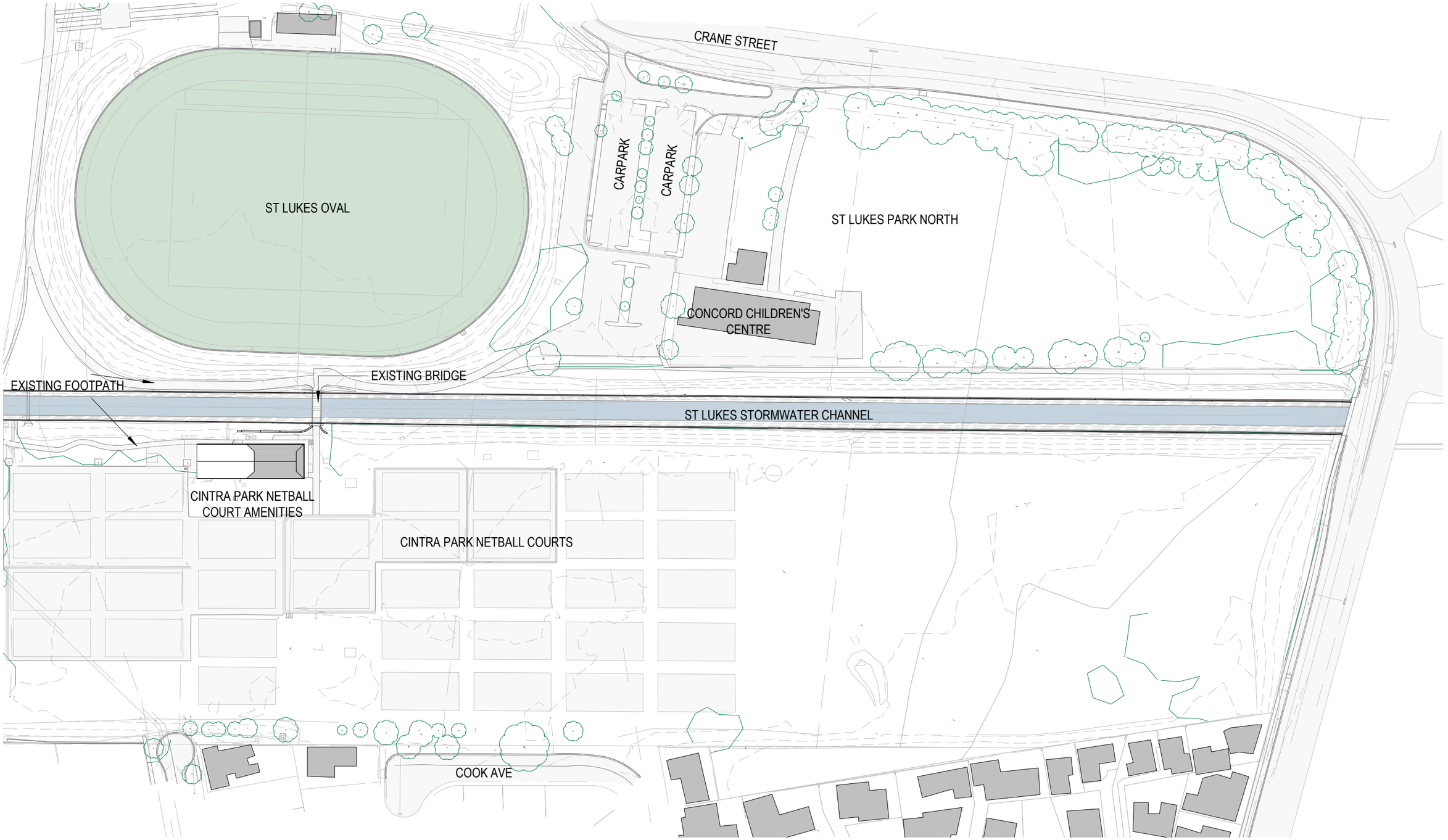
A	ISSUED FOR REF 10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	DRAWING LIST DATE 10/05/2019 3:18:12 PM	19023	AL	REF 0001	A



SITE PLAN.

1 : 1500

LEGEND

EXISTING ELEMENT

PROPOSED ELEMENT

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A	ISSUED FOR REF	10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	SITE PLAN DATE 10/05/2019 3:18:15 PM	19023	AL	REF 0010	A

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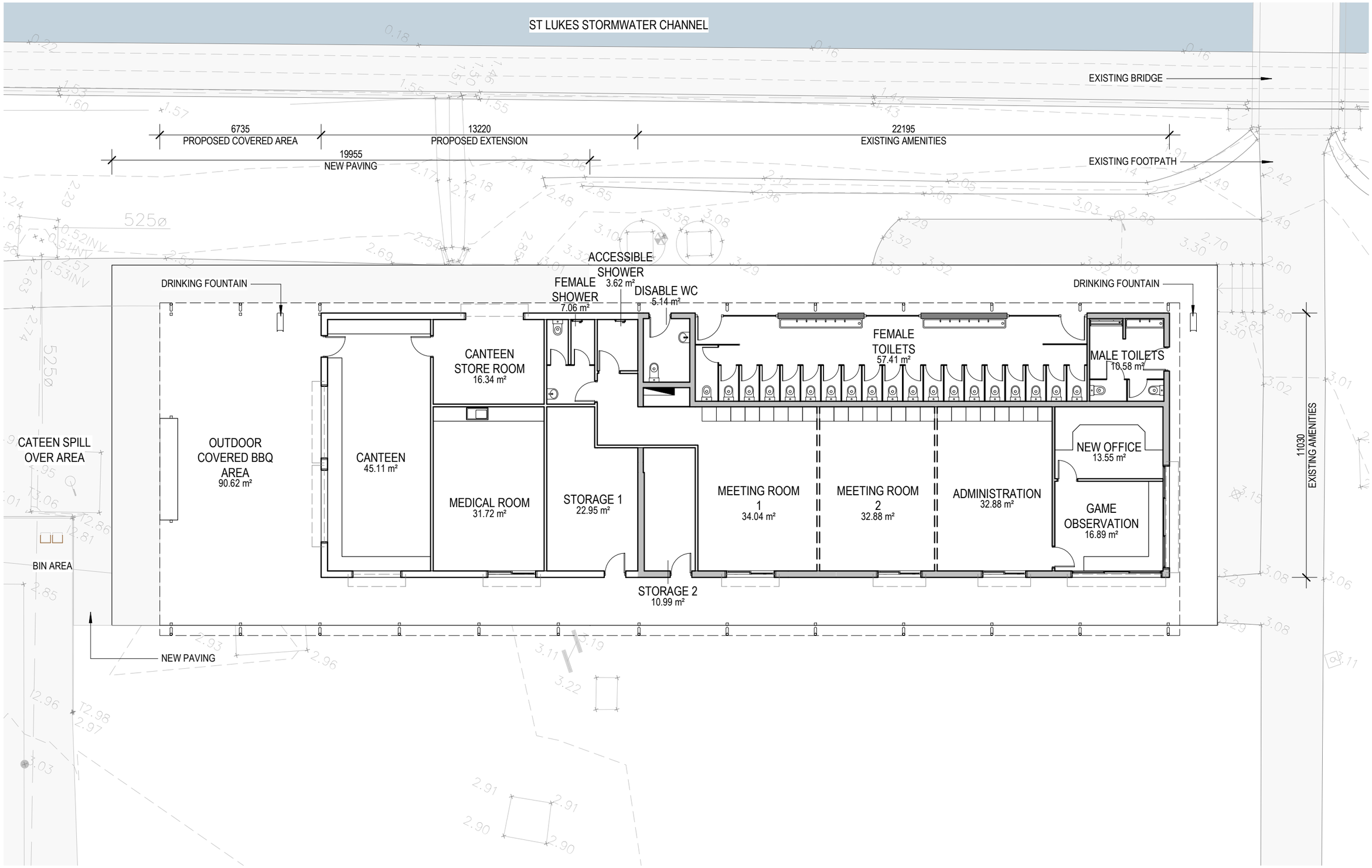

GROUND FLOOR - FLOOR PLAN.

1 : 150

LEGEND

EXISTING ELEMENT

PROPOSED ELEMENT

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A ISSUED FOR REF	10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	GROUND FLOOR - FLOOR PLAN DATE 10/05/2019 3:18:17 PM	19023	AL	REF 1001	A

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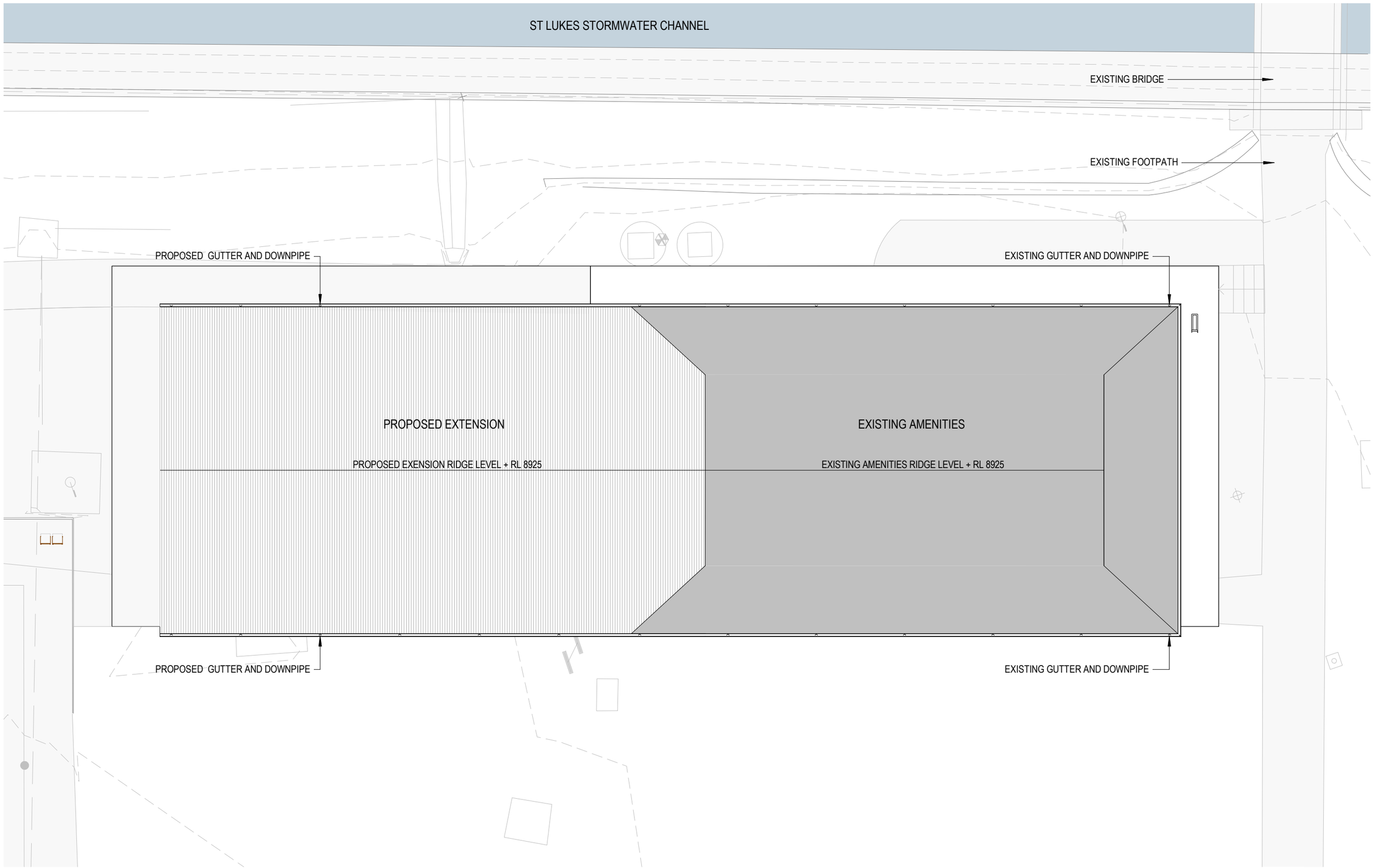

ROOF PLAN.

1 : 150

LEGEND

EXISTING ELEMENT

PROPOSED ELEMENT

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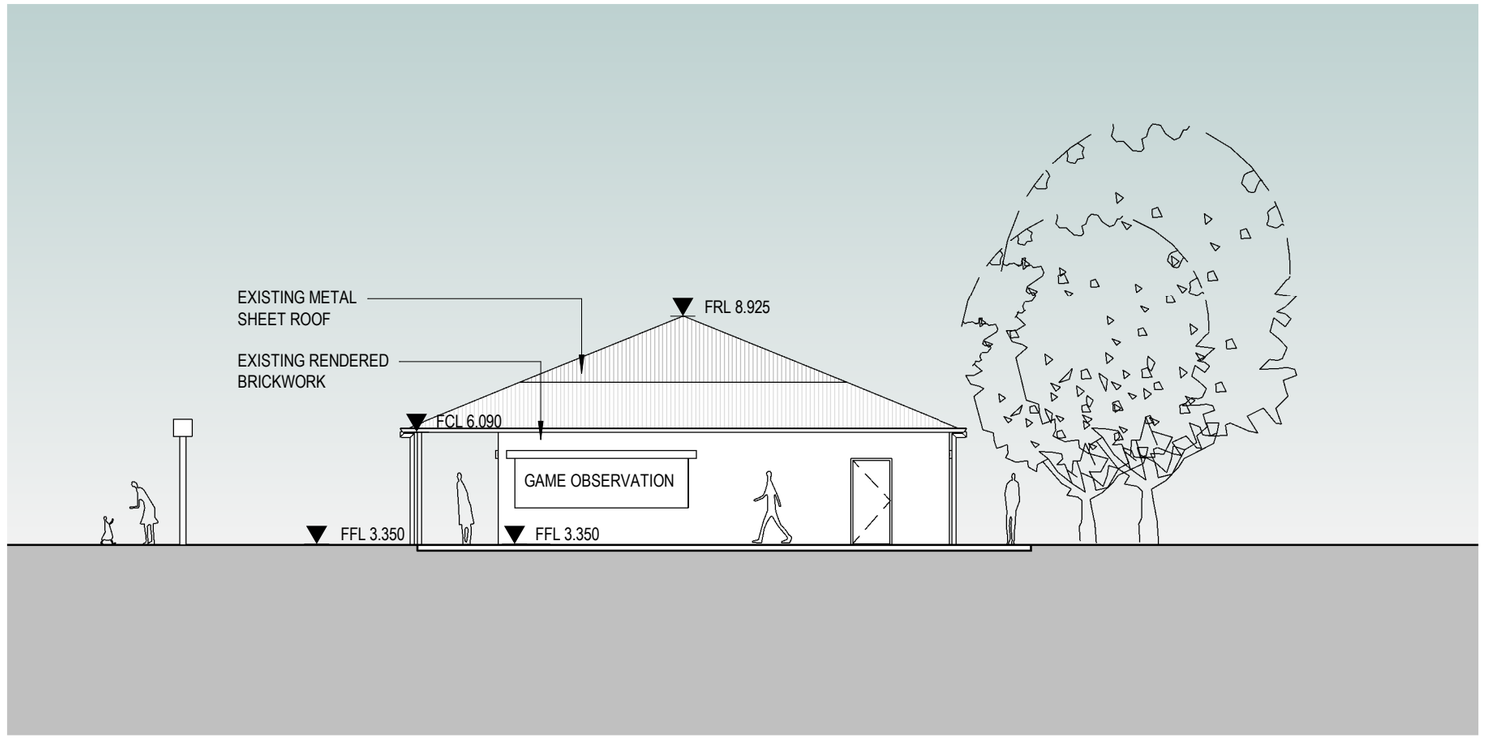

NORTH ELEVATION.

1 : 150

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ISSUE		JOB	TITLE	JOB NO.	DRAWN	DRAWING NO.	REV:
A ISSUED FOR REF	10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	ELEVATION - NORTH DATE 10/05/2019 3:18:20 PM	19023	AL	REF 2001	A

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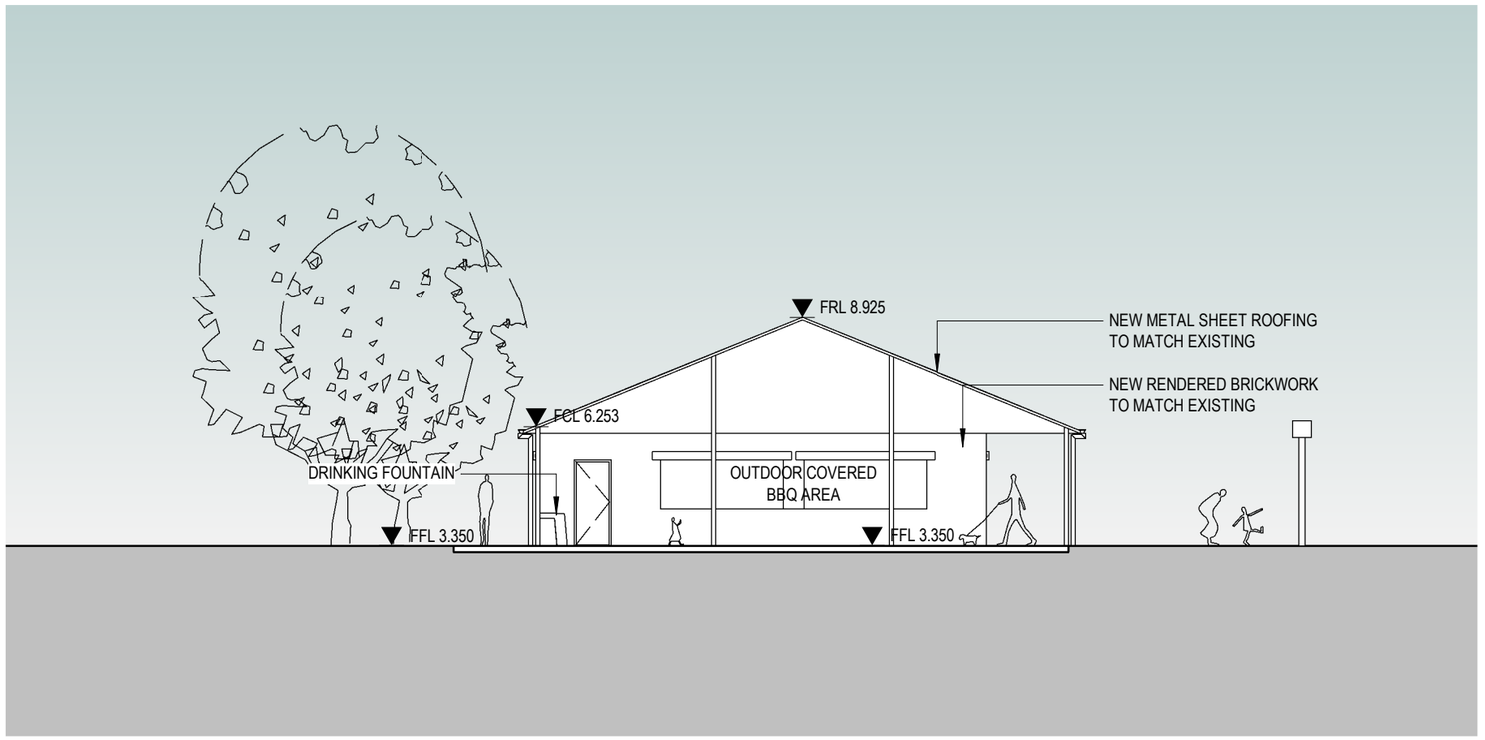

SOUTH ELEVATION.

1 : 150

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ISSUE		JOB	TITLE	JOB NO.	DRAWN	DRAWING NO.	REV:
A ISSUED FOR REF	10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	ELEVATION - SOUTH DATE 10/05/2019 3:18:22 PM	19023	AL	REF 2002	A

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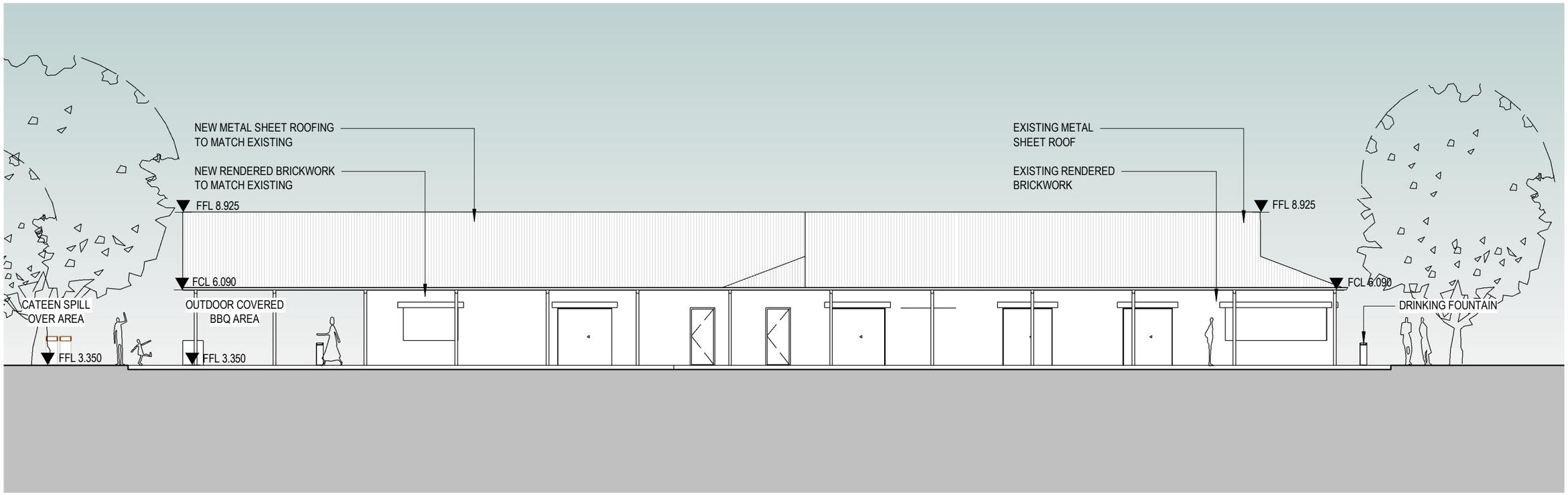

EAST ELEVATION.

1 : 150

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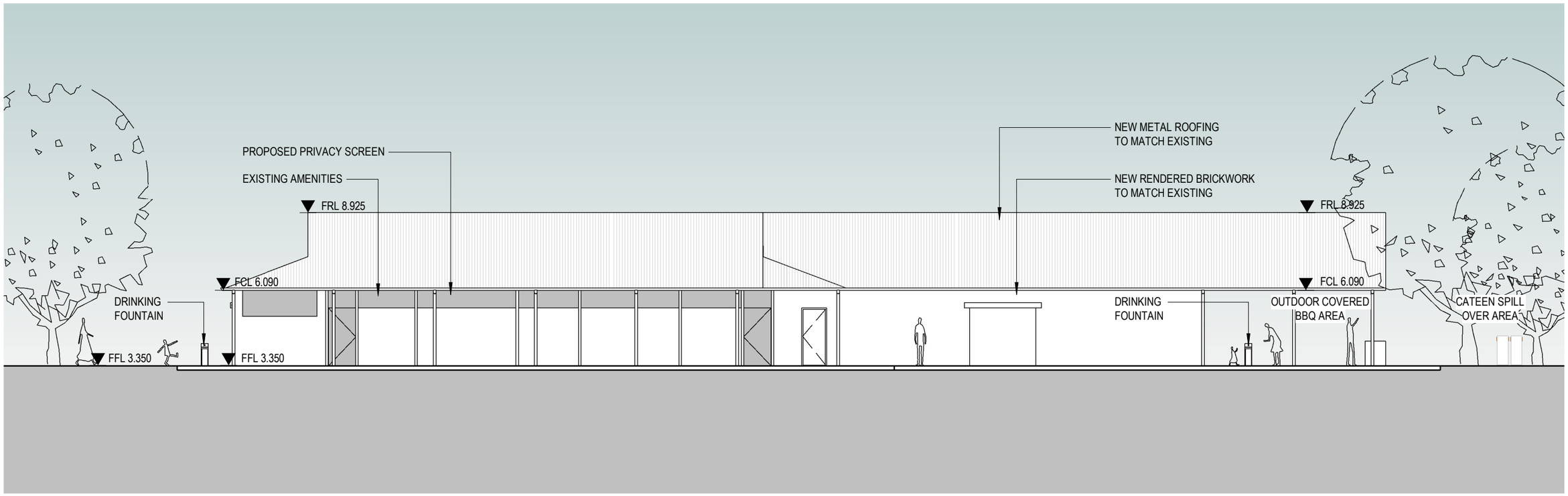
A ISSUED FOR REF	10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	ELEVATION - EAST DATE 10/05/2019 3:18:25 PM	SCALE 1 : 150 @ A3 0 SCALE: 1:150 3		REF 2003	A



WEST ELEVATION.

1 : 150

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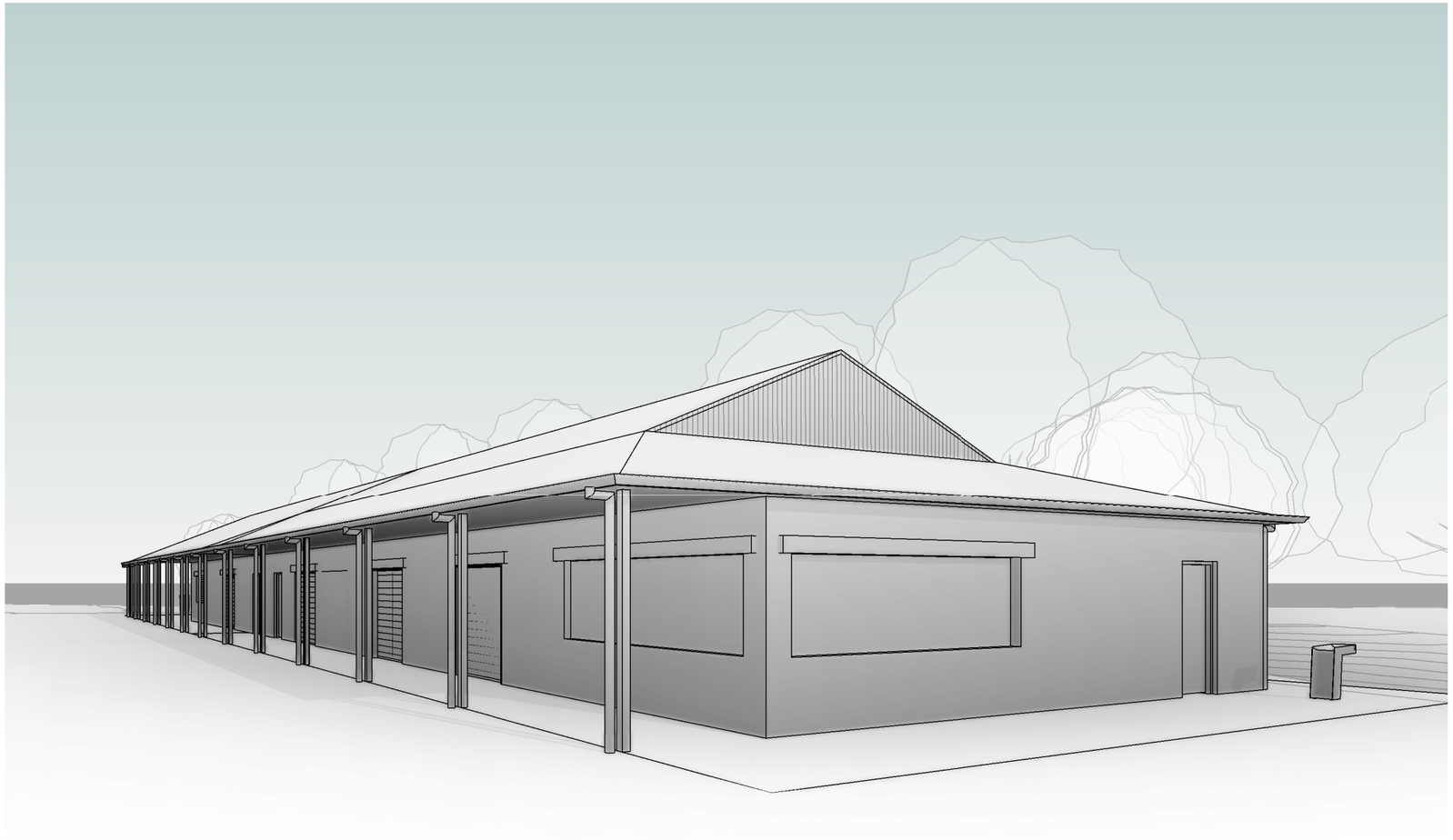

PERSPECTIVE - GAME OBSERVATION SPACE

NTS

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ISSUE		JOB	TITLE	JOB NO.	DRAWN	DRAWING NO.	REV:
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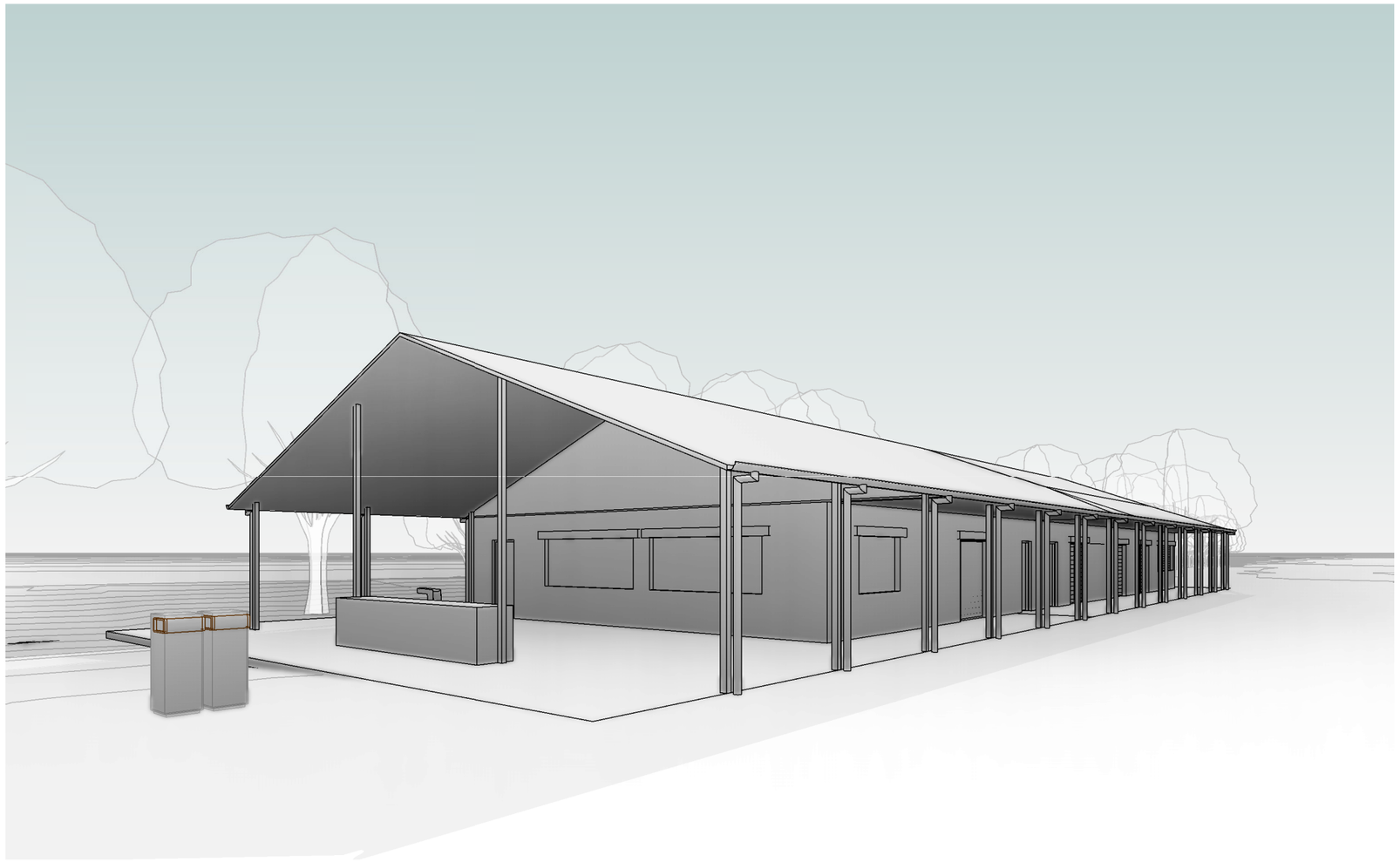

PERSPECTIVE - UNDERCOVER BBQ AREA

NTS

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A ISSUED FOR REF	10.05.19	CINTRA PARK NETBALL COURT AMENITIES CRANE STREET, CONCORD, NSW	PERSPECTIVE - UNDERCOVER BBQ AREA DATE 10/05/2019 3:18:46 PM	19023	AL	REF 9002	A

APPENDIX B. STORMWATER CONCEPT PLAN PREPARED BY CANADA BAY COUNCIL AND MARKED BY A GUDAS

BITUMEN

HP GAS PIPE

INV.0.38 RCP 0.41

CONCRETE BRIDGE

SWG

BITUMEN TRACK

2.0 M WIDE CONCRETE PATH AROUND THE PERIMETER OF THE BUILDING 100mm THICK WITH F52 MESH PLACED IN THE MIDDLE

0.8 HIGH G.I. PERIMETER FENCE

F.L.

PROPOSED LOCATION OF NEW BUILDING TO BE WHERE EXISTING BUILDING IS CURRENTLY LOCATED

SANDSTONE RETAINING WALL

CONC. PATH

1 STOREY BRICK BUILDING

100mm PVC STORMWATER LINE@ 1% MINIMUM FALL AND 100mm MINIMUM COVER

CONC. PATH

100 x 100 COLOURBOND DOWN PIPES TO BE POSITIONED AS SHOWN ON PLAN

SEPTIC TANKS

CONC. PITS

40mm PIPE

FLAG POLE

REMOVE EXISTING PIT

REGRADE EXISTING SURFACE TO SUIT STORMWATER DRAINAGE PIT LOCATION

F.L.

L.B.

SILT ARRESTOR PIT TO BE CONSTRUCTED AT THIS LOCATION

NEW STORMWATER /SILT ARRESTOR PIT OUTSIDE OF BUILDING LINE.

BUILDING EXTENSION

CONCRETE BASE

P.L.

CONCRETE KERB

INV.0.52 RCP 0.46

REGRADE LEVELS UNDER BUILDING TO MATCH ARCHITECT & ENGINEER'S FOUNDATION PLAN.

SWG

LYSAGHT GALVANISED MAXIMESH RH3030 SCREEN IN GALVANISED GUIDED CHANNELS WITH LIFTING HANDLE

600 X 600 HINGED GATIC TYPE GRATE HEAVY DUTY IN DRIVEWAYS MIDIUM DUTY IN GARDEN AREAS

GALVANISED STEEL ANGLE SURROUNDS

ALL PIPES TO BE CUT FLUSH WITH THE WALL OF THE PIT

200 X 100 GALVANISED RHS WITH KERB ADAPTOR

GEO - FABRIC MEMBRANE ALL AROUND

IF BASE OF PIT IS FOUND ON ROCK A SUB-SOIL DRAINAGE BE PROVIDED AND CONNECTED TO A DOWN STREAM PIT

INFLOW PIPE DIRECTED ACROSS SCREEN TO PROVIDE SELF CLEANING

CONCRETE PIT

F82 MESH CENTRALY LOCATED

100mm COMPACTED BLUE METAL

min 4 of 40mm WEEP HOLES

TYPICAL SILT/LITTER ARRESTOR PIT DETAILS

NOTES:

1. Pit to be constructed in the following manner:
   a) Precast
   b) Cast in-situ concrete
   c) other materials may be used subject to council's approval
2. Outlet pipes to be at 90 degrees to the inlet pipeline (as shown on plan)
3. Inlet to be above the screen and the outlet to be below the screen
4. All work to be to the satisfaction of Council or private certifier
5. Orifice plates are not to be used
6. For connection to council's drainage system:
   a) Connection to be made into the top one third of the pipe at 45 degrees to flow
   b) No pipe protrution allowed into council's pipeline.
   c. Inspection to be made by council's engineer prior to the sealing of the joint

EXCAVATED MATERIAL FROM THE TRENCH SHALL BE SUITABLE FOR THE BACKFILL SO LONG AS IT IS FREE FROM ROCKS OR HARDER MATTER LARGER THAN 25mm AND BROKEN UP SO THAT IT CONTAINS NO SOIL LUMPS LARGER THAN 75mm WHICH COULD PREVENT ADEQUATE COMPACTION

PIPE SIDE SUPPORT AND OVERLAY MATERIAL SHALL BE SAND

BEDING MATERIAL SHALL BE CRUSHED ROCK OR GRAVEL SCREENINGS OF NOMINAL SIZES 7 - 10mm

SECTION DETAIL OF STORMWATER TRENCH

Scale 1:10

NOTES:

Where a trench has been excavated deeper than necessary, the excess depth shall be filled either with bedding material compacted to achieve a density as near to the original soil density as possible or with concrete

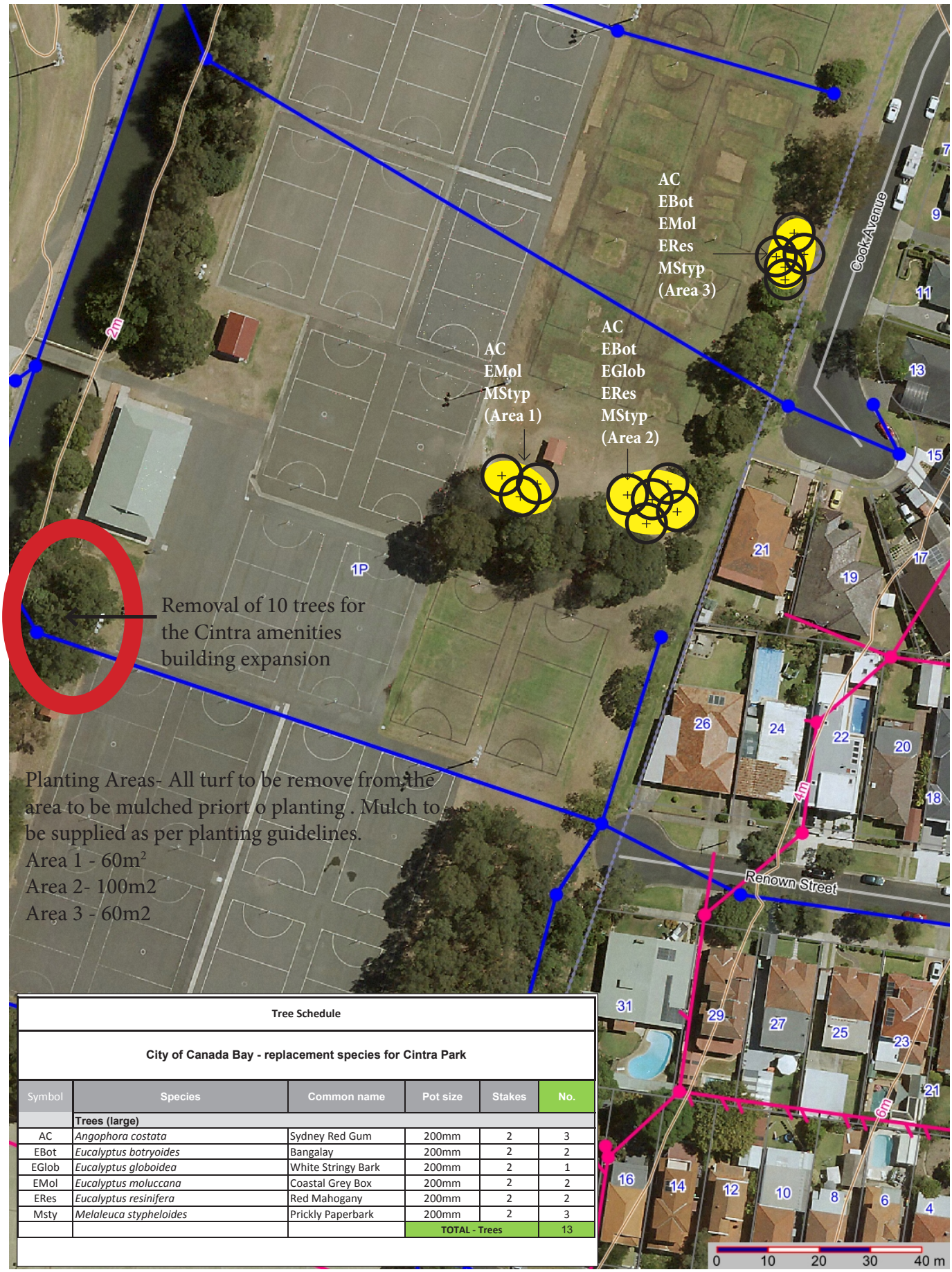
Trenches shall be made with a minimum clearance of 100mm on each side of the drain barrel measured to the inside of the side of tench. The trench width up to the level of the top of the drain shall be kept as narrow as practicable, but not less than the above minimum clearance

	Checked
CITY OF CANADA BAY MARKUP FOR CINTRA	Checked
PARK AMENITIES EXTENSION 09/04/2019.	Checked
CONCEPT ONLY. AMENDMENTS A.GUDAS.	
Filename	
Printed at 12:10:53 hours on 26JUN09	

City of Canada Bay Council

SURVEY	John Leven	DESIGN	P. Chrysostomou	CITY OF CANADA BAY COUNCIL	PLAN
SCALE	as shown on plan	DRAWN	P. Chrysostomou	**STORMWATER PLAN FOR CINTRA PARK NETBALL COURTS AMENITIES BUILDING**	**C 299** 3 OF 4
DATE	May 2009	DATUM	AHD		

APPENDIX C. TREE REPLACEMENT MAP PREPARED BY CANADA BAY COUNCIL



Tree Schedule

City of Canada Bay - replacement species for Cintra Park

Symbol	Species	Common name	Pot size	Stakes	No.
	Trees (large)				
AC	*Angophora costata*	Sydney Red Gum	200mm	2	3
EBot	*Eucalyptus botryoides*	Bangalay	200mm	2	2
EGlob	*Eucalyptus globoidea*	White Stringy Bark	200mm	2	1
EMol	*Eucalyptus moluccana*	Coastal Grey Box	200mm	2	2
ERes	*Eucalyptus resinifera*	Red Mahogany	200mm	2	2
Msty	*Melaleuca stypheloides*	Prickly Paperbark	200mm	2	3
			TOTAL - Trees		13

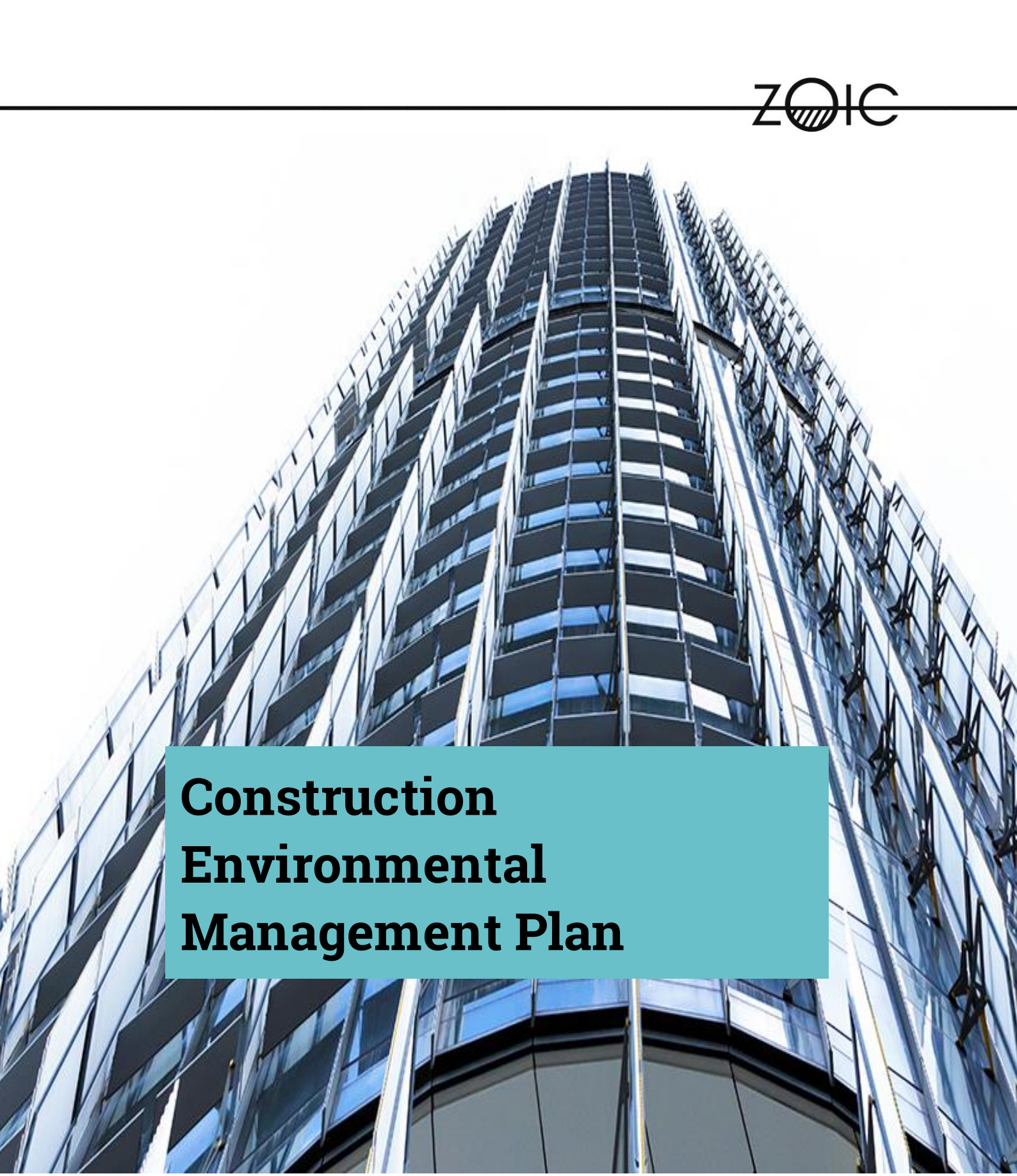
Tree replacement including 25% canopy increase (Canopy commitment)

City of Canada Bay

15/04/2019

N

APPENDIX D. CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN PREPARED BY ZOIC ENVIRONMENTAL PTY LTD



Construction Environmental Management Plan

Netball Courts Amenities Block, Cintra Park, Crane Street, Concord NSW 2137

City of Canada Bay
10 May 2019

18089

Quality Management

Document Distribution

Issue/Revision	Issue 1	Final
Remarks	DRAFT for Client Comment	Final
Date	7 May 2019	10 May 2019
Prepared by	Jack Braithwaite	Jack Braithwaite
Signature	DRAFT	
Reviewed by	Graeme Malpass CEnvP-SC	Graeme Malpass CEnvP-SC
Signature	DRAFT	
File reference	19089 CEMP (DRAFT) 7May19 New.docx	19089 CEMP Final 10May19.docx
Distribution	• City of Canada Bay • Zoic Electronic File	• City of Canada Bay • Zoic Electronic File

This report was prepared in accordance with the scope of services set out in the contract between Zoic Environmental Pty Ltd, ABN 23 154 745 525, and the client.

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Table of Contents

Appendices

1 Introduction

1.1 Background and Scope

Zoic Environmental Pty Ltd (Zoic) was commissioned by City of Canada Bay (CCB) to prepare a Construction Environmental Management Plan (CEMP) for the proposed extension of the Netball Courts Amenities Building (the 'Project') located at Cintra Park, Crane Street, Concord NSW 2137 (the 'site').

From an environmental planning perspective, (Zoic) has been advised by CCB that under Division 12, Clause 65 (3) (a) (vi) of State Environmental Planning Policy (SEPP) (Infrastructure) 2007, extension of the Netball Courts Amenities Building (NCAB) does not require development approval (DA) and may be carried out without consent subject to completion of a Review of Environmental Factors (REF). Consequently, this CEMP has been prepared to support the REF.

CCB must ensure that the requirements of this Plan are communicated and implemented by the Principal Contractor. This CEMP may be updated, as required, throughout the Project.

This CEMP provides overarching guidance to manage environmental risks associated with the Project. It is understood that the Project will be managed by the Principal Contractor who will be required to communicate necessary requirements to all Employees and Subcontractors, prepare and implement a number of additional Sub Plans to ensure compliance with the CEMP.

1.2 Site Location

The site is located within a public recreational complex off Crane Street, Concord NSW 2137. Cintra Park Netball Courts comprises paved and grassed netball courts, two sheds and the existing amenities block.

According to the Canada Bay LEP (2013), the Cintra Park Netball Courts are zoned RE1 Public Recreation. Land in the surrounding area is also zoned RE1 Public recreation. Approximately 100m to the east and 250m to the west of the Project site there are R2 and R3 residential areas respectively.

The Project footprint comprises the following:

- The existing amenities block footprint is approximately 280m^2 (13 x 21.6m) and is legally described as Part Lot 7300 in DP1159824; and
- The NCAB footprint comprises 217m^2 (13 x 16.7m) of grassed land that is bounded by the existing amenities block footprint to the north; the netball courts to the east; existing trees to the south; and, existing trees and a retaining wall / concrete lined drainage channel immediately to the west (beyond which lies St Lukes Park).

The location and layout of the site is available in Appendix A, Figures 1 and 2 respectively.

1.3 Proposed Construction Activities

It is understood that the construction scope of work comprises:

- Tree removal and replanting;

- Piled foundations as per Michael Adler Geotechnical Report (including investigating feasibility and cost impact of future provision for second storey);
- Reconfiguration of Overland Flow Path (various options to be investigated and confirmed);
- Extension of the NCAB to the southern side of the existing amenities block;
- Internal reconfiguration and fitout of existing amenities block including reconfiguring load bearing walls (if required);
- Relocation of existing drinking fountain;
- Upgrade of privacy screens to existing amenities;
- Outdoor covered BBQ area with vandal proof locking and two additional bins;
- Provision of two additional showers;
- Provision of air conditioning to internal spaces;
- Protection of building and essential services during works;
- Repainting building;
- Rectification of hydraulic issues;
- Restoration of existing amenities block to 'as new' condition; and
- Landscaping and associated footpaths.

The proposed extension footprint is lower than the existing amenities block. It is anticipated that services will be located within the void space created beneath the floor slab during the construction of the NCAB.

Minimal excavation (max depth 500mm) may be required as part of the NCAB extension for pile-caps and / or service trenching. It is understood from previous investigations that the site is located on a former landfill. The POEO Legislation Amendment (Waste) Regulation 2018 states that it is an offense to exhume waste from a landfill site without acquiring prior written approval from the EPA. A previous geotechnical investigation (Michael Adler and Associates (MAA) (October 2008)) drilled six boreholes in the vicinity of the NCAB and reported landfill immediately underlying surface soils. On this basis, written approval from the EPA will be required prior to any proposed excavation works. It is noted that information from within the proposed NCAB extension footprint has not been collected. As part of this CEMP, boreholes are proposed within the NCAB footprint to inform landfill gas / soil vapour protection design measures. Once obtained, this information can be used to characterise the underlying conditions to determine whether landfill will be exhumed and written approval from the EPA is required.

Screw-pile techniques will be used which is a soil displacement method, as such, spoil will not be generated and no disposal of cuttings required.

1.4 Operating Hours

Works will be carried out during standard construction hours or as stipulated within any subsequent approvals issued for the Project:

- Monday to Saturday 7.00am to 5.00pm; and
- No work may be carried out on Sundays, public holidays, or during the Christmas Shutdown (23 December 2019 to 5 January 2020) except in the following cases:
  - By the Police or a public authority for the delivery of vehicles, plant or material; or

- In an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or
- Where the works are inaudible at the nearest sensitive receivers; or
- Where a variation is approved in advance in writing by CCB.

Notification of high impact activities or works out of standard construction hours must be notified to key stakeholders and neighbours in advance.

1.5 Environmental Objectives and Targets

The environmental objectives and targets for the Project are in Table 1.1 below.

Table 1.1 Environmental Objectives and Targets

Objective	Target
Effective site environmental controls	Achieve alignment with CCB expectations in relation to best practice control measures -Fulfil environmental obligations
Environmental Performance	• Zero major environmental incidents and no breaches • Zero infringement notices • All major environmental spills to be reported to CCB within 2 hrs of occurrence • Environmental inspection completed each week and documented using an Inspection Checklist (an example is presented in Appendix C). Frequency of documented inspections can increase, if required.
Reduce the amount of environmental impact our operations have on the environment	Environmental issues identified and controlled prior to causing negative impacts on the project or on the environment
Effective implementation of the environmental system	• 80% or better internal audit results
Community issues carefully handled	Zero valid complaints and all complaints reported to CCB

1.6 Consultation

It is understood that community consultation will be conducted by CCB or their nominated representative prior to commencement of construction works.

2 Construction Management

2.1 Environmental Management Structure and Responsibilities

The Project roles and responsibilities are summarised in the following table:

Table 2.1 Project Roles and Responsible Persons

Role	Responsible Person
CCB Project Manager	Andrei Gudas
Construction Manager	Principal Contractor TBA
Project Manager	Principal Contractor TBA
Site Manager	Principal Contractor TBA
Corporate HSE Manager	Principal Contractor TBA
Site HSE Officer	Principal Contractor TBA
Project/Site Engineers	Principal Contractor TBA
Contracts Administrator	Principal Contractor TBA

Specific responsibilities expected under the CEMP are as follows:

CCB Project Manager

- Shall appoint the Principal Contractor to implement the CEMP on behalf of City of Canada Bay.
- Shall ensure that the Principal Contractor has demonstrated appropriate training, experience and competencies to be able to successfully deliver the Project in accordance with this CEMP.
- Shall provide the Principal Contractor with available information and existing documents relevant to the implementation of the CEMP.
- Shall conduct appropriate checks to ensure that the Principal Contractor implements all relevant requirements of the CEMP.

Construction Manager

- Facilitate a systematic approach to managing health, safety and environment (HSE) including the identification, assessment, control and monitoring of related risks that may arise through both normal and adverse operating conditions.
- Check that personnel are adequately skilled and trained for the tasks they are required to undertake.
- Encourage and promote safety by participating and openly consulting with employees in respect to their health and safety.

- Support the Corporate HSE Manager in ensuring Project / Site Managers have developed and implement systems, which will ensure Subcontractors and/or Suppliers engaged by the Principal Contractor comply with the health and safety management systems and the relevant work health and safety (WHS) legislation.
- Respond to non-conformance by any Subcontractor, Supplier or Employee who fails to discharge their duties as set by the responsibility statement and actively participate in dispute resolution where required.

Project Manager

- Monitor construction activities against the conditions of approval to evaluate compliance.
- Conducting an Environmental Risk Assessment, reviewing and incorporating legal matters, and any requirements of other documents such as Environmental Impact Assessments (EIA) / Review of Environmental Factors (REF) prepared for the development.
- Identifying, planning and ensuring all environmental training required for personnel is undertaken. This task may be done in liaison with the Corporate HSE Manager.
- Support the Site Manager in the management of employees, sub-contractors, and suppliers' performance in complying with the requirements of this CEMP.
- Selecting appropriate Subcontractors, giving due regard to their ability to comply with legislative and environmental requirements of the Principal Contractor.
- Ensure environmental emergencies are incorporated in the site Emergency Response Procedures.
- Ensuring incidents are investigated and appropriate action taken as required by the Principal Contractors environmental plan requirements in consultation with the Corporate HSE Manager.
- Ensuring compliance with environmental legislation and the Principal Contractors environmental procedures.
- Operate as one of the 24-hour contact person for environmental matters.
- The Project Manager must carry out at least one formal site inspection per month at the site or at a higher frequency as appropriate (e.g. short Project timelines).
- Ensuring compliance with environmental legislation, regulations and licensing conditions, and authorities' requirements relevant to all construction work.
- Reporting to the CCB Project Manager on environmental performance of the Project.

Site Manager

- Unless otherwise nominated, undertaking the role of Site HSE Officer for environmental issues and control of the site. This role is supported by the Project Manager and the Corporate HSE Manager.
- Ensuring site security and site specific signage is fixed to key access, internal and perimeter areas including 24 hour project contact details, attendance details for visitors, personal protective equipment (PPE) requirements and construction zone signage.
- Monitor environmental controls for effectiveness and suitability.
- Implementing through consultation with the Project Manager, the CEMP in accordance with Legislation and Regulations, Codes of Practice, Australian Standards and/or other statutory requirements.

- Implementing and undertaking formal and proactive consultation measures between the Project Team, Subcontractors and Industrial Representatives such as Subcontractor meetings, toolbox talks, site HSE committee meetings and inspections.
- Monitoring Subcontractors compliance with the CEMP in particular to the environmental components of their safe work method statements.
- Identifying any hazards and assessing risks onsite, and implementing risk control measures.
- Liaising with civil or statutory authorities should an onsite emergency situation occur.
- Investigating, recording and reporting incidents and initiating corrective and action plans by relevant personnel. Reporting any serious incident immediately to the CCB Project Manager, Project Manager and Corporate HSE Manager.
- Ensuring that all plant and equipment used on the site is safe, correctly maintained and that the operator is correctly licensed or qualified for that equipment.
- Ensure that all environmental incidents (including spills, failure of sediment controls, water pollution etc.) are reported in accordance with the Incident Reporting and Investigation Procedure.
- Assessing Subcontractors Safe Work Method Statements prior to any work commencing, to ensure environmental requirements are met.

Corporate HSE Manager

- Overseeing the implementation of the integrated HSE management system and the Environmental Management Plans throughout the Principal Contractors activities.
- Ensuring a CEMP is prepared and implemented for the Project.
- Advise Management and Site teams to any new or revised Act's, Standards, codes of practice (COP) or legal requirements associated or required in conducting the works.
- Setting and reviewing overall environmental targets and allocating priorities within the framework of the HSE management system.
- Planning and facilitating training in environmental management, including arranging for the appropriate internal or external trainers/facilitators to conduct the training.
- Manage collection and reporting of environmental performance data from monthly site reporting.
- Conducting or delegating internal HSE management system and site audits.
- Reviewing internal and external (independent) audit reports, and in consultation with the Directors and the Project Manager - develop appropriate action plans if necessary.
- Assist Project Managers in preparation of Environmental Risk Assessment and determining appropriate controls.
- Communicating relevant environmental information to management, staff and contractors.

Site HSE Officer

- Carry out erosion and sediment control inspections.
- Ensure that a Materials Management Plan (MMP) and Erosion & Sediment Control Plan (ESCP) are prepared and implemented.
- Maintenance of the CEMP including any minor revisions, as required.

- Ensure training/induction of personnel is carried out and that staff operate in an environmentally responsible manner.
- Ensure compliance with Environmental Approvals.
- Operate as one of the 24-hour contact person for environmental matters.
- Report on environmental incidents, liaise with the CCB Project Manager on corrective actions and verify environmental measures.
- Manage the register of environmental complaints and the subsequent corrective measures.
- Undertake and report on all monitoring and inspections completed.
- Monitor construction activities against the conditions of approval to evaluate compliance with the Environmental Management Systems (EMS), including at a minimum weekly site inspections.
- Maintain a register of all environmental management documents for the Project.
- Ensure that the CEMP is established, implemented and maintained in compliance with all Sub Plans, supplementary method statements and approval conditions.
- Overall responsibility for on-site establishment, management, monitoring and maintenance of erosion and sediment controls.
- Carry out regular inspections and auditing of the works to ensure that environmental safeguards are being followed.
- Identifying where environmental measures are not meeting the targets set and where improvement can be achieved.
- Facilitating environmental induction and toolbox talks for all site personnel.
- Specific authority to stop work on any activity where it is considered necessary to prevent environmental non-conformances.

Project/Site Engineers

- Liaise closely with the CCB to ensure environmental considerations contained within this CEMP are incorporated into construction activities.
- Produce SWMS which address environmental requirements.
- Conduct regular checks of the site to ensure environmental controls such as sediment controls and dust suppression are functioning effectively.
- Where engineers are responsible for managing Subcontractors and/or utilities authorities, ensure that any work performed by these external parties meets with the requirements of this CEMP and Sub Plans, including identifying and documenting the environmental risks of the proposed works.
- Report any non-compliance with Erosion and Sediment Control Plans (ESCP) and/or the CEMP to CCB.

Contracts Administrator

- Support the Project and Site Manager in the management of Employee, Subcontractor and Suppliers' performance in complying with the Principal Contractors WHS and the site specific rules for the Project.

- Assist the Project / Site Manager to ensure the CEMP and all Sub Plans associated documentation, including standard forms, procedures and templates; remain current and up to date.
- Include in subcontract agreement the requirement for Subcontractors to carry out their works in accordance with the Companies or Subcontractors approved Environmental Plans.
- At the tender interview stage discuss with the Subcontractors their obligation for managing environmental requirements by issuing to them relevant sections of the tender interview form and ensuring this is completed by Subcontractor prior to commencing on site.
- Request and obtain from the Subcontractor copies of their Environmental Plans.
- Where required, assist the Project / Site Manager in collecting required environmental documentation from engaged Subcontractors, and for conducting initial review ensuring all required documents have been submitted prior to forwarding documentation provided by Subcontractors to the Project / Site Manager for review.
- Ensure that the latest copies of Project Plans and HSE Risk Assessments are uploaded onto an appropriate data control system to which engaged Subcontractors have access.
- Assist the Project / Site Manager in conducting project audits, to report on safety compliance and in the maintenance of environmental records.
- Ensure all external complaint/incidents are recorded on 'Incident Report Form', filed in the 'Complaints Register' and communicated to CCB Project Manager.
- Assist Project / Site Manager in the general administration of HSE where requested.

Employees / Subcontractors

- Must comply with all site HSE rules, procedures and work practices identified in the CEMP, and / or as directed or informed by the Site Manager.
- Attending environmental training / inductions as directed by the Site Manager.
- Complying with all relevant environmental legislation.
- Reporting promptly to a Site Manager of any spills, leaks, potential pollution and / or poor environmental practices.

2.2 Approval and Licencing Requirements

In general, all activities carried out onsite must comply with the provisions of all legislation relating to the construction and operation of the Project.

Key planning legislation requirements are listed in Table 2.2 below.

Table 2.2 List of Legal and Legislative Requirements

Legislation / Policy (Administering Authority)	Summary of Legislation Requirements	Approvals/Permits or Licences Required
Contaminated Land Management Act 1997 (NSW Office of Environment & Heritage (OEH) / CCB Council)	Establishes a process for investigating and, where appropriate, remediating land where contamination presents a risk of harm to human health and/or the environment.	Minimal excavation works may be required for the extension of the amenities block. Prior written approval must be acquired from the EPA if landfill waste is likely to be exhumed. No further approvals needed. However, works are to be conducted in accordance with this CEMP to satisfy EPA requirements.
Environmental Planning and Assessment Act 1979	Works must proceed in accordance with the consent provided, including any conditions.	It is understood that construction of the NCAB will be conducted under SEPP (Infrastructure) 2007 and may proceed without a DA. Comply with the requirements of the SEPP (Infrastructure) 2007 including preparation of an REF
Environmental Protection and Biodiversity Conservation Act (1999) (Commonwealth Department of Environment and Water Resources)	The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, and heritage places – defined in the EPBC Act as Matters of National Environmental Significance (MNES). In addition, the EPBC Act confers jurisdiction over actions that have significant impact on the environment where the actions affect, or are taken on, Commonwealth land, or are carried out by a Commonwealth agency (even if that significant impact is not on one of the nine matters of 'national environmental significance').	There are no known MNES on the site. No requirement for permit or approval identified.
Environmentally Hazardous Chemicals Act 1985 (OEH)	Regulates the disposal of wastes issued with a "chemical control order" and designated chemical and chemical wastes (including asbestos). Disposal requirements for asbestos are identified under the Protection of the Environment Operations Act 1997 (POEO) Other chemical wastes designated under this act are: • Aluminium smelter wastes containing fluoride or cyanide • Dioxin contaminated waste materials • Organotin waste materials • Polychlorinated Biphenyl Compounds (PCB) • Scheduled chemical wastes	Clearance, transport and disposal of designated chemical wastes must be completed under appropriate licences. Chemical wastes designated under this Act to be removed from this site must be transported and disposed of by appropriately licensed waste transport contractors to a facility lawfully able to accept that type of waste.
Heritage Act 1977 (OEH)	Protects all items of environmental heritage (natural and cultural) in NSW. The Act does not apply to Aboriginal "relics".	The site is not listed as a heritage item.

Legislation / Policy (Administering Authority)	Summary of Legislation Requirements	Approvals/Permits or Licences Required
Local Government Act 1993	Controls environmental impacts including noise, pollution and nuisance not controlled under the POEO Act. Provides for licensing of trade waste discharges, in conjunction with the *Liquid Trade Waste Guidelines*.	Approval required, as appropriate.
National Parks and Wildlife Act 1974	Provides protection for most fauna species and protected flora. Provides protection for indigenous heritage in NSW. It is an offence: to harm animal which is part of a threatened species, population or ecological community; to pick any plant which is part of a threatened species, population or ecological community. It is also an offence if a person knows that an area of land is the habitat of a threatened species, population or ecological community, to do something or fail to do something that causes damage to that habitat.	There are no threatened species which have been identified. The potential for indigenous artefacts, based on the former site use as landfill, considered low.
Noxious Weeds Act 1993 (NSW Department of Primary Industries)	Provides for the identification, classification and control of noxious weeds in NSW. Applies to the management and disposal of noxious weeds if found and removed during works.	No approvals required.
Protection of the Environment Operations (POEO) Act 1997 (OEH) POEO Legislation Amendment (Waste) Regulation 2018	Environment protection licences are required for scheduled activities. Provides for the control of polluting activities in NSW to prevent pollution to the environment. Provides a duty to notify OEH of any environmental harm from site activities. Waste Classification is required prior to the removal of waste (including fill/soil) from a site to establish the appropriate means of disposal. The POEO Legislation Amendment (Waste) Regulation (2018) states that it is an offence to exhume waste from a landfill site. This does not include material from a former landfill that is closed and capped and no waste is removed from beneath that cap. Landfill waste is able to be exhumed with written direction from the EPA.	No requirement for an Environment Protection Licence identified for scheduled activities. However, control measures must be established on site to ensure that there are no uncontrolled discharges to water, sediments or air during the construction works. Minimal excavation is scheduled as part of the construction works. Should soil require offsite disposal, written approval must be sought from the EPA to remove waste from a former landfill. The exhumed material must be classified in accordance with NSW EPA (2014) Waste Classification Guidelines waste classification certificates (produced by a qualified environmental assessor) are required prior to disposal and to accompany all waste soils materials being transported to waste facilities that are licenced by the EPA to accept the respective class of waste. Transport contractors must be appropriately licensed to transport the class of waste they are carrying. EPA is the appropriate regulatory authority for the works.

Legislation / Policy (Administering Authority)	Summary of Legislation Requirements	Approvals/Permits or Licences Required
Soil Conservation Act 1938 (OEH)	Controls activities causing or likely to cause soil erosion or land degradation. Project activities must prevent soil erosion or land degradation.	No requirements for permit or approval or licence identified.
Threatened Species Conservation Act 1995 (OEH)	This Act protects vulnerable and threated species, populations and ecological communities.	No requirements for permit or licence identified.
CCB Local Environmental Plan 2013	Provides detailed implementation of development requirements, including where particular typed of development are permitted with or without consent. Identifies items of local heritage value and trees which require preservation.	Should excavation be required, consideration must be given to the potential to disturb acid sulfate soils when conducting excavations for foundations and services associated with the NCAB. Whilst the proposal does include the removal of trees, they are not subject to preservation orders and proposed to be replanted under an approved plan in Appendix F.
Waste Avoidance and Resource Recovery Act 2001 (OEH)	Promotes the waste management hierarchy (avoidance, resource recovery, and disposal).	No requirement for permit or approval or licence identified. No excavation is proposed and any excavated material will be reused on site where possible provided it is chemically / geotechnically suitable
Waste Management Act 2000 (NSW Office of Water)	Controls water use for excavation activities and in areas of groundwater management.	Deep excavation is not expected as part of the site works. As such, the requirement for dewatering is unlikely. On this basis, it is not expected that a temporary dewatering licence is required. Should dewatering be required, a discharge to stormwater permit, discharge to sewer licence or engagement of a suitably licenced liquid waste contractor is required.

Notwithstanding the above, all environmental investigation or waste classification works must be conducted in accordance with guidelines made or endorsed by Environmental Protection Authority (EPA) under Section 105 of the CLM Act 1997.

It is also understood that any works will be managed in accordance with CCB's policies and procedures.

This CEMP has been prepared in accordance with the relevant legislation and industry standards, with particular reference to the NSW Department of Infrastructure, Planning and Natural Resources (DIPNR) Guideline for the Preparation of Environmental Management Plans (2004).

3 Site Condition and Environmental Setting

3.1 Site Identification

The site location is shown on Figure 1, Appendix A. The project site identification and land use details are provided in Table 3.1.

Table 3.1 Site Identification

Title	Details
Street Address	Cintra Park Netball Courts, Crane Street, Concord NSW 2137
Property Description	Part of Lot 7300 in DP1159824
Proposed Development	Extension of the existing amenities block including a covered BBQ area. Refer to Figures in Appendix A
Site Ownership	Crown
Property Size	The Project footprint comprises the following: • Existing amenities building: 280m^2 (13 x 21.6m) • The proposed extension: 217m^2 (13 x 16.7m)
Local Government Area	City of Canada Bay
Zoning	RE1 Public Recreation LEP 2013

3.2 Surrounding Land Use and Sensitive Environments

The Project is located within a sporting recreational area in Concord. Immediately adjoining land uses are described as follows:

Table 3.2 Site Surrounds

Direction	Details
North:	Cintra Park and Lyons Road beyond which lies Barnwell Golf Course and Parramatta River.
East:	Cintra Park beyond which lies residential properties.
South:	Cintra Park Tennis Club/courts beyond which lies Gipps Street.
West:	A concrete enclosed tidal canal that drains to the Parramatta River approximately 570m to the north east of the site beyond which lies St Lukes Oval.

3.3 Previous Investigation and Planning Works

The following previous environmental investigations were conducted at the site:

- Michael Adler and Associates (MAA) (October 2008) Geotechnical Investigation (GI), Proposed New Netball Facilities, Cintra Park, Canada Bay (Ref: 08/10491);
- MAA (June 2009) Covering Letter for Contamination & Acid Sulfate Investigations (CASI) for Proposed New Netball Facilities, Cintra Park, Canada Bay (Ref: 08/10491);

- SMEC Testing Services Pty Limited (STS) (June 2009) Contamination Assessment (CA), Cintra Park, Concord (Ref: 09/0520);
- Griffiths Engineers Structural Consultants (GESC) (July 2009) Construction Issue Typical Cross Section (Ref: Drawing No. 0939 / S-4 Rev 2);
- Environmental Investigations Australia Pty Limited (EIA) (August 2015) Preliminary Site Investigation (PSI) with Limited Sampling, Cintra Park Netball Courts, Gipps Street, Concord (Ref: E22675/AA);
- CCB (3 April 2019) Project Management Plan (PMP) Cintra Park Netball Amenities Extension, Crane Street, Concord (Ref: 102799);
- CCB (undated) Drawing showing proposed Ground Floor Plan Options 1 and 2 (unreferenced); and
- CCB (undated) Drawing showing Erosion Control Plan for CPNAE building (unreferenced).

The following table provides a summary of the previous investigation / planning reports:

Table 3.3 Summary of Previous Investigation Reports

Report	Summary (Objectives, Scope of Work, Key Findings)
MAA (October 2008) GI	The GI was conducted for the proposed ne Netball Facilities. The objective of the GI was to provide preliminary information on subsurface conditions, appropriateness of using the existing raft foundations, suggested other foundation alternatives, allowable bearing pressures for other foundation alternatives, site classification to AS 2870, and depth to groundwater. The scope of works comprised: • Reviewing available geological information relevant to the proposed development site. • Carrying out a walk over survey to assess existing site conditions. • Drilling six boreholes (BH1 to BH6) using a small utility mounted drilling rig. Boreholes were drilled to depths ranging from 1.3m to 8.5m. • Preparation of engineering borehole logs. • Dynamic Cone Penetrometer (DCP) testing was undertaken adjacent to each borehole to provide continual assessment with depth of the insitu strength of the underlying soils. • Measuring depths to groundwater level or seepage in the boreholes, where encountered. The key findings of the GI in relation to this Project can be summarised as follows: • The site is underlain by an old landfill and there is a significant risk that the site is contaminated. • Significant settlement of the netball courts was noted and the concrete pavement had separated from the structure by up to 30mm. • The original building appeared to be in good condition for its age. • The Sydney 1:100000 geological sheet noted that the site was underlain by man-made filling over Quaternary deposits of sands, silts and clays. Ashfield Shale underlies these deposits. • Ground conditions encountered 1.7 to 2.5m of landfill over soft alluvial clays underlain by stronger residual clays. Weathered shale was identified at 8.2m bgl in one location in the vicinity of the proposed structure. • Landfill materials were described as silty clay or gravelly sandy clay with household rubbish including wire, carpet, rope, plastic, glass, shoe, etc. • Groundwater was observed in two boreholes that penetrated below 1.5m depth. Water was observed at 1.6 to 1.8m and it is likely to be influenced by the tidal waters of the adjacent canal.

Report	Summary (Objectives, Scope of Work, Key Findings)
	• Reuse of the existing raft slab or use of a fully suspended piled raft slab was recommended. It was noted that provision of services would require careful consideration to tolerate likely settlement and prevent damage or flow reversals.
MAA (2009) Covering Letter	The MAA (2009) Covering Letter provides the following key information for the site regarding contamination and acid sulfate soils: • Site Fill contains BaP above human health criteria. • Filling contains arsenic and mercury above ecological criteria. • A capping layer was recommended around the proposed building footprint. • The underlying soils are assessed to be acid sulfate containing and an acid sulfate soils management plan (ASSMP) will be required if they are disturbed. • Landfill gas was identified and protection measures in the form of subfloor ventilation or sealing the building from ingress were recommended. • A long term Environmental Management Plan (LTEMP) was recommended to maintain integrity of capping and ensure that landfill gas concentrations within the building remain at acceptable levels. Annual gas monitoring was recommended.
STS (2009) CA	Given the presence of imported fill, Canada Bay Council requested that an environmental site investigation be carried out. The STA (2009) CA investigations assessed the following items: • Contamination of the imported fill; • Gases generated by the imported fill; • Acid sulfate soils (ASS) underlying the fill; and • Any impact from the imported fill on the groundwater. The scope of work comprised: • A monitoring well was formed in BH101 and a gas analyser used to record concentrations during drilling in open holes. • A maximum depth of filling was encountered in BH101 at 3.3m bgl. • Groundwater in BH101 was measured at 3m bgl at low tide. • COPC included heavy metals, OCP, OPP, TPH, BTEX, PAH, PCB and asbestos. • SPOCAS testing was carried out for ASS. • 11 soil and two groundwater samples were collected from four boreholes. • Conclusions and recommendations were generally as outlined in the MAA (2009) Covering Letter above, with the following additional information noted: - No asbestos was detected in soils but samples only comprised 40g in accordance with AS4964:2004. - A ventilated void / pipes in gravel or a 1mm HDPE membrane were recommended. - Steel screw piles were recommended to prevent generation of ASS or bringing landfill material to the surface. - It was reported that groundwater was not impacted by contaminant in landfill materials noting that ammonia was not analysed.
GSEC (2009) Typical Cross Section	The Typical Cross Section noted the following (from bottom up): • Piled foundation solution with pile caps. • 1mm HDPE gas barrier (equivalent to Curtis Barriers) terminated at building edge. • Reinforced suspended concrete slab.
EIA (2015) PSI	EIA completed a PSI with limited sampling to assist the development application process for the installation of 40 new light poles. The main objectives of the assessment were to: • Evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources; • Investigate the degree of any potential contamination by means of limited intrusive sampling and laboratory analysis, for relevant contaminants; • Where site contamination is confirmed, make recommendations for the appropriate management of any contaminated soils and/or groundwater; and

Report	Summary (Objectives, Scope of Work, Key Findings)
	• To characterise waste for off-site disposal in accordance with NSW EPA (2014) *Waste Classification Guidelines*[Although CCB advised that this component of the works was not completed] The key findings presented in the EIA (2015) PSI are outlined below: • The site has been used for recreational (park) purposes since at least 1886; • The site was free of statutory notices issued by the NSW EPA/DECC and was not recorded on the list of NSW Contaminated Sites Notified to EPA; • Soil sampling and analysis were conducted at six borehole locations (BH1 – BH6) down to a maximum of 11m below ground level (BGL). • Subsurface layers comprised primarily gravelly sand to sandy fill materials overlying silty clay and sandstone. • Groundwater seepage was encountered at depths of between 1.5 and 3.5m BGL during drilling. • Lead was detected in one borehole at 1.4 -1.5m BGL. Asbestos was detected in one borehole at 1.2-1.3m BGL. The levels of these contaminated exceeded the National Environmental Protection Measure (NEPM) (2013) Health Investigation Level C (HIL-C) criteria for public open space. • The concentrations of lead and Polycyclic Aromatic Hydrocarbons (PAHs) within the fill would classify the soil as Restricted Solid Waste without Toxicity Characteristic Leaching Procedure (TCLP). TCLP was completed for the samples reported negligible leaching. • Asbestos fibres were detected within the fill layer (BH6). Delineation of the extent of asbestos-impacted fill was not achieved.

3.4 Site History and Environmental Setting

This information has been sourced from the reports listed in Section 3.3 above and supplemented by publically available information.

Table 3.4 Summary of Site History and Environmental Setting

Item	Details
Summary of Aerial Photographs (both on and offsite): *Sourced from EIA PSI (2015)*	Historical aerial photographs of the site (not provided) indicate the following land use: • 1930 – Site appeared to be vacant with trees observed. An oval-shaped track was observed in the southern portion of the site, whilst the northern portion appeared to be marshland. • 1943 – Appeared unchanged from previous aerial photograph. • 1951 – Appeared unchanged from previous aerial photograph. • 1961 – Appeared unchanged from previous aerial photograph. • 1986 – Extensive clearing of marshland in the northern portion of the site was observed. A defined shoreline was observed to be established, indicating that possible land reclamation had been undertaken. Surface of new land was grassed. • 1999 – A portion of the site appeared to be dedicated to recreational/sports courts. Some courts appeared to be paved in asphalt whilst some appeared to be grassed. • 2005 – Appeared unchanged from previous aerial photograph. • 2015 – Appeared unchanged from previous aerial photograph. The following represents a summary of the surrounding area based on the review of the historical aerials completed by EIA PSI (2015): • 1930 – The site makes up a small portion of St Lukes Park, the immediate surroundings of the site are therefore undeveloped. Canada Bay is to the north of the site. Residential properties were observed to the east, south and west of the site. • 1943 – Urban development was observed in all directions, however the predominant land use was low-density residential.

Item	Details
	• 1951 – Urban development was observed in all directions, however the predominant land use was low-density residential. • 1961 – Urban development was observed in all directions, however the predominant land use was low-density residential. • 1986 – The northern portion of the site appeared to have been cleared of marshland and re-laid with grass. Land use remains residential in all other directions. • 1999 – Land use appeared unchanged in all directions. • 2005 – Land use appeared unchanged in all directions. • 2015 – Land use appeared unchanged in all directions.
NSW EPA Records	A search of the POEO public register did not indicate any environment protection licences, licence applications or notices issued under the POEO Act or pollution studies or reduction programs for the site. A search of NSW EPA contaminated land public register indicated the site has not been notified as contaminated to the EPA, has not been issued with a Site Audit Statement, and is not under a voluntary management proposal.
Geology and Soil Map Conditions:	Geological Map of Sydney (scale 1:100,000) indicates that the subsurface profile across the site includes Quaternary Holocene alluvial deposits overlying the Hawkesbury Sandstone formation. Reference to the Soil Landscape Map of Sydney (scale 1:100,000) indicates that the landscape at the site is identified as disturbed. The disturbed landscape shares a nearby border with the Blacktown Soil Landscape.
Acid Sulfate Soils:	The NSW Natural Resources Atlas for Prospect/Parramatta River, Acid Sulfate Soil Risk Map 1:25,000 (1992) indicates that the site is located on 'Disturbed terrain'. Disturbed terrain includes filled land as part of reclamation of low lying swampland for urban development. Investigations are required to determine potential for ASS. Review of Council's LEP 2013, indicates that the site is Class 2 ASS. This requires development consent where works will occur below the natural ground surface, and where works result in the lowering of the water table. The MAA (2009) Covering Letter reported the presence of ASS in the underlying material at the Project site. Given that the proposed piling technique is screw piles, a soil displacement method, the underlying ASS is unlikely to be exposed. However, this must be taken into consideration by the appointed Geotechnical Consultant for the subsurface piling works.
Location of Fill Materials:	Investigation works conducted by MAA (2009) GI, STS (2009) CA, and the EIA (2015) PSI, as summarised in Section 3.3, stated that fill of variable thickness occurs across the site as a whole. This includes material described as gravelly sand and sandy clay, fine to medium grained, dark brown – black, gravel is fine to medium, subangular to subrounded, trace rootlets, trace metal fragments, trace plastics, bricks, tiles, metal and glass were observed.
Summary of Registered Bores:	A review of registered bores was not completed by EIA (2015) PSI. Based on Zoic's experience with the general area, there are other sites along the Mortlake peninsula that have monitoring wells installed, however, the purpose is for monitoring rather than for any beneficial use. Shallow groundwater is saline in the region.
Depth to Groundwater:	Based on the geotechnical investigation (MAA, 2008) and the contamination assessment (STS, 2009), groundwater at the site was encountered in fill material between 1.6m BGL and 3.0m BGL. STS (2009) CA noted that the detection of groundwater at 3.0m BGL was recorded during low tide. This suggests that groundwater depth is tidal.
Direction and Rate of Groundwater Flow:	Groundwater is expected to flow in a north easterly direction towards Canada Bay, which lies approximately 550m beyond the proposed construction site. Groundwater is likely tidally influenced, especially beneath the Project footprint which lies adjacent to the concrete lined drainage channel

Item	Details
Direction of Surface Run Off:	Surface water is expected to follow the topography and internal drainage lines for Cintra Park. It is likely that the site drains towards the concrete lined drainage channel to the west of the site and toward Canada Bay to the north of the site.

3.5 Potential Extent of Contamination

Reference should be made to the information presented in the existing reports for further detail, however, information regarding contamination at the site has been summarised in Sections 3.5.1 to 3.5.3 inclusive above.

As excavation of site soils is minimal and screw piles will be used; it is unlikely that workers will come in contact with the potentially contaminated media, however, due consideration should be given to the potential for existing subsurface contaminants and determining any complete exposure pathways. Should excavation be required of the waste from the former landfill, written approval must be sought from the EPA in accordance with the POEO Legislation Amendment (Waste) Regulation 2018. Furthermore, the excavation of landfill waste will result in additional potentially complete exposure pathways and as such will require appropriate control measures to minimise risk to human health and the environment.

Management of future below ground works (and the associated environmental and health & safety risks) should take into consideration the information presented in this CEMP.

3.5.1 Potential Sources and Types of Contamination

Based on the review of site history, environmental setting and considering the proposed works, the potential source of contamination and associated contaminants of concern is as follows:

- Uncontrolled and historically placed fill present across the site ranging in thickness between 1.0m - 3.3m;
- Fill material is variable and contains waste material (metal, tiles, brick, and plastic);
- Identified contaminants within the fill in the vicinity of the site include:
  - Polycyclic Aromatic Hydrocarbons (PAHs) (in particular Benzo(a)pyrene
  - Lead
  - Flammable gases (as a result of landfilling)
- Contaminants of potential concern (COPC) include:
  - Heavy metals;
  - Total petroleum hydrocarbons (TPH);
  - Volatile organic hydrocarbons (VOC including BTEX)
  - Asbestos;
  - Dioxin (given the known history of reclaimed land and dioxin incidence);
  - Polycyclic aromatic hydrocarbons (PAH);
  - Polychlorinated biphenyls (PCB);
  - Organochlorine pesticides (OCP). (Organophosphate pesticides (OPP) are unlikely due to historical fill activities and OPP typically degrade within 24 months);

- Given the uncontrolled nature of filling, STS identified hazardous ground gases to be present. The following ground gases have the potential to be present within the building footprint: including methane, carbon dioxide, carbon monoxide and hydrogen sulphide;
- Acid Sulfate Soils have been identified onsite (STS 2009 CA) within the fill layer and could occur >2m below ground level. Acid Sulfate Soils are unlikely to be a risk given that:
  - Minor excavation (max depth 500mm) will not be deep enough to expose the potential underlying ASS; and
  - Screw piles (i.e. displacement techniques) are unlikely to expose or bring to the surface ASS thus limiting the generation of ASS.
  - On this basis, the site is unlikely to require an Acid Sulfate Soil Management Plan (ASSMP). However, confirmation should be sought from the geotechnical engineer / piling contractor prior to commencement of piling works.

3.5.2 Potential Migration Pathways

The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (i.e. solid / liquid and mobility characteristics);
- The extent of the contaminants (i.e. isolated or widespread);
- The location of the contaminants (i.e. on the site surface or at depth); and
- The topography, geology, hydrology and hydrogeology at the site.

Based on the information available to date, the following migration pathways may be associated with the site:

- If shallow fill is disturbed during the Project, workers and general public could be exposed to COPC identified above. Minimal excavation is proposed as part of the Project works which will require characterisation prior to construction to identify any risks to human health or the environment and advise approval requirements from the EPA to exhume landfill waste.
- If spoil is generated and not removed from the site, or sufficiently remediated, capped or managed, there could be ongoing migration resulting in surface impact and runoff potentially causing a risk to human health and the environment.
- If volatile vapours or hazardous ground gases are identified, these may pose a potential risk to workers, the general public during construction and / or in the future, and future site users.

Given that excavation is minimal and limited as part of the NCAB extension works, the only complete exposure pathways that have the potential to exist is from inhalation of landfill gas and soil vapours pending further investigation into the subsurface characteristics within the NCAB footprint. It is noted in the MAA (2009) Covering Letter that landfill gas was identified and protection measures in the form of subfloor ventilation or sealing the building from ingress were recommended and included in the existing amenities block. A Long Term Environmental Management Plan (LTEMP) was also recommended to maintain integrity of capping and ensure that landfill gas concentrations within the building remain at acceptable levels. Annual gas monitoring was also recommended.

3.5.3 Potential Receptors

Potential receptors to COPC that may be present include the following:

- Construction workers on the site during the Project works;
- Future users of the site; and

- Future maintenance workers that may need to access services;

The closest residential receptor is located approximately 100m to the east its closest point. Furthermore, the only complete exposure pathway considered to exist is the potential for landfill gas and / or soil vapour intrusion into structures and given that no excavation is proposed, preferential migration of landfill gas / soil vapour is not expected to be unduly altered with respect to the adjacent residential areas.

4 Environmental Management Activities and Controls

4.1 Impact Identification

A list of Environmental Aspect and Impacts has been prepared for the Project works and is presented in Appendix B. The list outlines the anticipated major environmental aspects associated with the proposed works which have the potential to impact the surrounding environment. The list contains a risk assessment based approach to the risks identified, describes mitigation and management measures, and provides a residual risk rating based on implementation of the management measures. Upon identification of additional potential impacts, these documents will need to be updated accordingly.

4.2 Control Measures

Control measures to be implemented to address identified potential effects are included in the Project's Environmental Aspects and Impacts and Environmental Weekly Checklist (Appendix C). Relevant procedures will be followed by implementing the required control measures.

Specific requirements and all reasonable practical steps to reduce impacts regarding erosion and sediment, stockpiles, groundwater, contamination, waste, traffic, noise and vibration, flora and fauna, air quality, acid sulfate soils, asbestos, Aboriginal and non-Aboriginal heritage items, and external lighting are addressed in the following sections and the Environmental Aspects and Impacts list (Appendix B).

4.2.1 Erosion and Sediment Control

The Principal Contractor and Subcontractors must plan and carry out works to avoid erosion and prevent sediment leaving the site to the surrounding land, watercourses, water bodies, wetlands, and stormwater drainage systems. This includes the installation of erosion and sedimentation controls prior to commencing works. Where possible, works shall be staged to reduce the areas cleared at the time to minimise soil disturbance.

The construction zone of the site comprises a grassed area, with some trees, to the south of the existing amenities block. As work progresses the ground surface will be exposed to rainfall and flows. It is important to manage flows on site so that sediment laden water is not mobilised into existing or temporary stormwater drains or channels. No excavation is proposed so additional sediment laden surface water is not expected to current flows.

An Erosion and Sediment Control Plan (ESCP) has been prepared by City of Canada Bay dated 26 June 2009. It is to be available at the site, and shall be communicated to all Project staff during induction processes. The ESCP is presented in Appendix E. The appended ESCP provisions for a silt fence to surround the proposed construction area and provides locations for the stockpiling of building material.

Upon appointment of the Principal Contractor, an updated ESCP shall be developed and implemented prior to construction. The ESCP must identify specific site measures that control water quantity and reduce the potential for soil erosion, land degradation and impacts on water quality within the construction zone, including typical measures as follows:

- Silt fences to prevent sediment from entering adjoining land.

- Stormwater inlet filters comprising of gravel filled wire mesh or geotextile 'sausage'
- Geotextile pit filters and / or geotextile filter pit surrounds will maintain stormwater quality by preventing sediment from entering stormwater pits.
- Temporary construction vehicle exit providing a stabilised site access point comprising of a berm and timber or metal sleepers underlain by a gravel bed followed by geotextile fabric.
- The removal of mud from the wheels and bodies of plant and vehicles before it enters public roads or other sealed pavements. This could be rumble grids, dry brushing, wheel wash etc. depending on the nature and conditions of the site.
- The removal of mud or dirt spilt by construction equipment on to public roads or other sealed pavements.

The controls shall be inspected and approved by the Site HSE Officer prior to the commencement of works. The controls shall be maintained in good working order and inspected daily to ensure they are effective in controlling erosion and sedimentation. Accumulated sediment shall be removed and disposed of regularly, i.e. weekly and after rain events.

Works shall be undertaken in accordance with this Plan and be subject to review / update by the Project Manager as works progress (the ESCP is to be considered a working document). Specific details such as the sizing of diversion channels must be confirmed by the Principal Contractor prior to commencing works.

To further protect water quality, additional actions have been outlined in Appendix B.

A weekly checklist to be completed by the Site Manager is provided in Appendix C.

4.2.2 Soil and Stockpile Management

Soil stockpiles are not expected to be generated as part of the construction works given the methods proposed. As such, soil stockpile management is unlikely to be required. Should soil stockpiling be required, the below must be considered.

Where storage of material is required, stockpiles should be kept to a maximum of 2m in height and be situated in an area of the site of relatively level ground with no intercepting surface water flow paths. Stockpiles are to be 2m clear of drainage lines, natural water courses and established trees in accordance with Landcom's Blue Book (2004). Stockpiles are to have temporary silt fences in place around the stockpiles to create an enclosure and if necessary they will be covered with a shade cloth or tarpaulin to retain the materials on the stockpile.

A Materials Management Plan (MMP) must be prepared by the Principal Contractor prior to commencement of works to document the handling, temporary storage, environmental controls and final emplacement requirements of excavated and imported materials. It is to be available at the site and will be communicated to all Project staff during induction processes.

4.2.3 Groundwater

Screw-piles are expected to encounter groundwater given that they will extend beyond 1.6m. Groundwater is not expected to be extracted or impacted as part of the proposed works.

4.2.4 Existing Contamination Management

Minimal below ground excavation will occur within the Project site. Consequently, no excavation into the underlying contamination (refer to Section 3 above) is anticipated.

However, landfill gas and / or vapour risks could be present at the Project site requiring further consideration and during investigation, subsurface conditions may be characterised to inform protection measures, controls, and the need to acquire prior written approval from the EPA to exhume landfill waste (refer to Section 4.2.12 below).

4.2.5 Spill Management

To prevent the possible contamination of the site with hydrocarbons during construction, several measures are to be implemented to reduce the risk of an oil / fuel spill:

- Dangerous goods (such as petrol, diesel, oxy-acetylene, oils, etc) shall be stored in a lockable compound with sufficient ventilation in accordance with the relevant codes of practice and standards.
- Safety Data Sheets on all flammable and potentially harmful liquids shall be provided by the contractor undertaking the works.
- A register shall be kept of all chemicals stored onsite.
- A Spill Response Procedure Flow Chart must be prepared by the Principal Contractor prior to storage of any dangerous goods or chemicals on site.

4.2.6 Water Quality and Storm Water Control

The Principal Contractor and Subcontractors shall comply with the requirements of Section 120 of the Protection of the Environment Operations Act 1997 – Prohibition of pollution of waters. The Act prohibits all forms of pollution unless specifically authorised through an Environmental Protection Licence (EPL). To address this, the following control measures shall be in place.

Potentially hazardous activities, including washing out of concrete delivery vehicles, washing down of construction plant are not permitted on site except in specially constructed bays that retain high pH water. Washing out of concrete delivery vehicles offsite is only permitted at locations approved for that purpose by the appropriate authority. Drains are to be labelled to reduce likelihood of misuse.

Washing of paint brushes must be managed via collection of the wash-water and removed from the site and appropriately treated and / or disposed. The chemicals, acids or residues from any “wet trades” such as brick cleaning must be prevented from entering drains and waterways.

All liquids and materials that could cause water pollution must be stored in areas with secondary containment.

In general, stormwater shall be managed onsite via ESCP (refer to Section 4.2.1). In the event of stormwater collecting in erosion and sediment controls and is required to be pumped out, the pump intake is to be located no more than one metre below the surface of the collected water to reduce the amount of settled silt being pumped out for further treatment. Discharge of stormwater to the stormwater system requires prior written consent from Council.

Stormwater treatment options shall be outlined in the ESCP.

If stormwater cannot be treated suitable to regulations, an appropriately licenced liquid waste contractor must be engaged and the stormwater collected and disposed of at a location lawfully able to receive that type of waste and receipt documentation must be recorded.

4.2.7 Waste Management Plan

The Principal Contractor and Subcontractors shall adopt the hierarchy of waste – avoid, reduce, recycle/reprocess and dispose, to maximise resource recovery and minimise disposal wherever possible and practical. The Project's target is to recycle as much waste as possible. The importance of appropriate waste management practices is to be included in the site induction.

For general waste and general recycling, bins shall be provided onsite.

Soils are not expected to require offsite disposal based on the proposed construction methods. However, should offsite disposal be required for soils the following approach will be implemented.

To exhume landfill waste, prior written approval must be sought by the EPA. Soils designated for offsite disposal must be classified in accordance with NSW EPA (2014) Waste Classification Guidelines, Part 1: Classifying Waste. Once classified, waste designated for offsite disposal must be taken to a facility lawfully allowed to receive that type of waste. Consideration of chemical control orders, particularly with respect to dioxin shall also be required. Given the potential for Acid Sulfate Soils and other contaminants, should soil be excavated and require offsite disposal, a suitably qualified environmental consultant should be engaged to, supervise the excavation, classify soils, and advise disposal requirements.

As previously mentioned, a Material Management Plan (MMP) should be developed for the site to track material import and export. The MMP must include an Unexpected Finds Protocols for contamination. An example is provided in Appendix D, but this shall be modified to suit the findings of the proposed investigations and MMP requirements.

4.2.8 Construction Traffic Management

A Construction Traffic Management Plant (CTMP) shall be prepared for the site outlining how the Principal Contractor proposes to manage safety in regards to traffic during the external works and construction components of the Project. The CTMP should include provisions for:

- The safe movement of vehicular and pedestrian traffic;
- The protection of workers on the site and from passing traffic;
- Access to the property for delivery of material and movement of work vehicles located within the limits of the project;
- Design, construction, maintenance and removal of any necessary temporary roadways and detours;
- Traffic controllers;
- The installation of temporary signs, road markings, lighting and safety barriers;
- The proposed protection of pedestrians adjacent to the site; and
- The best route / road corridor for all work activities including the existing road and road shoulder that may be used for the temporary diversion of traffic.
- Defined traffic route through the local area to minimise the impact to surrounding residents.

Based on information provided by CCB, heavy vehicles are anticipated to access the site via Cook Avenue to the east of the site and light vehicles via the west from the Crane Street Carpark. Figure 4 in Appendix A shows the vehicular / plant access routes.

4.2.9 Noise and Vibration Management

From an environmental viewpoint, noise can create a nuisance to neighbours, members of the public, fauna and is subject to legal requirements. The Principal Contractor and its Subcontractors shall make all practical efforts to comply with statutory requirements for noise management and minimise nuisance to neighbours.

A Construction Noise Management Plan (CNMP) shall be prepared for the site by the Principal Contractor. The CNMP must provide site specific recommendations for management of noise and vibration together with complaints management procedures.

4.2.10 Flora and Fauna Management

No sensitive flora and fauna have been identified at the site and no special precautions are required.

Ten trees have been identified that require removal to facilitate Project works. Thirteen trees will be replanted in accordance with the Tree Replanting Plan developed by City of Canada Bay and is provided in Appendix F.

4.2.11 Bushfire and Flood Emergency Plan

The site is not susceptible to bush fire. The site is not within a flood planning area under the Canada Bay Local Environmental Plan (LEP) (2013).

4.2.12 Air Quality

The Site Manager shall ensure that all construction facilities erected on the site and equipment associated with the works are designed and operated to minimise the emission of dust, plant and vehicle exhausts and other substances into the atmosphere.

The Principal Contractor and its Subcontractors shall employ construction methods that keep the air pollution to a minimum and apply measures as those listed below to ensure that airborne pollutants do not cause air pollution and nuisance in the vicinity of the works:

- Fitting power tools with dust collection devices where practical.
- Keeping all plant and equipment well maintained and not leaving them idling while not being used.
- Reporting excess air emissions from plant and arranging for a service to fix the problem.

Exposed ground and bulk excavations are not expected as part of the construction works. Should they be required, the below considerations should be taken into account:

- EPA approval where excavation of landfilled waste is required
- The spraying of disturbed soil and roads with water while under construction, as required.
- Minimising exposed and disturbed soil areas.
- The provision of coverings or stabilisation of soil stockpiles.
- Covering all loads leaving the site.
- Stabilisation of ground likely to be exposed for significant periods (e.g. – using sterile seed).

Given the potential for landfill gas and risk of soil vapour present at the site, additional measures are to be taken to minimise human health and environmental risk:

The required gas protection level with respect to current NSW EPA guidance is unknown. The Principal Contractor should appoint a suitably qualified and experienced environmental consultant (i.e. Certified Environmental Practitioner – Soil Contamination or similar) to complete a hazardous ground gas and soil vapour investigation in the footprint of the NCAB.

Key considerations for the investigation shall include:

- Installation of a single hazardous gas and single vapour monitoring well within the footprint of the NCAB.
- Gas monitoring for methane, carbon dioxide, oxygen, carbon monoxide, hydrogen sulphide together with flow rate in accordance with NSW EPA (2012) Gas Guidelines.
- Collection of a volatile vapour sample for analysis in accordance with NEPM (2013). .
- Given that the groundwater is likely to be tidally influenced, the gas monitoring programme should include high and low tide data as well as low pressure data.
- Preparation of a Ground Gas Protection Measures Design & Verification Plan and Technical Specification in accordance with NSW EPA (2012), CIRIA C748 Guidance on the Use of Plastic Membranes as VOC Vapour Barriers and CIRIA C735 Good Practice on Testing and Verification of Protection Systems.
- Any proposed modifications to the natural venting within the existing amenities block must also be assessed as part of the deliverables referred to in the above point.
- Establishment of monitoring, trigger levels, and / or protection measures for construction activities, as required.
- The investigation can also be used to characterise subsurface conditions to ascertain the extent of the landfilling and inform whether written approval from the EPA will be required for minimal excavation (max depth 500mm) of landfill waste.

The following additional measures should be considered based on the findings of the additional investigation outlined above:

- Any temporary or permanent structures or site features where landfill gas or vapour could accumulate must be assessed by a Competent Person and constructed in a manner which prevents accumulation of harmful or explosive atmospheres. For example, raised above ground level with services sympathetically designed to prevent creation of preferential migration pathways or by the incorporation of other protection measures (e.g. passive venting and / or membranes). Care must also be taken to ensure that lateral migration of vapour / landfill gas is not exacerbated as a result of Project works conducted (e.g. installation of new services).
- A designated smoking area is to be confirmed onsite. Care must be given to ensure the smoking area is greater than 10m from netball courts. It is an offence to smoke within 10m of a sporting venue (court, field, pitch etc.), when in use for children's activities.
- All activities to be assessed for their potential to create a spark or source of ignition and appropriate control measures implemented.
- Monitoring of landfill gas / soil vapours continually throughout drilling works (e.g. piling) with predetermined action levels.
- Personal Protective Equipment (PPE) is to be worn at all times when there is the potential to encounter landfill gas / soil vapour including half face mask respirators with an appropriate filter for organic vapours.
- Machine operators are required to have cabin doors shut with air conditioning turned on.

Each stage of the construction must be assessed for the potential for hazardous gas accumulation and explosion risk. Further investigation of landfill gas within the footprint of the NCAB extension (as mentioned above) is expected to enhance the understanding of the underlying conditions and enable informed decision making regarding design of the gas protection measures and risk to construction workers and future site users.

On completion of the construction works, CCB must appoint a suitably qualified and experienced environmental consultant (i.e. Certified Environmental Practitioner – Soil Contamination or similar) to prepare a Long Term Environmental Management Plan (LTEMP) to manage the gas protection measures and residual contamination present across the site as a whole.

Existing landfill gas / soil vapour protection measures are identified in the floor plan shown in Figure 3, Appendix A.

4.2.13 Acid Sulfate Soils

Works are not expected to expose acid sulfate soils. Acid sulfate soils are expected in the subsurface of the site and as a result, displacement piling (screw-piles) will be used.

Should excavation be required, field indicators of actual or potential ASS include the following:

- Dominance of mangroves / swamp / marine / estuarine environment
- Scalded or bare low lying areas
- Sulfurous smell
- Presence of shells in soil
- Yellowish / rust coloured staining in soil or water
- Unusually clear or milky blue-green drain water
- Erosion of concrete or steel
- Waterlogged soils, muds estuarine sands or sediments

The MAA (2009) Covering Letter states that the underlying soils were assessed to be acid sulfate containing and that should the soils be disturbed, an Acid Sulfate Soil Management Plan will be required. The appointed geotechnical consulting and piling works contractor must be made aware of this and factor these conditions into their design / method. Consideration should also be given to the tidal nature of the groundwater level and any influence this may have on Acid Sulfate Soils.

4.2.14 Asbestos

Asbestos has been identified within the confines of Cintra Park. Asbestos has not been identified within close proximity to the proposed NCAB extension. Given that materials are not expected to be excavated as part of the construction works, asbestos is unlikely to be encountered. Should asbestos be encountered, **STOP WORKS** and arrange for appropriate investigation / management to be conducted by a suitably qualified environmental consultant / occupational hygienist.

4.2.15 Aboriginal and Non-Aboriginal Heritage

The presence of aboriginal or non-aboriginal heritage is considered unlikely due to the extensive filling that has occurred at the site. However, the following unexpected finds protocols are provided as a contingency measure.

Indigenous Heritage

Should any relic, artefact or material (including skeletal remains) suspected of being of Aboriginal origin be encountered, the Principal Contractor and Subcontractors must cease all construction work that might affect the relic, artefact or material and protect the relic, artefact or material from damage or disturbance. The Project Manager will notify CCB immediately, who will then provide further direction, as required.

Non-Indigenous Heritage

Should any item be encountered which is suspected to be a relic of heritage value, the Principal Contractor and Subcontractors must cease all construction work that might affect the item and protect the item from damage or disturbance. The Project Manager will notify CCB immediately, who will then provide further direction, as required.

A 'relic' means any deposit, object or material evidence:

- Which relates to the settlement of the area, not being aboriginal settlement; and
- Which are 50 or more years old.

4.2.16 External Lighting

External lighting will comply with AS 4282-1997 Control of the obtrusive effects of outdoor lighting.

4.3 Unexpected Finds

Residual hazards that may exist at the site would generally be expected to be detectable through visual or olfactory means. At this site, these types of hazards may include friable types of asbestos in soil and odorous or stained hydrocarbon impacted soils. Given that minimal excavation will occur, the potential to uncover unexpected items is considered unlikely. Should the uncovering of unexpected contamination occur the Project Manager is to maintain communication with the engaged specialist consultants to ensure the appropriate procedures are implemented. The proposed landfill gas / soil vapour investigation within the footprint of the NCAB will also be used to characterise underlying soil conditions with regard to the need to obtain permission from NSW EPA should excavation into landfill waste be required.

An example is provided in Appendix D, but this shall be modified to suit the findings of the proposed investigations and MMP requirements.

5 Monitoring and Review

5.1 Environmental Monitoring Program

Requirements for environmental monitoring for the project are included in the Environmental Aspects and Impacts list (Appendix B). The monitoring program consists of: daily site inspections; weekly inspections, which are formally documented each week by using the Weekly Checklist (Appendix C); and specific monitoring carried out at agreed intervals or following major events, e.g. rainfall and vegetation clearing. The environmental monitoring program shall be the responsibility of the Site HSE Officer (or Project Manager Nominee), and include:

- Sufficient training of personnel.
- Arranging specialist consultants when required.
- Coordination of monitoring equipment and materials.
- Coordination of sample collection, documentation and delivery.
- Ensuring frequency and methodology is in accordance with all licences, permits, approvals, Australian Standards and any other industry standards.
- Data management and representation of results.
- Reporting non-conformances and implementing corrective actions.

Field data such as weather, air quality, and noise and water quality shall be recorded electronically where possible and transferred into monitoring results spreadsheets. Field data sheets shall be completed where required, and data input directly into monitoring results spreadsheets. In addition to measured parameter readings, the following information shall be recorded on Field Data sheets:

- Date
- Time
- Sampling point/location
- Name of sampler
- Laboratory analysis results will be filed electronically onsite.

5.1.1 Site Inspections

Environmental site inspections shall be undertaken by various project personnel to assess the adequacy and effectiveness of environmental controls. These inspections shall address the following as a minimum:

- High risk activities and processes.
- Work in environmentally sensitive areas.
- Site preparation for adverse weather conditions.

Responsibilities for environmental inspections on the Project are summarised below:

- Site staff shall conduct daily inspections of areas under their supervision, including assessment of environmental controls and issues. Daily inspections will be documented in Daily Diaries.

- Site supervisory staff / Site HSE Officer (or nominated person) shall conduct weekly inspections completing the Weekly Environmental Checklist. Environmental issues arising shall be immediately reported to the Site HSE Officer and Site Manager for rectification. Where required, issues may be entered into the Corrective Action Database.
- Any employee of the Principal Contractor or Subcontractor may raise an environmental issue through tool box talks or to any managing personnel.
- Safety, Environment and Quality Audits shall be performed by the Principal Contractors nominated HSE representative on a regular basis.

5.1.2 Auditing of CEMP

Audits of the CEMP shall be conducted regularly to ensure the Plan is appropriately in place and implemented. Audits must be undertaken by suitably experienced auditors.

Projects that have duration of more than six months shall have at least one audit of the CEMP, and after 6 months, shall be audited at least once per year. Projects with high risk activities or that performed poorly at the initial audit may be audited at a higher frequency. The Corporate HSE Manager is responsible for coordinating project audits.

A concluding environmental compliance audit must be undertaken at completion of the work under this Project. It shall include the following:

- Site surveillance/inspection.
- Full review of environmental records.
- Identification of any environmental protection measures and operational controls that have not yet been implemented to the levels identified in the associated plans.
- Recording of the condition of existing environmental protection controls.
- Identification of any environmental protection measures which require rectification and ongoing management.

5.2 Site Environmental Inspections

Site Environmental Inspections are to be undertaken weekly using the Weekly Environmental Checklist (example provided in Appendix C) to ensure that environmental hazards are recognised and can be promptly rectified.

Additional environmental issues may be added to the Site HSE Inspection form, as required.

5.3 Monitoring of Project Environmental Activities

Objectives and Targets for the project are specified in Section 1.5. Data relating to these targets are to be documented daily using site diaries which are to be reviewed by Project / Site Managers on a monthly basis and forwarded to the Corporate HSE Manager for reporting to CCB Project Manager.

The KPI Monthly Report shall capture information on lag and lead indicators. The current indicators are:

Lag indicators:

- Number of environmental incidents.
- Number of Penalty Infringement Notices (PINs) or clean-up notices.

- Number of community complaints.

Lead Indicators:

- Number of toolbox talks (combined with WHS & include environmental issues)
- Number of environmental inspections undertaken.
- Waste and recycling volumes (initially to set benchmark then track improvement).

5.4 Review of CEMP

This CEMP must be reviewed by the Project Manager in consultation with the Site HSE Officer and the Corporate HSE Manager whenever any major changes occur on the site that may have an impact on the environment, or at least once during construction. Changes made to the plan are to be documented.

6 Environmental Incidents, Non-Conformance and Complaints

6.1 Environmental Incidents

An environmental incident may, amongst other things, include a fuel or hazardous material spillage / release; a major leak; failure of a pollution control device such as sediment controls; major noise and/or vibration affecting neighbours.

Any Environmental Incidents shall be immediately reported to the Site HSE Officer or Project Manager who will report the incident to the CCB Project Manager as per project requirements.

In the event of serious or material environmental harm, the Principal Contractor shall notify the CCB Project Manager and the relevant regulatory authorities in accordance with State / Commonwealth requirements. Where necessary, an agreed representative shall also notify the respective property owners or occupiers within 24 hours of the incident occurring.

An incident shall be reported if any of the following scenarios occur or have the potential to occur:

- Serious environmental harm.
- Material environmental harm.
- Prosecution by a regulatory authority.
- Environmental approval condition breach.
- Environmental monitoring parameter breach.

Incidents shall be reported both verbally and in writing. Additionally this information shall be forwarded to the CCB Project Manager. Verbal notification shall be provided immediately, and written notification will be forwarded to the CCB within 24 hrs of incident occurring. All incidents and accidents shall be recorded in an appropriate Incident and Accident Database.

All environmental incidents that cause, or could potentially cause environmental harm are to be investigated, and corrective actions implemented following the investigation. Depending on the seriousness of the incident, key site personnel, the Principal Contractors HSE Officer / Project Manager, witnesses etc. shall be consulted on the investigation and in determining appropriate corrective or preventive actions.

6.2 Preparedness

The key to effective prevention of incidents is risk assessment, procedure development, monitoring and training. During construction activities, the Principal Contractors inspections and preventive actions will include:

- Activity specific and daily risk assessments.
- Development of work procedures and construction method statements in consultation with relevant staff such as work teams, environment team members and senior management.
- Daily inspections of active work sites.
- Completion of routine environmental checklists.
- Issue and quick close-out of non-compliance notices.

- On-going environmental training.
- Environmental audits of work sites, Subcontractors and compliance issues.

Environmental and safety information on hazardous substances (e.g. MSDS) shall be available at the main site office and where such substances are stored. Environmental response procedures may be tested in areas where a pollution risk is present, such as those adjacent to waterways.

Personnel involved in emergency response activities shall be provided with specific training.

An up-to-date list of emergency response personnel and organisations shall be maintained at the site office and compounds.

6.3 Reporting

Site environmental incidents must be reported to the Project / Site Manager as soon as practically possible; in addition, any major environmental incidents must also be reported to the Principal Contractors HSE Manager. The first priority is to ensure that the situation is controlled as soon as possible, and to avoid further pollution or other adverse environmental consequences. Reporting of the incident shall not delay any immediate responses to the incident.

Environmental incidents that cause or threaten to cause material environmental harm must be reported to the Appropriate Regulatory Authority (ARA – which may include Council, EPA, Fire & Rescue, Minister for Health and SafeWork NSW) as soon as practicable following the incident. This would include any spillage or leak of substances that cause water or land pollution. Material environmental harm generally means harm that is not trivial and / or costs more than $10,000 to clean up.

If the Site Manager believes the incident may be reportable to the ARA, contact the HSE Manager for further advice prior to making an Investigation Report.

Incident reports must be completed and forwarded to the Corporate HSE Manager within 24 hours and must be kept for a minimum of 5 years.

In the event of an environmental emergency, the Principal Contractor must nominate a person that can be contacted 24 hours per day, seven days per week (e.g. Project Manager).

Emergency services contact details are as follows:

- Emergency Hotline: 000
- Ambulance: 000
- NSW Fire Service: 000
- NSW Police (Five Dock): (02) 8753 3599
- State Emergency Service (SES): 132 500
- WIRES (injured wildlife): 1300 094 737
- OEH Environmental Hotline: (02) 9995 5911

All onsite information relating to hazardous materials, including Material Safety Data Sheets and spill containment materials shall be kept at the site office.

6.4 Non-Conformance Reports (NCRs)

The Principal Contractor shall have a non-conformance and Corrective Action process in place to address all non- conformities across the business regardless of the source.

Typically, environmental non- conformances would result from audits and inspections, from observations by the Site Manager of poor environmental practices including incorrect waste disposal/recycling including liquid waste, poor storage of hazardous substances, oils, chemicals and damage to existing environmental controls such as sediments fencing. Non-conformances may be issued for serious breaches, or repeated minor breaches.

7 Environmental Control Documentation

7.1 Records

Where applicable, the Principal Contractor shall maintain the following records for the project, in legible format, to demonstrate compliance with the CEMP:

- The CEMP (all versions), supplementary plans and procedures.
- Internal and external Construction Environmental Management Systems and CEMP audit reports approvals, regulatory licences and permits.
- Regulatory authority inspection reports.
- Correspondence with regulatory authorities and other key stakeholders.
- Employee induction and training records.
- Environmental monitoring records.
- Monthly KPI reports
- Sediment control works checklist and release records.
- Environmental accidents/incidents/emergency reports.
- Non-conformance reports.
- Reports to regulatory bodies.
- Complaint records.
- Community involvement information.
- Waste records.
- Checklists and field sheets.
- Any relevant reports submitted to regulatory bodies.
- Management review minutes and action taken.

Records will be held for at least five years after the date of final completion and will be available to upon request by regulatory authorities.

7.2 Inspections and Checklists

Completed inspections and checklists are to be documented within each Sub Plan. The primary Environmental Weekly Checklist is available in Appendix C.

7.3 Availability

Environmental control documentation, monitoring results and other environmental records shall be made available to CCB Project Manager or any regulatory authority immediately upon request.

8 Communication

8.1 Complaints Management

CCB Project Manager will engage suitably trained and experienced Council personnel to be responsible for fielding stakeholder feedback and coordinating appropriate responses from the Project team.

The CCB Project Manager or other nominated Council personnel must prepare a Complaints Management Protocol commensurate for the scale of the Project.

Those responsible for undertaking complaints and feedback handling shall be equipped to respond promptly to concerns about construction impacts, including but not limited to noise, dust, and vehicle movements – notwithstanding proper conduct on the part of the Contractor to mitigate foreseeable impacts. Where required, enquiries and / or disputes about compensation and rectification will be escalated.

A complaints register shall be maintained by the Site HSE Officer with the following records for all complaints and enquiries:

- Date and time of complaint.
- The method by which the complaint was made (telephone, letter, meeting, etc.).
- Name, address, and contact telephone number of complainant (if no such details were provided, a note to that effect).
- Nature of complaint.
- Action taken in response including follow up of contact with the complainant.
- Any monitoring to confirm that the complaint has been satisfactorily resolved.
- If no action was taken, the reasons why no action was taken.

This process enables the management of receipt and response to issues and reports.

All project staff shall be advised of the procedures to be followed on receipt of a complaint during the project induction.

The Principal Contractor shall notify relevant authorities (e.g. CCB) upon the receipt of a complaint, and provide a final report within 5 working days detailing the action taken to remedy the situation and any proposed measures to prevent recurrence.

8.2 Internal Communication

- Essential information relating to project environmental management will be communicated through tool-box talks and inductions.
- Environmental alerts shall be periodically prepared and sent to sites for posting on notice boards.
- Key changes to environmental legislation shall be sent by email to all Project Managers and Site Managers.

8.3 External Communication

8.3.1 Regulatory Authorities

Communication with a range of Regulatory Authorities shall be undertaken throughout the Project. This communication shall be through the Project Manager. Any communication from a regulator must be notified to the Corporate HSE Manager, and records of all communications retained and appropriately filed.

The name and contact numbers for two site personnel who are available on a 24 hour basis and who have authority to take immediate action to shut down any activity or to affect any pollution control measure must be notified to CCB prior to commencement of the works.

8.3.2 Media

All contact with the media must be through CCB Project Manager. Under no circumstances are Project staff to engage with the media.

9 Emergency Plan and Response

Prior to commencement of the Project, the Principal Contractor must prepare an Emergency Plan and Response.

Some examples of incidents / emergencies, impacts and contingency response measures are provided in the following table:

Incident / Emergency	Potential Impact	Example of Contingency Response
Major Oil or Fuel or Chemical Spill Major spills defined as a spill that is likely to have direct environmental consequences.	• Contamination of land or stormwater system. • Contamination of soil. • Prosecution.	• Immediately call the fire brigade and notify Site Manager • All work to stop immediately in vicinity. • Identify the source of the spill. • Refer to the MSDS and evaluate the hazards of the material. • Spill response kits and equipment deployed if it is safe to do so. • Use all available resources to contain and clean up spill. • Contact additional consultants or Subcontractors if required. • Notify relevant authorities and persons (Corporate HSE Manager, Site Manager & Project Manager, EPA). • Implement incident reporting procedures.
Minor Site Spills Minor spills defined as spills which can be contained and rectified correctly without the need of external services.	• Contamination of land or stormwater system. • Contamination of soil. • Prosecution.	• Stop work in the vicinity. • If the material is dangerous, evacuate the site immediately and notify neighbours. • If it is safe, halt the source of the spill immediately. • Contain the spill with spill kits and control the flow. • Block stormwater drains downstream of the spill. • EPA and local Council must be notified about any spills that are likely to threaten the environment. • Minor spills shall be contained and rectified with the site spill kit and disposed of correctly. Project Manager to be notified via incident report. • Reported to the Site Manager.

Incident / Emergency	Potential Impact	Example of Contingency Response
Major Sediment Discharge This could result from heavy rainstorm and flooding beyond the capacity of the sediment and erosion controls or a failure in the sedimentation control measures.	• Contamination of stormwater system. • Risk to aquatic flora/fauna. • Prosecution.	• All work to stop immediately in the vicinity. • Reinstate controls if required. • Install new controls if required. • Apply flocculants if required. • Commence clean-up activities. • Contact additional consultants or Subcontractors if required. • Notify relevant authorities (i.e. Council) • Implement incident reporting procedures.

At practical completion, the Principal Contractor shall ensure the site and surrounds, or any area which may have been used or impacted upon as a result of project-related works, is rehabilitated to a state equivalent or better in comparison to the pre-construction state.

10 Contacts

Internal Contacts Position	Name	Contact Number
CCB Project Manager	Andrei Gudas	02 9911 6591
Construction Manager	TBA	TBA
Project Manager	TBA	TBA
Site Manager	TBA	TBA
Corporate HSE Manager	TBA	TBA
Site HSE Officer	TBA	TBA
Project/Site Engineers	TBA	TBA
Contracts Administrator	TBA	TBA

External Contacts Position	Name	Contact Number
Emergency Services	Police/Fire/Ambulance	000
Poisons Info Line	TBA	13 11 26
EPA Hotline	TBA	131 555

11 References

- AS/NZS ISO 14001: Environmental Management Systems – Specifications with Guidance for Use
- AS 3480.4: Methods for Sampling and Analysis of Ambient Air
- AS 1940-2017 The Storage and Handling of Flammable and Combustible Liquids
- Canada Bay Local Environmental Plan 2013
- Contaminated Land Management Act 1997
- Environmental Planning and Assessment Act 1979
- Environmental Protection and Biodiversity Conservation Act 1999
- Environmentally Hazardous Chemicals Act 1985 (OEH)
- Heritage Act 1977 (OEH)
- IECA Best Practice Erosion and Sediment Control Guidelines 2008.
- Landcom, 2008, The Blue Book – Managing Urban Stormwater: Soils and Construction.
- Local Government Act 1993
- NEPC Assessment of Contaminated Sites Measure 2013.
- NSW EPA (2014) Waste Classification Guidelines, Part 1: Classifying Waste
- Protection of the Environment Operations Act 1997 (OEH)
- Protection of the Environment Operations Legislation Amendment (Waste) Regulation 2018
- SEPP 55 (1998) Remediation of Land (OEH)
- Soil Conservation Act 1938 (OEH)
- Waste Avoidance and Resource Recovery Act 2001 (OEH)
- Waste Management Act 2000 (NSW Office of Water)

12 Limitations

This report has been prepared for use by the Client who commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the Client and other parties. The findings of this report are based on the scope of work outlined in Section 1. The report has been prepared specifically for the Client for the purposes of the commission, and use by any nominated third party in the agreement between Zoic and the Client. No warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party (other than where specifically nominated in an agreement with the Client).

This report relates to only this project and all results, conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be reproduced without prior approval by the Client, or amended in any way without prior approval by Zoic.

Subject to the scope of work, Zoic's assessment was limited strictly to identifying typical environmental conditions associated with the subject property area and does not include evaluation of any other issues.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigation.

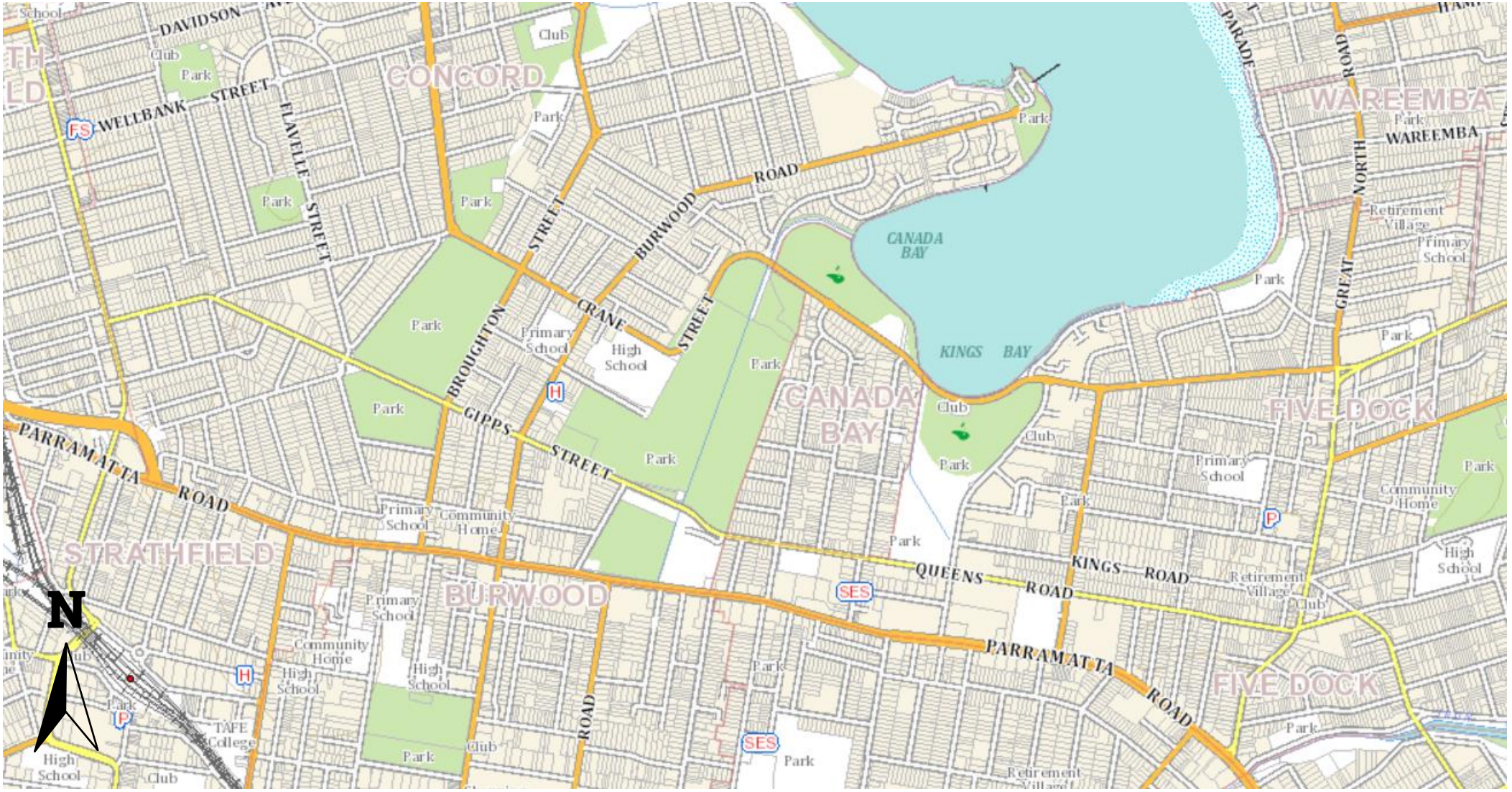
This report does not comment on any regulatory obligations based on the findings. This report relates only to the objectives stated and does not relate to any other work conducted for the Client.

The absence of any identified hazardous or toxic materials on the site should not be interpreted as a guarantee that such materials do not exist on the site.

All conclusions regarding the site are the professional opinions of the Zoic personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, Zoic assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements from sources outside of Zoic, or developments resulting from situations outside the scope of this project.

Zoic is not engaged in environmental assessment and reporting for the purpose of advertising sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity purposes. The Client acknowledges that this report is for its exclusive use.

Appendix A Figures



LEGEND

Site Location

This product has been created to support the main report and is not suitable for other purposes. Image courtesy of SIX Maps.

Not to Scale

Figure 1: Site Location Plan

Site Address: Cintra Park Netball Courts, Concord NSW

Client: City of Canada Bay

Job Number: 19089

Date: 7 May 2019

ZOIC

LEGEND

Existing Amenities Block Footprint

Proposed extension footprint

This product has been created to support the main report and is not suitable for other purposes. Image courtesy of SIX Maps.

0m 10m

Scale indicative only

Figure 2: Site Layout

Site Address: Cintra Park Netball Courts, Concord NSW

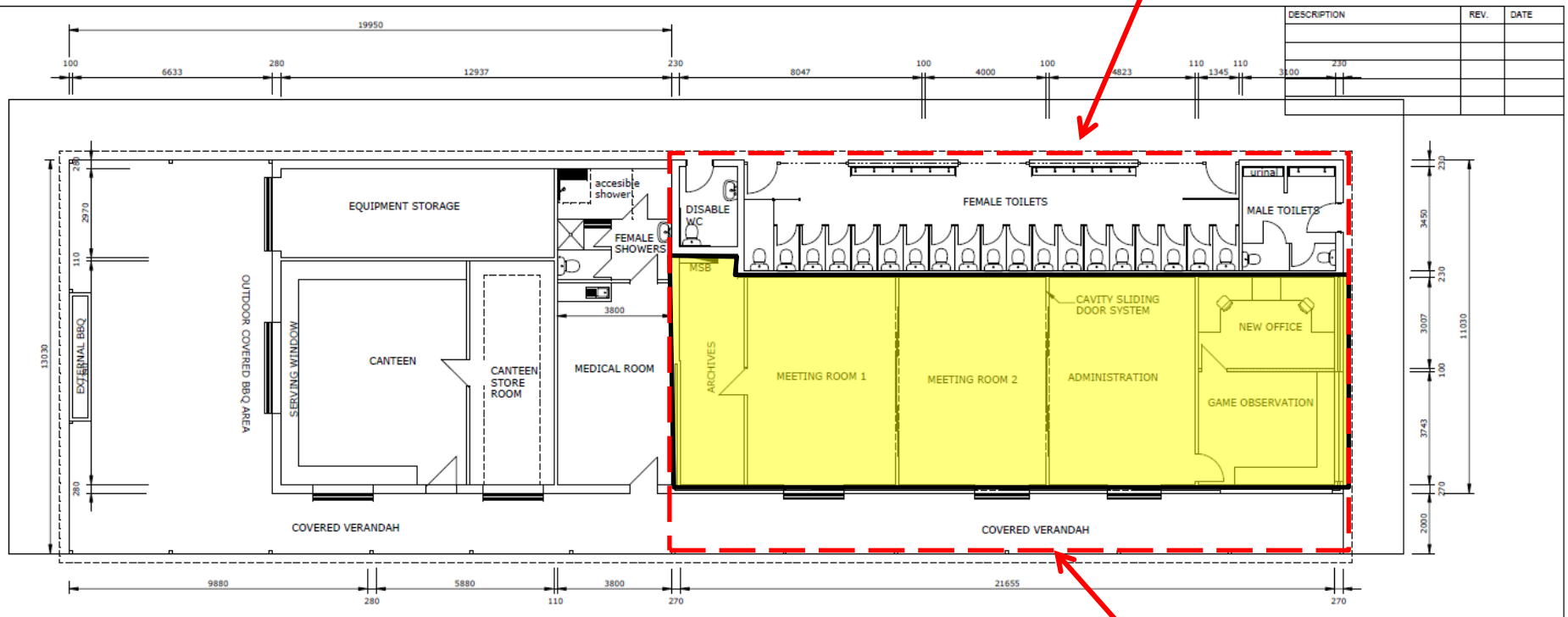
Client: City of Canada Bay

Job Number: 19089

Date: 7 May 2019

ZOIC

Expanded mesh screen along amenities



OPTION 2 PROPOSED GROUND FLOOR PLAN

Scale 1:100

Existing building extent shown in red
Gas Membrane extent shown in yellow

Future Floorplan

LEGEND

- Existing Amenities Block Footprint
- Proposed extension footprint
- Light vehicle site access route
- Heavy vehicle site access route

This product has been created to support the main report and is not suitable for other purposes. Image courtesy of Google Maps.

0m 20m

Scale indicative only

Figure 4: Site Access Routes

Site Address: Cintra Park Netball Courts, Concord NSW

Client: City of Canada Bay

Job Number: 19089

Date: 10 May 2019

Appendix B Environmental Aspects and Impacts List

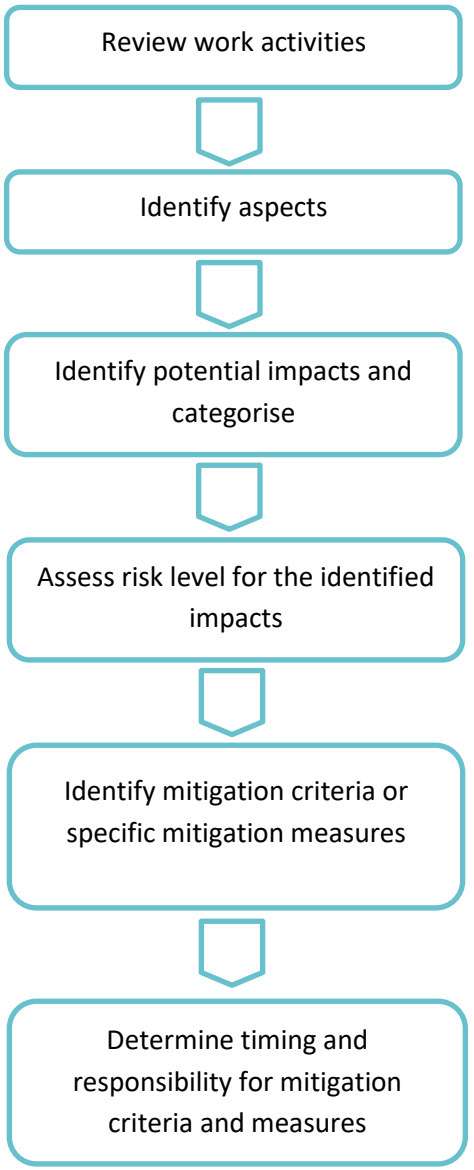
Environmental Aspects and Impacts: Netball Courts Amenities Building, Cintra Park, Concord, NSW 2137

The process used to develop possible mitigation measures after an environmental risk has been identified, is illustrated in the Figure to the right.

The mitigation measures developed to control the identified environmental impacts are presented in the following tables. Also shown are the associated levels of risk of impact and responsible party for implementation of the respective mitigation measure. In accordance with the roles and responsibilities described in Section 2.1 of the CEMP.

As defined in ISO 14001, an environmental aspect is "an element of an organisation's activities, products or services that can interact with the environment" (SAI Global, 2004). Environmental aspects within this project are specific actions or items that could cause an impact.

The risk assessment matrix on the following page is used to determine the level of risk for identified potential impacts from the proposed works.



Severity	How severe are potential adverse impacts on:			What is the likelihood (risk) of this level of severity?			
	Human Health	**Environment**	**Construction schedule and/or project costs**	**Very Likely**	**Likely**	**Unlikely**	**Very Unlikely**
Catastrophic	Death, life-threatening injuries, permanent disability / ill health	Catastrophic environmental incident, serious risk and/or damage to onsite or offsite receptors, regulatory involvement, significant onsite and offsite remediation, financial penalties enforced, legal action	Severe delays, significant cost increases, possible project termination	16	15	13	10
Major	Major illness or injury requiring surgery / hospitalisation	Major environmental incident, onsite and offsite contaminant migration, regulatory notification and remediation needed	Lengthy project delays / major cost increases	14	12	9	6
Moderate	Injury or illness requiring treatment and resulting in lost time	Moderate environmental incident, contained onsite, requires some remedial action	Moderate project delays and cost increases	11	8	5	3
Minor	Minor injury or exposure not requiring medical attention	Minor environmental incident, localised	Minor project delays / some additional costs	7	4	2	1

Should additional environmental impacts relating to changed or additional work activities be identified during the project, the risks are to be assessed according to this procedure. Following this risk assessment system, mitigation measures must be selected as required, with responsibility allocated and the details documented in the relevant table, as part of the ongoing review of the CEMP.

Erosion and Sedimentation Risks					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Pre-construction					
Erosion and sediment control design	Inappropriate design, resulting in offsite transport of sediment to adjacent tidal Canal, roads, and/or stormwater drains	12	An approved erosion and sediment control plan (ESCP) is to be implemented with controls in place.	4	Project Manager / Site Manager
Construction					
Site preparation	Sediment mobilisation and surface runoff from site establishment and clearing.	12	Prior to commencement of site work, install all erosion and sediment control measures based on an erosion and sediment control plan and ensure controls are operational in accordance with approved ESCP.	4	Site Manager
Vehicle traffic leaving site	Sediment tracked offsite by vehicle wheels.	8	Appropriate measures are to be implemented during the construction period to ensure vehicles leaving the premises are sufficiently free from dirt, aggregate or other materials such that material are not transported onto public roads. These may include shake-down areas at access points and truck wash-down facilities.	4	Site Manager
Transport of materials to and from site	Loss of load resulting in pollution of roads	5	Truck loads shall be covered. Should any material be transported onto the road or any spills occur it is to be cleaned up prior to cessation of the same day's work and/or commencement of any rain event.	2	Site Manager

Erosion and Sedimentation Risks Cont.					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Exposed surfaces and stockpiling of fill and construction materials	Offsite transport of sediment to adjacent tidal Canal roads and stormwater drains. Loss of fill material.	12	Maintain a project ESCP: Daily operational check of control measures by Site Manager or nominated person. Additional inspections to be carried out by the Site Manager after each storm event to assess adequacy of the erosion control measures, repair/replace any dysfunctional erosion control devices, and clean up any sediment that has left the site or is deposited on public land or drainage channels.	5	Site Manager
Stormwater run-off	Run-off resulting in soil erosion.	12	Do not stockpile materials on drainage lines. Ensure that the maximum distance possible is maintained between stockpile and the adjacent tidal Canal. Ensure stockpile slopes and batters are not excessive. Control stormwater runoff during construction in accordance with the ESCP.	5	Site Manager

Water Quality					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Pre-construction					
Design of erosion and sedimentation control	Inappropriate design, resulting in localised ponding or flooding, excessive runoff, erosion and pollution of local area.	12	Controls to be installed in accordance with the ESCP. Any off site discharge is to be tested and approved by the appropriate authority in writing prior to commencement. Any imposed conditions of consent must be implemented	4	Contractor / Site Manager
Construction					
Discharge of waters from site	Discharge of sediment laden waters into watercourses.	14	Any off site discharge is to be tested and approved by the appropriate authority in writing prior to commencement. Any imposed conditions of consent must be implemented within the ESCP.	2	Site Manager
Plant and equipment refueling, chemical use and storage	Accidental spills and leaks into nearby watercourses during refueling of equipment or storage of fuels and chemical.	8	Refuel plant and equipment in a location away from drains and watercourses. Ensure sufficient spill response kits are accessible on site at all times. Chemicals to be stored on site must comply with the management measures in the CEMP. Ensure site induction covers dangerous / hazardous goods and appropriate spill response procedure.	2	Site Manager
General use of construction site	Waste, litter etc. entering waterways via stormwater drains.	4	Ensure contractors leave the construction work sites free of debris and other rubbish (daily) and at the completion of the works. Provide sufficient number of and type of suitable receptacles on site for general waste, recyclable materials and other waste types (as required).	2	Project Manager / Site Manager

Noise and Vibration Management					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Pre-construction/Construction					
Pre-construction and construction activities resulting in noise complaints	Disturbance of onsite receptors/personnel, local residents, potential noise complaints. Non-conformance with Consent Conditions.	8	Comply with defined work hours: 7.00am to 5.00pm Monday to Saturdays, no work on Sundays or public holidays or as stipulated within any conditions for the site. All subcontractors to be managed to ensure they work only within defined hours and in a manner to minimise noise and vibration. Stakeholders and neighbours must be kept notified in advance of potential high impact activities.	4	Site Manager

Traffic Management					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Pre-construction / construction					
Parking due to construction related vehicles	Loss of parking availability in local streets	8	All site personnel are to be advised of parking allocations. Ensure work vehicles and plant/equipment do not obstruct vehicular or pedestrian traffic on roadways, footpaths or access to land uses unless absolutely necessary. Parking within residential areas is not permitted.	4	Site Manager
Construction traffic movements to and from site (imported materials, off site disposal, deliveries and site staff)	Increased traffic volume on roads during construction.	14	Haul routes to be identified and communicated to staff, personnel and subcontractors. Co-ordinate importation / off site disposal of materials and deliveries to avoid peak periods where feasible. Implement traffic management plans, including use of designated routes. Implement traffic control plan, including traffic controller where necessary.	9	Site Manager
Pedestrian movements surrounding construction site / site occupant movements	Pedestrian/occupant confusion, interference with vehicles, potential incident due to conflict between pedestrian/occupant and construction access points.	15	Identify traffic controls required. Restrict site access to personnel and authorised people only in accordance with WorkCover 2017 Regulations. Provide appropriate restriction signage.	9	Project Manager

Heritage Management					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Construction					
Discovery of unexpected find of heritage item/artifact	Impact on that heritage item in the event that correct steps are not taken.	8	Establish a heritage protocol for unexpected heritage finds and agree with CCB	5	Site Manager

Air Quality					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Pre-construction					
Design of Materials Management Plan	It is not expected that fill material will be excavated as part of the construction works. However, should fill be excavated the following must be considered. Fill materials excavated from the site may contain asbestos and may also have the potential to generate hazardous ground gases / volatiles	12	An approved Materials Management Plan (MMP) is to be implemented with controls in place. Air quality monitoring adjoining work areas and site boundaries.	4	Project Manager / Site Manager
Construction					
Operation of plant and equipment	Air pollution from emissions	1	Ensure equipment and machinery is maintained and not left idling when not in use.	1	Site Manager
Vehicle movement, earthworks, handling and transport of spoil and fill	Dust generated from earthworks, including materials handling and wheel dust	12	Comply with all requirements of the MMP for excavation of fill materials. General: Cover all loads of excavated material and other erodible materials that are transported to and from the work site. Avoid or restrict dust generating activities during windy conditions.	4	Site Manager

Air Quality Cont.					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Management of stockpiles, exposed areas and general site	Wind erosion of exposed surfaces and stockpiles	12	Comply with all requirements of the MMP for excavation of fill materials. General: Keep areas adjacent to the work sites free of construction soil or dust. Monitor all work sites, general work areas, stockpiles and skip bins for dust generation and water down or cover affected areas especially stockpiles of waste material. Minimise soil and vegetation disturbance, in order to minimise dust generation.	4	Site Manager

Air Quality Cont.					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Excavation is not expected as part of the construction works. However should excavation be required the following must be considered.	Release of dust from excavation	12	Comply with all requirements of the MMP for excavation of fill materials. General: Implement dust suppression measures appropriate for the specific works; no dust is to leave the site. Wetting down / water carts can be used to minimise dust release. Note: in accordance with the POEO Legislation Amendment (Waste) Regulation 2018, if any landfill material is to be exhumed, prior written approval must be acquired from the EPA.	4	Site Manager
Excavation Works / Piling Works	Release / accumulation of landfill gas / volatile organic compounds	16	Appropriate PPE for contaminants of concern (e.g. asbestos or hazardous ground gas) and activity being conducted (e.g. handling soils at surface or working in excavations). Plant cabin doors to be shut and AC turned on. Personnel in area to be kept to a minimum. Continuous air monitoring may be required with alarms set at predetermined limits undertaken by a suitably trained professional. Accumulation of harmful atmospheric gas or volatile compounds may occur within confined spaces during construction. A suitably qualified person should be engaged to monitor development progress and inform risk and associated protection measures. No smoking anywhere onsite. Note: in accordance with the POEO Legislation Amendment (Waste) Regulation 2018, if any landfill material is to be exhumed, prior written approval must be acquired from the EPA.	10	Site Manager

Waste Management					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Construction					
Earthworks and construction	Generation of waste including potentially recyclable or reusable materials	12	Waste Management is to be based on the waste hierarchy, and is to maximise recycling and reuse of waste material and construction wastes, and to minimise waste to landfill. Waste management is to include the following steps. All material leaving site is to be disposed of at a suitable location lawfully able to accept the waste it is receiving. All material leaving the site is to be disposed of in accordance with the provisions of the Protection of the Environment Operations Act 1997 and the NSW EPA (2014) Waste Classification Guidelines, Part 1: Classifying Waste. The waste disposal facility must be appropriately licensed to receive the class of waste being delivered as described in the respective waste classification. Monitor waste volumes and record their method and location of disposal and whether or not that location was a place that could lawfully be used as a waste facility for that waste. Note: in accordance with the POEO Legislation Amendment (Waste) Regulation 2018, if any landfill material is to be exhumed, prior written approval must be acquired from the EPA.	9	Project Manager

Waste Management Cont.					
Aspect	**Impact**	**Risk of Impact**	**Mitigation Criteria or Management Measure**	**Risk After Mitigation / Management**	**Responsibility**
Earthworks and construction	Generation of waste leading to disposal - construction waste	7	Provide a sufficient number of and type of suitable receptacles onsite for general waste, recyclable materials and other waste types (as required). Maximise segregation of wastes. Recycle and divert from landfill surplus soil, rock, and other excavated material where possible. Separately collect and stream quantities of waste concrete, bricks, blocks, timber, metals, plasterboard, paper, and packaging, glass, and plastics and offer them for recycling where practical. Ensure that no waste from the site is conveyed to or deposited at any place that cannot lawfully be used as a waste facility for that waste.	2	Project Manager

Appendix C Weekly Environmental Checklist

Notes:

1. This checklist is to be used as a guide for the weekly monitoring of environmental issues by the Site Manager. The Site Manager should review, amend and update this checklist to ensure compliance with relevant legislation, guidelines and this CEMP.
2. The checklist is to be completed, reviewed and signed at the end of each week and filed as a component of the Project's records.
3. The weekly checklist applies to the entire site until construction has been completed. After this time, the monitoring/reporting component of the CEMP will be reassessed. As some activities become completed, some items in the weekly checklist may no longer be applicable.
4. Additionally, general site conditions should be checked daily for compliance and to ensure controls in general appear to be maintained in good conditions such as the erosion and sediment controls and stockpile controls.

Environmental Weekly Checklist

Project: Netball Courts Amenities Building Extension, Cintra Park, Concord, NSW 2137

Week Ending:.....

Action	Yes/ No/ NA	Comments/ Actions
GENERAL OBLIGATIONS		
Have all site managers, operators and staff undergone site induction and are aware of the appropriate method statements/procedures and environmental responsibilities that apply to their work? Has a written record been kept?		
NOISE & VIBRATION		
Are construction activity times being complied with?		
Are all work activities limited to the approved time periods?		
Are noise suppressors on site in working order?		
Are all reasonable practicable steps to reduce construction noise and vibration taken?		
ODOUR & AIR POLLUTION		
Are requirements of the Materials Management Plan being implemented?		
Is the disturbed area being minimised?		
Is dust suppressed on disturbed areas (including stockpiles)?		
Are odour emissions from portaloos minimal?		
Is dust control applied, as requested, to landscaping activities?		
Are vehicle loads covered, as required, to prevent air pollution?		
Is machinery inspected and maintained to prevent noxious emissions?		
Machinery on site is not left idling when not in use. Is this statement correct?		
SITE ACCESS & TRAFFIC		
Have Council / residents been informed of upcoming traffic disruptions?		

EROSION AND SEDIMENTATION		
Are erosion and sedimentation controls designed and installed according to Blue Book specifications prior to commencement of works and according to design specifications (including diversion drains where appropriate)?		
Are controls functioning and trapping approximately 80- 90% of sediment?		
Are erosion and sediment controls being maintained weekly, or after every rain event, e.g. sediment removed, materials repaired or replaced?		
Are stockpiles located greater than 25 metres from water flow paths/spoon drains and controls used to prevent sediment escaping (e.g. silt fences, spray grass, sediment pond)?		
Are erosion/sedimentation controls installed at vehicle wash-down areas?		
Are controls decommissioned according to Blue Book specifications when replaced/removed? Has approval been sought prior to removal of controls when construction and revegetation works ceases? (Liaise with Project Manager and Site Manager).		
Are inspections of erosion and sediment controls conducted daily/following incidents?		
WASTE MANAGEMENT		
Are requirements of the Materials Management Plan being implemented?		
Is waste reused on site where possible?		
Is waste separation occurring on site?		
Is waste stockpiled according to Materials Management Plan?		
Is all litter generated on site being disposed of using onsite, covered bins?		
Is the site tidy and free from windblown waste?		
Are waste materials leaving site covered to prevent windblown litter as required?		
Is waste being disposed to appropriate waste management centres?		
Have waste disposal dockets been maintained and recorded?		
Is construction / demolition, contaminated wastes and / or asbestos disposed of offsite? If disposed of onsite, is this in an appropriately bundled and designated area? In the case of asbestos, has the Asbestos Management Plan been implemented?		
When handling excavated fill materials / waste have the appropriate precautions been implemented as listed in the Environmental Aspect and Impact list?		

WASTE MANAGEMENT		
Are "Portaloo" toilets established on site and emptied as per relevant regulations?		
WATER POLLUTION		
Are vehicles stored in an appropriate area i.e. compound located greater than 50m from water flow path?		
Is equipment refuelled/ maintained offsite or in the vehicle compound?		
Are appropriate spill containment information (SDS) and spill kits kept on site?		
Are site managers and operators aware of spill kit locations and procedures?		
Is chemical/fuel storage appropriately located at 25m distance away from water flow paths?		
Is bund height and bund condition sufficient (sufficient volume to contain 120% of largest container within bunded area?		
Are concrete/agitator trucks leaving the site and returning to base for wash-out		
Is a schedule of hazardous chemicals maintained?		
EMERGENCY/ INCIDENT RESPONSE		
Were emergency/ incident procedures implemented as required?		
INCIDENTS		
Are Environmental Incident Reports completed and investigated?		

SIGNED:..... **DATE:**

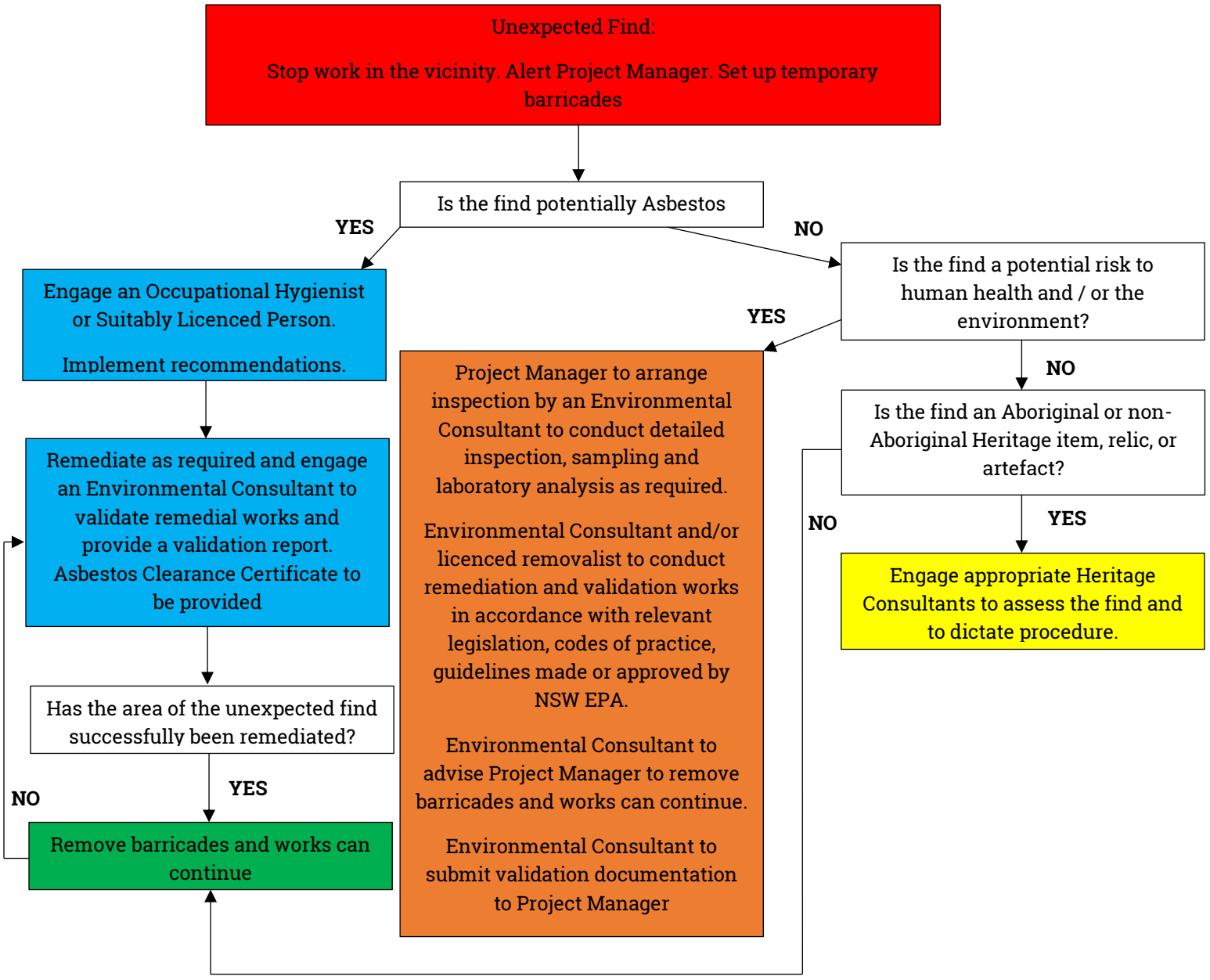
(Site Manager)

REVIEW/SYSTEM CHECK:
Environmental Weekly Checklist has been reviewed. All necessary NCRs have been raised.

SIGNED:..... **DATE:**

(Project Manager)

Appendix D Unexpected Finds Protocol Example



Appendix E Erosion and Sediment Control Plan

NOTES:

PROPOSED CONSTRUCTION FENCE TO BE ERECTED AROUND THE PERIMETER OF THE SITE WITH ALL THE APPROPRIATE CONSTRUCTION SIGNAGE AND CONTACT TELEPHONE NUMBERS

1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER
2. MINIMISE DISTURBED AREAS
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS
4. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSIBLE
5. ROADS AND FOOTPATHS TO BE SWEPT DAILY
6. IF YOU DO NOT COMPLY YOU MAY BE LIABLE TO A $1500 ON THE SPOT FINE

LEGEND

UNDISTURBED VEGETATION

SILT FENCE

STOCKPILES

GEOTEXTILE FABRIC

FABRIC FILLED WITH GRAVEL

STORMWATER PIT

SILT FENCE

SILT FENCE

SILT FENCE

SILT FENCE

BUILDING MATERIAL STOCK PILE

BITUMEN

CONCRETE BRIDGE

HP GAS PIPE

INV.0.45 RCP 0.36

SWC

BITUMEN

TRACK

F.L.

SANDSTONE RETAINING WALL

CONC. PATH

2 STOREY BRICK BUILDING

CONC. PATH

SEPTIC TANKS

CONC PITS

40mm PIPE

FLAG POLE

H/W

CONC DRAIN

L.B.

CONCRETE BASE

F.L.

CONCRETE KERB

F.L.

	Checked
	Checked
	Checked
AMENDMENTS	
Filename	
Printed at 12:09:41 hours on 26JUN09	

City of Canada Bay Council

SURVEY	DESIGN
SCALE	DRAWN
DATE	DATUM

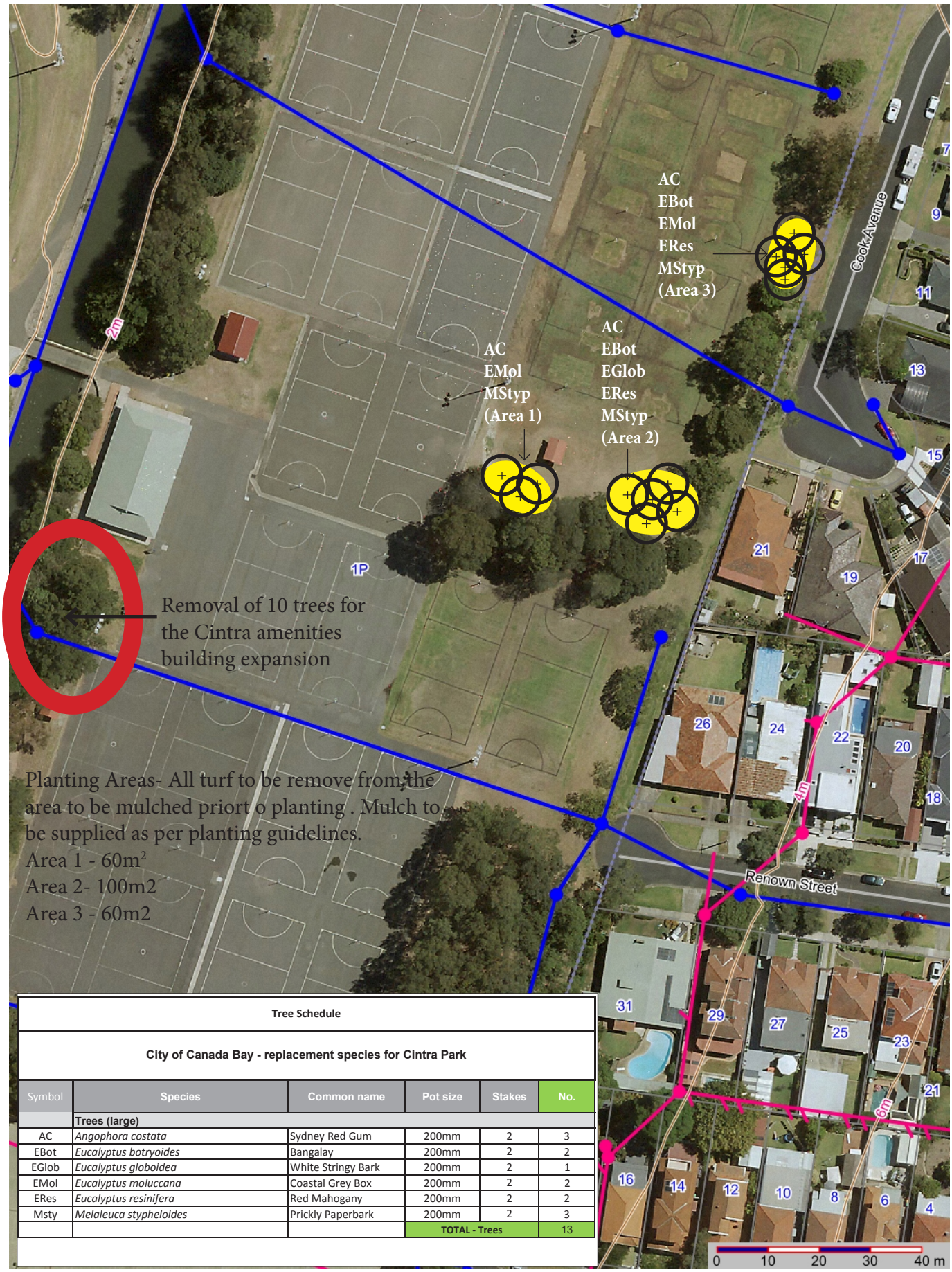
CITY OF CANADA BAY COUNCIL

EROSION CONTROL PLAN FOR CINTRA PARK NEBALL COURTS AMENITIES BUILDING

PLAN **C**

2 OF 4

Appendix F Tree Replanting Plan



Tree Schedule

City of Canada Bay - replacement species for Cintra Park

Symbol	Species	Common name	Pot size	Stakes	No.
	Trees (large)				
AC	*Angophora costata*	Sydney Red Gum	200mm	2	3
EBot	*Eucalyptus botryoides*	Bangalay	200mm	2	2
EGlob	*Eucalyptus globoidea*	White Stringy Bark	200mm	2	1
EMol	*Eucalyptus moluccana*	Coastal Grey Box	200mm	2	2
ERes	*Eucalyptus resinifera*	Red Mahogany	200mm	2	2
Msty	*Melaleuca stypheloides*	Prickly Paperbark	200mm	2	3
			TOTAL - Trees		13

Tree replacement including 25% canopy increase (Canopy commitment)

City of Canada Bay

15/04/2019

N

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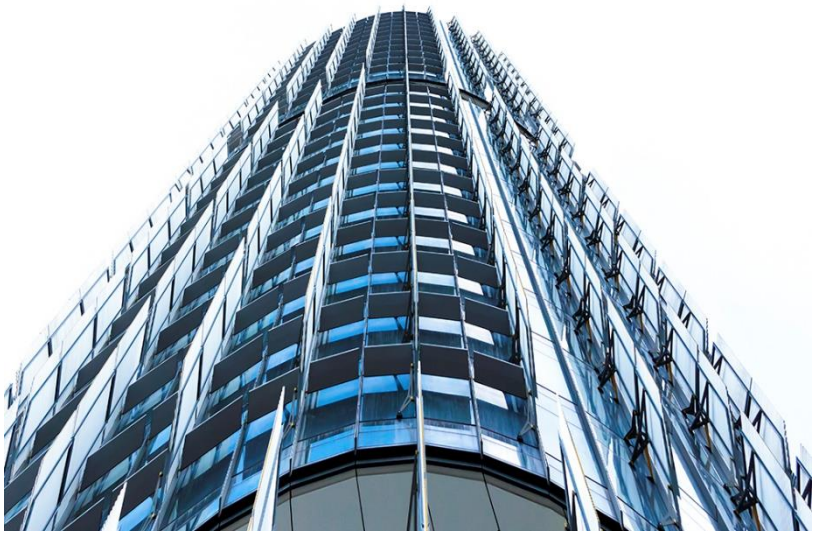
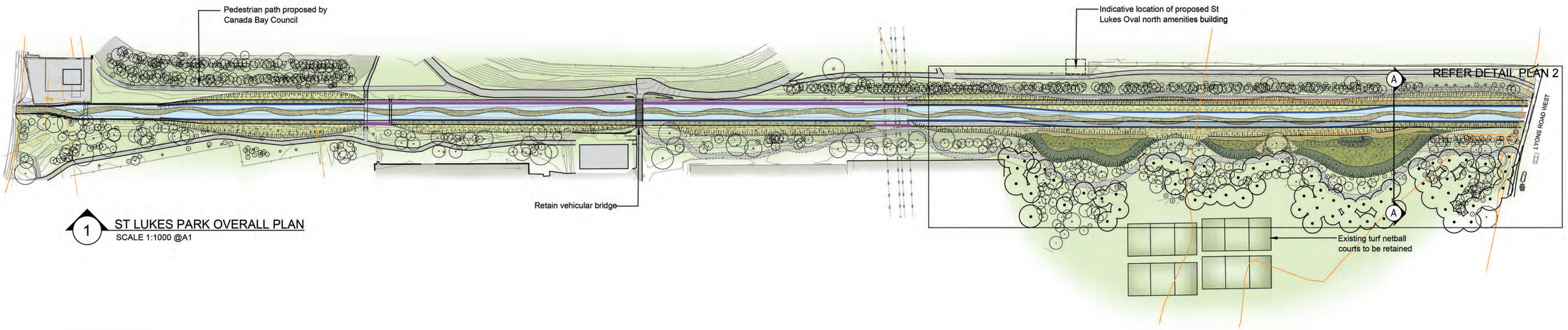


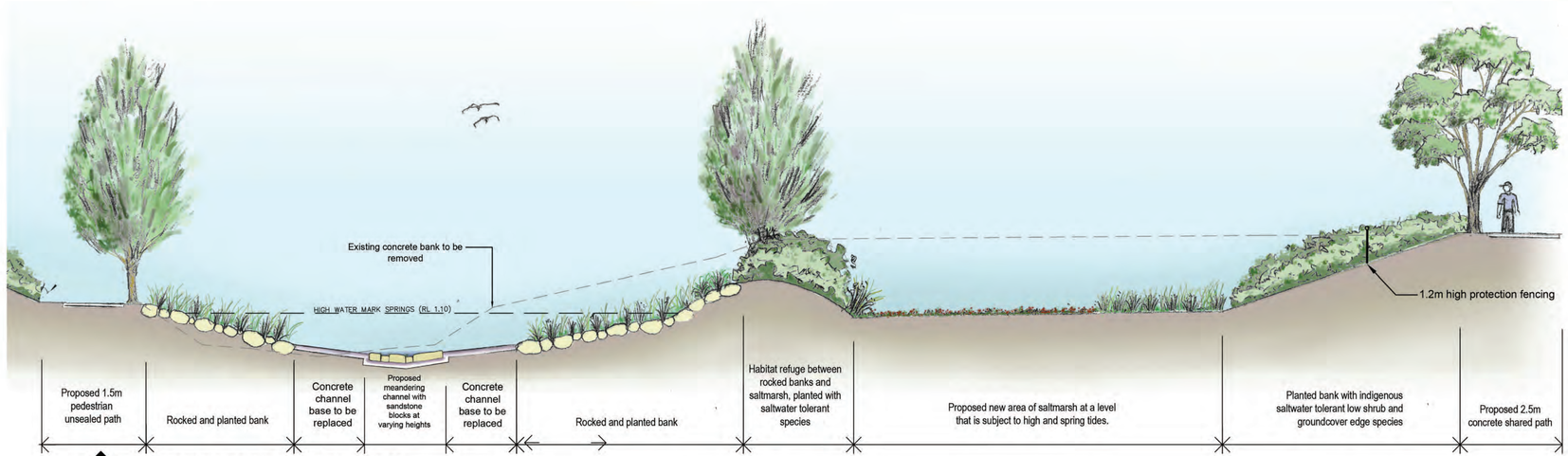
APPENDIX E. PRELIMINARY CONCEPT DESIGN PLAN FOR ST LUKES STORMWATER CHANNEL NATURALISATION PREPARED BY THOMPSON BERRILL LANDSCAPE DESIGN PTY LTD



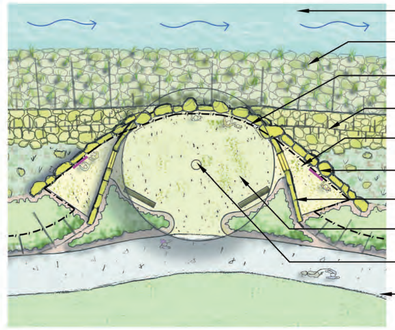
1 ST LUKES PARK OVERALL PLAN
SCALE 1:1000 @A1

DRAWING KEY

- Existing trees to be retained
- Proposed trees
- Existing trees to be removed
- Saltmarsh
- Rocked and planted bank
- Planted only bank
- Terrestrial planting
- Porous rock weir
- Proposed meandering channel invert
- Existing bank to be replaced at current grade and alignment with concrete or sandstone block facing
- Design top of bank
- Design bottom of bank
- Concrete channel base replacement
- Proposed boardwalk / bridge
- Existing boardwalk / bridge
- Existing path
- Proposed path
- Sandstone block walls
- Boundary lines



AA ST LUKES PARK CROSS SECTION
SCALE 1:100 @A1

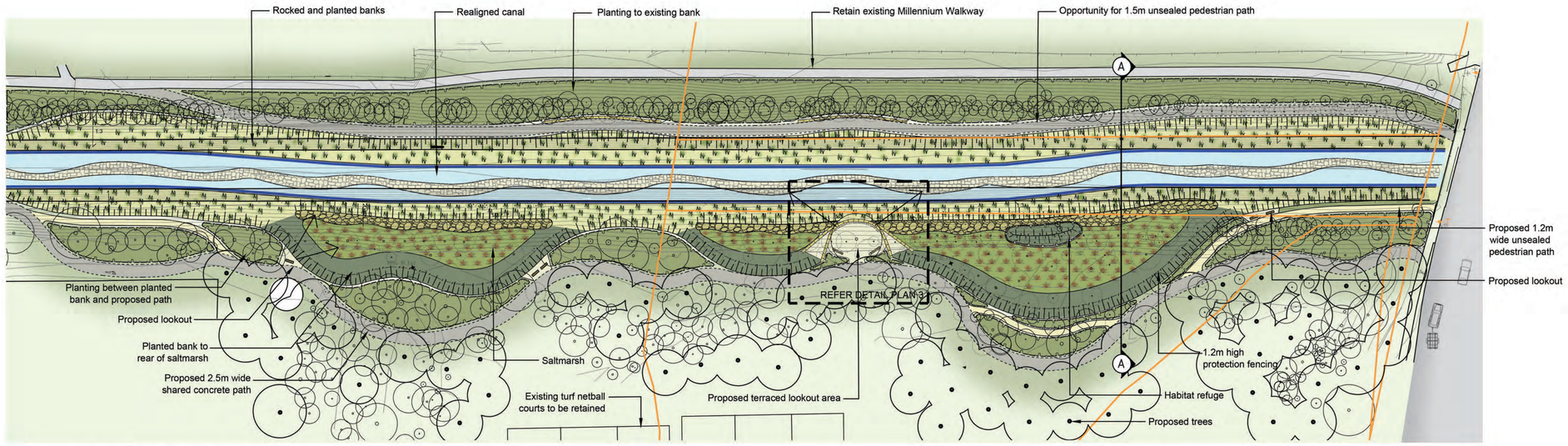


3 TERRACED LOOKOUT AREA
SCALE 1:200 @A1

DESIGN PRECEDENTS

Cooks River Bank Naturalisation
sandstone rocked and planted banks

Cooks River Bank Naturalisation
planted banks and saltmarsh



2 ST LUKES PARK DETAIL PLAN
SCALE 1:500 @A1

THOMPSON BERRILL LANDSCAPE DESIGN P/L
PO BOX 665 MANLY NSW 2095 T: 9977 6444 E: info@tblnl.com.au

Sydney WATER

TIDAL OPEN CHANNEL RENEWALS - PACKAGE B

MAY 2017
TOCR-B-PCD-SL-V6

PRELIMINARY CONCEPT DESIGN: ST LUKES PARK

APPENDIX F. ASSESSMENT OF PROPOSAL PURSUANT TO THE SYDNEY REGIONAL ENVIRONMENTAL PLAN (SYDNEY HARBOUR CATCHMENT) 2005, PREPARED BY MILESTONE (AUST) PTY LTD

APPENDIX H

REVIEW OF ENVIRONMENTAL FACTORS FOR PROPOSED EXTENSION OF THE EXISTING NETBALL AMENITIES BUILDING INCLUDING RECONFIGURATION OF INTERNAL SPACES AND NEW BBQ AREA AT CINTRA PARK, CONCORD (LOT 7300 DP 1159824)

ASSESSMENT OF PROPOSAL PURSUANT TO THE SYDNEY REGIONAL ENVIRONMENTAL PLAN (SYDNEY HARBOUR CATCHMENT) 2005

May 2019

Clause	Matter for Consideration	COMPLIANCE
Clause 21 – Biodiversity, ecology and environment protection.	(a) A development should have a neutral or beneficial effect on the quality of water entering the waterways.	**Complies.** The proposed extended amenities building is located within Cintra Park and adjoining the St Lukes Stormwater Channel which drains into the Canada Bay to the north. The proposal will not alter the quality of water entering the St Lukes Stormwater Channel and Canada Bay.
	(b) Development should protect and enhance terrestrial and aquatic species, populations and ecological communities and, in particular, should avoid physical damage and shading of aquatic vegetation (such as seagrass, saltmarsh and algal and mangrove communities).	**Complies.** The proposal includes removal of ten trees located to the south of the existing amenities building which will reduce the shading canopy however, thirteen trees will be replanted nearby including with a 25% canopy increase. Therefore, there will be no adverse impact on the ecology of the area as the result of the proposal.
	(c) Development should promote ecological connectivity between neighbouring areas of aquatic vegetation (such as seagrass, saltmarsh and algal and mangrove communities).	**Complies** The proposed works are to be located within and continue the use of existing areas of public recreation and do not seek alteration to, maintain significant distance from, the existing footpath and stormwater channel and will not adversely impact neighbouring areas of aquatic vegetation.
	(d) Development should avoid indirect impacts on aquatic vegetation (such as changes to flow, current and wave action and changes to water quality) as a result of increased access.	**Complies.** Existing access routes are maintained to the site with no increase in activity within the aquatic environment resulting from the proposed works.
	(e) Development should protect and reinstate natural intertidal foreshore areas, natural landforms and native vegetation.	**Complies.** All works are located within the bounds of the existing Cintra Park, being a public recreation area, with no new impacts to the existing waterways. Removal of ten trees located to the south of the existing netball amenities building is required to facilitate the proposed works. Thirteen trees will be replanted by Council within Cintra Park (60m to the east) including 25% canopy increase.
	(f) Development should retain, rehabilitate and restore riparian land.	**Not applicable.** No works to riparian land are proposed.

Clause	Matter for Consideration	COMPLIANCE
	(g) Development on land adjoining wetlands should maintain and enhance the ecological integrity of the wetlands and, where possible, should provide a vegetative buffer to protect the wetlands.	**Not applicable.** No works to riparian land are proposed.
	(h) The cumulative environmental impact of development.	**Complies.** The proposed works are compatible with the existing use of the site for public recreation and use by netball clubs and no significant additional impact will arise as a result of the proposal.
	(i) Whether sediments in the waterway adjacent to the development are contaminated, and what means will minimise their disturbance.	**Complies** No adverse impact on the adjoining waterways will result from the proposed works.
Clause 22 - Public access to use of foreshores and waterways.	(a) Development should maintain and improve public access to and along the foreshore, without adversely impacting on watercourses, wetlands, riparian lands or remnant vegetation.	**Complies.** The proposal will maintain pubic access to the surrounding vegetation and footpaths.
	(b) Development should maintain and improve public access to and from the waterways for recreational purposes (such as swimming, fishing and boating), without adversely impacting on watercourses, wetlands, riparian lands or remnant vegetation.	**Complies.** The proposal will have no impact on the existing access arrangements of the site.
	(c) If foreshore land made available for public access is not in public ownership, development should provide appropriate tenure and management mechanisms to safeguard public access to, and public use of, that land.	**Complies** The proposal will have no impact on the existing access arrangements of the site.
	(d) The undesirability of boardwalks as a means of access across or along land below the mean high water mark if adequate alternative public access can otherwise be provided.	**Not applicable.** The proposal will have no impact on the existing site access.
	(e) The need to minimise disturbance of contaminated sediments.	**Not applicable.** Minimal excavation (<500mm) may be required as part of the amenities building extension in accordance with the CEMP.
Clause 23 - Maintenance of working harbour	(a) Foreshore sites should be retained so as to preserve the character and functions of a working harbour, in relation to both current and future demand.	**Not applicable.**
	(b) Consideration should be given to integrating facilities for maritime activities in any development.	**Not applicable.**

Clause	Matter for Consideration	COMPLIANCE
	(c) In the case of development on land that adjoins land used for industrial and commercial maritime purposes, development should be compatible with the use of the adjoining land for those purposes.	**Not applicable**
	(d) In the case of development for industrial and commercial maritime purposes, development should provide and maintain public access to and along the foreshore where such access does not interfere with the use of the land for those purposes.	**Not Applicable**
Clause 24 - Interrelationship of waterway and foreshore uses	(a) Development should promote equitable use of the waterway, including use by passive recreation craft.	**Complies** The use of the surrounding waterway is not affected as a result of the proposal.
	(b) Development on foreshore land should minimise any adverse impact on the use of the waterway, including the use of the waterway for commercial and recreational uses.	**Complies.** The proposal complements existing commercial and recreational uses.
	(c) Development on foreshore land should minimise excessive congestion of traffic in the waterways or along the foreshore.	**Complies** Traffic congestion in the waterways will not increase as a result of the proposed works.
	(d) Water-dependent land uses should have priority over other uses.	**Not applicable.** The proposal does not constitute a water dependent use.
	(e) Development should avoid conflict between the various uses in the waterways and along the foreshores.	**Complies.** No conflict will arise as a result of the proposed development.
Clause 25 - Foreshore and Waterways Scenic Quality	(a) The scale, form, design and siting of any building should be based on an analysis of: (i) the land on which it is to be erected, and (ii) the adjoining land, and (iii) the likely future character of the locality.	**Complies.** The proposed extended and upgraded amenities building will continue to be compatible with the existing use and character of this site.
	(b) Development should maintain, protect and enhance the unique visual qualities of Sydney Harbour and its islands, foreshores and tributaries.	**Complies** The current proposal will not impact on the visual qualities of the nearby bays and waterways.
	(c) The cumulative impact of water-based development should not detract from the character of the waterways and adjoining foreshores.	**Complies.** No adverse impact on the character of the waterways will arise from the proposed development.

Clause	Matter for Consideration	COMPLIANCE
Clause 26 - Maintenance, protection and enhancement of views	(a) Development should maintain, protect and enhance views (including night views) to and from Sydney Harbour.	**Complies.** The site does not hold and is not subject to views to and from Sydney Harbour. The development does not restrict views to Canada Bay.
	(b) Development should minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items.	**Complies.** The site and Cintra Park is not subject to any iconic or significant views or vistas. The proposed development will generally maintain existing views within Cintra Park.
	(c) The cumulative impact of development on views should be minimised.	**Complies.** No adverse impact arises with respect to view impacts.
Clause 27 - Boat Storage Facilities	(a) Development should increase the number of public boat storage facilities and encourage the use of such facilities.	**Not applicable.**
	(b) Development should avoid the proliferation of boat sheds and other related buildings and structures below the mean high water mark.	**Not applicable.**
	(c) Development should provide for the shared use of private boat storage facilities.	**Not applicable.**
	(d) Development should avoid the proliferation of private boat storage facilities in and over the waterways by ensuring that all such facilities satisfy a demonstrated demand.	**Not applicable.**
	(e) Boat storage facilities should be as visually unobtrusive as possible.	**Not applicable.**
	(f) In the case of permanent boat storage, the safety and utility of the development should not be adversely affected by the wave environment, and the development should avoid adverse impacts on safe navigation and single moorings.	**Not applicable.**