



AECOM Australia Pty Ltd
Level 21, 420 George Street
Sydney NSW 2000
PO Box Q410
QVB Post Office NSW 1230
Australia
www.aecom.com

+61 2 8934 0000 tel
+61 2 8934 0001 fax
ABN 20 093 846 925

22 April 2014

Ron Meyer
Senior Project Manager, NSW
Lend Lease Construction and Infrastructure
Level 15, AON Building, Maritime Centre
201 Kent St,
SYDNEY NSW 2000

Dear Ron

SICEEP PPP - Contamination support letter for the Section 96 modification under the EP&A Act

1.0 Introduction

Lend Lease Construction and Infrastructure Pty Limited (Lend Lease) has requested AECOM Australia Pty Ltd (AECOM) to provide a letter detailing the potential contamination impacts for the removal of the majority of the 2.5 RL ground slab across an area within the Sydney Exhibition Centre (refer to green highlighted area in **Figure 1**) and if those potential impacts affect the risk profile of the site as determined in the remedial works plan (RWP – AECOM 2013¹).

2.0 Background

AECOM prepared the RWP for the redevelopment of the Public Private Partnership (PPP) area within the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Darling Drive, Darling Harbour, NSW (the Site). The RWP (AECOM, 2013) was based on retaining the existing 2.5 RL ground slab with removal in limited, selected areas for relatively shallow excavations to install utilities, strip footings and pile caps. The RWP (AECOM, 2013) formed part of a State Significant Development Application (SSD 12_5752) submitted to the Minister for Planning and Infrastructure pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Development Consent issued by the Department of Planning and Infrastructure in August 2013.

Lend Lease has informed AECOM that the existing ground slab is defective and will not support the proposed future development for the extent of the new Exhibition Halls and will need to be removed and replaced accordingly. Lend Lease is preparing to submit a section 96 modification under the EP&A Act for the removal of the majority of the 2.5 RL ground slab, with replacement of a higher grade slab (refer to **Figure 1**).

3.0 Proposed Modified Works

AECOM understands that the proposed modified works for the redevelopment of the Site are as outlined in Section 3.0 of the RWP (AECOM, 2013), with the exception of the pre-construction works, which will comprise the following:

- Demolition of the Sydney Exhibition Centre building to slab level;
- Construction of the new Exhibition Hall structure;
- Removal of the 2.5 RL ground slab across the area indicated in **Figure 1**, with the works conducted inside the new structure; and
- Replacement with a higher grade slab that supports the new development.

4.0 Potential Contamination Impacts

Based on the findings of the Human Health Ecological Risk Assessment (HHERA) (AECOM, 2013a), the RWP identified the following chemicals of potential concern (CoPC) for the PPP:

- **Soil:** Total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs); and
- **Groundwater:** heavy metals (namely Cu and Zn) and PAHs (fluoranthene and pyrene).

¹ AECOM. 2013. Remedial Works Plan, Public Private Partnership Area, Sydney International Convention Exhibition and Entertainment Precinct, Darling Harbour, NSW. 15 March 2013.

AECOM notes that an unexpected find, as defined in Section 6.1 of the RWP, has been identified within the approximate area of the 2.5 RL ground slab removal, during archaeological/heritage excavations conducted over the past three months (Excavation 7/T7, refer to location in **Figure 2**). This unexpected find comprised the discovery of black stained fill materials with a hydrocarbon odour at a depth of 2 metres below ground surface (bgs).

AECOM also notes that groundwater is not expected to be encountered during the removal of the 2.5 RL ground slab, and therefore does not require further consideration.

AECOM is of the opinion that potential contamination impact will occur during the removal of the ground slab, including:

- Exposing of known contamination in the area surrounding NBH10 in the northern exhibition hall and at Excavation 7/T7, also located in the northern exhibition hall, and remains on Site. Soil contamination at NBH10 comprised a Benzo-a-Pyrene (BaP) concentration of 6.5 mg/kg at a depth of 0.5 m below ground surface (bgs) and contamination at Excavation 7/T7 comprised BaP of 84.7 mg/kg, Total PAHs of 881 mg/kg, total recoverable hydrocarbons (TRH) C₁₀-C₁₆ of 370 mg/kg, TRH C₁₆-C₃₄ of 18,600 mg/kg and TRH C₃₄-C₄₀ of 4,170 mg/kg at a depth of 2.0 m bgs; and
- Exposing of unexpected chemical contamination: given the heterogeneity nature of the fill materials encountered on Site to date.

Removal of the slab will allow better visual and chemical characterisation of the underlying fill material. This will enable the Environmental Consultant to inspect (and sample if necessary) the excavation on a nominated 20 metre grid to identify the presence of any unexpected finds. Identification of any unexpected finds will be conducted in accordance with section 6.1.2 of the RWP (AECOM, 2013), with the impacted materials (not suitable for reuse on Site) disposed offsite in accordance with the NSW Department of Climate Change and Water (DECCW) *Waste Classification Guidelines* (NSW DECCW, 2009) and the remaining materials validated for the proposed end use of commercial land use.

5.0 Mitigation Measures

AECOM (2013) presents the mitigation measures that should be implemented at the Site to minimise any impacts to the environment or to human health (for the proposed end use and for the construction workers) during the removal and replacement of the 2.5 RL ground slab, which will be taking place within the new structure.

5.1 Erosion and Sedimentation Control

Erosion and sediment control will continue to be managed in accordance with the *Sediment Control Plan* (Hyder, 2013) as the slab replacement will be conducted under cover.

5.2 Water Management

The works will be conducted so as not to pollute water in accordance with section 120 of the *Protection of Environment Operations Act* (POEO Act, 1997). Surface Water management will be conducted in accordance with the RWP (AECOM, 2013) and based on the following:

- Stormwater will be directed away from the exposed areas within the Sydney Exhibition Centre;
- Sediment control devices will be installed around all stormwater drains, gutters and pits, and in depressions downstream of the Sydney Exhibition Centre prior to the start of works, to prevent sediment-laden water from entering the stormwater system or Cockle Bay. Stormwater inlet / grate openings within the vicinity of works that have the potential to receive contaminated waters are to be blocked through the use of barriers surrounding the inlet. All control devices will be inspected on a daily basis;
- If on-site stormwater comes in contact with excavated areas, then this stormwater is to be contained to allow stormwater collection, categorisation, appropriate water quality treatment and reuse, or, off-site disposal. No untreated sediment-laden surface water collected in these areas is to enter Cockle Bay or the stormwater system or is to be sprayed on other areas of the Site without prior testing and treatment (if required);
- If a wheel wash is installed, dirty water is to be pumped out and treated (e.g. with flocculent in a sealed skip bin) and reused onsite (if suitable) or disposed offsite at a licensed facility; and
- Before any on-site collected water is discharged to stormwater drains, sewers or other outlets, approval, permits and/or licences from relevant authorities will be required.

5.3 Material Tracking Procedure

All materials handled during the construction works will be tracked in accordance with the Quality Management Plan (QMP, prepared by the Civil Contractor) in order to allow verification of the correct movement and handling. This system will track the removal, stockpiling and disposal of the concrete slab to provide detailed information on the location and quantity of material movements both on and off-site, with all material handled accounted for, so as to reduce the risk of cross contamination between stockpiles.

5.4 Management of BACM

The management of BACM is controlled as an unexpected find in accordance with the RWP (AECOM, 2013).

5.5 Waste Classification for Off-site Disposal

Concrete is pre-classified as 'General Solid Waste' in accordance with the *Waste Classification Guidelines* (NSW DECCW, 2009) for off-site disposal to a licensed landfill.

AECOM notes that the concrete from the 2.5 RL ground slab, will be taken off-site to a concrete recycler in accordance with Lend Lease's CEMP.

5.6 Air Quality Management

Given that the removal of the 2.5 RL ground slab will be conducted under cover, air quality will continue to be managed in accordance with the *Air Management Plan and Stormwater and Erosion Management Plan* provided in the overarching *CMP* (Lend Lease).

5.7 Noise and Vibration Management

Acoustic impact management on Site should be informed by the outcomes of a noise and vibration impact assessment undertaken by others for the proposed works as part of the section 96 modification. As required by the DGR's (NSW DoPI, 21 January 2013) measures to minimise and mitigate potential noise impacts to the surrounding area will be undertaken to minimise potential noise and vibration impacts from removal of the 2.5 RL ground slab within the Exhibition Hall structure, and will be undertaken in accordance with:

- *Industrial Noise Policy* (NSW EPA, 1999);
- *Interim Construction Noise Guideline* (NSW DECC, 2009)
- *Assessing Vibration: A Technical Guidelines* (NSW DEC, 2006); and
- *Environmental Criteria or Road Traffic Noise* (NSW EPA, 1999).

The RWP (AECOM, 2013) outlines measures recommended to minimise potential noise and vibration impacts from the excavation works, and are to be applied in conjunction with any measures that are required from the acoustic impact assessment. Any amendments to the noise and vibration impact assessment as a result of the modification will be covered in Lend Lease's CEMP.

5.8 Contingency Planning

Procedures are outlined in the RWP (AECOM, 2013) for the identification and management of unexpected finds that may occur during the removal of the 2.5 RL ground slab. Given that a greater area will be visually inspected for the presence of unexpected finds, the Environmental Consultant will conduct a visual inspection on a 20 m grid across the exposed surface area and collect a bagged sample to measure headspace using a calibrated PID.

Other unexpected issues such as flooding, spills and leaks, fugitive emissions and odours are managed through the *CMP* developed by Lend Lease.

6.0 Conclusion

AECOM has outlined the proposed modification works comprising the removal of the 2.5 RL ground slab and its replacement for the proposed redevelopment. The potential contamination impacts that are likely to result from the removal of the 2.5 RL ground slab and its replacement have been identified, with the mitigation measures and management plans identified to minimise these impacts. Therefore the expected environmental impacts as a result of soil and groundwater contamination, from the amended works are considered to be minimal.

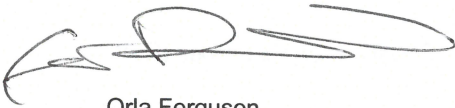
AECOM considers that the remediation strategy required with the removal of the 2.5 RL ground slab is consistent with the strategy outlined in the RWP (AECOM, 2013), which formed part of the original DA. An additional element of the management strategy will include a visual inspection/collection of bagged sample for screening

purposes using a PID, across a 20 m grid for the presence of unexpected finds in accordance with the RWP (AECOM, 2013).

AECOM concludes that the modification to the proposed development, which is consistent with the strategy in the RWP (AECOM, 2013) will provide benefit for greater characterisation of the underlying fill materials and enable any unexpected finds to be removed from the Site during the redevelopment.

If you have any other queries, please contact the undersigned.

Yours sincerely



Orla Ferguson
Associate Director - Environment
orla.ferguson@aecom.com

Mobile: +61 427 076 709
Direct Dial: + 61 2 8934 0252



Brad Eismen
Technical Director - Environment
brad.eismen@aecom.com

Mobile: +61 410 431 637
Direct Dial: +61 2 8934 0231
Direct Fax: +61 2 8934 0001

encl: Figure 1 - Site Layout
Figure 2 - Location of Unexpected Finds



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SITE LAYOUT AND SAMPLING LOCATIONS
 Sydney International Convention, Exhibition and Entertainment Precinct

FIGURE 1

Note: Borehole and Groundwater Monitoring well locations are based on Coffey Geotechnics Figure 1: Borehole location plan showing Coffey Investigations, Revision C, dated 11/01/2013



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LOCATION OF UNEXPECTED FINDS
 Sydney International Convention, Exhibition and Entertainment Precinct

Note: Trench locations identified by Casey&Lowe (Archaeology and Heritage) and Comber Consultants and surveyed for Lend Lease

FIGURE 2