Australian Capital Territory

Planning and Development (EIS Exemption Application – Proposed mixed use development, Block 2, Section 67 Kingston – DA201700031) Public Consultation Notice 2017

Notifiable Instrument NI2017 - 511

Made under the

Planning and Development Act 2007, s 211C (EIS exemption application – public consultation) and s 147AB (public notification of concurrent documents)

1 Name of instrument

This instrument is the *Planning and Development (EIS Exemption Application – Proposed mixed use development, Block 2, Section 67 Kingston – DA201700031) Public Consultation Notice 2017*.

2 Commencement

This instrument commences on the day after its notification day.

3 Dictionary

EIS means environmental impact statement, see section 208 of the *Planning and Development Act 2007* (the Act).

EIS exemption see section 211 of the Act.

EIS exemption application see section 211B of the Act.

concurrent consultation period see section 147AA of the Act

concurrent development application see section 147AA of the Act.

concurrent document see section 147AA of the Act.

4 EIS exemption application

(1) Canberra Town Planning is the proponent (proponent) of the EIS Exemption Application for the proposed mixed use development at Block 2, Section 67 Kingston (proposal).

(2) The proponent has applied for an EIS exemption for the proposal under section 211B of the Act. This EIS exemption application is in the schedule.

(3) The EIS exemption application is a concurrent document for a concurrent development application.

(4) The EIS exemption application is also available at the planning and land authority website:
http://www.planning.act.gov.au/topics/design_build/da_assessment/environmental_assessment/exemption_from_requiring_and_eis_s211

5 Concurrent development application

(1) The proponent has lodged a concurrent development application, DA201732569, for the proposal.
(2) The concurrent development application is available at:
http://www.planning.act.gov.au/development_applications/pubnote
(3) The concurrent development application cannot be finalised until the concurrent process is complete (see s 147AB(3)(a)(ii) of the Act).
(4) If the EIS exemption application is refused, rejected or withdrawn, the concurrent development application is taken to have been refused (see s 147AB(3)(c) of the Act).

6 Public consultation

(1) The concurrent public consultation period (concurrent consultation period) on the EIS exemption application and the concurrent development application starts on commencement of this instrument and ends 35 working days later.
(2) Anyone may give a written submission to the Chief Planning Executive (delegate) about the EIS exemption application or the concurrent development application.
(3) Representations may only be given during the concurrent consultation period.

7 Making of representations

(1) Representations should be addressed to the Chief Planning Executive and sent by:
   a. email to: EPDcustomerServices@act.gov.au;
   b. mail to:

      Environment, Planning and Sustainable Development
      Directorate Customer Service

      GPO Box 158

      Canberra ACT 2601; or

   c. hand to:

      Environment, Planning and Sustainable Development
      Directorate Customer Service Centre
      16 Challis Street, Dickson.

(2) Representations should include the application reference number **DA201700031**, and the name and contact details of the person making the representation.

Note 1 Printed copies of the EIS exemption application and background documents are available for inspection and purchase at the Environment and Planning Directorate Customer Service Centre, 16 Challis Street, Dickson. The Customer Service Centre is open Monday to Friday (except public holidays) between 8:30am and 4:30pm. Please call 6207 1923 to arrange a copy for purchase.

Note 2: As required by section 211F and section 147AC of the Act copies of representations will be made publicly available on the planning and land authority website until the concurrent consultation period ends or the representation is withdrawn. Also, copies of representations will be provided to the proponent. Published representations will include the name and contact details of the person making the representation as well as the other content of the representation. A request for exclusion of information from publication can be made under section 411 or 412 of the Act. A request for exclusion under these sections must be made in writing, clearly identifying what exclusions are sought and how the request satisfies the exclusion criteria in sections 411, 412 of the Act.

Ben Ponton
Chief Planning Executive
(delegate of the Minister)
4 October 2017

ACT Government
Environment, Planning and Sustainable Development

Planning and Development Act 2007, s425

APPLICATION FOR:

SCOPING DOCUMENT

ENVIRONMENTAL SIGNIFICANCE OPINION S211
EXEMPTION FROM EIS

Form 1M

1. Type of Application

☐ **Request for Scoping Document OR**

☑ **Request for Exemption to Provide Environmental Impact Statement**
Section 211 Planning and Development Act 2007 ***OR***

☐ **Application for Environmental Significance Opinion**
Section 138AA Planning and Development Act 2007 ***OR***

☐ **Additional Information as requested by the planning and land authority for any application for Scoping, EIS, or ESO**

If you attended a pre-application meeting or written pre-application advice in relation to the proposal that is the subject of this application please provide proposal number **Proposal Number 20**_____

Project Name MIXED USE DEVELOPMENT

Project Description Construction of 4 storey building, site services, access, landscaping works

2. Lease/Site Details *Please Print*

Provide the following details for each lease/site:

Site 1

Block: 2 **Section:** 67 **Suburb:** KINGSTON

Street Address (if applicable)

Land Use Zone/s applicable to this site CZ5 - MIXED USE

Site 2

Block: 3 **Section:** 67 **Suburb:** KINGSTON

Street Address (if applicable)

Land Use Zone/s applicable to this site PRZ1 - PUBLIC OPEN SPACE

Site 3

Block: **Section:** **Suburb:**

Street Address (if applicable)

Land Use Zone/s applicable to this site

Approved form AF2017-37 approved by Dorte Ekelund *Chief Planning Executive* Planning and Land Authority on 19 January 2017 under section 425 of the *Planning and Development Act 2007* and revokes approved form AF2014-88.
Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au

If more than three sites please provide details on separate page

3. Applicant Details *Please Print*

Surname	WATSON	First Name	HOPE
Name of Company/Department/ Government Agency	CANBERRA TOWN PLANNING		
Position held in Company/Department/Government Agency	TOWN PLANNER		
Australian Company/Business Number (ACN/ABN)	66 131 577 261		
Postal Address	2/20 CHALLIS ST		
Suburb	DICKSON	State ACT	Postcode 2602
Phone Number Business Hours	62 62 5091	Mobile	0402 062627
EMAIL ADDRESS	hope@canplan.com.au		

4. Lessee (Property Owners) or Government Land Custodian Details *Please Print*

SITE 1

1st Lessee or Land Custodian Details		2nd Lessee or Land Custodian Details	
Full Name:	Jin Wang	Full Name:	
Company Name:	Keggins Estate Pty Ltd	Company Name:	
Position Held in Company:	Director	Position Held In Company:	
ACN Number:	31 206 369 604	ACN Number:	
Postal Address:	9/26 Ipswich St Fyshwick ACT	Postal Address:	
Telephone BH:	02 6239 1998	Telephone BH:	
Mobile:		Mobile:	
Email Address:	jin.wang@keggins.com	Email Address:	

SITE 2

1st Lessee or Land Custodian Details		2nd Lessee or Land Custodian Details	
Full Name:	Chloè Elvy	Full Name:	
Company Name:	Land Development Agency	Company Name:	
Position Held in Company:	Development Director	Position Held in Company:	
ACN Number:	20 419 925 579	ACN Number:	
Postal Address:	GPO Box 158 Canberra ACT 2602	Postal Address:	
Telephone BH:	6205 0402	Telephone BH:	
Mobile:		Mobile:	
Email Address:	chloe.elvy@act.gov.au	Email Address:	

SITE 3

1st Lessee or Land Custodian Details		2nd Lessee or Land Custodian Details	
Full Name:		Full Name:	
Company Name:		Company Name:	
Position Held in Company:		Position Held in Company:	
ACN Number:		ACN Number:	
Postal Address:		Postal Address:	
Telephone BH:		Telephone BH:	
Mobile:		Mobile:	
Email Address:		Email Address:	

All lessees must sign authorising the lodgement of this application. In doing so the lessee gives authority to the applicant to negotiate any dealings in relation to the application through to its determination. If there are more than two lessees please ensure that the details and authorisation are attached to the application.

*If a lessee signature **can not be obtained** and either a land acquisition or lease withdrawal is underway to facilitate the project to which the EIS Scope relates then the applicant **must** submit documentary evidence that such land acquisition or lease withdrawal is occurring and that the lessee is aware of the project to which the EIS Scope relates.*

5. EIS Requirements – complete this part for Application for Scoping Document ONLY

Please identify why your proposal requires an Environmental Impact Statement and include applicable references to the *Planning and Development Act 2007 (P&D Act).*

☐ The proposal is a type listed under schedule 4 of the P&D Act. **Please list item numbers:** _____ _____ _____ _____ _____

☐ The proposal is not an EXEMPT, CODE, or MERIT track development where the development is allowed under an existing lease

☐ The proposal is permissible under the National Capital Plan but listed as prohibited in the relevant development table

☐ The proposal has been declared under section 124 and section 125 of the P&D Act

☐ The proposal is not listed anywhere in the relevant development table (in-nominate use)

6. Complete this part for Application for Environmental Significance Opinion ONLY
S138AA Planning and Development Act 2007

Are you seeking an Environmental Significance Opinion? ☐ **YES** ☐ **NO**

IF YES - identify the item(s) for opinion under Schedule 4 of the *Planning and Development Act 2007*

☐ **Section 4.2 Item 3 (c)** ☐ **Section 4.2 Item 3 (d)** ☐ **Section 4.3 Item 1**
☐ **Section 4.3 Item 2 (a)** ☐ **Section 4.3 Item 2 (b)** ☐ **Section 4.3 Item 3**
☐ **Section 4.3 Item 6**

Note: Applications for Environmental Significance Opinion from the ACT Heritage Council must be accompanied by a Statement of Heritage Effects prepared by a suitably qualified heritage professional regarding the potential impacts of the proposal.

7. Complete this part for Request for Exemption to Provide Environmental Impact Statement ONLY
S.211 Planning & Development Act 2007

The Minister may exempt a development proposal from a requirement to include an EIS if satisfied that the expected environmental impact of the development proposal has already been sufficiently addressed by another study, whether or not the study relates to the particular development proposal.

If the proposal is a type listed under Schedule 4 of the P&D Act, **please list the item numbers:** Part 4.3 Item 7

Please supply supporting documentation to justify s211 consideration and a statement as to how the supporting documentation satisfies the requirement of s.211 and s50A of the P&D Regulation. ☑ **Documentation Attached**

8. Environment Protection and Biodiversity Conservation Act 1999

Does the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC) affect your proposal? ☑ **NO** ☐ **YES**

If YES - attach copies of the Commonwealth Department of the Environment "Notification of Referral Decision" and "Decision on Assessment Approach"

NOTE: Copies of these documents must be attached to this application form before it can be accepted for processing by the planning and land authority.

IF NO - Have you had meetings/discussions with the Department of the Environment? ☑ **NO** ☐ **YES**

If YES - Please provide the contact details of the Department of the Environment officer

Name: _____ **Contact No.** _____

9. Your Proposal – Required for ALL application types

Please attach to this application form a document that provides sufficient detail to enable prescribed entities to obtain an understanding of the full extent of your proposal and any associated works, including:

1. a statement outlining the objectives of the project and why it is needed;
2. a description of the nature/type of project proposed by providing location map(s) of the project site(s), preliminary design drawings and satellite/aerial photographs;
3. a preliminary risk assessment (PRA) based on the guidance document attached to this form (not required for an ESO application);
4. a description of the natural conservation values of the site based on the considerations listed in the "Preparation of an application for scoping and preparation of an ESO" guideline available from the EPD website;
5. a description of measures within the proposal that seek to avoid and minimise (and as a last resort offset) impact on identified conservation values (for ESO and Section 211 applications only);
6. any decision made under the EPBC Act in relation to this proposal.
7. **For s211 applications only**, the following additional information is required:
    - details of qualifications, expertise and experience of the person(s) who conducted previous studies supporting the application;
    - details of public consultation undertaken, as part of statutory requirement, for projects or previous studies included as supporting documentation undertaken. Details of public consultation not required for a statutory process should also be included;
    - verification from a qualified person that the information in the previous studies supporting the application is still current.

10. Prescribed Entities

Have you had any meetings/discussions with relevant prescribed entities?

☐ NO
☑ YES

IF YOU ANSWERED YES TO THE QUESTION – please complete the following table and provide meeting minutes:

ENTITY (please tick)	**DATE/s OF MEETING/s**	**ENTITY CONTACT**
☐ ACTEW Corporation Ltd		
☐ ACTEWAGL Distribution		
☐ Conservator Flora & Fauna		
☐ Emergency Services		
☐ Environment Protection		
☐ Heritage Council		
☐ Health Policy		
☐ Territories & Municipal Services		
☐ Custodian of the Land		
☑ Other: LDA (Please specify)	9/6/17 and 19/6/17	Anton Veld

11. Conflict of Interest Declaration

Does the applicant or lessee have any association with EPD staff?

☑ NO
☐ YES

If YES please provide details:

NOTE: There are penalties for deliberately giving false and misleading information. The planning and land authority or Minister may revoke an approval if satisfied that the approval was obtained by fraud or misrepresentation.

12. Other Application Requirements

DOCUMENTATION AND PLANS

All required documentation must be provided in an electronic format on compact disc/DVD or via email and meet the following requirements (Form can be submitted in hardcopy if lodged over the counter)

- Each document must be saved as a PDF and named in accordance with the naming convention as detailed on the EPD website.
- All plans must be to scale.
- All plans must be rotated to the correct orientation i.e. they are the right way up when opened
- All plans are to be clear and concise and generally consistent with Australian Standard 1100.301 - 1985 and Australian Standard 1100.301 supplementary - as updated from time to time.
- The documentation provided on CD/DVD either over the counter or via an electronic lodgment process (email or internet) will be considered to be the relevant documentation associated with this application.

HARDCOPY DOCUMENTATION REQUIREMENTS FOR ALL APPLCATION TYPES

In addition to the documentation being provided on CD/DVD **one bound and one unbound hard copy must also be provided.**

13. Applicant and Lessee Declaration

I/we the undersigned, declare that this application is accompanied by all of the required information and or documents and understand that the documentation provided on CD/DVD or via electronic lodgement process (email or internet) will be considered to be the relevant documentation associated with this application; and understand that the information submitted with this application form will undergo a documentation check. I/we understand that this application will be considered lodged once the relevant application fees have been paid;

I/we hereby authorise ACT Government officers to access the subject property(s) for the purpose of evaluating the proposal;

I/we the undersigned (lessee) appoint the applicant whose name and signature appear below to act on my/our behalf in relation to this application. This authorises the applicant to pay for all application fees, bonds, and securities, liaise with the planning and land authority when required, alter amend or provide further information as necessary and receive any communications relating to this application;

I/we declare that all the information given on this form and its attachments is true and complete;

If signing on behalf of a company, organisation or Government agency: -
I/we the undersigned, declare I/we have the appropriate delegation or authority to sign on behalf of the company, organisation or Government agency.

Applicant Signature (s)		**Date**	18/7/17
SITE 1			
1st Lessee Signature		**Date**	18/7/17
2nd Lessee Signature		**Date**	
Govt Land Custodian Signature (unleased land only)		**Date**	
Delegate of the planning and land authority (unleased land only)		**Date**	

SITE 2

1st Lessee Signature		Date	
2nd Lessee Signature		Date	
Govt Land Custodian Signature (unleased land only)		Date	17/5/17
Delegate of the planning and land authority (unleased land only)		Date	

SITE 3

1st Lessee Signature		Date	
2nd Lessee Signature		Date	
Govt Land Custodian Signature (unleased land only)		Date	
Delegate of the planning and land authority (unleased land only)		Date	

Does the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC) affect your proposal?
The EPBC came into operation on 16 July 2000. It establishes an environmental assessment and approval system that is separate and distinct from the ACT system. It does not affect the validity of ACT development assessment and approval processes, but may affect the assessment track. The ACT cannot provide preliminary advice on whether a proposal falls within the definition of a controlled action, or requires referral to the Commonwealth. You should consult with the Commonwealth to determine if your proposal is a controlled action before seeking any approvals under the *Planning and Development Act 2007*. For information about the EPBC, including the referral process and when a referral should be made, contact the Commonwealth Department of the Environment www.environment.gov.au

Privacy Notice
The personal information on this form is being collected to enable processing of your application. Collection of personal information is authorised by Chapters 7, 8 and 9 of the *Planning and Development Act 2007*. The information that you provide may be disclosed to the ACT Revenue Office, the Australian Valuation Office and the Registrar-General's Office. The information may be accessed by other government agencies, ACTEWAGL, ACTEW Corporation and other commercial organisations interested in development and building information.

Contact Details:
Environment, Planning and Sustainable Development Directorate
Customer Service Centre
GPO Box 158, Canberra City 2601
16 Challis Street, Dickson ACT 2602
Business Hours: 8.30am to 4.30pm weekdays (excluding Public Holidays)
Phone: (02) 6207 1923
Email: epdcustomerservices@act.gov.au **Website:** www.planning.act.gov.au

27 January 2016

SITE AUDIT REPORT

Site 14 Developable Area and Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT

Submitted to:

Environment Protection Authority
Construction, Environment and Workplace Protection
ACT Government
Level 2 South - Dame Pattie Menzies House
16 Challis Street
DICKSON 2601 ACT

REPORT

Report Number. 99613681-679-R-Rev0

Distribution:

Environment Protection Authority (2 electronic copies + 2 hard copies)
Land Development Agency (1 electronic copy)
Golder Associates Pty Ltd (1 electronic copy)

Golder Associates

ACT Environment Protection Authority

SITE AUDIT STATEMENT

Environment Protection Act 1997

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

PART I: Site audit identification

Site audit statement no. RJP 030a - ACT

This site audit is a **statutory audit/~~non-statutory audit~~*** within the meaning of the *Environment Protection Act 1997*.

Site auditor details (approved under the *Environment Protection Act 1997*)

Name Roger Parker Company Golder Associates Pty Ltd

Address Building 7, Botanicca Corporate Park, 570-588 Swan Street, Richmond, Victoria

Postcode 3121

Phone (03) 8862 3500 Fax (03) 8862 3501

Site details

Address Kingston Foreshore Development Precinct, Kingston, ACT Postcode 2604

Property description *(attach a list if several properties are included in the site audit)*

Block 2 of Section 67

Division Kingston District Canberra Central

Area of site (e.g. hectares) 0.38 ha (Block 2 and Part Block 3 Section 67)

Current zoning CZ-5 Mixed Zone

To the best of my knowledge, the site **is/~~is not~~*** the subject of an order or agreement under the *Environment Protection Act 1997*.

Order/Agreement * no(s)

Environmental Protection Agreement between Kingston Foreshore Development Authority and ACT Environment Protection Authority dated 8 February 2007, for the assessment, remediation, and audit of the Kingston Foreshore Development Precinct, Kingston, ACT.

**** Strike out as appropriate***

Site audit commissioned by

Name Mr Nicholas Holt Company Land Development Agency

Address Level 7, TransACT House, 470 Northbourne Avenue, Dickson, ACT, GPO Box 158, Canberra, ACT Postcode 2601

Phone (02) 6207 8355 Fax (02) 6207 5101

Name and phone number of contact person (if different from above)

As above

☑ A. To determine land use suitability *(please specify intended use[s])*

High-density residential and/or commercial development (with or without basements) and landscaped areas with no access to soils (ground surfaces across the site will be covered by concrete slabs (building footprints, paving or hardstand) or at least 0.5 m of clean fill capping layer overlying a geotextile marker layer within landscaped areas and areas not covered by building footprints)

~~☐ B(i) To determine the nature and extent of contamination, and/or~~

~~☐ B(ii) To determine the appropriateness of an **investigation/remedial action/management plan***, and/or~~

~~☐ B(iii) To determine if the land can be made suitable for a particular use or uses by implementation of a specified **remedial action plan/management plan*** *(please specify intended use[s])*~~

.....

Information sources for site audit

Consultancy(ies) which conducted the site investigation(s) and/or remediation, and

Title(s) of report(s) reviewed:

- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the DEMP') (attached)
- Environmental Resources Management Australia Pty Ltd (January 2016), *Site Occupancy Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the OEMP') (attached)
- AAC Environmental Pty Ltd (28 November 2013), *Asbestos Assessment Report – Kingston Foreshore – Site 14*
- Coffey Environments Pty Ltd (March 2009), *Final Validation Report, Area F3, Kingston Harbour Works, Kingston, ACT*, document reference ENVICANB00092AA-R24)

* ***Strike out as appropriate***

- Coffey Environments Pty Ltd (March 2009), *Final Site Conditions Report, Area F5, Kingston Harbour Works, Kingston, ACT*, document reference ENVICANB00092AA-R23
- Coffey Environments Pty Ltd (10 August 2009), *Environmental Management Plan for Saleable Land Portions of Milestone 2, Kingston Harbour Civil Works, Kingston Foreshore Development Precinct, Kingston ACT*, document reference ENVICANB00092AA.R28
- Coffey Environments Pty Ltd (24 March 2009), *Quality Assurance and Quality Control Summary Report (Final), Kingston Harbour Works, Kingston, ACT*
- Environmental Resources Management Australia Pty Ltd (February 2009), *Insitu Harbour Area (Sites 12, 13 and 14), Kingston Foreshore Development Project, Kingston, ACT, Stage 2 Investigation Works Report*
- Environmental Resources Management Australia Pty Ltd (June 2015), *Consolidated Validation Report, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT*
- Environmental Resources Management Australia Pty Ltd (June 2015), *Site 14 Rowing Club Building, Environmental Site Assessment*
- Environmental Resources Management Australia Pty Ltd (August 2015), *Validation of Foreshore Land Parcel (Adjacent to Site 14) – Kingston Foreshore Development Precinct*
- Golder Associates Pty Ltd (September 2009), *Site Audit Statement and Site Audit Report, Kingston Harbour Area – Milestone 2, Kingston Foreshore Development Precinct, Kingston, ACT*, document reference 99613681/280
- Robson Environmental Pty Ltd (March 2011), *Waste Classification Report – Insitu Fill Material, Aurora Apartments, Site 18, Kingston Foreshore Development Precinct, ACT*
- SMEC Australia Pty Ltd (January 2013*), Assessment of Stockpile Material and Classification for Beneficial Reuse - Kingston Foreshore Development: Site 14, Block 1 Section 67, Kingston*
- SMEC Australia Pty Ltd (February 2014), *Stockpile Assessment Report: S14/SP11 - Site 14 of the Kingston Foreshore Development Precinct*

Other information reviewed (including previous site audit reports and statements relating to the site) Related documents as listed in the Site Audit Report

Site audit report by Golder Associates Pty Ltd

Title *Site Audit Report, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT*

Report no. 99613681-679B2S67-R-Rev0 Date 21 January 2016

* ***Strike out as appropriate***

PART II: Auditor's findings

Please complete either Section A or Section B, **not** both. *(Strike out the irrelevant section.)*

Use Section A where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land use(s).

Use Section B where the audit is to determine the nature and extent of contamination and/or the appropriateness of an investigation or remedial action or management plan and/or whether the site can be made suitable for a specified land use or uses subject to the successful implementation of a remedial action or management plan.

Section A

☑ **I certify that, in my opinion, the site is SUITABLE for the following use(s) permitted by its zoning 'CZ-5 Mixed Zone' as detailed in the ACT *Territory Plan 2008 updated on*21 March 2014:**

List Uses:

High-density residential and/or commercial development (with or without basements) and landscaped areas with no access to soils (ground surfaces across the site will be covered by concrete slabs (building footprints, paving or hardstand) or at least 0.5 m of clean fill capping layer overlying a geotextile marker layer within landscaped areas and areas not covered by building footprints)

subject to compliance with the following environmental management plans

- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the DEMP') (attached)
- Environmental Resources Management Australia Pty Ltd (January 2016), *Site Occupancy Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the OEMP') (attached)

in light of contamination remaining on the site.

OR

☐ **I certify that, in my opinion, the site is NOT SUITABLE for any use due to the risk of harm from contamination.**

Overall comments

Soil and fill on the site is known to be contaminated, including with asbestos-containing material and asbestos fibres. Further, there is potential for unexpected finds to be encountered during development works. Given this, any soil or fill removed from the site will

require classification and EPA approval prior to appropriate disposal. Soil removed from the site cannot be reused within the Kingston Foreshore Development Precinct.

Prior to sale of the site the DEMP notes that the site will be added to the list of sites to be managed by the LDA under their Environmental Protection Agreement with the EPA (MCL 2014-001) for the ongoing management of contaminated land. This will continue until evidence is provided to the EPA that the site has formally transferred.

The DEMP also notes that clauses must be included in the Crown Lease variation for the site to the effect that the lessee (the Developer and then the Owners Corporation) will be responsible for the management of the site in accordance with the requirements of the SAS, DEMP and OEMP.

Following the satisfactory completion of the management requirements under the DEMP and prior to occupancy, the lessee (the Developer) is to provide an EPA Approved Auditor with a report demonstrating compliance with the requirements of the DEMP. Once satisfied that development is complete and compliance has been achieved, the Auditor will seek EPA agreement that the site no longer requires management in accordance with the DEMP. The site will then be managed (by the Owners Corporation) into the future in accordance with the requirements of the SAS and OEMP as described in the Crown Lease variation.

The DEMP and OEMP are attached.

Section B

Purpose of the plan1 which is the subject of the audit

.....

.....

I certify that, in my opinion:

☐ the nature and extent of the contamination HAS/HAS NOT* been appropriately determined

AND/OR

☐ the investigation/remedial action plan/management plan* IS/IS NOT* appropriate for the purpose stated above

AND/OR

☐ the site CAN BE MADE SUITABLE for the following use(s) permitted by its zoning 'XXXXXXX' as detailed in the ACT *Territory Plan 2008 updated on DATE*:

List Uses:

if the site is remediated/managed* in accordance with the following remedial action plan/management plan* *(insert title, date and author of plan)*

.....

.....

.....

.....

subject to compliance with the following condition(s):

.....

.....

Overall comments

.....

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

PART III: Auditor's declaration

I am an Environmental Auditor in Victoria appointed pursuant to the Victorian *Environment Protection Act* 1970 (Accreditation No. 75566), and therefore approved as an Environmental Auditor under the *Environment Protection Act 1997*.

I certify that:

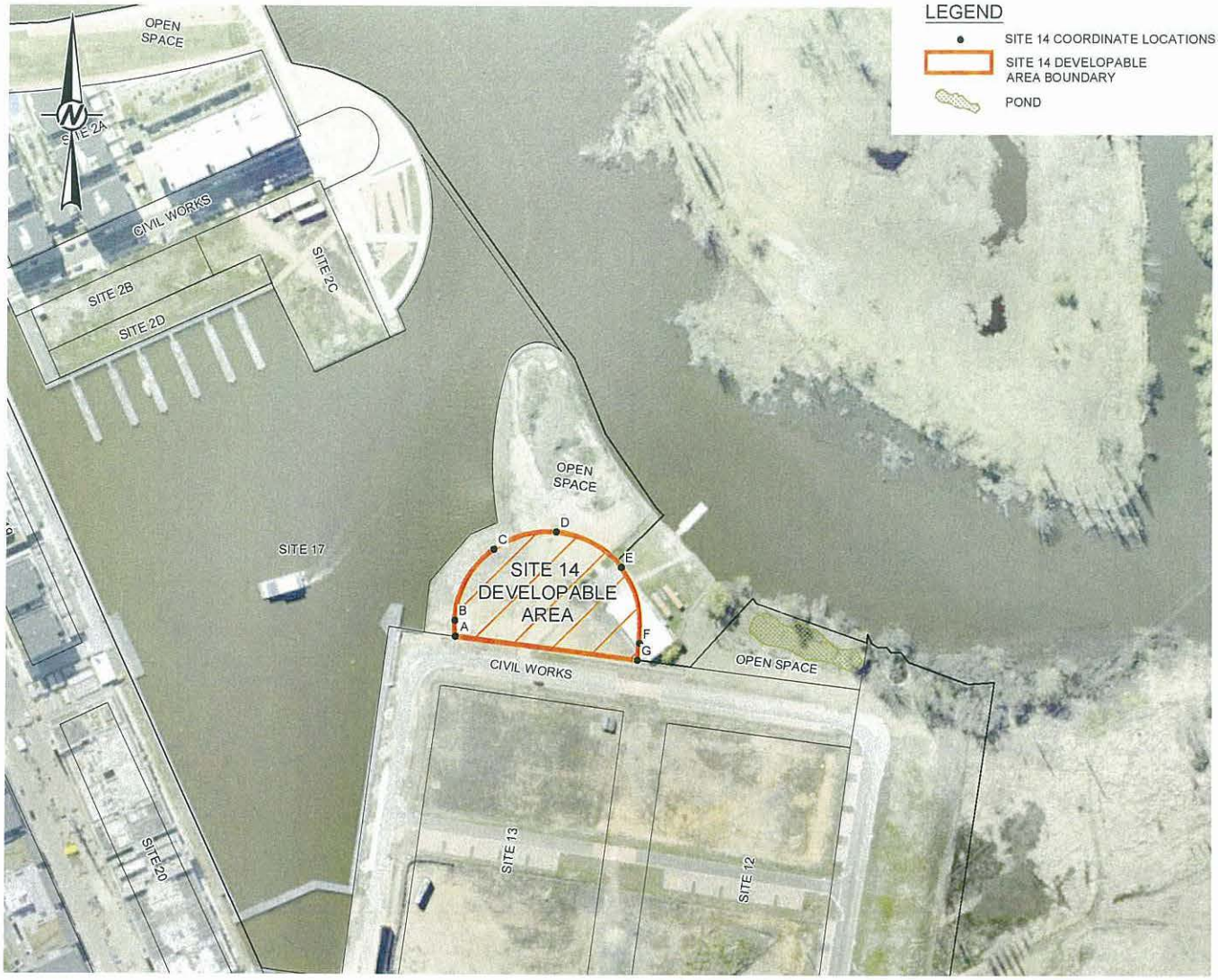
- I have completed the site audit free of any conflicts of interest and have not carried out an assessment or remediation of the land to which the audit relates, and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Environment Protection Act 1997* for wilfully making false or misleading statements.

Signed

Roger Parker, Environmental Auditor

Date 27 January 2016



Point ID	x	y
A	696322.73	6090174.11
B	696323.86	6090181.61
C	696342.22	6090210.22
D	696369.67	6090220.54
E	696399.48	6090204.62
F	696407.82	6090169.05
G	696406.62	6090161.51

NOTE(S)

1. COORDINATES ARE UN GDA 1994, MGA ZONE 55 PER REFERENCE LISTED BELOW

REFERENCE

SITE 14 , POINTS COORDINATES SHOWN FROM ERM, FIGURE 2 - SITE LAYOUT PLAN, DRG REF : 0115687S_S140EMP_G002_R1.MXD (PDF FORMAT) DATED 12 JANUARY 2016

nearmap

IMAGE DATED 31 AUG 2014
SOURCED WITH PERMISSION FROM NEARMAP ON 24 SEP 2014
IMAGE GEOREFERENCED BY GOLDER AND INTENDED FOR INDICATIVE PURPOSES ONLY
www.nearmap.com.au

0 60 120 180 m

APPROX. 1:3,000

Golder Associates

www.golder.com
GOLDER ASSOCIATES PTY. LTD.

CLIENT	PROJECT
LAND DEVELOPMENT AGENCY, ACT	SITE AUDIT REPORT, SITE 14, KINGSTON FORESHORE DEVELOPMENT PRECINCT

DRAWN BY	DATE	DRAWING TITLE
KM/PDM	18-01-2016	SITE 14 DEVELOPABLE AREA
CHECKED BY	DATE	
RJP	20-01-2016	

SCALE	SHEET SIZE	PROJECT No	DOC No	DOC TYPE	FIGURE No	REVISION	
AS SHOWN	A4	99613681	679	R	F001A	0	FIGURE 1A

ACT Environment Protection Authority

SITE AUDIT STATEMENT

Environment Protection Act 1997

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

PART I: Site audit identification

Site audit statement no. RJP 030b - ACT

This site audit is a **statutory audit/~~non-statutory audit~~*** within the meaning of the *Environment Protection Act 1997*.

Site auditor details (approved under the *Environment Protection Act 1997*)

Name Roger Parker Company Golder Associates Pty Ltd

Address Building 7, Botanicca Corporate Park, 570-588 Swan Street, Richmond, Victoria

Postcode 3121

Phone (03) 8862 3500 Fax (03) 8862 3501

Site details

Address Kingston Foreshore Development Precinct, Kingston, ACT Postcode 2604

Property description *(attach a list if several properties are included in the site audit)*

Part Block 3 of Section 67

Division Kingston District Canberra Central

Area of site (e.g. hectares) 0.38 ha (Block 2 and Part Block 3 Section 67)

Current zoning PRZ1 Urban Open Space

To the best of my knowledge, the site **is/~~is not~~*** the subject of an order or agreement under the *Environment Protection Act 1997*.

Order/Agreement * no(s)

Environmental Protection Agreement between Kingston Foreshore Development Authority and ACT Environment Protection Authority dated 8 February 2007, for the assessment, remediation, and audit of the Kingston Foreshore Development Precinct, Kingston, ACT.

** **Strike out as appropriate***

Site audit commissioned by

Name Mr Nicholas Holt Company Land Development Agency

Address Level 7, TransACT House, 470 Northbourne Avenue, Dickson, ACT, GPO Box 158, Canberra, ACT Postcode 2601

Phone (02) 6207 8355 Fax (02) 6207 5101

Name and phone number of contact person (if different from above)

As above

☑ A. To determine land use suitability *(please specify intended use[s])*

Landscaped areas and public open space for recreational uses with no access to soils (ground surfaces across the site will be covered by hardstand (paving or concrete) or at least 0.5 m of clean fill capping layer overlying a geotextile marker layer within landscaped areas and areas not covered by hardstand)

☐ ~~B(i) To determine the nature and extent of contamination, and/or~~

☐ ~~B(ii) To determine the appropriateness of an **investigation/remedial action/management plan***, and/or~~

☐ ~~B(iii) To determine if the land can be made suitable for a particular use or uses by implementation of a specified **remedial action plan/management plan*** *(please specify intended use[s])*~~

.....

Information sources for site audit

Consultancy(ies) which conducted the site investigation(s) and/or remediation, and

Title(s) of report(s) reviewed:

- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore DEMP') (attached)
- Environmental Resources Management Australia Pty Ltd (January 2016), *Ongoing Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore OEMP')
- AAC Environmental Pty Ltd (28 November 2013), *Asbestos Assessment Report – Kingston Foreshore – Site 14*
- Coffey Environments Pty Ltd (March 2009), *Final Validation Report, Area F3, Kingston Harbour Works, Kingston, ACT*, document reference ENVICANB00092AA-R24)

* ***Strike out as appropriate***

- Coffey Environments Pty Ltd (March 2009), *Final Site Conditions Report, Area F5, Kingston Harbour Works, Kingston, ACT*, document reference ENVICANB00092AA-R23
- Coffey Environments Pty Ltd (10 August 2009), *Environmental Management Plan for Saleable Land Portions of Milestone 2, Kingston Harbour Civil Works, Kingston Foreshore Development Precinct, Kingston ACT*, document reference ENVICANB00092AA.R28
- Coffey Environments Pty Ltd (24 March 2009), *Quality Assurance and Quality Control Summary Report (Final), Kingston Harbour Works, Kingston, ACT*
- Environmental Resources Management Australia Pty Ltd (February 2009), *Insitu Harbour Area (Sites 12, 13 and 14), Kingston Foreshore Development Project, Kingston, ACT, Stage 2 Investigation Works Report*
- Environmental Resources Management Australia Pty Ltd (June 2015), *Consolidated Validation Report, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT*
- Environmental Resources Management Australia Pty Ltd (June 2015), *Site 14 Rowing Club Building, Environmental Site Assessment*
- Environmental Resources Management Australia Pty Ltd (August 2015), *Validation of Foreshore Land Parcel (Adjacent to Site 14) – Kingston Foreshore Development Precinct*
- Golder Associates Pty Ltd (September 2009), *Site Audit Statement and Site Audit Report, Kingston Harbour Area – Milestone 2, Kingston Foreshore Development Precinct, Kingston, ACT*, document reference 99613681/280
- Robson Environmental Pty Ltd (March 2011), *Waste Classification Report – Insitu Fill Material, Aurora Apartments, Site 18, Kingston Foreshore Development Precinct, ACT*
- SMEC Australia Pty Ltd (January 2013*), Assessment of Stockpile Material and Classification for Beneficial Reuse - Kingston Foreshore Development: Site 14, Block 1 Section 67, Kingston*
- SMEC Australia Pty Ltd (February 2014), *Stockpile Assessment Report: S14/SP11 - Site 14 of the Kingston Foreshore Development Precinct*

Other information reviewed (including previous site audit reports and statements relating to the site) Related documents as listed in the Site Audit Report

Site audit report by Golder Associates Pty Ltd

Title *Site Audit Report, Site 14 Developable Area and Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT*

Report no. 99613681-679-R-Rev0 Date 22 January 2016

* ***Strike out as appropriate***

PART II: Auditor's findings

Please complete either Section A or Section B, **not** both. *(Strike out the irrelevant section.)*

Use Section A where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land use(s).

Use Section B where the audit is to determine the nature and extent of contamination and/or the appropriateness of an investigation or remedial action or management plan and/or whether the site can be made suitable for a specified land use or uses subject to the successful implementation of a remedial action or management plan.

Section A

☑ **I certify that, in my opinion, the site is SUITABLE for the following use(s) permitted by its zoning 'PRZ1 Urban Open Space' as detailed in the ACT *Territory Plan 2008 updated on* 21 March 2014:**

List Uses:

Landscaped areas and public open space for recreational uses with no access to soils (ground surfaces across the site will be covered by concrete slabs (paving or hardstand) or at least 0.5 m of clean fill capping layer overlying a geotextile marker layer within landscaped areas and areas not covered by hardstand)

subject to compliance with the following environmental management plans

- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore DEMP') (attached)
- Environmental Resources Management Australia Pty Ltd (January 2016), *Ongoing Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore OEMP')

in light of contamination remaining on the site.

OR

☐ **I certify that, in my opinion, the site is NOT SUITABLE for any use due to the risk of harm from contamination.**

Overall comments

Soil and fill on the site is known to be contaminated, including with asbestos-containing material and asbestos fibres. Further, there is potential for unexpected finds to be encountered during development works. Given this, any soil or fill removed from the site will

require classification and EPA approval prior to appropriate disposal. Soil removed from the site cannot be reused within the Kingston Foreshore Development Precinct.

Prior to transfer to the Territory and Municipal Services Directorate (TAMS) the Foreshore DEMP notes that the site will be managed by the LDA under their Environmental Protection Agreement with the EPA (MCL 2014-001). This will continue until evidence is provided to the EPA that the site has been formally transferred.

When the land is transferred to TAMS, the site will be added to the TAMS Environmental Protection Agreement and must be recorded in the TAMS Integrated Asset Management Systems in accordance with TAMS procedure, "*Procedure for the Management of Contaminated Assets*", Version 1.2 dated 31 May 2013 (as updated).

The DEMP also notes that clauses must be included in the required agreement between TAMS and EPA for the site to the effect that TAMS will be responsible for the management of the site in accordance with the requirements of the SAS, the Foreshore DEMP (if still relevant) and the Foreshore OEMP.

Following the satisfactory completion of the management requirements under the DEMP and prior to public access and use, the lessee (LDA or Developer) is to provide an EPA Approved Auditor with a report demonstrating compliance with the requirements of the Foreshore DEMP. Once satisfied that development is complete and compliance has been achieved, the lessee must seek EPA agreement that the site no longer requires management in accordance with the Foreshore DEMP. The site will then be managed by TAMS into the future in accordance with the requirements of the SAS and the Foreshore OEMP until the EPA agrees in writing that management is no longer required.

The Foreshore DEMP and the OEMP are attached.

Section B

Purpose of the plan[1] which is the subject of the audit

.....

.....

I certify that, in my opinion:

☐ the nature and extent of the contamination HAS/HAS NOT* been appropriately determined

AND/OR

☐ the investigation/remedial action plan/management plan* IS/IS NOT* appropriate for the purpose stated above

AND/OR

☐ the site CAN BE MADE SUITABLE for the following use(s) permitted by its zoning 'XXXXXXX' as detailed in the ACT *Territory Plan 2008 updated on DATE*:

List Uses:

if the site is remediated/managed* in accordance with the following remedial action plan/management plan* *(insert title, date and author of plan)*

.....

.....

.....

.....

subject to compliance with the following condition(s):

.....

.....

Overall comments

.....

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

PART III: Auditor's declaration

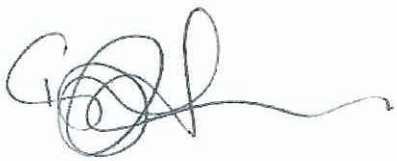
I am an Environmental Auditor in Victoria appointed pursuant to the Victorian *Environment Protection Act* 1970 (Accreditation No. 75566), and therefore approved as an Environmental Auditor under the *Environment Protection Act 1997*.

I certify that:

- I have completed the site audit free of any conflicts of interest and have not carried out an assessment or remediation of the land to which the audit relates, and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

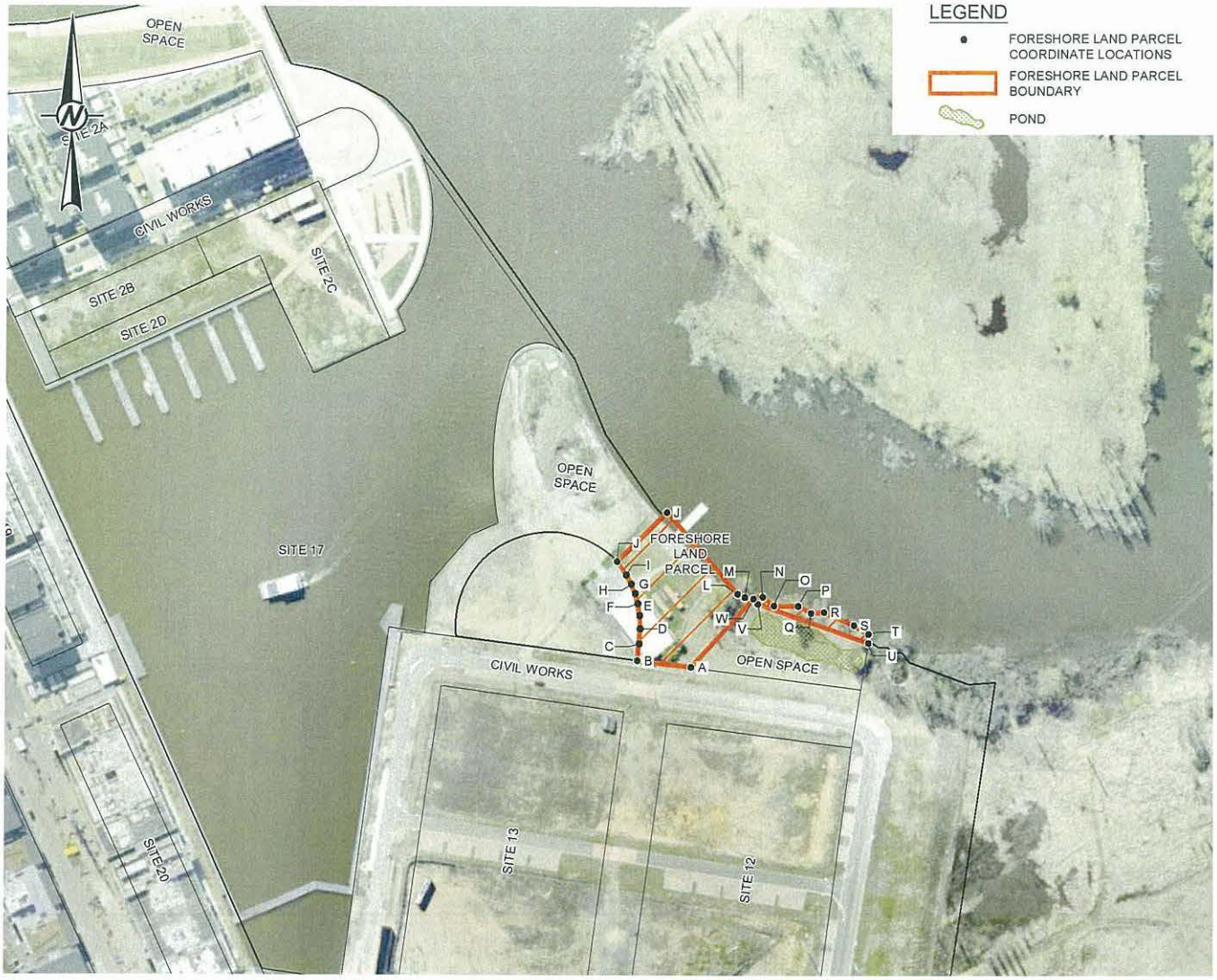
I am aware that there are penalties under the *Environment Protection Act 1997* for wilfully making false or misleading statements.

Signed



Roger Parker, Environmental Auditor

Date 27 January 2016



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E	695405.23	6090188.29
F	695404.55	6090193.76
G	695403.36	6090198.43
H	695401.60	6090202.83
I	695399.29	6090207.02
J	695395.18	6090213.28
K	695418.73	6090235.35
L	695450.84	6090197.26
M	695454.21	6090195.64
N	695462.39	6090195.63
O	695467.40	6090191.50
P	695478.63	6090191.14
Q	695484.42	6090187.77
R	695490.42	6090188.03
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U	695510.56	6090173.51
V	695460.05	6090192.39
W	695458.07	6090194.88

NOTE(S)

1. COORDINATES ARE UN GDA 1994, MGA ZONE 55 PER REFERENCE LISTED BELOW

REFERENCE

SITE 14 , POINTS COORDINATES (EXCEPT POINTS C AND D) SHOWN FROM ERM, FIGURE 2 - SITE LAYOUT PLAN, DRG REF : 0115687s_FLPV_G002_R1.MXD (PDF FORMAT) DATED 10 DECEMBER 2015

nearmap

IMAGE DATED 31 AUG 2014
SOURCED WITH PERMISSION FROM NEARMAP ON 24 SEP 2014
IMAGE GEOREFERENCED BY GOLDER AND INTENDED FOR INDICATIVE PURPOSES ONLY
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Golder Associates

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GOLDER ASSOCIATES PTY. LTD.

CLIENT	PROJECT
LAND DEVELOPMENT AGENCY, ACT	SITE AUDIT REPORT, SITE 14, KINGSTON FORESHORE DEVELOPMENT PRECINCT

DRAWN BY	DATE	DRAWING TITLE
KM/PDM	18-01-2016	SITE 14 FORESHORE LAND PARCEL
CHECKED BY	DATE	
RJP	20-01-2016	

SCALE	SHEET SIZE	PROJECT No	DOC No	DOC TYPE	FIGURE No	REVISION	
AS SHOWN	A4	99613681	679	R	F001B	0	FIGURE 1B

Glossary of Report Terms

Abbreviation and Technical Terms

ACM	Asbestos containing material
ACT	Australian Capital Territory
AF	Asbestos fines
BTEX	Benzene, toluene, ethylbenzene and xylene
EPA	ACT Environment Protection Authority
FA	Fibrous asbestos
KFDP	Kingston Foreshore Development Precinct, Kingston, Australian Capital Territory
LDA	Land Development Agency, formerly Kingston Foreshore Development Authority
LOR	Laboratory limit of reporting
OCP	Organochlorine pesticide
OPP	Organophosphate pesticide
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PID	Photoionisation detector
QA/QC	Quality assurance / quality control
RPD	Laboratory relative percentage difference
TAMS	ACT Department of Territory and Municipal Services
TPH	Total petroleum hydrocarbon
UCL	Upper confidence level
VENM	Virgin excavated natural material
VOC	Volatile organic compound

Units

Ha	Hectares
m	Metres
mbgl	Measured depth in metres below ground level
mg/kg	Concentration measured as milligrams per kilogram
mg/L	Concentration measured as milligrams per litre
µg/L	Concentration measured as micrograms per litre
% w / w	Percentage weight by weight

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TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

The Land Development Agency (LDA) requested Mr Roger Parker of Golder Associates Pty Ltd (Golder Associates) to undertake an environmental site audit ('the Audit') of the land parcel described below located within the Kingston Foreshore Development Precinct (KFDP), Kingston, ACT. Figure 1 presents the Site Locality Plan, and includes co-ordinates of the area subject to the Audit.

The audit area includes two land parcels referred to as Site 14 Developable Area and the Foreshore Land Parcel or 'pan-handle' shaped land occupied by Canberra Rowing Club boatshed building ('the Rowing Club') and public open space abutting the eastern portion of Site 14 Developable Area. For ease of reporting, the Auditor uses the term 'the site' or 'Site 14' to collectively refer to the two parcels of land forming the Audit area. Similarly, specific portions of the site are referenced were relevant. These two parcels are defined as:

- Block 2 Section 67 – Site 14 Developable Area – Figure 1A
- Part Block 3 Section 67 – Foreshore Land Parcel – Figure 1B.

The environmental site audit is required pursuant to the requirements of the Australian Capital Territory (ACT) *Environment Protection Act* 1997 (the Act) (ACT 1997), and the ACT Environment Protection Authority (EPA) *Contaminated Sites Environment Protection Policy* dated November 2009 ('the ACT Policy') (ACT 2009).

Mr Parker (the Auditor) is an Environmental Auditor in Victoria appointed pursuant to the Victorian *Environment Protection Act* 1970, and is therefore is duly accredited in ACT under Section 75(5) of the Act (ACT 1997).

This Site Audit Report supports two Site Audit Statements issued for the site (one for Site 14 Developable Area and one for the Foreshore Land Parcel), and is primarily based on review of the validation and remediation reports prepared by the LDA's consultants in assessing suitability of the site for the proposed land use. Further details are provided in Section 2.0, and Table 1 presents a summary of the Site Audit information.

Table 1: Site Audit Information

Name of Auditor	Mr Roger Parker of Golder Associates Pty Ltd
Audit Requested By	Kingston Foreshore Development Authority (now Land Development Agency)
Date of Engagement	27 April 2001
Address of Site	Site 14 Kingston Foreshore Development Precinct, Kingston, ACT
Title Information	Block 2 of Section 67 and part Block 3, Kingston
Size of the Site	3,800 metres square or 0.38 hectares
Current Owners	Land Development Agency
Current Occupiers	The majority of the site is currently undeveloped. A portion of the eastern half of the site is covered by the Canberra Rowing Club boathouse ('the Rowing Club') and public open space, and a road transverses the site in a general north-south alignment

2.0 AUDIT BACKGROUND

The KFDP covers an area of approximately 37 hectares (ha) of land located between Wentworth Avenue and Lake Burley Griffin in Kingston, ACT. Historical industrial land uses, including power generation, workshops, bus and transport depot and Government printing works, has resulted in the potential for contamination of the KFDP. Given this, the LDA, formerly Kingston Foreshore Development Authority, entered into an Environmental Protection Agreement with EPA concerning the assessment, remediation and audit of the KFDP. Figure 2 shows the site relative to other properties within the KFDP, and the current audit status of the KFDP.

The aim of the Environmental Protection Agreement is to assess:

- That investigation, remediation and audit of the KFDP is consistent with the objectives of the Act (ACT 1997) for the purpose of managing potentially contaminated land.
- Suitability of the land for the proposed land use(s). The land use has been specified in the Variation to the Territory Plan No. 113 by the Planning and Land Management Group Urban Services under the *Land (Planning and Environment) Act* 1991 (ACT (1991)), and is described in Section 2.2.

A portion of Site 14 is located within an area of the KFDP formerly referred to as the Harbour Area – Milestone 2 (refer to Figure 3). The Harbour Area – Milestone 2 was audited by Mr Parker in 2009.

Mr Parker's audit of Harbour Area – Milestone 2 is documented in a report by Golder Associates titled *Site Audit Report, Kingston Harbour Area – Milestone 2, Kingston Foreshore Development Precinct, Kingston, ACT* dated September 2009, document reference 99613681/280 (Milestone 2 Audit Report) (Golder (2009)) (included in Appendix A).

Subsequent to the audit of Harbour Area – Milestone 2, Mr Parker issued the three Site Audit Statements, RJP 012-ACT, RJP 013-ACT and RJP 014-ACT (included in Appendix A). The three Site Audit Statements considered that Harbour Area – Milestone 2 was suitable for the following land uses:

- **Site Audit Statement RJP 012 – ACT**

  Subject to compliance with Coffey Environments Pty Ltd (24 August 2009), *Environmental Management Plan for the Parks and Open Space Portions of Milestone 2, Kingston Harbour Civil Works Area, Kingston Foreshore Development Precinct, ACT,* approximately 1.5 ha of land within Harbour Area – Milestone 2 was considered suitable for "*parks and recreational open space, consistent with the land use specified in the "Variation to the Territory Plan No. 113, Planning and land Management Group Urban Services, ACT Government under Land (Planning and Environment) Act 1991*".

- **Site Audit Statement RJP 013 – ACT**

  Subject to compliance with Coffey Environments Pty Ltd (24 August 2009), *Environmental Management Plan for Saleable Land Portions of Milestone 2, Kingston Harbour Civil Works Area, Kingston Foreshore Development Precinct, ACT*, approximately 4 ha of land within Harbour Area – Milestone 2 was considered suitable for "*residential with minimal opportunity for soil access, including units (high-density residential), consistent with the land use specified in the "Variation to the Territory Plan No. 113", Planning and land Management Group Urban Services, ACT Government under Land (Planning and Environment) Act 1991*".

- **Site Audit Statement RJP 014 – ACT**

  Subject to compliance with Coffey Environments Pty Ltd (24 August 2009), *Environmental Management Plan for Roadway Portions of Milestone 2, Kingston Harbour Civil Works Area, Kingston Foreshore Development Precinct, ACT*, approximately 2.2 ha of land within Harbour Area – Milestone 2 was considered suitable for "*roadways, consistent with the land use specified in the "Variation to the Territory Plan No. 113", Planning and land Management Group Urban Services, ACT Government under Land (Planning and Environment) Act 1991*".

2.1 Reason for the Audit

A portion of Site 14 was included in the Harbour Area – Milestone 2 Audit, and in accordance with the Site Audit Statements, this portion of the site was considered suitable for high-density residential development with minimal access to site soils or for purposes of open space. Figure 3 shows the area covered by Site 14 relative to the land parcels included in the Harbour Area – Milestone 2 Audit.

Since the Site Audit Statements were issued, there have been changes in the site boundaries and/or land uses stipulated in the Harbour Area – Milestone 2 Audit. For example, the 'pan-handle' shaped land (Foreshore Land Parcel) occupied by Canberra Rowing Club boatshed building ('the Rowing Club') and public open space abutting the eastern portion of Site 14 was not previously audited under the Harbour Area – Milestone 2 Audit.

In addition, during construction activities on neighbouring properties, including development of roads within Stage 4 Roads and Verges of the KFDP, a number of activities occurred at the site, including spreading of imported mulch across the site and the temporary storage and/or use of equipment and machinery, storage of building materials and stockpiling soil. These activities have the potential to have altered the contamination status of the site. Therefore, in accordance with the Environmental Protection Agreement, Site 14 is subject to audit (or re-audit in the case of previously audited areas of the site) in order to assess suitability for the proposed land use (described in Section 2.2). This audit is the subject of this Site Audit Report, and attached Site Audit Statement.

Conclusions presented in this Site Audit Report and the attached Site Audit Statement dated 6 November 2015 supersede any statements relating to land use options that were part of the Harbour Area – Milestone 2 Audit and associated Site Audit Statements.

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by the LDA to reassess (or assess in the case of previously unassessed areas) the environmental suitability of the site for the proposed land use. ERM's assessment of the site is documented in:

- Environmental Resources Management Australia Pty Ltd (June 2015), *Consolidated Validation Report, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Validation Report') (ERM 2015a); included in Appendix B.
- Environmental Resources Management Australia Pty Ltd (June 2015), *Site 14 Rowing Club Building, Environmental Site Assessment* ('the Rowing Club ESA') (ERM 2015b); included in Appendix C.
- Environmental Resources Management Australia Pty Ltd (August 2015), *Validation of Foreshore Land Parcel (Adjacent to Site 14) – Kingston Foreshore Development Precinct* ('the Foreshore ESA') (ERM 2015c); included in Appendix D.

This Site Audit Report supports the two Site Audit Statements issued for the site, and is primarily based on the Auditor's review of the Validation Report and associated documentation prepared by ERM and others engaged by the LDA, as discussed in Section 2.5.

This Site Audit Report should be read in conjunction with the abovementioned documents.

The Auditor notes that in terms of coverage of the site, the Validation Report addresses assessment of all areas (referred to as 'Site 14') except the portion of land to the east of the Rowing Club. Assessment of the suitability of this area is addressed in the Foreshore ESA prepared by ERM (ERM 2015c). Figure 1 shows the areas subject to the audit.

For ease of reporting, the Auditor uses the term 'the site' or 'Site 14' to collectively refer to the Audit area. Similarly, specific portions of the site are referenced were relevant.

2.2 Proposed Land Use

For future use of the site, the LDA have proposed 'mixed use' development comprising high-density residential and/or commercial uses with or without basements, landscaped areas and landscaped areas. The Auditor understands that this development allows minimal access to the soils, i.e. the site soils will be covered by concrete slabs (building footprints, paving or hardstand) or at least 0.5 m clean fill capping layer overlying a geotextile marker layer within landscaped areas and areas not covered by building footprints[1].

2.3 Objectives of this Site Audit Report

The purpose of this Site Audit Report is to document the Auditor's review of the assessment work undertaken by the LDA's consultants with regards to the proposed changes in land use and property boundaries, and supports the two Site Audit Statements issued for the site.

The objectives of the Audit were to meet the requirements of the LDA's agreement with EPA, viz:

1) Assessment, remediation and audit in accordance with the Act and the following guidelines and policies:

   - National Environment Protection Council (2003), *National Environment Protection (Assessment of Site Contamination) Measure* (amended NEPM (NEPM 2013)). Early assessment of portions of the site undertaken as part of the Harbour Area – Milestone 2 Audit were undertaken against the requirements of the National Environment Protection Council (1999), *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM 1999), which was applicable at the time. Where this was the case, as part of the site validation ERM reassessed previous assessment works against the requirements of the amended NEPM (2013), and provided conclusions on the site suitably in accordance with the amended NEPM (2013). This is discussed in the relevant sections of the Audit report. Given this, the Auditor considers that the Audit criteria is contemporary and appropriate.
   - Relevant Environment Protection Policies and Environment Protection Authority guidelines.
   - Australian and New Zealand Environment and Conservation Council (1992), *Australia and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (ANZECC 1992).
   - NSW Environment Protection Authority (1994), *Guidelines for Assessing Service Station Sites* (NSW 1994)[2].

2) Assessment by the Auditor of the consultant's proposed sampling, assessment and remediation procedures and requirements for further assessment or remediation, as required to assess the land is suitable for the specified use.

3) A copy of the Auditor's final Audit Report and Site Audit Statement to be provided to Environment Protection Authority within 15 working days of completing an audit.

[1] Separation barrier between the site soils and receptors is described in the environmental management plans.

[2] The Auditor notes NSW 1994 has been replaced by NSW EPA (April 2014), *Technical Note: Investigation of Service Station Sites* (NSW 2014).

2.4 Scope and Approach of the Site Audit

The Auditor's approach and methodology in undertaking this Site Audit involved the five key tasks discussed below.

Task 1: Review of Documentation

The Auditor's scope of works in preparing this Site Audit Report included review of a number of documents and reports made available to the Auditor by the LDA and their consultants, most of which are listed in Section 2.5 below.

Task 2: Evaluation of Available Data

The main purpose of this task was to review available data presented by the LDA in order to assess suitability of Site 14 for the proposed land use. As part of this task, the Auditor also undertook progressive reviews of the assessment works documented in the Validation Report, and provided ERM with feedback in finalising the Validation Report, some of which is documented in various letters by Golder Associates listed in Section 2.5.

Task 3: Site Observations

The Auditor and/or members of the Auditor's team conducted site visits in 2009 during the remediation works being monitored by Coffey Environments Pty Ltd (Coffey), and subsequent visits during the development of various parts of the KFDP. On 12 March 2014, amongst other areas of the KFDP, the Auditor made general observations of the site with the LDA.

Task 4: Discussions with LDA and Related Parties

The Auditor participated in weekly telecoms with the LDA and the KFDP project team, including ERM.

Task 5: Preparation of the Site Audit Report and Site Audit Statement

As outlined above, this Site Audit Report has been prepared by the Auditor to document the abovementioned tasks undertaken by the Auditor and to support the two attached Site Audit Statements for the site. .

2.5 Review of Documentation

In undertaking the works described in Section 2.4, key documentation and reports reviewed by the Auditor included the following:

- AAC Environmental Pty Ltd (28 November 2013), *Asbestos Assessment Report – Kingston Foreshore – Site 14* (AAC 2013).
- Coffey Environments Pty Ltd (March 2009), *Final Validation Report, Area F3, Kingston Harbour Works, Kingston, ACT*, document reference ENVICANB00092AA-R24) (Coffey 2009a).
- Coffey Environments Pty Ltd (March 2009), *Final Site Conditions Report, Area F5, Kingston Harbour Works, Kingston, ACT*, document reference ENVICANB00092AA-R23 (Coffey 2009b).
- Coffey Environments Pty Ltd (10 August 2009), *Environmental Management Plan for Saleable Land Portions of Milestone 2, Kingston Harbour Civil Works, Kingston Foreshore Development Precinct, Kingston ACT*, document reference ENVICANB00092AA.R28 (Coffey 2009c).
- Coffey Environments Pty Ltd (24 March 2009), *Quality Assurance and Quality Control Summary Report (Final), Kingston Harbour Works, Kingston, ACT* (Coffey 2009d).
- Environmental Resources Management Australia Pty Ltd (February 2009), *Insitu Harbour Area (Sites 12, 13 and 14), Kingston Foreshore Development Project, Kingston, ACT, Stage 2 Investigation Works Report* (ERM 2009).

- Environmental Resources Management Australia Pty Ltd (June 2015), *Consolidated Validation Report, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Validation Report') (ERM 2015a); included in Appendix B.
- Environmental Resources Management Australia Pty Ltd (June 2015), *Site 14 Rowing Club Building, Environmental Site Assessment* ('the Rowing Club ESA') (ERM 2015b); included in Appendix C.
- Environmental Resources Management Australia Pty Ltd (August 2015), *Validation of Foreshore Land Parcel (Adjacent to Site 14) – Kingston Foreshore Development Precinct* ('the Foreshore ESA') (ERM 2015c); included in Appendix D.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the DEMP') (ERM 2016a); included in Appendix E.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Site Occupancy Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the OEMP') (ERM 2016b); included in Appendix F.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore DEMP') (ERM 2016c); included in Appendix G.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Ongoing Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore OEMP') (ERM 2016d); included in Appendix H.
- Golder Associates Pty Ltd (September 2009), *Site Audit Statement and Site Audit Report, Kingston Harbour Area – Milestone 2, Kingston Foreshore Development Precinct, Kingston, ACT*, document reference 99613681/280 (Golder 2009) (included in Appendix A).
- Robson Environmental Pty Ltd (March 2011), *Waste Classification Report – Insitu Fill Material, Aurora Apartments, Site 18, Kingston Foreshore Development Precinct, ACT* (Robson 2011).
- SMEC Australia Pty Ltd (January 2013), *Assessment of Stockpile Material and Classification for Beneficial Reuse - Kingston Foreshore Development: Site 14, Block 1 Section 67, Kingston* (SMEC 2013).
- SMEC Australia Pty Ltd (February 2014), *Stockpile Assessment Report: S14/SP11 - Site 14 of the Kingston Foreshore Development Precinct* (SMEC 2014).

The Auditor provided ongoing feedback and commentary on draft documentation to ERM throughout the audit process. The Auditor's formal review of draft versions of the Validation Report and environmental management plans are presented in the following letters by Golder Associates:

- Golder Associates Pty Ltd (11 October 2013), *Auditor Review of Validation Report, Site 14, Kingston, ACT,* document reference 99613681-631-L-Rev0 (Golder 2013) (included in Appendix I).
- Golder Associates Pty Ltd (13 January 2014), *Auditor Review of Revised Validation Report, Site 14, Kingston, ACT,* document reference 99613681-642-L-Rev0 (Golder 2014a) (included in Appendix I).
- Golder Associates Pty Ltd (1 April 2014), *Auditor Review of Revised Validation Report, Site 14, Kingston, ACT,* document reference 99613681-650-L-Rev0 (Golder 2014b) (included in Appendix I).
- Golder Associates Pty Ltd (25 November 2014), *Auditor Review of Environmental Management Plans, Site 14, Kingston, ACT,* document reference 99613681-683-L-Rev0 (Golder 2014c) (included in Appendix I).

- Golder Associates Pty Ltd (29 April 2015), *Auditor Review Revised Validation Report and Environmental Management Plans, Site 14, Kingston, ACT,* document reference 99613681-693-L-Rev0 (Golder 2015a) (included in Appendix I).
- Email dated 3 August 2015 *[Naidoo:Holt]* (Golder 2015b) (included in Appendix I).
- Email dated 23 September 2015 *[Naidoo:Buck]* (Golder 2015c) (included in Appendix I).

2.6 Objectives and Scope of the Validation Undertaken by ERM

As discussed in Section 2.1, the Validation Report (ERM 2015a) addresses assessment of all areas (referred to as 'Site 14' by ERM) except the portion of land to the east of the Rowing Club, referred to as the 'Foreshore area'. Assessment of the suitability of this area is addressed in the Foreshore ESA prepared by ERM (ERM 2015c). Assessment of soils beneath the Rowing Club building is documented in the Rowing Club ESA (2015b) prepared by ERM and referenced in the Validation Report as part of ERM's assessment of Site 14. The extent of the area subject to the Audit (i.e. 'the site') is shown on Figure 1.

The overall objectives and scope of the assessment undertaken by ERM were to:

- Document environmental assessments undertaken on the site, including:
  - review of relevant reports prepared for the Harbour Area – Milestone 2 Audit relating to Site 14
  - assessment of environmental investigations of site undertaken post the Harbour Area – Milestone 2 Audit
  - undertake assessment of the Rowing Club, comprising soil investigation works
  - undertake assessment of the Foreshore area to the east of Site 14.
- Assessment of information relating to the importation and placement of fill on site to understand if this material may have altered the condition of the site soils.
- Demonstrate that sufficient environmental assessment work has been undertaken of the site to meet the requirements of relevant guidelines, and to define the environmental condition of the site.
- Preparation of the Validation Report documenting ERM's review and assessment of suitability of the site for the proposed land use.

3.0 SITE INFORMATION

The information presented in this section has been obtained from the LDA, and is based on review of the Validation Report and on the Auditor's knowledge and understanding of the general area of the site and the KFDP. Figure 1 presents the Site Locality Plan, and includes co-ordinates of the site boundaries.

3.1 Site Location and Description

The KFDP is located on the banks of Lake Burley Griffin in the suburb of Kingston, ACT. The site is located in the north eastern portion of the KFDP, and portions of the site form part of the former Areas R4, F3 and F5 of the Harbour Area – Milestone 2 Audit[3]. Figure 3 shows the area covered by the site relative to the land parcels referred to in the Harbour Area – Milestone 2 Audit.

The site covers approximately 0.38 hectares. Figure 1 presents the Site Locality Plan, and includes co-ordinates of the site boundaries. The majority of the site is currently undeveloped; a portion of the eastern half of the site is covered by the Rowing Club; and a road transverses the site in a general north-south alignment. The Rowing Club comprises a 480 m^2 building used for storage and maintenance of boats, external shelving for boat and equipment storage and portable toilet. The Auditor notes that the Rowing Club will be demolished during the redevelopment construction phase. To the east of the Rowing Club is a narrow strip of land along Lake Burley Griffin, currently comprising public open space.

The immediate surrounds of the site include:

- **North:** to the north of the site is vacant land with Lake Burley Griffin further north beyond the vacant land.
- **East:** to the east of the site is undeveloped land. To the north east the site is bounded by Lake Burley Griffin.
- **South:** the site is bounded by Honeysett View to the south, and south of Honeysett View are Sites 12 and 13 of the KFDP (Honeysett View was audited as part of Stage 4 Roads and Verges in 2014, and considered suitable for uses as roads. Sites 12 and 13 were re-audited by the Auditor in 2013, and considered suitable for redevelopment for high-density residential and/or commercial land uses).
- **West:** to the west of the site is Kingston Boat Harbour or Site 17 of the KFDP. Site 17 was audited by the Auditor in February 2015, and considered suitable for ongoing use as a boat harbour.

3.2 Site History and Development Status

In 1963, a harbour (described as Areas R2 and F3 in Figure 3) was constructed as part of the development of Lake Burley Griffin (the former harbour). The western portion of Site 14 comprising the former Area F3 formed part of the former harbour.

Between 2003 and 2008, the former harbour was redeveloped to modify the size and shape, and to form an additional inlet on the north western corner. This redevelopment process with respect to Site 14, included:

- Filling and reclamation of Area F3 of the former harbour to form usable land, now part of Sites 12, 13 and 14 and Stage 4 Roads and Verges of the KFDP. Area F3 was filled with material sourced from other parts of the KFDP, including sediments dredged from Area R2, and soil excavated from Areas R3 and R6.
- Dredging of Area R2 to a minimum depth of 2.75 m to provide a navigable channel to the harbour.

The Auditor understands that remaining portions of the site, comprising former Areas F5 and R4 including the Rowing Club and the Foreshore area (refer to Figure 3), have not been used for commercial or industrial purposes, other than temporary stockpiling of soils at the site.

[3] The Harbour Area – Milestone 2 Audit area was subdivided into several parcels of land for redevelopment purposes. The area covered by Site 14 relative to these subdivisions is shown in Figure 3.

3.3 Topography and Drainage

The topography of the KFDP is predominantly flat with a slight slope towards Lake Burley Griffin. The site is relatively flat, and has similar grading to other properties in the immediate surrounds.

3.4 Geology

Based on the *1:50,000 Geology Map of Canberra, Queanbeyan and Environs*, the general area of the KFDP is underlain by sedimentary bedrock of the Canberra Formation, comprising sandstones, shales and siltstones. Overlying the bedrock is Quaternary Alluvium deposited by paleochannels of the Molongolo River and Jerrabomberra Creek.

The depth to underlying weathered bedrock is generally less than one metre (m) in the west and south of the KFDP deepening to greater than 10 m in the harbour area. The Auditor notes that bedrock was not encountered in any of the excavations completed by Coffey during the redevelopment of Harbour Area – Milestone 2 (Golder 2009) (included in Appendix A).

It is understood that fill was placed across much of the KFDP to raise the elevation above past flood levels, and the depth of fill in the area of the harbour before remediation was found to have a thickness generally between 1 to 3 m. Following remediation of the Harbour Area – Milestone 2, additional fill was placed to achieve design levels. For the most part, surface fill originated from the adjacent Harbour excavation within Site 17 (refer to Figure 2). Portions of the Harbour Area – Milestone 2 now consist of reclaimed land, including parts of Sites 2, 12, 13 and 14 (refer to Figure 2). A mixture of excavated soil and fill from within the KFDP and imported crushed rock fill were used to reclaim these areas.

Figure 3 shows the area covered by the site relative to the land parcels referred to in the Harbour Area – Milestone 2 Audit.

The Validation Report notes:

- The portion of Site 14 that comprised the former Area F3 (refer to Figure 3) was reclaimed using material from numerous sources including soil excavated from elsewhere within the KFDP, and virgin excavated natural material (VENM).
- Fill of varying thicknesses comprising silty sand and gravelly clayey sand with less than 5 % brick, concrete or glass was encountered across the majority of Area F5 (refer to Figure 3).

3.5 Hydrogeology

Groundwater is known to be present beneath the KFDP at depths ranging from 0.5 to 3 m and generally flows towards the north east. Groundwater is likely to have been lowered by dewatering during excavation of the Harbour temporarily altering the natural groundwater flow.

The Validation Report considered the upper groundwater aquifer beneath the KFDP comprised fine grained clays and sandy clays alluvial overlying sand/gravel/cobble alluvial, and that behaviour of groundwater within these units would be similar and continuous. With regards to groundwater at the site, the Validation Report noted that groundwater is present within the shallow aquifers across Site 14, and is likely to be influenced by Lake Burley Griffin, with inferred flow being westwards towards Lake Burley Griffin.

Groundwater quality is discussed further in Section 8.0.

4.0 POTENTIAL CONTAMINANTS OF CONCERN

Potential contaminants of concern were assessed based on historical land uses and activities and infrastructure associated with the site and surrounding areas. This information is tabulated in Table 2.

Table 2: Potential Sources of Contamination and Associated Potential Contaminants of Concern

Past Land Uses and Activities	Potential Contaminants of Concern
ONSITE SOURCES	
Imported fill potentially impacted with coke and/or ash, and spreading of imported mulch across the site	■ Benzene, toluene, ethylbenzene and xylene (BTEX) ■ Herbicides ■ Metals ■ Poly Aromatic Hydrocarbons (PAH) ■ Total Petroleum Hydrocarbons (TPH) ■ Volatile organic compounds (VOCs)
Former buildings and/or imported fill may contain ACM	■ Asbestos
Boat maintenance and painting activities (the Rowing Club)	■ Metals ■ PAH ■ Tributyl tin
Temporary storage and/or use of equipment and machinery, and storage of building materials	■ Asbestos ■ BTEX ■ Metals ■ TPH ■ VOCs
Temporary stockpiling soil	■ Asbestos ■ BTEX ■ Metals ■ PAH ■ TPH ■ VOCs

Past Land Uses and Activities	Potential Contaminants of Concern
OFFSITE SOURCES	
Potential for offsite sources of contamination include construction activities on neighbouring sites, storage of materials and soils, historical industrial activities, and uses associated with the Kingston Harbour	■ Asbestos ■ BTEX ■ Herbicides ■ Metals ■ PAH ■ TPH ■ Tributyl tin ■ VOCs

The Auditor notes that ERM indicated that tributyl tin may be a potential contaminant of concern. However, this was based on earlier assessment works undertaken within the former harbour area. Assessment of the site did not include analyses of tributyl tin. Given that the site was not part of the former harbour, the Auditor considers this to be acceptable and that tributyl tin is not considered a potential contaminant of concern.

5.0 ASSESSMENT CRITERIA

The assessment criteria adopted for the Audit of the site, discussed below, is based on the proposed land use for the site, i.e. high-density residential and/or commercial uses, landscaped areas and public open space for recreational uses with minimal access to the site soils.

5.1 Soil Assessment Criteria

The soil assessment criteria adopted for the assessment and validation of the site was established based on guidance provided in the following documents:

- ACT EPA (November 2009), *Contaminated Sites Environment Protection Policy* (ACT 2009).
- ACT *Environment Protection Act* 1997 (ACT 1997).
- Where the soil assessment was completed prior to May 2013[4] - National Environment Protection Council (1999), *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM 1999), Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater - Health Investigation Levels (HIL) for scenario 'D', residential uses with minimal opportunities for soil access (NEPM (1999) HIL D), and Interim Urban Ecological Investigation Levels (NEPM (1999) EIL).
- Soil assessment of the Rowing Club - National Environment Protection Council (April 2013), *National Environment Protection (Assessment of Site Contamination) Measure* (amended NEPM (2013)), Schedule B(1) *Guideline on Investigation Levels for Soil and Groundwater*, Health Investigation Levels (HIL) for scenario 'B', residential uses with minimal opportunities for soil access (amended NEPM (2013) HIL B).
- Assessment of the Foreshore area - National Environment Protection Council (April 2013), *National Environment Protection (Assessment of Site Contamination) Measure* (amended NEPM (2013)), Schedule B(1) *Guideline on Investigation Levels for Soil and Groundwater*, Health Investigation Levels (HIL) for scenario 'C', public open space (amended NEPM (2013) HIL C).

  Where soil assessment at the site was completed prior to May 2013, based on guidance provided in the Addendum dated February 2014 to the ACT Contaminated Sites Environment Protection Policy, November 2009 (ACT 2009), the Auditor considers use of the NEPM (1999) rather than the amended NEPM (2013) appropriate in this instance. However, in preparing the Validation Report, ERM reviewed investigation data against the amended NEPM (2013), and concluded that use of these criteria does not change the outcome of the assessment. This is discussed in subsequent sections of the Site Audit Report.
- Australian and New Zealand Environment and Conservation Council (1992), *Australia and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (ANZECC 1992) B criteria (ANZECC (1992) B).
- Western Australia Environmental Health Directorate, Department of Health (May 2009), *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (WA DoH 2009).
- ACT Environment and Sustainable Development (September 2011), *Environmental Guidelines for Service Station Sites and Hydrocarbon Storage* (ACT 2011).
- NSW Environment Protection Authority (April 2014), *Technical Note: Investigation of Service Station Sites* (NSW 2014).

[4] Where soil assessment at the site was completed prior to May 2013 (all areas except the Rowing Club), based on guidance provided in the Addendum dated February 2014 to the ACT Contaminated Sites Environment Protection Policy, November 2009 (ACT 2009), the analytical data was compared to limits established in the NEPM (1999) rather than the amended NEPM (2013). However, the Auditor notes that ERM reviewed the investigation data against the amended NEPM (2013), and concluded that use of the NEPM (1999) criteria does not change the outcome of the assessment.

- Environmental Resources Management Australia Pty Ltd (2006), *Preliminary Site Specific Water Quality Criteria, Kingston Foreshore Development Civil Harbour Works* (ERM 2006).
- NSW Office of Environment and Heritage (2011), *Guidelines for Consultants Reporting on Contaminated Sites* (NSW 2011).
- Australian Standard (September 1999), *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds, AS 4482.2 – 1999* (AS 4482.2) (AS 1999).
- Australian Standard (November 2005), *Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances, AS 4482.1 – 2005* (AS 4482.2) (AS 2005).

The adopted soil assessment criteria is presented in Table 3 relates to the following.

Table 3: Soil Assessment Criteria

Analyte	NEPM (1999) HIL D (mg/kg unless stated)	NEPM (1999) EIL (mg/kg)	Amended NEPM (2013) HIL B (mg/kg)	Amended NEPM (2013) HIL C (mg/kg)	ANZECC B (1992) (mg/kg)	NSW (1994) (mg/kg)	WA DoH (2009) (% weight by weight)	Soil Leachability Screening Criteria (mg/L)
METALS								
Arsenic	400	20	500	200	20	-	-	0.05
Cadmium	80	3	150	90	3	-	-	0.0002
Chromium (III)	12 %	400	-	-	-	-	-	0.004
Chromium (VI)	400	1	500	300	50	-	-	0.004
Copper	4,000	100	30,000	17,000	60	-	-	0.004
Mercury	60	1	120	80	1	-	-	0.0001
Nickel	1,200	600	1,200	1,200	300	-	-	0.025
Lead	1,200	600	1,200	600	300	-	-	0.002
Zinc	28,000	200	60,000	30,000	200		-	0.025
ORGANICS								
Benzene	-	-	Refer to Table Note A	Refer to Table Note A	1	1	-	0.3
Toluene	-	-	Refer to Table Note A	Refer to Table Note A	-	130	-	0.3

Analyte	NEPM (1999) HIL D (mg/kg unless stated)	NEPM (1999) EIL (mg/kg)	Amended NEPM (2013) HIL B (mg/kg)	Amended NEPM (2013) HIL C (mg/kg)	ANZECC B (1992) (mg/kg)	NSW (1994) (mg/kg)	WA DoH (2009) (% weight by weight)	Soil Leachability Screening Criteria (mg/L)
ORGANICS								
Ethylbenzene	-	-	Refer to Table Note A	Refer to Table Note A	-	50	-	0.14
Xylene	-	-	Refer to Table Note A	Refer to Table Note A	-	25	-	0.38
TPH $C_6 - C_9$	-	-	Refer to Table Note A	Refer to Table Note A	-	65		-
TPH $C_{10} - C_{36}$	-	-	Refer to Table Note A	Refer to Table Note A	-	1,000		10
Benzo(a)pyrene	4	-	4^B	3^B	-	-		0.001
Total Polycyclic Aromatic Hydrocarbon (PAH)	80	-	400	300	-	-	-	0.003
Heptachlor	40	-	10	10	-	-	-	-
Aldrin + Dieldrin	40	-	10	10	-	-	-	-
Chlordane	200	-	90	70	-	-	-	-
DDE+DDD+DDT	800	-	600	400	-	-	-	-

Analyte	NEPM (1999) HIL D (mg/kg unless stated)	NEPM (1999) EIL (mg/kg)	Amended NEPM (2013) HIL B (mg/kg)	Amended NEPM (2013) HIL C (mg/kg)	ANZECC B (1992) (mg/kg)	NSW (1994) (mg/kg)	WA DoH (2009) (% weight by weight)	Soil Leachability Screening Criteria (mg/L)
ORGANICS								
Total Polychlorinated Biphenyl (PCB)	40	-	1	1	1	-	-	-
Phenol	34,000	-	45,000	40,000	-	-	-	-
ASBESTOS								
Asbestos containing material (ACM)	-	-	0.04 % [C]	0.04 % [C]	-	-	0.04 % [C]	-
Fibrous Asbestos (FA)	Refer to Table Note C	Refer to Table Note C	0.001 % [C]	0.001 % [C]	-	-	0.001 % [C]	-
Asbestos Fines (AF)	Refer to Table Note C	Refer to Table Note C	0.001 % [C]	0.001 % [C]	-	-	0.001 % [C, D]	-
All forms of Asbestos	Refer to Table Note C	Refer to Table Note C	No visible asbestos for surface soil	No visible asbestos for surface soil	-	-	-	-

NOTES

A - Amended NEPM (2013) provides health screening levels for soil vapour intrusion based on soil type and depth of the contaminant

B - as benzo(a)pyrene toxicity equivalent quotient (TEQ), where the TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its benzo(a)pyrene toxicity equivalence factor, and summing these products

C - given the challenges associated with ensuring the quality and reproducibility of asbestos sampling methods due to its heterogeneity and discrete occurrence in the environment, the assessment criteria adopted was observations made of FA and AF in the field (i.e, the presence or absence of FA and AF). Where the Validation Report reported presence of FA or AF, the Auditor considered this to indicate potential for asbestos to be present at the site, irrespective of the concentrations reported through sample analyses

D - provided the level of AF does not exceed 10 % of the total asbestos material

5.2 Groundwater Assessment Criteria

The groundwater assessment criteria adopted by ERM (2015a), presented in Table 4, was based on guidance provided in the following:

- The 95 % species protection values listed in the Australian and New Zealand Environment and Conservation Council (2000), *Australia and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC 2000).
- National Environment Protection Council (April 2013), *National Environment Protection (Assessment of Site Contamination) Measure* (amended NEPM (2013)), Schedule B (1) *Guideline on Investigation Levels for Soil and Groundwater*, Groundwater Investigation Levels[5].
- ACT Environment Protection Regulation (2005), Schedule 4, AQUA 3, Lake Burley Griffin (ACT 2005).

Table 4: Groundwater Assessment Criteria

Analyte	ANZECC 2000 (ug/L)
METALS	
Arsenic	13
Cadmium	0.2
Chromium (VI)	1
Copper	1.4
Mercury	0.06
Nickel	11
Lead	3.4
Zinc	8
ORGANICS	
Benzene	950
Toluene	200
Xylene (o)	350
Xylene (p)	200
Naphthalene	16

[5] Although groundwater assessment at the site was completed prior to May 2013 given the amended NEPM (2013) references the ANZECC 2000, review of the analytical data does not change the outcome of the assessment.

5.3 Decision Rule

In assessing the suitability of material used for backfilling of the site for the proposed land use, the Validation Report adopted the guidelines developed by the Auditor for assessment of the KFDP in 2006, presented in a report by Golder Associates titled *Revised Auditor's Performance Specification – Remediation Works Harbour Audit Area, Kingston Foreshore Development, Kingston, ACT* (Golder 2006). The criteria are presented in Table 5.

The Auditor notes the intent of the criteria was to provide guidelines for suitability of material used during construction of the harbour, hence distinction of areas away from the harbour (Zone 1), and areas adjacent to the harbour (Zone 2). Relevance of the criteria to other areas of the KFDP has diminished with time. However, ERM continue to refer to the criteria in developing their assessment data quality objectives (DQOs). Assessment of the soil data against the DQOs is discussed in Section 10.0.

Table 5: Summary of Assessment Decision Rule

Zone	Criteria that must be met
Zone 1: soils greater than 10 m from the sea wall, above the water table and below one metre from exposed surface soils	■ Relevant NEPM (1999) HIL (NEPM (1999) HIL D in the case of the site) ■ Free of any unacceptable aesthetic impact ■ The top 1 m of soil in all accessible areas must meet the lower of NEPM (1999) HIL or NEPM (1999) EIL ■ 95 % Upper Confidence Level (UCL) must meet the relevant NEPM (1999) HIL with no one sample exceeding 2.5 times the criteria ■ Low propensity to leach in residential areas
Zone 1: shallow soils greater than 10 m from the sea wall, above the water table and placed within the upper 0.5 to 1 m of accessible areas	■ Relevant NEPM (1999) HIL ■ Free of any unacceptable aesthetic impact ■ In common garden areas soil in the top 0.5 m must meet the lower of NEPM (1999) HIL or NEPM (1999) EIL ■ 95 % UCL must meet the relevant NEPM (1999) HIL with no one sample exceeding 2.5 times the criteria ■ Low propensity to leach in residential areas
Zone 2: soils within 10 m of the sea wall or placed below the water table	■ ANZECC B (1992) criteria ■ Free of any unacceptable aesthetic impact ■ Low propensity to leach ■ 95 % UCL must meet the relevant NEPM (1999) HIL with no one sample exceeding 2.5 times the criteria

6.0 PREVIOUS INVESTIGATIONS

ERM's approach to assessment of suitability of the site for the proposed land use involved reviewing and reassessing data presented during the Harbour Area – Milestone 2 Audit ('previous investigations'), and data obtained post the Harbour Area – Milestone 2 Audit ('recent investigations'), separately.

This section presents summaries of previous assessment works relevant to the site undertaken as part of the Harbour Area – Milestone 2 Audit, and assessed in the Validation Report. These assessment areas and soil investigation locations at the site are shown on Figures 3, 4 and 5 (sourced from the relevant consultant's reports).

6.1 Coffey 2009A Former Area F3 Validation

Coffey (2009a) documents the works completed between 2006 and 2009 relating to reclaiming the former Area F3 (portion of the former harbour) and associated remediation and validation works. Portions of the western quadrant of the site were covered by the former Area F3 (refer to Figure 3).

The objective of Coffey (2009a) was to assess the suitability of the final condition of Area F3 for the proposed mixed land use comprising high-density residential and open space. However, it is understood that Coffey (2009a) compared the soil data to the more conservative NEPM (1999) HIL A criteria.

The Validation Report noted that approximately 111,008 m^3 of material sourced from various locations, including the following was placed within the former Area F3:

- Area F4
- Area F5 east slop
- Area R2 slop
- Area R3
- Market stockpile
- Material landfarmed from the former Commonwealth Tank Farm
- Middle and Northern Haul Roads
- PBS worksite
- Quarry material
- Rowing Club stockpile
- Site 10
- Site 12
- Site 16B forensic stockpile

The scope of works undertaken by Coffey (2009a) relevant to the site included assessment of imported material used to fill the former Area F3, and laboratory analyses of grid based (5 m x 5 m) soil samples collected from across the former Area F3. Figure 4 sourced from Coffey (2009a) shows the grid based sample locations across the former Area F3. The Auditor understands that this scope of works was part of the validation assessment undertaken following removal of material containing heavy metals above the assessment criteria that was initially placed within the former Area F3 as part of the redevelopment works. The impacted material was excavated and removed from the area prior to the grid based sampling.

Soil samples were analysed for metals and leachable metals. The laboratory analyses indicated a number of samples (43 samples) recorded concentrations of cadmium, copper, chromium, mercury, lead, and/or zinc

above the adopted NEPM (1999) HIL A and/or EIL assessment criteria. Consequently, further remedial works involving removal of material to a depth of approximately 200 mm from the relevant sample locations was undertaken. The resampling and analyses of the remediated areas did not record metal concentrations above the adopted NEPM (1999) HIL A and EIL assessment criteria.

In addition, Coffey (2009a) identified fill soils sourced from other parts of the KFDP (Site 10 and the former Area R3) was not considered suitable for placement within areas proposed for residential land use due to the presence of ash or leachable heavy metals above the adopted NEPM (1999) HIL A and EIL assessment criteria. This material was subsequently placed at depths greater than 1 m below the final surface levels beneath roads within the Harbour Area.

Coffey (2009a) concluded that following the completion of reclamation and remediation activities, the final landform of the former Area F3 was suitable for mixed land use comprising low density residential and open space.

The Validation Report noted that based on minor exceedences of metals and leachability of metals assessed in the fill soils, fill on Site 14 within the former Area F3 is considered to be suitable for high-density residential land use with limited opportunities for access to the soil. Based on statistical analysis of the data ERM (2015a) considered the average concentrations of metals in the fill soils were below the assessment criteria, and reflective of concentrations within the natural material.

6.2 Coffey 2009B Former Area F5 Validation

Coffey (2009b) reported on investigation work undertaken in the former Area F5 in order to assess the suitability of the final condition of the former Area F5 for mixed land use comprising high-density residential and road reserve land uses. The central portion of Site 14 comprises the former Area F5 (refer to Figure 3).

The scope of work undertaken by Coffey (2009b) included:

- Review of investigation assessments undertaken by ERM in 2009.
- Removal and remediation of ash material and ACM identified within the area.
- Removal of topsoil, soil stockpiles and a disused water main.
- Assessment of imported material used to fill the area to achieve the final form.

Figure 5 sourced from the Validation Report shows the investigation locations documented in Coffey (2009b), and the approximate locations and extent of the ash material and stockpiles assessed by ERM in 2009.

The Validation Report noted that investigations by ERM in 2009 reported ash slag and ACM within the former Area F5 (not within Site 14). Figure 5 sourced from the Validation Report shows the approximate location and extent of the ash material assessed by ERM in 2009. The ACM was associated with a fragment of pipe that was removed by Robson Environmental Pty Ltd (Robson Environmental). No other observations of ACM was reported. Coffey (2009b) reported the thickness of the ash material ranged between 0.1 m and 0.3 m over an approximate area of 3,300 m^2. Coffey (2009b) excavated to a depth of approximately 0.4 m to 0.5 m (ash material was not observed at the base of the excavation), and removed approximately 1,680 m^3 of potentially impacted material. This material was removed from the former Area F5 to Site 10 of the KFDP.

Based on recommendations made by ERM in 2009, Coffey (2009b) removed:

- Approximately 3,000 m^3 of topsoil from the former Area F5. This included removal of topsoil to a depth of approximately 0.4 m in the vicinity of test pits that recorded concentrations of arsenic and zinc above the NEPM (1999) EIL assessment criteria (Figure 5 shows the locations of the test pits, TP 2 and TP 58) (not located within Site 14; refer to Figure 5).
- Six soil stockpiles temporarily stored in the southwestern portion of the Former Area F5 (not located within Site 14; refer to Figure 5). These stockpiles, comprising approximately 175 m^3 of soil material

were removed from the former Area F5, and following sampling and analyses was later used as fill within former Areas F2, F3 and F4.

The Validation Report noted that approximately 31,335 m^3 of material sourced from various locations, including the following was placed within the former Area F5 to achieve final levels and form:

- Area R3 (referred to as 'general fill') - this material was assessed as suitable for Beneficial Reuse within Zone 1 (refer to Section 5.3, Table 5).
- Sediment dredged from the harbour floor (referred to as 'sediment cake material') - the sediment was assessed as suitable for Beneficial Reuse within Zone 1 provided it was placed more than 1 m below the final design levels (refer to Section 5.3, Table 5).
- Site 10 - soil stockpiles sourced from Site 10 of the KFDP comprised aesthetically impacted ash material, and was considered suitable for Beneficial Reuse beneath roads (refer to Section 5.3, Table 5).
- Material from the former Powerhouse (referred to as 'Market stockpile') - the Market Stockpile was assessed as suitable for Beneficial Reuse as fill within Zone 1 (refer to Section 5.3, Table 5).
- Site 16B forensic stockpile - this material was assessed as suitable for Beneficial Reuse as fill within Zone 1 (refer to Section 5.3, Table 5).
- Material landfarmed from the former Commonwealth Tank Farm - following bioremediation of hydrocarbon impacted material removed from the former Commonwealth Tank, the material was assessed as suitable for Beneficial Reuse as fill within Zone 1 (refer to Section 5.3, Table 5).

With respect to groundwater, while no groundwater monitoring wells were established within the former Area F5, based on soil investigations undertaken by Coffey and ERM, Coffey (2009b) considered that "*significant soil contamination that may pose an unacceptable risk to groundwater contamination on Areas F5 or R4*" was not identified. Further, based on groundwater monitoring undertaken by GHD in the northern portion of the KDFP, Coffey (2009b) considered it unlikely for potentially contaminated groundwater to be migrating to the former Area F5.

Overall, Coffey (2009b) concluded the former Area F5 was suitable for high-density residential and commercial uses, and for roads and verges. Imported material assessed as aesthetically unsuitable material, and/or containing concentrations of lead above the adopted NEPM (1999) HIL A and/or EIL assessment criteria was placed beneath the road reserve or used to backfill a stormwater drain within Stage 4 Roads and Verges of the KFDP.

6.3 ERM 2009 Insitu Investigation Works, Sites 12, 13 and 14

In 2009, ERM undertook an assessment of soils and groundwater quality at Sites 12, 13 and 14 of the KFDP. The objective of ERM's assessment was to understand potential contamination risks prior to development of this area, and included establishing 118 test pits across the area and analyses of stockpiled material. Portions of the site included in this assessment work included the eastern portion formerly comprising Area F5 and Area R4 (refer to Figure 3), and involved investigation of 17 test pits (TP 40, TP 41, TP 42, TP 43, TP 44, TP 45, TP 46, TP 47, TP 75, TP 76, TP 83, TP 84, TP 114, TP 115, TP 116, TP 117 and TP 118) located on the site[6]. Figure 6 presents the soil investigation locations.

The following summary is presented based on the Auditor's review of information provided in ERM (2009), the Validation Report (ERM 2015a) and in the Foreshore ESA (ERM 2015c):

[6] As discussed in Section 2.1, the Auditor notes the Validation Report considers the extent of Site 14 only, and not the site in its entirety. Therefore, in reviewing data presented in ERM (2009), the Validation Report considered the results of soil sampling from the ten test pits located on Site 14 only, and the Foreshore ESA considered the results of soil sampling from the test pits located on the Foreshore area abutting Site 14 to the east.

- Fill of varying thickness was observed in 75 of the 118 test pits, typically ranging from 0 to 1 mbgl (deepest fill of 2 metres was encountered in test pits TP 76, TP 77 and TP 78). Figure 6 presents the depth of fill assessed across the investigation area, including onsite.
- The fill was described as predominantly silty sand and gravelly sandy clay with less than 5 % brick, concrete or glass debris with ash/slag material noted in nine of the test pits (TP 06, TP 07 and TP 18, TP 57, TP 104, TP 105, TP 107, TP 111 and TP 113), and large volumes of waste comprising tyres, wire fencing and suspected asbestos cement piping observed in TP 59 (refer to Figure 6 for test pit locations). These test pits are not located within the site (the test pits are located to the south of the site within Site 12 and Site 13 of the KFDP). ERM (2009) noted that material from TP 59 was removed, while material comprising ash/slag from the remaining nine test locations was not removed as the material appeared to be widespread.
- Groundwater was encountered in 99 of the 118 test pits generally at depths of 0.5 to 2.7 mbgl. Groundwater samples were not analysed. However, ERM (2009) noted based on review of investigation works undertaken by GHD in 2006 that "*overall the quality of water in the groundwater and Lake Burley Griffin were consistent*".
- Except for a sample from one test pit (TP 117) located adjacent to the Rowing Club, concentrations of potential contaminants of concern in samples obtained from test pits on the site were not recorded above the adopted assessment criteria (refer to Section 5.1)[5]. The soil sample from a depth of 0.5 mbgl from test pit TP 117 recorded a concentration of mercury of 2.8 mg/kg exceeding the NEPM (1999) EIL criteria. Further, the Auditor notes that the sample from test pit TP 38, located on the eastern boundary of the site, recorded copper and zinc at concentrations above the NEPM (1999) EIL criteria.

  ERM (2015a) also reviewed the data against the amended NEPM (2013) criteria (where HIL B is relevant to the proposed high-density residential development for the site), and noted no exceedences of the amended NEPM (2013) criteria.

  Table 6 presents the maximum contaminant concentrations detected in the samples from the site against the amended NEPM (2013) criteria[7].

Table 6: Soil Assessment Data for the Site (ERM 2009)

Potential Contaminant of Concern	Maximum Concentration Detected (mg/kg)	Amended NEPM (2013) HIL B Criteria (mg/kg)	Amended NEPM (2013) HIL C Criteria (mg/kg)
Arsenic	6	500	300
Cadmium	0.2	150	90
Chromium	38	500	300
Copper	24	30,000	17,000
Lead	34	1,200	600
Mercury	2.8	120	80
Nickel	15	1,200	1,200
Zinc	187	60,000	30,000
Benzene	< 0.5	0.5 [A]	Non-limiting [A]

[7] Data presented in Table 6 includes data for the 17 test pits located on the site, while the data presented in the Validation Report relates to the ten test pits located on Site 14.

Potential Contaminant of Concern	Maximum Concentration Detected (mg/kg)	Amended NEPM (2013) HIL B Criteria (mg/kg)	Amended NEPM (2013) HIL C Criteria (mg/kg)
Toluene	< 0.5	160 [A]	Non-limiting [A]
Ethylbenzene	< 0.5	55 [A]	Non-limiting [A]
Xylene	< 2	40 [A]	Non-limiting [A]
TPH $C_6 - C_9$	< 10	45 [A]	Non-limiting [A]
TPH $C_{10} - C_{36}$	< 200	110 [A, B]	Non-limiting [A]
Benzo(a)pyrene	< 0.5	4	3
PAH	< 8	400	300
Heptachlor	< 0.05	10	10
Aldrin	< 0.05	10	10
Dieldrin	< 0.05	10	10
Trans-chlordane	< 0.05	90 [C]	70 [C]
Cis-chlordane	< 0.05	90 [C]	70 [C]
DDE	< 0.05	600 [D]	400 [D]
DDD	< 0.05	600 [D]	400 [D]
DDT	< 0.05	600 [D]	400 [D]
PCB	< EQL	1	1
Phenol	< 0.5	45,000	

NOTES

A - value applies to amended NEPM (2013) HSL for vapour intrusion for shallow soils

B - the Validation Report (ERM 2015a) and Foreshore ESA (ERM 2015c) noted that while the criteria is higher than the laboratory limit of reporting, additional investigation was not required given that TPH, BTEX and PAH was not detected in the samples, photoionisation detector (PID) readings were low, and there was no visual or olfactory evidence of TPH impacts

C - value applies to total chlordane concentration

D - value applies to total concentration of DDE + DDD + DDT

Of the 100 test pits located outside the site, the Validation Report noted that with the exception of samples listed in

Table 7, potential contaminants of concern were not recorded at concentrations above the adopted assessment criteria (refer to Section 5.1).

Table 7: Soil Assessment Data Offsite to the Site (ERM 2009)

Test ID	Approximate Test Pit Location Relative to the Site (refer to Figure 6)	Potential Contaminant of Concern and Concentration Detected	Assessment Criteria Exceeded (refer to Section 5.1)
TP2-1	South east of the site within the south eastern portion of Site 12	Arsenic - 30 mg/kg	NEPM (1999) EIL - 20 mg/kg ANZECC B (1992) - 20 mg/kg
TP13-1	South east of site within The Causeway Mound (Stage 4 Roads)	Lead - 520 mg/kg	ANZECC B (1992) - 300 mg/kg
TP14-3	South of the site within the south western portion of Site 13	Benzo(a)pyrene - 1.7 mg/kg	NSW (1994) - 1 mg/kg
TP38-2	On the eastern boundary of the site adjacent to the Rowing Club	Copper - 200 mg/kg	NEPM (1999) EIL - 100 mg/kg ANZECC B (1992) - 60 mg/kg
		Zinc - 280 mg/kg	NEPM (1999) EIL - 200 mg/kg ANZECC B (1992) - 200 mg/kg
TP52-1	North of the site within the vacant land abutting Lake Burley Griffin	Zinc - 380 mg/kg	NEPM (1999) EIL - 200 mg/kg ANZECC B(1992) - 200 mg/kg
TP57-0.5	South east of the site 14 within Eyre Street (Stage 4 Roads)	Benzo(a)pyrene - 1.1 mg/kg	NSW (1994) - 1 mg/kg
TP57-1		Zinc - 294 mg/kg	NEPM (1999) EIL - 200 mg/kg ANZECC B (1992) - 200 mg/kg
TP58-0.1	South east of the site 14 within the south eastern portion of Site 12	Nickel - 63 mg/kg	NEPM (1999) EIL - 60 mg/kg ANZECC B (1992) - 60 mg/kg
		Arsenic - 42 mg/kg	NEPM (1999) EIL - 20 mg/kg ANZECC B(1992) - 20 mg/kg
TP60-1	South east of the site 14 within the south eastern portion of Site 12	Zinc - 205 mg/kg	NEPM (1999) EIL - 200 mg/kg ANZECC B(1992) - 200 mg/kg
		Benzo(a)pyrene - 1.4 mg/kg	NSW (1994) - 1 mg/kg
TP87-0.1	South east of the site 14 within The Causeway (Stage 4 Roads)	Lead - 502 mg/kg	ANZECC B (1992) - 300 mg/kg
TP87-0.5		Lead - 3,040 mg/kg	NEPM (1999) HIL D - 1,200 mg/kg NEPM (1999) EIL - 600 mg/kg ANZECC B (1992) - 300 mg/kg

A selection of samples recording analytes above the assessment criteria were analysed for leachability (none of the samples taken from soils at the site were analysed for leachability). ERM (2009) reported that some samples recorded concentrations of arsenic, copper, lead and zinc above the ANZECC freshwater

criteria. However, ERM concluded that these metals were not considered to pose a risk to surface water or groundwater given that:

- Total soil concentrations for these metals were consistent with regional background values in soil and sediment.
- Past investigations of the KFDP either did not detect arsenic, copper, lead and zinc in groundwater and surface water, or detected at concentrations reflective of naturally occurring levels.
- Monitoring undertaken in 2006 by GHD reported copper, lead and zinc concentrations in water sampled from Lake Burley above the assessment criteria, and at higher concentrations than that detected in groundwater sampled from the KFDP.

Overall, subject to implementation of the following recommendations, ERM (2009) considered the assessment area, including the site, suitable for low to medium density residential land uses (it is noted this land use is more sensitive than that proposed for the site, i.e. high-density residential and/or commercial uses with minimal access to the site soils):

- Shallow surface soils should be scraped and classified for appropriate disposal.
- Subsequent to decommissioning Rowing Club, soil samples from beneath the building footprint should be analysed to characterise the subsurface soil conditions in this area (discussed in Section 7.1).
- Stockpiled soils should be removed offsite.
- Ash/slag material be removed during redevelopment of the area, and validation sampling of the materials removed from the impacted area should be undertaken.
- Identified disused water mains or underground utilities (including adjacent to test pit TP108) should be removed during civil works.
- Test pit TP87 should be excavated to a depth of greater than 0.5 metres below grade and validated to confirm that contaminant concentrations are below the relevant guidelines.

The Validation Report (ERM 2015a) and Foreshore ESA (ERM 2015c) confirmed that all recommendations other than soil sampling beneath the footprint of the Rowing Club building (discussed in Section 7.1) have been implemented, and that the site is suitable for the proposed high-density residential, commercial and open space land uses.

7.0 RECENT INVESTIGATIONS

Given the nature of the activities that have occurred at the site post the Harbour Area – Milestone 2 Audit, namely temporary stockpiling of soils and construction material and spreading mulch across the site, there is potential for these activities to have changed conditions of the site soils and potentially impacted suitability of the site for the intended uses. Therefore, the LDA commissioned a number of site investigations works in order to understand the condition of the site. This section presents summaries of assessment works relevant to the site undertaken post the Harbour Area – Milestone 2 as discussed in the Validation Report.

7.1 ERM Rowing Club Assessment

The Rowing Club ESA prepared by ERM (ERM 2015b) (included in Appendix C) documents assessment of the suitability of the land beneath the Rowing Club for the proposed high-density residential land uses[8]. The scope of assessment comprised soil sampling of five boreholes established to a depth of 1 mbgl within the footprint of the Rowing Club buildings (Figure 6 sourced from ERM (2015b) presents the sample locations). The soil samples were analysed for TPH, BTEX, PAH, phenols, metals and asbestos (three samples). ERM 2015c reported:

- No odour or staining was observed in the soil samples.
- PID readings did not exceed 5 ppm.
- Benzo(a)pyrene was detected in all samples analysed. However, concentrations did not exceed the amended NEPM (2013) HIL B criteria.
- TPH was detected in one sample at a depth of 0.4 to 0.5 mbgl; non-detectable concentrations of TPH was recorded for the sample taken from the same location at a depth of 1 to 1.1 mbgl. No exceedences of the amended NEPM (2013) HIL B criteria for TPH were reported.
- Non-detectable concentrations of BTEX were recorded in all samples.
- Total concentrations of PAH and phenols were below the amended NEPM (2013) HIL B criteria in all samples.
- Metal concentrations were non-detectable or below the amended NEPM (2013) HIL B criteria in all samples.
- Friable asbestos (chrysotile) was detected in two of the three samples analysed. The detected asbestos concentrations of 0.002 % w/w and 0.01 % w/w exceeded the adopted WA DoH (2009) criteria of 0.001 % w/w.

The Validation Report concluded the land associated with Rowing Club is suitable for high-density residential land use, and that potential risks associated with asbestos being present at the site can be managed in accordance with the DEMP and OEMP.

7.2 ERM Foreshore Area Assessment

As discussed in Section 6.3, the Foreshore ESA prepared by ERM (2015c) documents assessment of areas of the site to the east of Site 14, including the area occupied by the Rowing Club building and open space (the assessment area is shown in Figure 8). The Foreshore ESA (ERM 2015c) reported that this portion of the site is proposed for purposes of public open space and recreational land uses. Hence, ERM 2015c reassessed the soil investigation data reported in ERM (2009) and ERM (2015b) against the amended NEPM (2013) HIL C criteria. The results of the soil investigation are discussed in Sections 6.3 and 7.1, respectively.

[8] The Auditor notes that subsequent to preparation of the Rowing Club ESA (ERM 2015b) which documents assessment of the area occupied by the Rowing Club building for high-density residential land uses, ERM reported in the Foreshore ESA (ERM 2015c) that the area is assessed as suitable for open space land uses. ERM 2015c documents assessment of the soil investigations undertaken by ERM (2009) and ERM (2015b) against the Amended NEPM (2013) criteria for open space. This is discussed in Sections 6.3 and 7.2.

Based on the site history and the soil investigation data, ERM (2015c) considered the assessment area is suitable for the proposed public open space land uses subject to management of asbestos and unexpected finds in accordance with management measures described in the Foreshore DEMP (Appendix G) and the Foreshore OEMP (Appendix H). The Auditor understands that access to the site soils will be minimised through installation and maintenance of a layer of 0.5 m clean fill overlying a geotextile marker layer in landscaped areas and areas not covered by concrete slabs (building footprints or paving).

7.3 SMEC Stockpile Assessment and Classification

SMEC (2013) documents the assessment work undertaken by SMEC in 2012 of ten stockpiles stored at Site 14. The objectives of SMEC (2013) were to evaluate the material for the presence of ACM, and to assess suitability of the material for Beneficial Reuse within the Borrow Pit at the West Belconnen Resource Management Centre.

The stockpiles, equating to a total volume of approximately 1,075 m^3, comprised material excavated from Stage 1 of the KFDP. The scope of SMEC (2013) included:

- 20 samples for ACM assessment (sampling density of approximately 1:53 versus the WA DoH (2009) recommendation of 1:70 sampling density).
- Laboratory analyses of 56 samples for TPH, BTEX, arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc, and PAHs, total phenols, organochlorine pesticide (OCP), organophosphate pesticide (OPP) and PCB on selected samples (sampling density of approximately 1:19[9] versus EPA guidance on stockpile sampling density of 1:25).

Figures 9, 10 and 11 sourced from SMEC (2013) show the locations of the stockpiles (ten soil stockpiles and one mulch stockpile) and stockpile sampling locations.

SMEC (2013) did not identify ACM in any of the stockpile samples, and the laboratory analyses did not detect asbestos fibres or fines above the WA DoH (2009) assessment criteria in the samples tested. Analyses of the potential contaminants of concerns indicated:

- Total concentration of PAH and phenols were below the NEPM (1999) HIL F assessment criteria in all samples.
- Concentrations of BTEX, OCP, OPP and PCB were non-detectable in all samples.
- TPH and metal concentrations were non-detectable or below the NEPM (1999) HIL F assessment criteria in all samples.

Based on the assessment results, SMEC (2013) concluded the stockpiles[10] classified as Beneficial Reuse for commercial and industrial land uses, and was therefore suitable for disposal as Beneficial Reuse within the Borrow Pit at the West Belconnen Resource Management Centre. On 29 January 2013, EPA approved of Beneficial Reuse of the stockpiles at the West Belconnen Resource Management Centre, and based on review of waste dockets included in SMEC (2013), ERM (2015a) concluded that stockpiled material temporarily stored at the site was removed to the West Belconnen Resource Management Centre.

Given the footprints of the stockpiles were not validated after removal of the material, ERM (2015a) reassessed the analytical data against the DQOs adopted for the site (refer to Section 5.3) in relation to the possibility that some material may inadvertently remain at the site. ERM (2015a) also reviewed the data against the amended NEPM (2013) criteria (where HIL B is relevant to the proposed high-density residential development for the site), and reported that there were no exceedences of the amended NEPM (2013)

[9] The Validation Report reported the sampling density as 1:17, however, the Auditor considers analyses of 56 samples from a total volume of 1,075 m^3 equates to approximately 1:19.

[10] The Auditor notes that Section 4.2 of SMEC (2013) included in Annex C of the Validation Report refers to "*four stockpiles*", however the Auditor understands that this is a typographic error. Section 6, Conclusions of SMEC (2013) correctly references ten stockpiles.

criteria. Table 8 presents the maximum contaminant concentrations detected in the stockpile samples against amended NEPM (2013) HIL B criteria.

Table 8: Stockpile Assessment Data (SMEC 2013)

Potential Contaminant of Concern	Maximum Concentration Detected (mg/kg)	Amended NEPM (2013) HIL B Criteria (mg/kg unless stated)
AF / FA	Non-detect	0.001 %
Arsenic	7	500
Cadmium	0.6	150
Chromium	43	500
Copper	170	30,000
Lead	68	1,200
Mercury	0.16	120
Nickel	13	1,200
Zinc	170	60,000
Benzene	<0.1	0.5 [A]
Toluene	<0.1	160 [A]
Ethylbenzene	<0.1	55 [A]
Xylene	<0.3	40 [A]
TPH $C_6 - C_9$	<20	45 [A]
TPH $C_{10} - C_{36}$	<210	110 [A, B]
Benzo(a)pyrene	0.2	4
PAH	1.4	400
Heptachlor	<0.1	10
Aldrin	<0.1	10
Dieldrin	<0.2	10
DDE	<0.1	600 [C]
DDD	<0.1	600 [C]
DDT	<0.1	600 [C]
PCB	<1	1

Potential Contaminant of Concern	Maximum Concentration Detected (mg/kg)	Amended NEPM (2013) HIL B Criteria (mg/kg unless stated)
Phenol	0.3	45,000

NOTES
A - value applies to the amended NEPM (2013) HSL for vapour intrusion for shallow soils
B - the Auditor notes the criteria is higher than the laboratory limit of reporting
C - value applies to total concentration of DDE + DDD + DDT

ERM (2015a) concluded that any material from the stockpiles remaining at site is considered suitable for the intended high-density residential land use of the site based on:

- No exceedence of the NEPM (1999) HIL D assessment criteria was detected.
- Except for one sample, no exceedence of the NEPM (1999) EIL assessment criteria was detected. One sample from Stockpile SP 8 recorded copper concentration of 170 mg/kg exceeding the ANZECC B (1992) (60 mg/kg) and NEPM (1999) EIL (100 mg/kg) criteria.
- No exceedences of the amended NEPM (2013) HIL B criteria was detected.
- ACM was not detected in the stockpiles.
- Although samples were not analysed for leachate, concentrations of potential contaminants of concern were generally non-detect to low (except for copper concentrations detected in one sample from stockpile SP 8).
- While stockpiles were reported to contain waste materials, given the stockpiles were removed from the site, it was considered unlikely for there to be ongoing aesthetic impacts.

7.4 AAC Environmental Asbestos Assessment

In 2013, AAC Environmental Pty Ltd (AAC) was engaged by the LDA to provide an Asbestos Clearance Certificate for surface materials located at Site 14, and on the area abutting Site 14 to the north. AAC (2013) documents the results of the assessment undertaken by AAC.

The assessment involved visual inspection of the surface soils undertaken in a general grid-based pattern across the area ('Emu Parade') by a Class A Asbestos Assessor from AAC on 24 October 2013. During the inspection, three fragments of cement sheeting were observed at Site 14 (located within the central portion of the site adjacent to the internal construction road). The fragments were removed from the site for analysis. The laboratory analysis indicated that two of the three fragments contained asbestos fibres (Chrysotile).

Subsequently, AAC undertook a further visual inspection on 6 November 2013, and removed several (less than five) potential ACM fragments from the site for disposal at the Mugga Lane Resource Management Centre.

AAC (2013) noted the following observations made during the inspection:

- The source of the ACM fragments was not known. ERM (2015a) considered potential sources of ACM at the site may include the temporary stockpiles and/or the underlying fill at the site.
- A small stockpile of material (approximately 1 m^3) potentially resulting from works offsite (within the KFDP) was observed. Assessment of this material (referred to as S14/SP 11) is discussed in Section 7.5.

- Building material, generally comprising steel reinforcement bars, was observed distributed sporadically across the site surface.
- Significant portions of the site were covered with vegetation, mulch or gravel, impeding the visual inspection. However, based on review of site plans, ERM (2015a) considered that vegetation was not within the site.
- ACM was not observed on the surface of the site during the final visual inspection undertaken on 6 November 2013.

Overall, ACM was not observed on the surface of the site during the final visual inspection. However, based on the site history and observations made, coupled with limitations due to the ground cover, AAC (2013) considered that ACM may be present at the site in areas not inspected.

ERM (2015a) concurred with conclusions made in AAC (2013) that there is potential for asbestos to be present at the site.

7.5 SMEC Assessment and Classification of Stockpile S14/SP11

Following observations by AAC (AAC 2013) of a stockpile of material (S14/SP11) remaining at the site, SMEC was commissioned by the LDA to undertake an assessment of the material for purposes of classification for Beneficial Reuse or disposal. This assessment is documented in SMEC (2014), and comprised visual inspection of the material and laboratory analyses of five samples (including two quality control samples) for TPH, metals and BTEX (all samples), and asbestos fibres and fines, PAH, total phenol, OCP, OPP, PCB, free cyanide and total fluoride (one sample).

SMEC (2014) reported the following:

- Potential ACM was not observed in the material, and the laboratory analysis did not record asbestos fibres or fines above the WA DoH (2009) assessment criteria in the sample tested.
- Concentrations of potential contaminants of concern were recorded below the laboratory limits or below the amended NEPM (2013) HIL A criteria in all samples analysed.
- Concentrations below the laboratory limits of reporting were recorded for TPH, phenols, OCP, OPP, PCB, PAH, BTEX and free cyanide in all samples analysed.
- With the exception of the following, concentrations of potential contaminants of concern met the Inert Waste criteria in all samples analysed:
  - chromium was detected at concentrations ranging from 18 to 41 mg/kg exceeding the criteria of 10 mg/kg
  - nickel was detected at concentrations ranging from 6.8 to 8.7 mg/kg exceeding the criteria of 4 mg/kg
  - lead was detected at concentrations ranging from 18 to 46 mg/kg exceeding the criteria of 10 mg/kg[11].

Based on the assessment results, SMEC (2014) concluded that stockpile S14/SP11:

- Does not pose a human health risk to site workers, members of the public and future residential users of the site.
- Classified as Beneficial Reuse and was therefore considered suitable for the following reuse options:

[11] The Auditor notes that SMEC (2014) did not comment on lead concentrations is their discussion of the laboratory results. However, this is not considered to affect the assessment or Audit outcomes.

- within the KFDP as Fill Material (material meets the Victorian Fill Material criteria)
- subject to EPA approval, within ACT as fill for residential, open space, commercial and industrial land uses
- subject to EPA approval, at the West Belconnen Resource Management Centre.

ERM (2015a) reviewed that data against the adopted site assessment criteria (refer to Section 5.0), and reported that there were no exceedences of the criteria. With respective to the DQOs established in the Validation Report (refer to Section 5.3), ERM (2015a) noted the following:

- The material is considered to fall within Zone 1.
- Although leachate analyses was not undertaken by SMEC, ERM considered the material to have low propensity to leach given:
  - metals were detected at low concentrations
  - concentrations of organic contaminants were below levels of detection.
- No exceedences of the adopted site assessment criteria (refer to Section 5.0) were recorded.
- Potential for aesthetic impacts could be addressed by covering the material (for example, placing beneath building footprints).

The Auditor understands that stockpile S14/SP11 remains at the site, and considers that potential impacts that may be associated with this material will be addressed through implementation of appropriate management measures described in the DEMP. The location of the stockpile is shown on Figure 1.

8.0 GROUNDWATER

The Validation Report noted that:

- During the Harbour Area – Milestone 2 Audit, Coffey (2009a) (refer to Section 6.1) did not assess groundwater quality within Area F3 (refer to Figure 3), stating that there were no reported sources of contamination within Area F3 prior to filling.
- Based on previous investigations in the vicinity of Area F5 (refer to Figure 3), during the Harbour Area – Milestone 2 Audit, Coffey (2009b) (refer to Section 6.2) reported that groundwater quality satisfied the ANZECC (2000) criteria, and that groundwater quality was consistent with surface water quality in Lake Burley Griffin.
- Based on the following, ERM (2009) (refer to Section 6.3) concluded that groundwater within former Areas R4 and F5 did not pose a risk:
  - up-gradient groundwater quality was comparable to water quality of Lake Burley Griffin
  - groundwater at the site was unlikely to be extracted for use as drinking water or for purposes of irrigation or industrial use
  - groundwater quality measured in other parts of the KFDP indicated that contaminants of concern have not leached from soil into groundwater thereby impacting groundwater quality at the site.

To evaluate groundwater quality within the site post the Harbour Area – Milestone 2 Audit, ERM (2015a) and ERM (2015c) assessed activities undertaken at the site and immediate surrounds since September 2009, and noted that:

- It was considered unlikely that activities on the site post 2009 had the potential to change the quality of groundwater since the Harbour Area – Milestone 2 Audit.
- Dewatering of groundwater has not occurred at the site or in the immediate surrounds.

Based on this, the Validation Report concluded that groundwater quality at the site does not present potential risk to receptors.

9.0 QUALITY ASSURANCE / QUALITY CONTROL

The Validation Report presented the quality assurance (QA) and quality control (QC) assessment that was undertaken by ERM in reviewing whether sufficient data of suitable quality was available for conclusions to be drawn about the environmental condition and suitability of the site for high-density residential and/or commercial uses, landscaped areas and public open space land for recreational uses. ERM's approach to assessing the QA/QC of the data involved reviewing data gathered for the Harbour Area – Milestone 2 Audit, and post the Harbour Area – Milestone 2 Audit separately.

9.1 Assessment of Harbour Area – Milestone 2 Audit Data Validation

The Validation Report noted that the Auditor reported the following inconsistencies and errors in the QA/QC assessment undertaken by Coffey during the Harbour Area – Milestone 2 Audit:

- Lack of overall QA/QC assessment of the entire data set.
- Inconsistencies with regards to the number of samples referenced in Coffey's report.
- Methods for calculating Relative Percentage Difference (RPD), arithmetic values of RPD and discussion of RPD results contained errors.
- Errors in the discussion of trip blanks, trip spikes and wash blank samples within the report.

As a result, in consultation with the Auditor, Coffey undertook a re-assessment of nominated soil, sediment and water data for Areas F1, F4, R5, R3, R6 and R1 over a period of approximately 18 months. It is noted that the re-assessment did not include data specific to the site (Site 14 comprised portions of former Areas F3 and F5). However, given that the works on Site 14 was undertaken concurrently, ERM considered "*it likely that a similar sampling methodology would have been adopted and as a result their validation data for works completed at Site 14 was considered suitable*".

The results of the re-assessment was documented in a report by Coffey titled *Quality Assurance and Quality Control Summary Report (Final), Kingston Harbour Works, Kingston, ACT*, dated March 2009 (Coffey 2009d). Based on the re-assessment undertaken by Coffey (Coffey 2009d), the Auditor considered "*the QA/QC data for Areas F1, F4, R5, R3 and R6 and Sediment and Cakes (R1), is adequate to accept the usability of the validation data for the overall Milestone 2 investigation area*".

Table 9 summarises the Auditor's review of the data quality presented in the Harbour Area – Milestone 2 Audit Report.

Table 9: Review of Quality Assurance and Quality Control, Harbour Area – Milestone 2 Audit

QA/QC	Evidence and Evaluation
FIELD QA/QC	
Field QC program - verification of field procedures / sampling procedures	Coffey 2009d included procedures for the collection of soil samples, including using laboratory supplied samples jars, decontamination of field equipment, nitrile gloves, and placement of samples on ice after collection for transport to the laboratory.
Qualified personnel	Coffey 2009d confirmed that suitably qualified personnel conducted the site investigations.
Calibration of field equipment	Coffey 2009d reported that the photoionisation detector (PID) was calibrated at the beginning of the measurement of volatile compounds and tested on completion of each day. Calibration certificates were included in Coffey 2009d.
Rinsate blanks and decontamination of equipment	Overall, adequate rinsate blanks were collected and analysed. The results of the rinsate blanks were generally below the laboratory limit of reporting (LOR), and acceptable to indicate limited potential for cross contamination of samples

QA/QC	Evidence and Evaluation
	collected during the investigation.
Trip blanks and trip spikes volatile loss	Overall, adequate trip blanks and trip spikes were collected and analysed. The trip spike recoveries reported were generally within the control limits (75 – 125 %). Volatile hydrocarbons were generally not detected in the samples analysed with the results of trip blanks being below the LOR.
Logs for each sample collected	Records of samples collected were presented in the report.
Chain of custody and sample receipt notifications	Chain of custody forms were signed by the laboratories engaged to analyse the samples (SGS Environmental Services (SGS) and mgtLabmark (MGT)), and were included in the report. However, sample receipt notification documents were not available.
LABORATORY QA/QC	
Blind duplicates	Overall, adequate blind duplicates were collected and analysed: for Areas F1, F4 and R5 approximately 7 % of the primary samples analysed were analysed as blind duplicates; and for Areas R3, R6 and R1, greater than 10 % of the primary samples analysed were analysed as blind duplicates. During the soil investigation RPD for analyte pairs (comparison of primary and blind duplicates) were generally within acceptable ranges, and where exceedences were noted Coffey provided justification as to the appropriateness of the data. The Auditor agreed these RPDs were not an indication of a systematic bias or inadequate quality of the data.
QC testing – split duplicates	Overall, adequate split duplicates were collected and analysed: for Areas F1, F4 and R5 approximately 8 % of the primary samples analysed were analysed as split duplicates, and for Areas R3, R6 and R1, greater than 10 % of the primary samples analysed were analysed as split duplicates. RPD values were generally within acceptable ranges, and where exceedences were noted Coffey provided justification as to the appropriateness of the data. The Auditor agreed these RPDs were not an indication of a systematic bias or inadequate quality of the data.
Holding times	Samples were generally dispatched to the laboratories within the recommended holding times, with the exception of the following: ■ Areas F1, F4 and R5 - one batch (237308), containing two primary and one duplicate samples was received by the laboratory too late for extraction of samples within holding time. Given that this resulted in three holding time non-conformances out of 1039 samples analysed, it was considered that the holding times for Areas F1, F4 and R5 were acceptable. ■ Areas R3 and R6 - two TPH samples exceeded the required holding time by six days resulting in two non-conformances out of 356 samples analysed. Based on the relative number of non-conformances it was considered that the holding times for Areas R3 and R6 were acceptable.
Laboratory accreditation for analytical methods used	Both the laboratories, MGT and SGS were (are) accredited by the National Association of Testing Authorities, Australia (NATA) for the analyses performed.
Laboratory method detection limit	Overall, laboratory detection limits were below the screening criteria with the exception of analysis of benzo(a)pyrene in water samples. It was noted that no detectable concentrations of benzo(a)pyrene or PAH was detected in water, is was therefore considered unlikely to affect the usability of the data.

QA/QC	Evidence and Evaluation
QA/QC DATA EVALUATION	
Data quality objectives	It was considered that the site investigation works was undertaken in general accordance with the data quality objectives established by the Auditor in Golder 2006.
Completeness of test program	It was considered that the scope of works undertaken was generally consistent with that required to characterise the site as set out in Golder 2006.
Validity of dataset	The data quality review documented in Coffey 2009d indicated that no significant systematic errors had occurred during the data collection process, and it was therefore considered that the dataset was of appropriate quality.

Based on the re-assessment of QA/QC data presented in Coffey 2009d, ERM (2015a) considered that:

- Field procedures implemented by Coffey were adequate.
- A satisfactory number of field and laboratory QA samples were analysed.
- Quality of the data was of an acceptable precision and accuracy, and adequate to accept that usability of the data.
- Although Coffey 2009d did not specifically re-assess data collected for Site 14, as a subset of the full dataset, validation data for Site 14 was considered adequate for use in the assessment.
- While there was some uncertainty in the quality of the data collected to characterise the site, potential risks during development of the site (part thereof) will be managed through implementation of the management plans (discussed in Section 13.0).

9.2 Assessment of Data Validation Post Milestone 2 Audit

ERM (2015a) assessed data quality of investigations listed below undertaken at the site post Harbour Area – Milestone 2 Audit:

- ERM (2009) (discussed in Section 6.3).
- Rowing Club ESA documented in ERM (2015b) (discussed in Section 7.1).
- SMEC (2013) (discussed in Section 7.37.1).
- SMEC (2014) discussed in Section 7.5).

Table 10 summarises the Auditor's review of the data quality presented in the Validation Report of the investigations undertaken at the site post Harbour Area – Milestone 2 Audit.

Table 10: Review of Quality Assurance and Quality Control, Post Harbour Area – Milestone 2 Audit

QA/QC	ERM (2009)	ERM (2015b)	SMEC (2013)	SMEC (2014)
		FIELD QA/QC		
Field QC program - verification of field procedures / sampling procedures	ERM (2009) included procedures for the collection of soil samples, including using laboratory supplied samples jars, decontamination of sampling equipment, nitrile gloves, and placement of samples on ice after collection for transport to the laboratory for analyses.	ERM (2015b) included procedures for the collection of soil samples, including using laboratory supplied samples jars, decontamination of sampling equipment, and placement of samples in a cool box with ice after collection for transport to the laboratory for analyses.	SMEC (2013) reported that soil samples were collected by hand using disposable gloves that we changed between sample locations, and samples were placed in laboratory supplied samples jars stored in cool boxes with ice for transport to the laboratory for analysis.	SMEC (2014) descried the sampling methodology including use of laboratory supplied sample jars and placement of samples on ice after collection for transport to the laboratory for analyses.
Qualified personnel	Fieldwork was undertaken by an ERM field scientist.	Fieldwork was undertaken by an ERM field scientist.	Fieldwork was undertaken by a SMEC suitably qualified and experienced (in accordance with guidelines provided in WA DoH (2009)) Environmental Scientist.	Fieldwork was undertaken by a SMEC suitably qualified and experienced (in accordance with guidelines provided in WA DoH (2009)) Environmental Scientist.
Calibration of field equipment	ERM (2009) included calibration certificates and records of daily calibration for the PID.	Both the Validation Report and ERM (2015b) reported that the PID used "*appropriately calibrated and used according to the manufacturer's instructions*". However, calibrations records were not provided in the reports. Therefore, the Auditor could not verify calibration of the instrument.	No instruments were used that required calibration.	No instruments were used that required calibration.

QA/QC	ERM (2009)	ERM (2015b)	SMEC (2013)	SMEC (2014)
Rinsate blanks and decontamination of equipment	Two rinsate blanks were analysed for a combination of BTEX, TPH, metals and PAHs. Results were below the LOR except for zinc concentration in one sample. Given that samples collected on the same day did not record metals above the assessment criteria, ERM considered that field procedures were adequate to reduce cross contamination during the fieldwork.	One rinsate blank sample was collected from the hand auger during soil sampling (the Auditor understands the hand auger was decontaminated with Decon 90 and rinsed with water between each sampling location). Analyses of the rinsate blank sample noted contaminant concentrations were below the limit of detection with the exception of zinc. Zinc was detected at 9 µg/L (above the laboratory limit of reporting of 5 µg/L). While zinc was detected in the primary samples, concentrations were not above the adopted assessment criteria. ERM (2015b) concluded the non-conformance was not considered to affect the outcomes of Rowing Club ESA, and the Validation Report noted that the rinsate blank analyses "*indicated that cross-contamination was minimised during sampling*".	SMEC (2013) did not analyses rinsate blanks during the fieldwork. SMEC (2013) noted that soil samples were collected from the undisturbed soil at the base of each excavation and did not make contact with reusable field equipment, and therefore collection of rinsate samples was not considered necessary.	SMEC (2014) did not analyses rinsate blanks during the fieldwork.

QA/QC	ERM (2009)	ERM (2015b)	SMEC (2013)	SMEC (2014)
Trip blanks and trip spikes volatile loss	RPDs for the two trip spike samples were within the acceptable limits. The four trip blank samples analysed were free of analytes.	One trip blank and two trip spike samples were analysed. Concentration of contaminants in the trip blank were below the LOR, indicating low likelihood of cross-contamination during transport of the samples from the field to the laboartory. Trip spike samples recorded percentage recovery for BTEX, PAH, phenols and TPH between 41 and 63 %; below the acceptance criteria of 70 to 130 %. While these results suggest volatile hydrocarbon concentrations may have been under-reported due to a loss of volatiles during transport, ERM (2015b) noted that the PID measurements did not indicate volatile compounds were present in the samples. Therefore, it was considered that trip spike recovery non-conformances did not affect the results of the Rowing Club ESA. The Validation Report concluded that "*laboratory spikes were prepared and reported within acceptable limits*".	Trip blank and trip spike samples were not analysed by SMEC (2013). The Validation Report noted the lack of field and trip blanks was not considered to affect the overall reliability of the dataset given the consistency of soil data and that contaminant concentrations in the samples were generally below the assessment criteria (except for exceedance of the NEPM EIL).	Trip blank and trip spike samples were not analysed by SMEC (2014). The lack of analyses of a trip spike was not considered to affect the overall reliability of the dataset given potential for volatile loss was low. This was based on: ■ Non-detection of volatile organic compounds in the samples ■ Samples were received by the laboratories within 24 hours and in chilled conditions. The Validation Report concluded that the lack of field and trip blanks was not considered to affect the overall reliability of the dataset given the relative (small) size of the sample set and the consistency of soil data.
Logs for each sample collected	Records of samples collected were included in the report.	Records of samples collected were included in the report.	Records of samples collected were included in the report.	Records of samples collected were included in the report.

QA/QC	ERM (2009)	ERM (2015b)	SMEC (2013)	SMEC (2014)
Chain of custody and sample receipt notifications	Sample receipt notification documents and chain of custody forms signed by the laboratories were included in the report.	Sample receipt notification documents and chain of custody forms signed by the laboratories were included in the report.	Sample receipt notification documents and chain of custody forms signed by the laboratories were included in the report.	Sample receipt notification documents and chain of custody forms signed by the laboratories were included in the report.
LABORATORY QA/QC				
QC testing	41 duplicate samples were analysed, meeting the assessment criteria of at least one duplicate per 10 per primary samples for intra-laboratory analyses and one duplicate per 20 per primary samples for inter-laboratory analyses. RPDs for three of the intra-laboratory samples were outside the acceptance criteria. Given that the results for the RPD outliers were within the site assessment criteria, ERM considered that the results were acceptable. 20 inter-laboratory samples were analysed by ALS Laboratory Group at a rate of 1 per 20 primary samples analysed by LabMark Environmental Laboratories. Ten of the inter-laboratory samples were outside the acceptance criteria. Given that the results for the RPD outliers were within the site assessment criteria, ERM considered that the results were acceptable.	One intra-laboratory duplicate sample and one inter-laboratory duplicate sample were analysed. Given there were ten primary samples, this met the criteria of at least one duplicate to ten primary samples for intra-laboratory analyses and one duplicate per 20 per primary samples for inter-laboratory analyses. RPDs for duplicate sample pairs were generally within the acceptance limits.	Six intra-laboratory duplicate samples and three inter-laboratory duplicate samples were analysed. Given there were 56 primary samples, this met the criteria of at least one duplicate to ten primary samples for intra-laboratory analyses and one duplicate per 20 per primary samples for inter-laboratory analyses. RPDs for the three of the inter-laboratory samples (for nickel, zinc, chromium and copper) and for two of the intra-laboratory samples (lead, zinc and nickel) were outside the acceptance criteria. ERM concurred with SMEC (2013) that these results were attributed to the high heterogeneity of the sampled material, and that this was not considered to affect the quality of the data.	One intra-laboratory duplicate sample and one inter-laboratory duplicate sample were analysed. Given there were three primary samples, this met the criteria of at least one duplicate to ten primary samples for intra-laboratory analyses and one duplicate per 20 per primary samples for inter-laboratory analyses. RPDs for the duplicate samples were within acceptable ranges (30 to 50 %) except for barium chromium and lead in the intra-laboratory sample, and barium, cobalt and manganese in the inter-laboratory sample. SMEC (2014) noted that the sampled material, Stockpile S14/SP11, consisted of "*silty fill, with gravel, and traces of construction materials such as concrete, metal, plastic, wood and road base gravels*", and therefore the high RPDs were attributed to the heterogeneity of material. SMEC (2014) therefore considered the RPD exceedences to be acceptable.

QA/QC	ERM (2009)	ERM (2015b)	SMEC (2013)	SMEC (2014)
Holding times	ERM (2009) reported that some leachate samples were received and analysed by the laboratories outside the recommended holding times due to being mislaid during transit. However, the samples when received were still at a cool temperature. Soil samples were received and analysed within the recommended holding times.	ERM (2015b) reported that samples were extracted and analysed within recommended holding times for each analyte.	SMEC (2013) reported that samples were extracted and analysed within recommended holding times for each analyte.	SMEC (2014) reported that samples were extracted and analysed within recommended holding times for each analyte.
Laboratory accreditation for analytical methods used	NATA accredited laboratories, LabMark Environmental Laboratories, ALS Laboratory Group and EnviroLab Services Pty Ltd conducted the analyses.	NATA accredited laboratories, ALS Laboratory Group and EnviroLab Services Pty Ltd conducted the analyses.	NATA accredited laboratories, Eurofins and MGT Labmark Environmental Laboratories conducted the analyses.	NATA accredited laboratories, Eurofins MGT and SGS Environmental Services conducted the analyses.
Laboratory Practical Quantitation Limits (PQL) and Limits of Reporting (LOR)	Except for PCBs, the PQLs used by the laboratories were generally less than the adopted investigation criteria. The Validation Reported considered this was acceptable given that PCB was not considered a contaminant of concern.	The PQLs and LORs used by the laboratories were generally less than the adopted investigation criteria.	The PQLs and LORs used by the laboratories were generally less than the adopted investigation criteria.	The PQLs and LORs used by the laboratories were generally less than the adopted investigation criteria.
QA/QC DATA EVALUATION				
Data quality objectives	The Validation Report concluded that the laboratory QA/QC was of acceptable quality for purposes of the investigation.	The Validation Report concluded that the laboratory QA/QC was of acceptable quality for purposes of the investigation.	The Validation Report concluded that the laboratory QA/QC was of acceptable quality for purposes of the investigation.	The Validation Report concluded that the laboratory QA/QC was of acceptable quality for purposes of the investigation.

QA/QC	ERM (2009)	ERM (2015b)	SMEC (2013)	SMEC (2014)
Completeness of test program	118 samples were collected from across the site, generally in a 20 m grid and 10 m grid in targeted areas. ERM (2009) considered this sampling frequency to be appropriate to identify potential residual contamination that may pose an ongoing risk to human and environmental receptors. The Validation Report concluded that this sampling frequency was in accordance with the sampling design guidelines.	The Validation Report concluded that relevant locations were sampled by ERM (2015b), and: ■ sampling representativeness was considered appropriate given the site setting ■ critical samples were analysed for the contaminants of concern ■ appropriate analysis methods and PQLs were used for most analytes ■ sample documentation was provided ■ sample holding times were generally complied with ■ laboratory QA/QC samples were reported within the acceptance limits specified in the laboratory reports with minor exceedences of the accuracy limits.	The Validation Report concluded that: ■ sampling representativeness was considered appropriate given the site setting ■ critical samples were analysed for the contaminants of concern ■ appropriate analysis methods and PQLs were used for most analytes ■ sample documentation was provided ■ sample holding times were generally complied with ■ laboratory QA/QC samples were reported within the acceptance limits specified in the laboratory reports with minor exceedences of the accuracy limits.	The Validation Report concluded that ■ sampling representativeness was considered appropriate given the site setting ■ critical samples were analysed for the contaminants of concern ■ appropriate analysis methods and PQLs were used for most analytes ■ sample documentation was provided ■ sample holding times were generally complied with ■ laboratory QA/QC samples were reported within the acceptance limits specified in the laboratory reports with minor exceedences of the accuracy limits.
Validity of dataset	The Validation Report concluded that the dataset was of appropriate quality, and adequately characterised the soils within this area.	The Validation Report concluded that the dataset was of appropriate quality, and adequately characterised the soils within this area.	The Validation Report concluded that the dataset was of appropriate quality, and although the base of the stockpiles were not assessed, the sampling undertaken by SMEC (2013) provided "*good coverage of locations for stockpile assessment*".	The Validation Report concluded that the dataset was of appropriate quality, and the sampling undertaken by SMEC (2014) was appropriate to characterise the stockpile remaining on site.

10.0 ASSESSMENT OF THE DATA QUALITY OBJECTIVES

Overall, ERM noted that soils at the site met the DQOs established for assessment of suitability of the site soils for the proposed land uses (refer to Section 5.3). This was based on the following:

- With the exception of asbestos, contaminants of potential concern were not detected at concentrations above the adopted site assessment criteria in the site soils analysed. Friable asbestos (chrysotile) above the WA DoH (2009) criteria was detected in two of the three samples analysed from soils located within the Rowing Club. Three fragments of cement sheeting comprising asbestos fibres (Chrysotile) were also observed at Site 14 by AAC during an initial visual inspection. ACM was not observed on the surface of Site 14 during the final visual inspection undertaken by AAC. However, based on the site history and observations made, coupled with limitations due to the ground cover, AAC (2013) considered that ACM may be present at the site in areas not inspected. Further, the Auditor notes the scope of works undertaken by AAC (2013) was limited to Site 14 only and did not cover the entire site.
- Although leachate analysis was not undertaken on samples collected from within Site 14 ERM 2009), based on the low contaminant concentrations detected in soil sampled from the site, ERM considered the propensity to leach was low.

  The Auditor notes that minor exceedences of metals and leachability of metals was assessed in the fill soils within the former Area F3. However, based on statistical analysis of the data ERM (2015a) considered the average concentrations of metals in the fill soils were below the assessment criteria, and reflective of concentrations within the natural material.
- With the exception of copper detected in a sample from one of the stockpiles, assessments of the stockpiles placed at the site, did not record contaminants of potential concern at concentrations above the adopted site assessment criteria (copper concentration exceeded the ANZECC B (1992) and NEPM (1999) EIL criteria.
- Stockpile samples were not analysed for leachate. However, concentrations of potential contaminants of concern were generally non-detect to low (except for copper concentrations detected in one sample from stockpile SP 8), and therefore considered to have low propensity to leach. Further, it is noted that the stockpiles have been removed from the site.
- Site soils do not present an aesthetic concern. While stockpiles were reported to contain waste materials, given the stockpiles were removed from the site, it was considered unlikely for there to be ongoing aesthetic impacts. With regards to the small waste material stockpile remaining at the site, ERM considered the material met the established DQOs, and that aesthetics impacts could be managed during site development by placing the material beneath concrete slabs (building footprints, paving or hardstand) or landscaped areas.

11.0 SUMMARY OF KNOWN RESIDUAL CONTAMINATION

Overall, ERM considered there is low potential for significant and widespread contamination to be present at the site. Known residual contamination that may be present at the site relate to:

- ACM may be present within surface soils either from the fill placed at the site, temporary stockpiles, and/or as a result of cross contamination from neighbouring properties and illegal dumping within the area.
- Aesthetically unsuitable material present in the waste stockpile remaining at the site and/or within the fill and on the surface of the site as result of temporary stockpiles placed at the site.
- Potential for unexpected contamination to be present in areas not assessed.

Given this, ERM concluded the site is suitable for high-density residential and/or commercial uses, landscaped areas and public open space land uses. Notwithstanding this, ERM developed four environmental management plans (the DEMP, the OEMP, the Foreshore DEMP and Foreshore OEMP; included in Appendices E, F, G and H, respectively (discussed in Section 13.0)) to address potential risks associated with unexpected finds of contamination and ACM that may be encountered during and post-development of the site.

12.0 ASSESSMENT OF POTENTIAL RISKS

Based on a Source-Pathway-Receptor approach, ERM (2015a) identified potential receptors (and associated exposure pathways) that may be impacted by residual contaminants of concern potentially remaining at the site. The Auditor has summarised this information from the Validation Report in Table 11. It is noted that post-development of the site direct access to the site soils and therefore any residual contamination would be limited by the construction of buildings, paving, hardstand and landscaped gardens. As discussed in Section 13.0, measures required to manage potential risks prior to, during and post-development (occupancy) of the site is documented in the four environmental management plans developed by ERM.

Table 11: Potential Receptors and Contamination Pathways

Potential Contaminants of Concern	Potential Exposure Pathways	Potential Receptors
■ Asbestos	■ Direct contact with site soils	■ Workers involved in redevelopment of the site and site construction works ■ Maintenance workers and landscapers post-development (accessing soils beneath building footprints, paving, hardstand or clean fill)
	■ Direct contact during demolition of the Rowing Club	■ Workers involved in redevelopment of the site and site construction works
	■ Dust	■ Workers involved in redevelopment of the site and site construction works ■ Maintenance workers and landscapers post-development ■ Site occupants post-development ■ General public and neighbouring site workers and occupants
■ Aesthetically impacted material	■ Direct contact with site soils	■ Workers involved in redevelopment of the site and site construction works ■ Maintenance workers and landscapers post-development (accessing soils beneath building footprints, paving, hardstand or clean fill)
	■ Direct contact with waste materials contained in the stockpile remaining at the site	■ Workers involved in redevelopment of the site and site construction works
■ Low level unidentified contamination (unexpected finds)	■ Direct contact with site soils	■ Workers involved in redevelopment of the site and site construction works ■ Maintenance workers and landscapers post-development (accessing soils beneath building footprints, paving, hardstand or clean fill)

13.0 ENVIRONMENTAL MANAGEMENT PLAN

ERM noted that following development there will be no access to the soils given that all areas of the site will be covered by concrete slabs (building footprints, paving or hardstand) or at least 0.5 m clean fill capping layer overlying a geotextile marker layer within landscaped areas and areas not covered by building footprints[12]. These structures are considered to provide a barrier between future site users and potential residual soil contamination post-development of the site. However, given the potential for residual contamination, including asbestos impacted material and potential for unidentified contamination and/or unexpected finds, to be present at the site, risks to ensure the safety of site workers and users and the general public, and to protect the environment should be managed prior to, during and post-development works at the site.

ERM developed four environmental management plans (collectively referred to as 'the EMPs') that document management measures required to manage potential risks prior to and during development and post-development (occupancy) of the site.

As discussed in Section 2.0 the EMPs are documented in reports by ERM as follows:

- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the DEMP') (ERM 2016a); included in Appendix E.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Site Occupancy Environmental Management Plan, Site 14, Kingston Foreshore Development Precinct, Kingston, ACT* ('the OEMP') (ERM 2016b); included in Appendix F.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Development Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore DEMP') (ERM 2016c); included in Appendix G.
- Environmental Resources Management Australia Pty Ltd (January 2016), *Ongoing Environmental Management Plan, Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT* ('the Foreshore OEMP') (ERM 2016d); included in Appendix H.

Sections 13.1, 13.2 and 13.3 present summaries of the main contents of the EMPs[13].

13.1 Enforceability of the Environmental Management Plans

Based on guidance provided in the EPA *Policy on Institutional Controls and Enforcement of Site Management Plans Required for Formerly Contaminated Land*, dated 7 January 2015 (EPA 2015), the Auditor understands the EMPs may be made legally enforceable through an Environmental Protection Agreement under Section 38 of the Act entered into between the EPA and the land custodian.

The Agreement will:

- Provide specific details on the site, and on the nature of the substances remaining at the site that require management.
- Include a requirement for the site to be managed in accordance with the DEMP, the OEMP, the Foreshore DEMP and the Foreshore OEMP.

[12] Separation barrier between the site soils and receptors is described in the EMPs.

[13] Whilst summaries of the management measures described in the current versions of the EMPs have been provided in this document, the wording of the DEMP, OEMP, Foreshore DEMP and Foreshore OEMP take precedence over the summaries (or equivalent) provided in this document. Further, as per the review protocols outlined in EMPs the Auditor notes that should the EMPs change in the future, then the most recent versions of the EMPs take precedence over previous versions and over any of the summaries (or equivalent) that are provided in this document.

The Auditor further understands that in the case of the Foreshore area, where ownership will be transferred from the LDA to the ACT Department of Territory and Municipal Services (TAMS), the Environmental Protection Agreement will also require the management measures to be recorded in the TAMS *Integrated Asset Management Systems* in accordance with TAMS procedure, "*Procedure for the Management of Contaminated Assets*", Version 1.2 dated 31 May 2013 (as updated).

Prior to occupancy or use of the site, the land custodian must request a variation to the lease to include a condition that the site will be managed in accordance with the OEMP.

The LDA or their appointed delegate is responsible for implementation of the DEMP until divestment of the site; thereafter the leaseholder will be responsible for implementation of the DEMP. Post-development responsibility for implementation of the OEMP is the leaseholder or their appointed delegate as noted in the provisions to the Crown Lease and notated on the Title for the site. This will be enforced through:

- Prior to sale, the site will be added to the list of sites to be managed by the LDA under their Environmental Protection Agreement with the EPA (MCL 2014-001) for the ongoing management of contaminated land up until evidence is provided to the EPA that the site has been sold.
- Following sale, conditions will be included in the lease for the site to the effect that the lessee (the Developer and then the Owners Corporation) will be responsible for the management of the site in accordance with the requirements of the Site Audit Statement, DEMP and OEMP. Following the satisfactory completion of the management requirements under the DEMP, the lessee (the Developer) will write to the EPA (with appropriate evidence) seeking the EPA's agreement that the site no longer requires management in accordance with the DEMP. In the case of the Developable Area, the Owners Corporation will then manage the site in accordance with the requirements of the Site Audit Statement and OEMP until the EPA agrees in writing that management is no longer required.

13.2 Site Development

The Developable Area DEMP (included in Appendix E) and Foreshore DEMP (Appendix G) have been prepared to manage known and potential contamination risks that may be encountered prior to and during development of the site[14].

Management measures described in the Developable Area DEMP and the Foreshore DEMP are summarised below:

- Prior to development (the site may remain vacant for a period of time prior to commencement of construction works) the following hazard mitigation and control measures must be implemented:
  - erection and maintenance of a secure locked fence around the perimeter to restrict public access to the site
  - placement and maintenance of signage warning people not to enter the site due to the presence of potential asbestos and contaminated soil
  - inspections by the LDA or their delegate on a weekly basis to ensure appropriate site management, and where necessary, any rectification works must be carried out in the timely manner
  - no ground disturbance at the site under any circumstances
  - no temporary stockpiling of materials at the site

[14] The Auditor notes that the DEMP Section 5 incorrectly states that "*this material* (the fill) *is known to contain asbestos based on previous sampling by SMEC (2011)*". However, the presence of asbestos in the site soils is expected based on assessments undertaken by AAC (2013) and ERM (2015b).

- During development (construction phase) of the site, the following hazard mitigation and control measures must be implemented:
  - maintenance of a secure locked fence around the perimeter to prevent unauthorised entry to the site
  - development of a health and safety plan by an occupational hygienist and induction processes to ensure construction workers are informed of anticipated site conditions
  - engagement of a suitably qualified environmental consultant and occupational hygienist to manage environmental and contamination aspects of the construction works, monitor and evaluate work performance, and demonstrate compliance with the DEMP and the Foreshore DEMP
  - appointment of a licensed asbestos removalist to manage potential asbestos material that may be excavated during construction in accordance with ACT guidelines and regulations
  - implementation of sediment and erosion controls in accordance with guidance provided in *Environment Protection Guidelines for Construction and Land Development* dated 2011 (ACT 2011a)
  - management of the site soils, including:
    - no disposal of soil from the site without approval from the EPA
    - no stockpiling of soils potentially impacted by asbestos at the site
    - soil excavated from the site must be managed, assessed, transported and disposed of in accordance with ACT guidelines and regulations
    - soil excavated from the site cannot be reused onsite or within the KFDP (aesthetically suitable material encountered onsite, subject to engineering requirements, may be placed beneath onsite building. However, aesthetically suitable material must not be imported to the site)
    - soil tracking including a record of all soil entering and exiting the site must be implemented and maintained
  - implementation of dust control measures to ensure construction activities do not lead to the airborne release of asbestos or the generation of unacceptably high levels of dust, including no ground disturbance during high wind conditions and application of water to reduce dust impacts
  - environmental monitoring, including:
    - air monitoring for asbestos in accordance with ACT Work Safety *(National Code of Practice for the Safe Removal of Asbestos) Code of Practice* 2010 and *Guidance Note for Membrane Filter Method for Estimating Airborne Asbestos Dust*, 2nd Edition (ACT 2010)
    - visual dust monitoring and dust deposition gauge and particulate matter monitoring
  - where it is anticipated that groundwater will be encountered or intercepted during development works, the developer must engage a suitably qualified professional to develop, submit and have approved by EPA a Groundwater Management Plan (GWMP), prior to commencement of construction.
  - groundwater management, including:
    - dermal contact with groundwater must be avoided
    - groundwater must not be ingested
    - consultation with the EPA on options for groundwater disposal in the event that groundwater is encountered during the development

- construction, installation and maintenance of a physical separation barrier comprising the following:
  - concrete slab of buildings with or without basements
  - at least 0.5 m of clean fill overlying a geotextile marker layer within landscaped areas and areas not covered by building footprints
  - subsurface services will be installed within trenches lined with at least 0.5 m of clean fill overlying a geotextile marker layer
- requirements relating to demolition of the Rowing Club, including the following:
  - waste materials generated during demolition of the building should be sorted and appropriately disposed offsite
  - no refueling of vehicles onsite
  - soil excavated during the demolition, including during grubbing cannot be stockpiled or reused onsite or within the KFDP
  - soil excavated during the demolition, including during grubbing must be managed, assessed, transported and disposed of in accordance with ACT guidelines and regulations and in accordance with the DEMP and the Foreshore DEMP

- The DEMP and the Foreshore DEMP require that compliance reports demonstrating that development works at the site have been undertaken in accordance with the DEMP and the Foreshore DEMP must be prepared and submitted to an EPA accredited Contaminated Site Auditor (auditor) for review. The auditor must issue a letter to the EPA confirming compliance with the DEMP and the Foreshore DEMP prior to occupancy or use of the site.

13.3 Site Occupancy and Use

The Developable Area OEMP (included in Appendix F) and Foreshore OEMP (Appendix H) have been prepared to manage potential contamination risks to future site occupants or users post development of the site.

Management measures described in the Developable Area OEMP and the Foreshore OEMP are summarised below:

- There will be no access to the site soils, i.e. the site soils will be covered by concrete slabs (building footprints, paving or hardstand) or at least 0.5 m clean fill capping layer overlying a geotextile marker layer within landscaped areas and open space areas not covered by building footprints[15].
- The separation layer (including, concrete slabs, building floor, paving, hardstand and clean fill) must not be penetrated unless in agreement with the leaseholder or their delegate.
- All underground services will have been installed within lined trenches to avoid disturbance of the surrounding soils should there be a need to access these services post-development of the site (which the Auditor interprets to mean that service trenches will be lined with clean fill and a geotextile marker layer prior to placement of services).
- In the event that access beneath the separation layer is required post-development:
  - an environmental management plan must be prepared for this purpose in accordance with the EPA *Environmental Guidelines for Preparation of an Environment Management Plan* dated 2009 (ACT 2009b)

[15] Separation barrier between the site soils and receptors is described in the EMPs.

- a health and safety plan to address health and safety of workers and others during the works must be prepared and implemented
- site workers must be informed of anticipated site conditions, including potential presence of asbestos beneath the site surfaces
- soil excavated during the works may only be replaced in the location and in the same order it was excavated from, noting that soil is not be replaced below the water table
- soil that cannot be reinstated must be must be managed, assessed, transported and disposed of in accordance with ACT guidelines and regulations
- appropriate management of asbestos impacted soil and unexpected finds.

The management measures required in the Developable Area OEMP and Foreshore OEMP are based on anticipated site conditions. Following the construction phase of development of the site and based on implementation of the Developable Area DEMP and the Foreshore DEMP, the Developable Area OEMP and/or Foreshore OEMP should be reviewed and updated as required. The updated OEMP and Foreshore OEMP must be reviewed by an EPA accredited Contaminated Site Auditor, and by EPA. Following the review and prior to implementation, the auditor must issue a letter of support to the EPA for the updated Developable Area OEMP or Foreshore OEMP.

Further, prior to occupancy of the site, the land custodian must request a variation to the lease to include a condition that the site will be managed in accordance with the OEMP. Upon transfer of the Foreshore area from the LDA to TAMS, the Foreshore area will be managed by TAMS in accordance with the Foreshore OEMP.

14.0 SUMMARY AND DISCUSSION OF THE AUDITOR'S REVIEW

The following sections present the assessment made by the Auditor in reviewing the Validation Report and evaluating suitability of the site for the proposed 'mixed use' development comprising high-density residential and/or commercial uses with or without basements, landscaped areas and public open space for recreational uses. The Auditor understands that this development will generally prevent access to soils and that any access to soils will be minimal.

14.1 Adequacy of the Assessment

In relation to adequacy of the assessment of the site suitability presented by ERM in the Validation Report and supporting documentation, the Auditor notes the following:

- ERM considered the main sources of contamination and associated potential contaminants of concern based on historical activities undertaken at the site and in the immediate surrounds.
- Various consultants undertook a number of phases of assessment and remediation works on parts of the site and/or in the vicinity of the site between 2006 and 2015, including:
  - soil investigations of parts of the site undertaken by Coffey prior to 2009 to support the Harbour Area – Milestone 2 Audit
  - soil investigations undertaken by ERM in 2009 of all areas of the site, and in 2015 of parts of the site (namely, the Rowing Club building)
  - assessment by SMEC in 2014 of stockpiles temporarily place at the site, and in 2015 of a waste stockpile remaining at the site
  - asbestos assessment of parts of the site by AAC in 2013.
- The number of grid based and judgemental sampling locations within fill material across site was considered to be generally consistent with the requirements of the NSW EPA *Sampling Design Guidelines* dated 1995 (NSW 1995), WA DoH (2009) or the amended NEPM (2013).
- Although limited, groundwater investigation augmented with review of groundwater information of activities in surrounding areas is adequate for purposes of decision-making on the likely condition of groundwater beneath the site.
- Coupled with the visual limitations to the asbestos assessment noted by AAC (2013), the Auditor considers there are limitations in the analytical methodology used for sampling of asbestos fibres. Therefore all positive asbestos fibre counts, irrespective of concentration are considered to be indicative of the presence of asbestos in soil. Further, the Auditor notes that other locations not identified during the investigation works may also contain asbestos.

The Auditor concludes that although there are some limitations with the investigations completed to date, the Auditor is generally satisfied that:

- ERM's approach to review investigation works undertaken at the site pre and post the Harbour Area – Milestone 2 Audit separately is adequate to make an assessment of the suitability of the site for the intended use.
- The number and distribution of samples and investigation locations across the site is adequate to characterise the site.
- Based on the soil investigation undertaken at the site, ERM concluded that the condition of site soils is suitable for the proposed land use, subject to implementation of the EMPs.
- Based on the groundwater investigations undertaken in the vicinity of the site, ERM concluded that the condition of groundwater is acceptable and unlikely to present potential risk to receptors.

From: Howorth, Chloe
To: Nichelle Jackson
Cc: Veld, Anton
Subject: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]
Date: Friday, 9 June 2017 12:37:35 PM
Attachments: 6. PLANNINGCONTROL-201425921-S165B-01.pdf
16. SUPP-201425921-S165B-PCPRULES-01 (A10384257).pdf

Hi Nichelle,

Thank you for coming in this morning to discuss your proposed lodgement of the building and landscape works for a Development Application. As discussed, in order for the LDA to issue a letter of endorsement confirming that all landscape works are supported as per the requirements of LDA's sales documents (A2.1.2 of the Deed), there are a few outstanding design issues that still require resolution:

a) The approved Planning Control Plan (PCP) (27/2/2015) issued with the sales documents included a requirement to maintain ground level view line and pedestrian access. The PCP design was integrated with the off-site landscape works to provide building occupants with views back along Jerrabomberra Creek. We note that although your design proposal does include two walkway connections at ground level, their size and location are not consistent with the approved PCP. Can you please demonstrate how you ensure the ground level view and pedestrian access maintain a high quality outcome that integrates with the landscape treatment. (See **Attached**)
b) The proposed location and design of the substation outside the leased area on public land would require written endorsement from ActewAGL, Transport Canberra and City Services, the Land Development Agency and the Deed Manager. At this stage we understand there is no electrical engineering reason that would prevent the substation being built within the block. The location shown is inconsistent with the approved EDP and the expectation of surrounding lessees. To support this we would therefore need evidence that there were no feasible on-block options and no detrimental impact on the amenity of the open space.
c) The ground level ramps and stairs adjacent to the building are significantly different from the approved design included in the sales documents. A clear concern is the proposed design of the public space in the Honeysett View verge immediately to the north of the pedestrian crossing, where the design of the landscape (stairs, lighting, landscape planter bed) presents a potential safety hazard and diminished axial view from path users travelling north from the developments to the south of Honeysett View. As discussed, some modifications to the design of the stairs/ramp/light pole location could address this.

The matters of bicycle facilities, driveway crossover materials, outdoor lighting, rubbish bins, prevention of illegal parking, and detailed design of the kayak deck as outlined below remain unresolved, however LDA is prepared to see these addressed as a condition of our endorsement. There is a risk to your client however that this approach could require additional re-design to secure agency endorsement and approvals.

Once again, please contact us if you need further clarification.

Thanks,

Chloë Howorth
Sustainability & Innovation Director
Development Director Kingston & East Lake
Land Development Agency | Chief Minister, Treasury & Economic Development Directorate
Level 7, Transact House | 470 Northbourne Ave Dickson | GPO Box 158 Canberra ACT 2601
t. 02 6205 0402 | m. 0407 201 029 | e. chloe.elvy@act.gov.au

From: Elvy, Chloe
Sent: Wednesday, 31 May 2017 2:41 PM
To: Nichelle Jackson
Cc: Veld, Anton
Subject: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Hi Nichelle,

Thanks for dropping off the set of plans on Friday. There are a few issues that we think still need further resolution/ information:

- *how the location/design of bicycle facilities could be used to increase active travel,*
    1. the design submission does not provide sufficient detail about how the number, location or accessibility of the bicycle racks (or end of trip facilities) will encourage active travel for visitors/residents/employees. There should be sufficient facilities in prominent locations in proximity to building entries preferably under cover for security and weather protection to enhance use. Also it was difficult to determine the number/location of secure basement bicycle storage facilities.
    2. The submission provides insufficient detail on how the driveway crossings and intersections of the shared paths will manage movements and the safety of users (eg levels, paving treatments, signage, line marking, etc)
- *how the tree species/size/location will respond to the National Capital Plan Special Requirements for Kingston Foreshore to maintain the landscape character of the Lake Burley Griffin parklands,*
    1. The National Capital Plan (NCP) specifies:
        a) *The landscape should permit views into the development through informal tree planting and should include landscape treatment of a high quality allowing for pedestrian and cycleway movement through the area.*
        b) *The edge of Jerrabomberra Creek should be landscaped as open space*

allowing for pedestrian movement and have a character not inconsistent with the role of the Creek as the edge to the Jerrabomberra Wetlands.

2. The submission does not provide detail how the landscape treatment will permit views into the development

- *what measures will be used to minimise visual impact of the substation (when available)*
    1. No details provided on how the location or materials of the substation will be used to minimise visual impact on the open space or surrounding developments.
- *temporary construction site compound location,*
    1. Thank you.
- *(as per note below) how the outdoor lighting + landscape design will minimise impact on the Jerrabomberra Wetlands.*
    1. Please provide detailed outdoor lighting design plans and report (detailing luminaire, pole type, location, height, design, number, consistency with other lighting in Kingston Foreshore and lake parklands, wildlife impacts, minimisation of obtrusive effects on park users, residents, controls). Please note the Emporium luminaries may require shielding where they are close to the building or generating excess light spill into the wetlands.
    2. Landscape design and proposed timing of works should address how impacts on the Jerrabomberra Wetlands nature reserve will be managed (including water quality, wildlife, noise, species, stormwater runoff)

Additional comments:

a) The approved Planning Control Plan (PCP) (27/2/2015) issued with the sales documents included a requirement to maintain ground level view line and pedestrian access. The PCP design was integrated with the off-site landscape works to provide building occupants with views back along Jerrabomberra Creek. We note that although your design proposal does include two walkway connections at ground level, their size and location are not consistent with the approved PCP. How will you ensure the ground level view and pedestrian access maintain a high quality outcome that integrates with the landscape treatment.

b) Transport Canberra and City Services will not support rubbish bins on public land in this area, however the commercial spaces on the ground floor are likely to generate rubbish that could be left in the public realm. We recommend including rubbish bins within the block boundary to be maintained by the future body corporate, located in the outdoor space near the commercial tenancy entries.

c) Car parking in waterfront parts of Kingston Foreshore is under pressure, for example the on-street parking along Trevillian Quay where parking controls and enforcement have needed supplementary landscape treatment and enforcement to maintain access for building residents. What measures will you have in place to prevent illegal parking on the Honeysett View verge in front of your building?

d) The landscape and outdoor lighting plans need to have the single light pole and planter bed proposed just north of the Honeysett View pedestrian/cycle crossing relocated for access/safety and to maintain the views through from the linear parkland on Section 66.

e) The location/type of lighting shown on the DA External Lighting Plan does not seem consistent with the Open Space Landscape Plan.

f) A condition of the design endorsement letter from LDA will be that the detailed design of the kayak deck is developed in consultation with users prior to final Design Acceptance submission. Any requested changes to make it accessible by kayak/personal

watercraft users will be the responsibility of the proponent.

Please give either Anton or me a call if any of this requires clarification.

Thanks,
Chloe

Chloë Elvy
Sustainability & Innovation Director
Development Director Kingston & East Lake
Land Development Agency | Chief Minister, Treasury & Economic Development Directorate
Level 7, Transact House | 470 Northbourne Ave Dickson | GPO Box 158 Canberra ACT 2601
t. 02 6205 0402 | m. 0407 201 029 | e. chloe.elvy@act.gov.au

From: Veld, Anton
Sent: Wednesday, 24 May 2017 11:08 AM
To: 'Nichelle@CanberraTownPlanning.com.au'
Cc: Elvy, Chloe
Subject: RE: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Hi Nichelle

It was good to meet you this morning. Can you please confirm details as discussed this morning:

- how the location/design of bicycle facilities could be used to increase active travel,
- how the tree species/size/location will respond to the National Capital Plan Special Requirements for Kingston Foreshore to maintain the landscape character of the Lake Burley Griffin parklands,
- what measures will be used to minimise visual impact of the substation (when available)
- temporary construction site compound location, and
- (as per note below) how the outdoor lighting + landscape design will minimise impact on the Jerrabomberra Wetlands.

As also discussed we encourage you to contact the Jerrabomberra Wetlands to discuss how the development proposal addresses their unique conservation requirements, we expect them to provide detailed feedback on outdoor lighting, landscape design, construction timing and noise, and stormwater management.

Woodlands and Wetlands Trust
General Manager

Jason Cummings
Phone: 0428 460 004

Email: gm@woodlandsandwetlands.org.au
Address: PO Box 58 Fyshwick, Canberra ACT 2609

Please do not hesitate to contact me if you need any more info or discussion.

Kind regards

Anton Veld
Senior Project Manager East Lake
Land Development Agency | Chief Minister, Treasury & Economic Development Directorate
Level 7, Transact House | 470 Northbourne Ave Dickson | GPO Box 158 Canberra ACT 2601
t. 02 6205 4683 | m. 0408 456 502 | e. anton.veld@act.gov.au

From: Elvy, Chloe
Sent: Wednesday, 24 May 2017 10:35 AM
To: Veld, Anton
Subject: FW: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Anton,
Nichelle's details are below.

Thanks,
Chloe

From: Nichelle Jackson [mailto:Nichelle@CanberraTownPlanning.com.au]
Sent: Tuesday, 23 May 2017 1:39 PM
To: Elvy, Chloe <Chloe.Elvy@act.gov.au>
Subject: RE: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Thanks Chloe, see you then.

CTP Logo

Nichelle Jackson
Town Planner

Mobile 0419 252 419

From: Elvy, Chloe [mailto:Chloe.Elvy@act.gov.au]
Sent: Tuesday, 23 May 2017 1:28 PM
To: Nichelle Jackson <Nichelle@CanberraTownPlanning.com.au>

Subject: RE: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Hi Nichelle,

Yes, 9am tomorrow is ok. If you go to LDA reception on the ground floor (Transact House) they will call me.

Thanks,
Chloe

From: Nichelle Jackson [mailto:Nichelle@CanberraTownPlanning.com.au]
Sent: Tuesday, 23 May 2017 12:48 PM
To: Elvy, Chloe <Chloe.Elvy@act.gov.au>
Subject: RE: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Hi Chloe,

Sorry we keep missing each other on phone. I wanted to check if you are still available to meet tomorrow morning (9-10am) to discuss the Kingston proposal – we have a set of documents nearing completion for submission and would like discuss with you to make sure we've addressed LDA requirements.

Regards,

Nichelle Jackson
Town Planner

Mobile 0419 252 419

From: Elvy, Chloe [mailto:Chloe.Elvy@act.gov.au]
Sent: Tuesday, 16 May 2017 1:56 PM
To: Nichelle Jackson <Nichelle@CanberraTownPlanning.com.au>
Cc: Elizabeth Slapp <Elizabeth@CanberraTownPlanning.com.au>; Hope Watson <Hope@CanberraTownPlanning.com.au>
Subject: RE: Block 2 Section 67 Kingston [SEC=UNCLASSIFIED]

Hi Nichelle,

The land custodian authorisation is attached. Yes, I'm happy to meet to discuss your proposal. Next Monday (any time), Tuesday before 2:30 and Wednesday morning are all clear.

Regards,

Chloë Elvy
Sustainability & Innovation Director
Development Director Kingston & East Lake
Land Development Agency | Chief Minister, Treasury & Economic Development Directorate
Level 7, Transact House | 470 Northbourne Ave Dickson | GPO Box 158 Canberra ACT 2601
t. 02 6205 0402 | m. 0407 201 029 | e. chloe.elvy@act.gov.au

From: Nichelle Jackson [mailto:Nichelle@CanberraTownPlanning.com.au]
Sent: Monday, 15 May 2017 4:48 PM
To: Elvy, Chloe <Chloe.Elvy@act.gov.au>
Cc: Elizabeth Slapp <Elizabeth@CanberraTownPlanning.com.au>; Hope Watson <Hope@CanberraTownPlanning.com.au>
Subject: RE: Block 2 Section 67 Kingston

Hi Chloe,

Nick put me onto you as the project manager for Block 2 Section 67 Kingston.

I'm assisting the developer, Keggins Homes, to prepare their planning approval applications and I understand the sale of the block has not yet been finalised. Can I ask that the LDA (as land custodian and proponent of the EDP) provide written consent to deal with the planning authority about this block? The ladies copied in on this email may also contact you on other matters requiring LDA's consent.

We are also working towards a submission in the coming weeks, can you advise when might be a convenient time to meet to discuss the proposal?

Regards,

Nichelle Jackson
Town Planner

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Mobile 0419 252 419
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canberratownplanning.com.au

CANBERRA TOWN PLANNING
2/20 CHALLIS STREET DICKSON
CANBERRATOWNPLANNING.COM.AU
ABN 66 131 577 261

17 June 2017

Anton Veld
Senior Project Manager - East Lake
Land Development Agency
Economic Development Directorate
470 Northbourne Avenue
DICKSON ACT 2602

By hand: to be delivered meeting with Anton Veld on Monday 19 June 2017 and via email: anton.veld@act.gov.au

Blocks 2 and 3 Section 67 Kingston – Endorsement of proposal for submission of Development Application for Development at Block 2 with EPSDD

Dear Anton,

Thank you for your further advice post our meeting on 15 June 2017 provided via e-mail dated 15/6/2017. The advice sought further advice in relation to the matters as discussed which relate to:

- Primary view corridors as per the Planning Control Plan (PCP) (27/2/2015),
- The substation positioning as proposed; and
- Integration of the proposed building at Block 2 with the adjoining landscape solution that was pre-approved in DA201425921 and included in the sale of the site.

We have undertaken further assessment and design consideration of these matters and provide the following for consideration in relation to these matters:

Matter		Response
a)	The primary access and viewpoints from the building ground level is a variation to the approved Planning Control Plan (PCP) (27/2/2015) issued with the sales documents, which Land Development Agency had specifically designed to integrate with the open space landscape design.	The Matter of the View Corridors and their interpretation was discussed at a number of meetings and through submissions to various government agencies in the progression of this proposal. We note meetings and key submissions at which this matter was discussed (among a range of matters) including: - LDA early discussion in October 2016 - All of Government discussion on 16 November 2016. - Provision of Design Scheme to facilitate discussion in November 2016. - Formal submission for advice to EPSDD post 16/11 meeting - MPRG review of the proposal in the context of the submission of November 2016 and advice sought, - EPSDD response to the matters discussed in the November 2016 correspondence. - Public and stakeholder consultation based on advice provided to date.

Matter	Response
The significant change to views and access here could have a range of consequences for the community and building users, including main pedestrian building entry points not aligned with the open space landscape design, blocking of views between the development and its surrounds, and indirect pedestrian/cycle movements through the soft landscape areas.	We provide the November 2016 correspondence to EPSDD, the notional scheme that was discussed with government in 2016 and the EPSDD response to this advice in this submission as background information. We note that the proposal was put to the MPRG for consideration. This included consideration against the approved EDP provisions and proposed changed. The advice provided state clearly that there is *…"no (in-principle) objection to an amendment application to the EDP to enable the above and the other aspects proposed".* As per our recent discussion we confirm that at no time prior to our last conversations where we advised that the proposed PCP view areas relate to the landscaping areas and connections; notwithstanding that we asked questions regarding its interpretation a number of times. We also note that the approved EDP wording that relates to what will become the criteria consideration of the EDP does not specifically sought the mandatory compliance with the view areas; but rather that integration. The "rule" consideration seeks the inclusion of a pedestrian access and visual connection to the urban open space areas of the Jerrabomberra Creek and Kingston Harbour. The criteria consideration seeks safe and convenient public access buildings and urban open space, generous path width that support among other consideration the views to the urban open space and Jerrabomberra Creek and an integration with the pedestrian routes and design of open space. The proponent acknowledges that there are opportunities to better integrate the open space design with the proposed location of the view corridors in the proposed design and would be happy to commit to altering the approved design by relocating key connectivity infrastructure in the open space design to align and integrate with the location of the proposed view corridoes as an amendment of DA201425921. This will be undertaken as a section 197 DA amendment along with other works proposed to improve the integration of the proposed design with the proposed building post approval of the building DA. This is permitted by the provisions of the Deed of Agreement.
b) The substation is still shown outside the development block within public open space adjoining Jerrabomberra Creek. The planning report provided today explains the substation would have detrimental impacts on the functionality and amenity of the open space if the substation were located on your development block. We share the concerns that these impacts will equally affect the public open space where you propose to locate the substation. The background documents issued with the sale showed an indicative service core on the block and included advice that: ActewAGL stated that the developer of the proposed development will be responsible for: - Providing a minimum 7m x 5m area for a Padmount Substation within the block boundary.	As requested, the proponent sought further advice from the electrical engineering consultant and we include is advice in relation to the technical difficulties associated with placing the substation within the boundaries of Block 3. In parallel we undertook a further investigation into the opportunities to locate the substation within the confines of Block 2 as agreed at our last meeting on 15/6/2017. Although it remains our preferred location to locate the substation within Block 3 we are happy to continue investigating a location within the proposed building (see drawings attached) for siting of the substation. We note that this location performs poorer to the preferred location based on a number of considerations including: - Requirement for additional access to the substation (potentially directly from Honeysett View), - Impact on carparking below due to thicker lab requirements that result in head clearance issues in the basement, - Constraints in relation to earthing opportunities,

Matter	Response
- If the developer prefers an Indoor Chamber Substation over a Padmount Substation, then they will be required to fund the cost difference between the two options on top of other estimated customer charges. The block developer is to liaise with ActewAGL Electrical Networks for more detailed electrical advice and to determine a costs agreement prior to commencing works. It is noted that despite the fact that the nearest substations to the Site are located some distance to the south of the Site, there are multiple empty electrical conduits which could provide a means of providing electricity to the Site. Based on this we maintain our advice provided below 9/6/17 and request you to investigate locating the substation within the service access/basement parking entry area of Block 2/67.	- Potential requirement for additional overhead clearance, fire protection and vertical ventilation, - Reconfiguration of the waste management facilities that may impact on the amenity of the design of the building. Notwithstanding, the proponent would be happy to progress on this basis and reconfigure the design documents for submission to Deed Management and EPSDD if this is the LDA's preference. We would appreciate your endorsement of this approach before embarking on what may be a time consuming redesign of the scheme to relocate the substation within the building. In anticipation of this endorsement, we show the notional location of the proposed substation within the building as well as the updated landscaping plan and off-site landscape context plan that remove the off-site substation locations for your consideration and endorsement.
c) On closer inspection of the issue around the stairs and ramps, we have identified the approved Estate Development Plan (27/2/2015) and Open Space Landscape works (approved by TCCS Design Acceptance 22/10/2015) show the design levels of the open space are expected to be raised to meet the ground level of the proposed building. This is to support potential future expansion of active ground floor land uses as set out in the Territory Plan and would avoid the safety and urban design issues caused by the stairs and ramps.	We note that the Deed of Agreement includes a specific opportunity for the proponent to seek an amendment to the approved design of DA201425921. To better facilitate the integration of the proposed building with the urban open space post design (and approval). This appears to be a sensible approach in the context where the design of the building was not known at the time of approval of the urban open space DA and the sale of the land. Conversely it would seem premature to embark on an amendment of DA201425921 until such time as the design of the proposed building has been submitted for assessment and is approved. This would prevent a scenario where the amendment requires multiple integrations and submissions should the building DA be altered during the assessment phase of the DA. We have started to consider the integration opportunities between the site and the surrounding pedestrian area (noting that the chosen outcome of a predominantly residential ground level in PCP area B) may benefit from a change in level to create a defensible semi private courtyard space that improve overlooking and active/passive surveillance to the surrounding open space area while increasing amenity to future residents. We specifically note that the building finish floor level is proposed to be RL558.5 (with some minor departures as noted) which is consistent with the approved DA and proposed EDP planning controls. Notwithstanding, we are not seeking to pursue the amendment of the Block 3 design (DA201425921) at this time and request that the LDA provide us with your endorsement to progress our DA approval noting that the proponent will seek amendments to the DA201425921 design to: - Re-align key design features in the open space landscape design to facilitate the integration of the view corridors with the open space pathway network; and - Resolve the interface between the building and Block 3 open space design as permitted by the Deed of agreement.

November 2016 Correspondence

6. Explore opportunities to place the entry/ exit arrangements (driveway) and waste collection services at a location outside the Block 2 boundary	We seek consideration to have consideration for locating the basement access driveway/s at locations that are outside the confines of the Block 2 boundary (As depicted in the Deed) as well as locating the waste collection service locations in a position outside the Block 2 boundary. The current Block 2 geometry and permitted building envelope provide limited opportunities to manage these matters in a high amenity and integrated way. With consideration of extending the basement (as per item 4 above) there would be opportunities to place these services at locations that provide efficient and safe operation of the development that improve the amenity of the precinct while not adversely impact on the amenity of the locality. These services could be integrated in the landscape and structural elements that will be created in the adjoining precinct and may be integrated with community facilities that we could proposed in the Block 3 locality. It is likely that any such facility would require land tenure to be granted by easement, a Licence to occupy land or seeking an amendment to the Deed to include any future parcel for this use into the holding Lease land.

In order to assist us with exploring these matters we are interested in receiving the Authority's commentary around these initiatives and view on how best we can progress these matters to fruition.

It is our opinion that, where there is consensus to proceed the exploration of the matters listed above, the most appropriate pathway may be to:

- Seek consideration to amend the approved EDP (DA201425921) with the consent of the proponent (LDA),
- Concurrently progress the Development Application for the Block 2 proposal. This scheme will detail the need for the EDP amendments in full,
- Confirm the most appropriate way to gain access to the subterranean land (Licence and/or Deed Variation), and
- Make amendments to the Deed as appropriate to facilitate the outcomes sought.

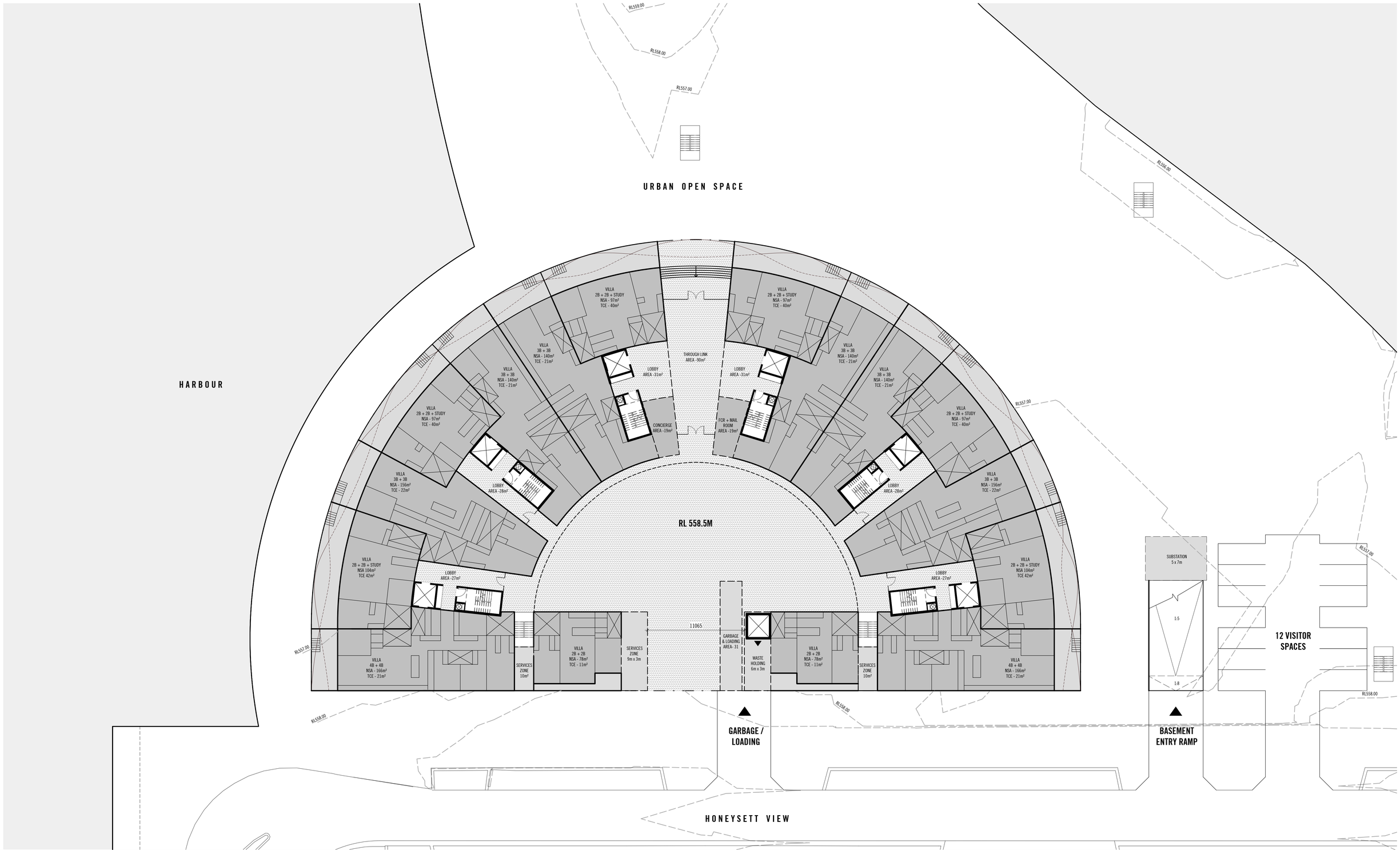
We trust that you would be able to provide us with direction to explore these matters. Should you wish to discuss the matter further please do not hesitate to call me on 0409 550 596.

Yours sincerely

Pieter van der Walt
Director – Senior Town Planner

Attachments:

- Notional Design Concepts relating to the matters listed above.



REV	DATE	REASON FOR ISSUE	ISSUED BY
A	10.10.16	PRELIMINARY ISSUE	DD
B	11.10.16	PRELIMINARY ISSUE	DD
C	17.10.16	PRELIMINARY ISSUE	DD
D	27.10.16	ISSUE FOR APPROVAL	DD
E	03.11.16	ISSUE FOR APPROVAL	DD
F	22.11.16	ISSUE FOR COUNCIL PRE-APP	DD

SCALE@A1
SCALE@A3 1 : 400

N

PRELIMINARY
NOT FOR CONSTRUCTION

Figured dimensions take precedence to scale readings. Verify all dimensions on site.
Report any discrepancies to the Architect for decision before proceeding with the work.

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Project Title
BLK 2, LOT 69
KINGSTON FORESHORE

Client
KEGGINS HOMES

Drawing Title
GROUND LEVEL

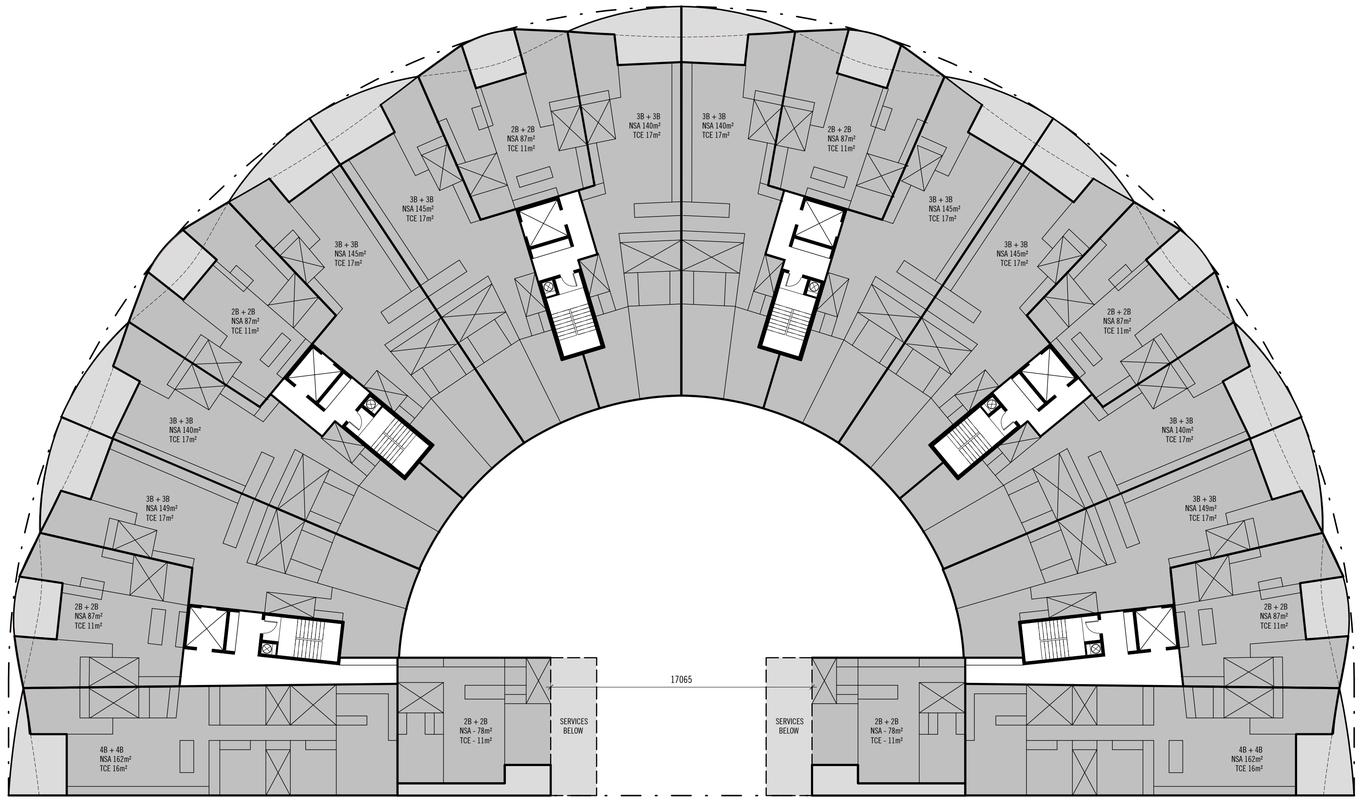
Project Number
16077

Drawing Number
A0100

Drawing Status
MP

Revision
F

22/11/2016 4:58:02 PM



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Project Title
BLK 2, LOT 69
KINGSTON FORESHORE

Client
KEGGINS HOMES

Drawing Title
LEVEL 01

Project Number
16077

Drawing Number
A0101

Drawing Status
MP

Revision
F

22/11/2016 4:58:15 PM

EPSDD response to November 2016 correspondence

From: Cilliers, George [mailto:George.Cilliers@act.gov.au]
Sent: Wednesday, 25 January 2017 7:09 PM
To: John Hayes <jahayes48@icloud.com>
Cc: Pieter Van Der Walt <Pieter@CanberraTownPlanning.com.au>; Jin Wang <jin.wang@kegginshomes.com>; Phillips, Brett <Brett.Phillips@act.gov.au>; Johnson, Lisa <Lisa.Johnson@act.gov.au>
Subject: RE: Correspondence re Block 2 and 3 Section 67 Kingston [SEC=UNCLASSIFIED]

John,

(I'm actually back in office.)

The minuted MPRG advice on this matter read as follows:

> *Considering the proposed development, and the options for basement treatment, a departure from the approved EDP (and PCP) for a single storey basement encroachment as a substratum under Block 3 could be considered as part of a future development application, provided that the encroachment be reconfigured in a more regular (rectangular) form, to limit encroachment to the north, and to encroach more to the east (parallel with Honeysett View and underneath the proposed visitor parking on the eastern side of Block 3.) It was considered that this will reduce the impact on the substantial part of the urban open space on Block 3 and will also provide more opportunity for landscaping and deep root planting.*
>
> *The proposed development would benefit from a commercial tenancy at ground floor level within Area A (as indicated on the PCP) and would also activate the frontage and provide greater connectivity to the public open space on Block 3 (to the north).*
>
> *On the basis of the above, there is no (in-principle) objection to an amendment application to the EDP to enable the above and the other aspects proposed.*
>
> *The tenure of the encroachment onto Block 3 is a separate matter and not a decision for the MPRG, but it was suggested that the proponent explore the possibility of a direct sale for this substratum as a preferred form of tenure.*
>
> *This advice should not be considered to be binding on a future development application, and is contingent on further detailed assessment of such a development application, and subject to securing appropriate tenure arrangements for the proposed basement.*

Happy to meet with your team to clarify if necessary. (I'm in office on Friday – onwards.)

Regards

George

From: John Hayes [mailto:jahayes48@icloud.com]
Sent: Tuesday, 24 January 2017 4:10 PM
To: Cilliers, George
Cc: Pieter Van Der Walt; Jin Wang; Phillips, Brett; Johnson, Lisa
Subject: Re: Correspondence re Block 2 and 3 Section 67 Kingston [SEC=UNCLASSIFIED]

George,

Thank you for your e-mail.

I am unclear from your message when you will be back in the office.

My concern is that the Design team need to rely on your formal advice, as I explained earlier the receipt of the formal advice can be the only way to avoid misunderstanding, uncertainty or any ambiguity (particularly when the Consultants are spread far and wide), so I look forward to receiving your response, when you return.

Nonetheless, I appreciate your efforts to provide a "heads up" on the matters raised.

Thanks, again.

Regards,

John.

On 24 Jan 2017, at 11:26 am, Cilliers, George <George.Cilliers@act.gov.au> wrote:

Good morning John,

Apologies, I'm on leave today.

I will provide formal advice to you as soon as possible when I'm back.

In essence the preliminary advice is that there is in-principle support for a single storey basement encroachment, provided the basement extends to the east along Honeyset View, underneath the proposed at-grade car park. (The basement should preferably not extend to the north, i.e. under the 'peninsula' area.) As far as tenure is concerned, it is suggested that a direct sale of the substratum for the proposed basement be explored by you in the first instance.

The view was that a commercial tenancy at GFL should be retained to activate the GFL (in Area A) and also to provide connectivity to the public open space to the north of the site, but there is no in-principle objection at this stage to an amendment application to the EDP to enable the other aspects proposed.

This advice is obviously contingent on further detail assessment of a development application, and subject to securing appropriate tenure arrangements.

I'd be happy to attend a quick meeting to explain the preferences if there is any uncertainty.

Hope this is of assistance in the meantime.

Regards

George Cilliers | Snr Manager (Development Assessment)
Phone 02 6207 6804
Planning Delivery| Environment, Planning and Sustainable Development| **ACT Government**

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22 June 2017

Anton Veld
Project Manager
Land Development Agency
Economic Development Directorate

Blocks 2 and 3 Section 67 Kingston – Endorsement of proposal for submission of Development Application with EPSDD

Dear Anton,

Please find attached additional information to support Development Application package submitted for LDA endorsement on behalf of the applicant, Keggins Estate.

Further to discussions on 19 June 2017 and email advice provided on 22 June 2017, please find a response to matters raised below.

Matter	Response
In general, LDA supports the inclusion of the substation within Block 2. We request you to check with your design team if the second driveway access is actually required, or if access could be from the main driveway and courtyard. Could you please provide a brief statement of what options you've investigated and agree to address landscape design, pedestrian/cycle access, outdoor lighting and parking controls in the detailed design.	The on-site substation location option presented with the submission provides an additional driveway access to the site from Honeysett View, resulting in the loss of one visitor car space along the verge. The design team has considered a single driveway option that would provide vehicular access to both the waste enclosure and on-site electrical substation, and we confirm that a singular access point from the internal courtyard does not appear to be feasible or practical to meet utility access requirements (ACTEW), based on advice provided by both our Civil Engineers Indesco and Electrical Engineers Rusden Consulting. The design team also looked at the option of having the waste facing Honeysett View, however based on the Waste Management Code, the hoppers are only to be moved by the waste operator 4 metres from the roller door on the waste enclosure to the waste truck. The option would require the hoppers to be moved along the footpath external to the site to be placed where the waste truck is operating – moving the hoppers to the courtyard and then back to the waste enclosure would have to be on a regular basis. The hoppers would need to be moved into place early to ensure they were already in place whatever time the truck arrived. This arrangement may also not be supported by ACT NoWaste – it is not the normal mode of operation. This option is also unlikely to be supported by TCCS as waste collection vehicles require daily access to the site, whereas access to the substation would be required infrequently (if at all). The design team would discuss and seek to gain agreement from TCCS during the design acceptance stage on access and verge treatment requirements for placement of traffic control devices (no parking signs), and to minimise the impact of the driveway (or remove if possible) to retain landscaping areas whilst meeting pedestrian, lighting and road safety requirements.

We trust this provides a satisfactory response to the matters raised. Should you have any questions please contact me on 0419 252 419.

Yours Sincerely,

N Jackson

Nichelle Jackson
Town Planner

Block 2 Section 67 Kingston

Application for Section 211 Exemption

Prepared for:

Keggins Estate

July 2017

CANBERRA TOWN PLANNING

Prepared by:
Canberra Town Planning

Hope Watson
Town Planner

Phone: 0402 062 627
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Version Control
09.05.17 :: Draft for Review
19.07.17 :: Final

Contents

1 Introduction

1.1 Brief Project Description

Block 2 Section 67 and part block 3 Section 67 Kingston are located in the Kingston Foreshore Development Precinct (KFDP). The blocks are subject to an approved Estate Development Plan (EDP DA201425921) with Block 2 Section 67 fronting Honeysett View.

A portion of this site was part of the former boat harbour, which was reclaimed following construction of a seawall (ERM, 2016). It is understood that the remainder of the site has been used for stockpiling during redevelopment works. Part of the site also previously contained a rowing club building, which is being demolished as part of the approved EDP works.

The proponent, Keggins Estate purchased Block 2 Section 67 Kingston and is proposing a new mixed use development on the site which will include construction of a four storey building with additional height elements, a central communal plaza at ground level, two levels of basement car parking and landscaping on site.

In addition, landscaping works on part of Block 3 Section 67 Kingston would be undertaken in association with the development on Block 2 Section 67 (these works have previously been approved as part of the EDP).

This site is listed on the register of Contaminated Sites under the *Environment Protection Act* 1997 and listing on this register is a trigger for development assessment in the Impact Track (under item 7 of Schedule 4 of the *Planning and Development Act* 2007 (the Act)) and therefore requires an Environmental Impact Statement (EIS) to accompany a development application.

1.2 Purpose of This Report

Proponents of a project that trigger or potentially trigger impact track assessment under the Planning and Development Act are required to use approved Form 1M to either:

- Request a Scoping Document for an EIS; or
- Apply for an Environmental Significance Opinion under Section 138AA; or
- Request an Exemption from the Minister for an EIS under Section 211; or
- Provide additional information to support an existing application.

This document has been prepared to request an Exemption for an EIS under Section 211 of the *Planning and Development Act 2007* (the Act). This report responds to the requirements of Form 1M to seek an exemption for the proposed works.

Section 211 of the *Planning and Development Act, 2007* applies where the expected environmental impact of a development proposal has been addressed by a recent study, and in such a case the proponent may apply to the Minister for an EIS exemption for the proposal.

The basis for this Section 211 exemption for the blocks are the previous Site Assessments and Management Plans that have been prepared in relation to the two blocks. In particular the following documents:

For Block 2 Section 67:

- Site Audit Statement dated 27 January 2016;
- Site Audit Report "Site 14 Developable Area and Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT dated 27 January 2016.
- EPA Endorsement of the Site Audit Statement and Report, for Block 2 Section 67 dated 18 February 2016;
- Development Environmental Management Plan Site 14 Developable Land Portion, Kingston Foreshore

For part block 3 Section 67:

- Site Audit Statement for Part Block 3 Section 67 dated 27 January 2016.
- EPA Endorsement of the Site Audit Statement and Report – Part Block 3 Section 67 dated 18 February 2016
- Site Audit Report "Site 14 Developable Area and Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston, ACT dated 27 January 2016.
- Development Environmental Management Plan Foreshore Land Parcel, Kingston Foreshore Development Precinct, Kingston ACT, January 2016.

1.3 Structure of This Report

This report has been structured around the information requirements identified in Form 1M. Specifically the requirements at Part 9 of the form are addressed in Table 1.

WHERE THIS REPORT DIRECTLY RESPONDS TO THESE REQUIREMENTS OR OTHER SECTIONS OF THE GUIDELINES, THE TEXT FROM THE FORM OR GUIDELINES IS REPRODUCED IN COLOURED CAPITALISED TEXT.

Table 1 – Structure of this Report

Document Requirements:	In this report:
A statement outlining the objectives of the project and why it is needed;	Chapter 2.
Description of the nature/type of project proposed by providing location map(s) of the project site(s), preliminary design drawings and satellite/aerial photographs;	Chapter 3
A preliminary risk assessment (PRA) based on the guidance document attached to this form;	Chapters 8, 9, 10 and 11
A description of the natural conservation values of the site based on the considerations listed in the "Preparation of an application for scoping and Preparation of an ESO" guideline available from the EPSDD website;	Chapter 7
A description of measures within the proposal that seek to avoid and minimise (and as a last resort offset) impact on identified conservation values (for ESO and Section 211 applications only).	Chapter 10
Any decision made under the EPBC Act in relation to this proposal.	Chapter 12
For s211 applications only, the following additional information is required:	
Details of qualifications, expertise and experience of the person(s) who conducted previous studies supporting the application;	Chapter 13

Document Requirements:	In this report:
Details of public consultation undertaken, as part of statutory requirement, for projects or previous studies included as supporting documentation undertaken. Details of public consultation not required for a statutory process should also be included;	Chapter 14
Verification from a qualified person that the information in the previous studies supporting the application is still current.	Not Applicable

1.4 Prescribed Criteria

Section 211 of the *Planning and Development Act 2007* provides the opportunity for development applications in the Impact Track to be exempt from requiring an EIS. The Minister may exempt a development application from a requirement to include an EIS if satisfied that the expected environmental impact of the development proposal has already been sufficiently addressed by another study, whether or not the study relates to the particular development proposal.

The *Planning and Development Regulation 2008* prescribes criteria that the Minister must take into account in deciding whether the environmental impact of the development proposal has been sufficiently addressed by the other study.

The following criteria are prescribed:

Table 2 - Criteria for consideration

Criteria	Comments
(a) whether the study was conducted by an appropriately qualified person with relevant expertise and experience in relation to the environmental values of the land in the proposal;	Refer to details provided in Chapter 13
(b) if the study does not relate directly to the proposal—whether there is sufficient detail to allow assessment of the environmental impacts likely to occur if the proposal proceeds;	The EMPs relate closely to the type of works proposed. The Audit Report and accompanying Site Audit Statements and Endorsements by the EPA confirmed that the blocks are suitable for the development being proposed.
(c) whether the part of the study relevant to the proposal required public consultation through a statutory process or as part of a government policy development;	Pre-DA Consultation has been undertaken as part of the Development Application package currently submitted for agency circulation with EPSDD. Refer to Chapter 14
(d) that the study is not more than 5 years old;	The studies relied upon are not more than 5 years old.
(e) if the study is more than 18 months old—that an appropriately qualified person with no current professional relationship with the proponent verifies that the information in the study is current.	Refer to details provided in Chapter 13

2 Objectives and need

STATEMENT OUTLINING THE OBJECTIVES OF THE PROJECT AND WHY IT IS NEEDED

This project relates to Block 2 Section 67 and Part Block 3 Section 67 Kingston. The proposal is for a new mixed use development and landscaping works on the block purchased by the proponent, with landscaping of the peninsula open space (Block 3 Section 67).

The Block has been purchased by the proponent, Keggins Estate, for the purposes of development.

Building Form

The building is made up of six micro-buildings, each served by one service core enclosing one elevator service and a stairwell. The micro buildings achieve greater privatisation for residents and reduced circulation areas, creating a sense of personal address within the building.

Each micro-building is of equal size, occupying a 30 degree segment of the building arc which sweeps through a total of 180 degrees.

By shaping the building in this way, every apartment is afforded solar access and lake views, while the segmentation effectively facilitates the built form outcome desired by the planning controls for the site.

Ground Floor Commercial Spaces

With reference to architectural Ground Level plan A0100, three separate tenancies are proposed at the ground floor level with the following areas:

- Tenancy 01 – 99m² of internal space and 41m² of terrace;
- Tenancy 02 – 99m² of internal space and 43m² of terrace; and
- Tenancy 03 – 128m² of internal space and 53m² of terrace.

Each of the tenancies will have a direct frontage to the lakeside promenade and transparent façades overlooking the Kingston Harbour. The terraces provide the opportunity for outdoor seating to activate the frontage.

The three commercial tenancies are provided rear access to amenities via a rear service corridor. The corridor will also provide the tenancies access to the waste management facilities via a door through to the waste enclosure. The commercial waste rooms is accessed via a goods lift within the ground floor lobby adjoining commercial tenancies.

The internal fitout of the commercial tenancies is not proposed as part of this application as it is intended that this would form part of future works (as required and to the detail of the individual tenant needs). Notwithstanding, each of these tenancies are proposed to be provided with amenities as well as commercial waste and recycling facilities integrated within the building services provisions.

Service vehicle parking is proposed within the central plaza of the building adjacent the waste enclosures, as identified on the General Arrangement Plan Ground Level A0100. This space is accessed via the vehicle entry from Honeysett View.

Basements

Two levels of basement car parking are proposed providing parking for 216 cars in the following arrangements:

- 146 car spaces for residential;
- 54 tandem spaces for residential;
- 8 shared disabled spaces; and
- 8 commercial spaces.

Of these parking spaces, all commercial and disabled spaces are provided on the upper basement level. The upper level also accommodates 55 single spaces (including 6 double lock up garages) and 16 tandem spaces for residential use.

The lower basement level includes 90 single car spaces and 38 tandem spaces for residential use.

In addition the basements accommodate storage areas (generally located near their respective parking space), motorbike parking, bicycle parking, stormwater tanks, waste facilities, communications and switch rooms.

Residential apartments

The proposal includes a total of 79 apartments including 22 two-bedroom apartments, 45 three-bedroom apartments/townhouses and 12 four-bedroom+ apartments/townhouses. The apartments are located across all six levels from ground to Level 5 as follows:

- Nine 2, 3 or 4-bedroom apartments on the ground floor with direct access to the public open space of the Jerrabomberra Creek Peninsula.
- 54 two, three and four bedroom apartments across levels one, two and three, 18 apartments per level.
- 16 ‘penthouse apartments’ within the taller building elements at the fourth and fifth levels in the form of:
    - 10 single level apartments on level four (‘sub-penthouse’ level);
    - five single level apartments on level five (penthouse level); and
    - one 2-storey, 5-bedroom apartment across levels four and five.

Landscaping

Landscaping will be provided as detailed in the Landscape Plans submitted with this Application.

3 Description of the project

DESCRIPTION OF THE NATURE OF PROJECT PROPOSED

3.1 The Proposal

The proposed development of Block 2 Section 67 Kingston includes:

- Demolition of existing structures located on Block 2 & 3 Section 67;
- Construction of a four storey building with additional height elements comprising:
    - Four levels of residential apartments with an additional two levels of penthouse apartments within taller elements, with a total of 79 dwellings across six levels;
    - 326sqm of lettable commercial space on the ground level plus associated services and amenities space;
    - Central communal and publicly accessible open plaza at ground level;
    - Two levels of basement car parking;
    - Private rooftop terraces, balconies and ground floor courtyards.
- Landscaping:
    - On site (Block 2 Section 67 Kingston);
    - Off site (Block 3 Section 67 Kingston) – approval required for any amendments proposed to detailed design plans.
- Site services, waste management arrangements, access arrangements, off-site works and other works

Off site works requiring development approval include:

- Modifications to Honeysett View verge to incorporate:
    - Construction of new verge crossings and removal of obsolete crossings;
    - Amended indented parking bays; and
    - Amendments to landscaping to accommodate the new verge layout, including replacement of any removed street trees.

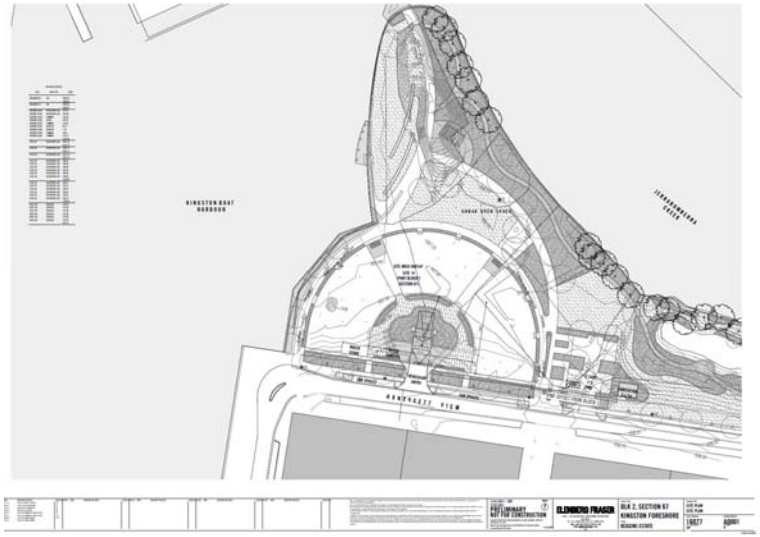

Figure 1: Indicative Site Plan (Elenburg Fraser)

Figure 2: Open Space Masterplan (Red Box Design Group)

4 Site Description

4.1 Location and Site Description

The blocks are located within the Canberra Central District in the Division of Kingston, approximately 4 kilometres south east of Canberra City. The location relative to Canberra City is illustrated in Figure 4 above.

The site is located within the suburb of Kingston on the southern shores of Lake Burley Griffin's east basin within the Kingston Foreshore Development precinct (KFDP). The site enjoys a waterfront location within the foreshore precinct.

The site is located to the east of the 'Kingston Harbour' on the 'peninsula' between the harbour and Jerrabomberra Creek. The site is the final developable parcel fronting the east side of the harbour and the proposed development together with landscaping of the peninsula open space (Block 3 Section 67) will complete development of the harbour frontage.

The site is a semi-circular shape with uninterrupted views to the east across Jerrabomberra Creek and wetlands, to the north across the lake, and to the west across the Kingston Harbour.

Block 2 Section 67 (development area) is 3,697m^2 in size, and part block 3 Section 67 (the Foreshore land parcel) comprises an area of approximately 2,906m2The development site (Block 2 Section 67) fronts Honeysett View.

The land uses surrounding the site are as follows:

- North – Jerrabomberra Creek and the Jerrabomberra Wetlands
- East – Jerrabomberra Creek, and Jerrabomberra Wetlands.
- South – Honeysett View and other mixed use development sites in Kingston - Section 66 is nearing completion and will provide four storey development with taller elements including residential and ground floor commercial tenancies fronting the Harbour.
- West – Kingston Harbour and Trevillian Quay developments

Figure 1: Regional Site Location (ACTMAPi May 2017)

Figure 2 - Site location (ACTMAPi February 2017)

4.2 Land custodianship

The block is subject to a holding lease to Keggins Estate, and a consequential Crown lease will be issued once Deed requirements are met.

4.3 Territory Plan

Block 2 Section 67 is subject to an approved Estate Development Plan which is to be zoned CZ5 Mixed Use, and Block 3 Section 67 is to be zoned PRZ1 Urban Open Space in the Territory Plan.

The site is also currently subject to a Future Urban Areas (FUA) overlay that will be uplifted in favour of the final land use zoning and planning controls.

The process to uplift the FUA from the Territory Plan (thus effecting a technical amendment to Kingston Precinct Code to include specific rules applicable to the subject site) has been initiated by the proponent and is expected to be completed in August 2017.

In CZ5 zones, residential use, car park, multi unit housing, non-retail commercial use, shop, restaurant are permissible uses and require a development application assessed in the merit track unless specified in Schedule 4 of the Planning and Development Act 2007 (as impact track) or specified as prohibited development in a precinct map.

In PRZ1 zones, parkland, minor road, minor use are also permissible uses and require a development application assessed in the merit track unless specified in schedule 4 of the Planning and Development Act 2007 (as impact track) or specified as prohibited development in a precinct map.

4.4 National Capital Plan

The site is also subject to Special Requirements under the National Capital Plan.

5 Description of the environment

The KFDP is located on the banks of Lake Burley Griffin in the district of Kingston, ACT. Historical land uses in the Kingston Area have included power generation, workshops, bus and transport depots and printing workshops.

In 1963 a harbour was constructed as part of the development of Lake Burley Griffin, and the western portion of the development site (Block 2 Section 67) comprised part of the former harbour (Golder and Associates, 2016). Between 2003 and 2008 the former harbour area was modified to include an additional inlet, which involved filling and reclamation to create the area which now comprises the development site (Block 2 Section 67) and land to the south.

Block 2 Section 67 is considered to comprise shallow fill material from various sources either pre-existing or placed during reclamation works (ERM, 2016).

A Rowing Club building was located on part of both the blocks relating to this application, but has been demolished as part of the approved EDP for these blocks. The remainder of Block 2 Section 67 is undeveloped land.

Part Block 3 Section 67 has not previously been used for commercial or industrial purposes, other than temporary stockpiling of soils (Golder and Associates, 2016). This area comprises vegetated open space land.

5.1 Topography

The topography of the site and surrounding area is flat, with a slight slope towards Lake Burley Griffin.

5.2 Geology

The *1:50,000 Geology Map of Canberra, Queanbeyan and Environs* shows the Kingston area to be underlain by sedimentary bedrock of the Canberra formation, comprising sandstones, shales and siltstones. Overlying the bedrock is Quaternary Alluvium deposited by paleochannels of the Molonglo River and Jerrabomberra Creek (Golder and Associates, 2016).

Depth to underlying weathered bedrock ranges from less than one metre in the west and southern parts of the KFDP, to greater than 10 metres in the harbour. Bedrock was not encountered in excavations undertaken by Coffey during redevelopment of the harbor area (Golder and Associates, 2016).

Fill was placed on much of the KFDP with a depth of fill of between 1 to 3 metres prior to remediation. Following remediation of the harbor additional fill was placed to achieve design levels. Portions of the development site (Block 2 Section 67) are reclaimed land, comprised of excavated soil and fill from within the KFDP and imported crushed rock (Golder and associates, 2016).

5.3 Soils

The audit report reviewed and summarized the previous reports and assessments undertaken in relation to the land, of which there have been numerous. Section 5 of the Audit Report details the assessment criteria adopted for the Audit of the site, which was based on the proposed land use, being high density residential and/or commercial uses.

Section 6 of the Site Audit report addresses previous investigations undertaken to assess the suitability of the site for the land uses proposed.

The audit report states that:

"The validation Report (ERM 2015a) and Foreshore ESA (ERM 2015c) confirmed that all recommendations other than soil sampling beneath the footprint of the Rowing Club building have been implemented, and that the site is suitable for the proposed high-density residential, commercial and open space uses."

Section 7 of the Audit report also addresses recent investigations which have been undertaken to address potential for stockpiling and construction materials to have impacted on the site. This includes a review of assessments undertaken as follows:

- ERM 2015 Environmental site Assessment on the Rowing Club; the Audit reports that the validation report concluded in relation to this that the land associated with the Rowing Club is suitable for high density residential land use, and potential risks associated with asbestos being present at the site can be management in accordance with the DEMP and OEMP.
- ERM 2015 Foreshore Area assessment which reassessed the soil investigation data based on the use of this area for public open space and recreational uses and found that the area was suitable for these uses subject to management of asbestos and unexpected finds in accordance with the measures described in the Foreshore DEMP and OEMP.
- Section 7.3 of the Audit report summarised assessment of stockpiles on the site, these Stockpiles are no longer extant on the site.
- Another stockpile (S14/SP11) assessment was reviewed and that this stockpile could be managed in accordance with the measures provided in the DEMP, it is understood that this has now been removed from the site.
- TH audit also reviewed an Environmental Asbestos Assessment undertaken on the site, which concluded that Asbestos Containing Material (ACM) may be present on the site.

The Auditors conclusion in the Audit report was as follows:

The Auditor considers there is potential for residual contamination to remain in the soil at the site and that this residual contamination can be managed through the implementation of appropriate management measures, including measures to manage health risks associated with asbestos that may remain on Site 14 after site development. (Golder and Associates, 2016).

5.4 Hydrogeology

Groundwater is present beneath the KFDP at depths ranging from 0.5 to 3 metres and generally flows towards the north east. The Audit report (Golder and Associates, 2016) considered it likely that the groundwater has been lowered by dewatering during excavation of the Harbour temporarily altering the natural groundwater flow.

On Block 2 Section 67, as provided in the Site Audit report, the validation report noted that groundwater was present with the shallow aquifers across the site and is likely to be influenced by Lake Burley Griffin, with inferred flow being westwards towards Lake Burley Griffin.

The Site Audit Report found that based on the previous investigations the Validation report concluded that the groundwater quality on the site does not present potential risk to receptors.

6 Assessment track

6.1 Impact track assessment

There are 5 types of development application that are required to be assessed in the Impact Track, and hence must be accompanied by a completed EIS (or be exempted by the Minister). These 5 types are listed in the relevant zone development table and are discussed below.

Table 3 – Development types required to be assessed in the impact track

Development	Commentary
1. A development that is not an Exempt, Code Track or Merit Track development where the development is allowed under an existing lease.	**Not applicable.** The proposed uses of the CZ5 zoned land are consistent with uses permitted under the merit track.
2. A development that would be permissible under the National Capital Plan but which is identified as prohibited development in the relevant zone Development Table.	**Not applicable.** The proposed development is not prohibited by the Territory Plan.
3. Development specified in Schedule 4 of the Planning and Development Act 2007 and not listed as prohibited development in the relevant zone Development Table.	**Applicable.** Table 5 below details the triggers for an EIS
4. Development declared under Section 123 and Section 124 of the Planning and Development Act 2007 and not listed as prohibited development in the relevant zone Development Table.	**Not applicable.**
Any development not listed in the relevant zone Development Table	**Not Applicable** The site is in CZ5 Mixed use and PRZ1 Urban Open Space and the development is listed as merit track assessable development.

The following table lists the triggers for an EIS from Schedule 4 of the Planning and Development Act. One trigger is identified.