SICEEP - The Haymarket – Response to Environmental Protection Authority Submission

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Licensing The Preliminary Geotechnical Assessment contained within Appendix F of the EIS states that excavation on site will be limited to half basements, footings and service installation, and remediation and archaeology works. However the EIS does not provide an estimate of the volume of soil that will be excavated on the site. On the basis of this information, it is unclear whether the proposal triggers the requirement for an Environment Protection Licence (EPL). It is possible that the volume of soil to be excavated on site may fall within clause 19 of Schedule 1 of the POEO Act, which lists 'Extractive Activities' on land that extract more than 30,000 tonnes per year as a scheduled activity. To ascertain whether an EPL is required, the proponent will need to calculate the weight of soil to be excavated on the site over a year period. If an EPL is required, the proponent will need to make a separate application to the EPA to obtain this licence once approval is granted.	There is limited excavation proposed on the Haymarket site with ancillary and public parking provided in the podium structures. Excavation will be limited to footing excavations, lift wells, underground services and the like. Excavation works associated with remediation and archaeological works may also be required. It is not anticipated that the proposal will involve the extraction, processing or storage of more than 30,000 tonnes per year of extractive materials.
Construction noise and vibration The EPA has reviewed the Noise and Vibration Impact Assessment (NVIA) contained within Appendix S of the EIS with respect to construction and operational noise and vibration, and makes the following comments and recommendations: • The NVIA does not appear to have made any predictions of noise from the proposed construction activities. In this respect it has not satisfied the project Director-General's Requirements (DGRs) and it is not adequate. • The NVIA states that vibration during construction is not expected to cause *adverse* human impacts and therefore no further assessment or consideration of mitigation measures would be undertaken in the NVIA Prediction of vibration impacts associated with construction of the proposal also lack detail as they do not consider project-specific construction methods and vibration sources. Vibration impacts therefore need to be assessed on a site-by-site basis for each Stage 2 application. • The NVIA proposes construction hours that are not consistent with the standard construction hours contained within the Interim Construction Noise Guideline (DECC 2009). The NVIA provides project specific operational noise criteria based on the intrusiveness and amenity criteria in the Industrial Noise Policy (EPA 2000). The amenity criteria provided in Table 5 of the NVIA have been calculated from the Industrial Noise Policy, *however* the noise levels used to calculate the criteria have not been provided. It is therefore not possible to assess whether these criteria have been calculated correctly.	As noted in the letter from the NSW EPA: • the subject SSDA seeks consent for a Concept Proposal including concept approval for staged demolition and a remediation strategy (not works); and • Stage 2 SSDAs on the Haymarket site will be lodged seeking approval for works including staged demolition and construction and associated remediation, as required. The Director-General's Requirements are written to cater for the staged nature and varying scope of the SSDAs and under the Key Assessment Requirements note that the requirements listed are to be provided as relevant for each individual SSDA. Accordingly the subject SSDA did not include a Noise and Vibration Impact Assessment that assessed the detailed construction as it is a Concept Proposal (Stage 1 SSDA) and does not seek approval for those works. In this regard, the extent of the assessment undertaken for the subject SSDA is entirely adequate to meet the requirements outlined in the Director-General Requirements. The assessment of Noise and Vibration impacts during construction will be undertaken as part of each Stage 2 SSDA. This is a matter appropriately dealt with via condition of consent, as has been recommended as appropriate by the EPA.

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• The NVIA states that the scope of the Assessment is to provide noise criteria and objectives for the concept plan only, as details regarding the development are not currently sufficient to allow a quantitative assessment. The EPA therefore recommends that a detailed NVIA incorporating operational noise and vibration be prepared for each subsequent Stage 2 application. The EPA therefore recommends that: • Project-specific noise and vibration impact assessments addressing noise impacts during construction and operation of the developments must be prepared for each Stage 2 application. These assessments must be prepared in accordance with the guidelines referenced in the project DGRs, and also include: • Assessment of the noise impacts associated with construction on other components of the SICEEP project that may be completed and occupied whilst construction works are undertaken. • Include assessment of cumulative impacts of construction of different elements of the SICEEP project concurrently on external and internal sensitive receivers. This could be achieved through an appropriate condition of approval (CoA).	
The EPA recommends a CoA requiring that construction works only occur within the standard construction hours of: • Monday to Friday 7am to 6pm • Saturday 8am to 1 pm • No work on Sundays or public holidays	It is ultimately proposed to undertake activities outside EPA recommended hours of construction. This will enable the construction activities to be carried out in a more efficient manner, thereby shortening the construction period during which receptors are exposed to construction-related noise and vibration impacts. Construction works will be undertaken during hours that are consistent with the City of Sydney Council's preferred hours for construction. These hours include Monday to Friday up to 7pm and Saturday afternoon up to 5pm, which recognises the urban nature of the city environment. This differs from the EPA guideline which covers the entire range of environments in NSW. As described in the Noise and Vibration Assessment (Addendum) at Appendix P, the detailed assessment and mitigation of Noise and Vibration impacts during construction will be undertaken as part of each Stage 2 SSDA. The imposition of conditions of approval in relation to construction hours is a matter appropriately dealt with via condition of consent as part of the Stage 2 SSDA.
The EPA recommends that the proponent should provide information regarding the LAeq contribution from industrial sources used to calculate the amenity criteria prior to approval. This will enable the EPA to assess the method used to calculate the amenity criteria for the operational stage of the development	Refer to Noise and Vibration Assessment (Addendum) at Appendix P in which Renzo Tonin & Associates has provided the following response. In regard to the establishment of the amenity noise criteria, the notes to Table 5 (set out on page 17 of

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and therefore whether the criteria used in the NVIA are correct.	the submitted Noise and Vibration Assessment for SSDA 2) outline the process used to modify the amenity noise criteria in accordance with the Industrial Noise Policy. As stated, the amenity criteria have been modified in accordance with Table 2.2 of the guideline, assuming the existing industrial noise contribution equals the measured background level. It is considered that the existing noise level is unlikely to decrease in the future. The high traffic noise environmental criteria has not been applied in the criteria as the majority of noise level measurements were carried out at street level and therefore lower traffic noise levels are expected at upper levels of development. The traffic noise correction could however reasonably be applied at lower levels of the development. No correction to the commercial premise criteria was determined to be required based on the measurement data. Table 1 below presents the noise levels used to establish the amenity noise criteria. This data will be included in each of the Stage 2 SSDA Noise and Vibration Impact Assessment reports, inclusive of in-principle allowable noise contributions for each development Plot within the Haymarket, in line with the cumulative assessment requirements of the amenity criteria. Table 1 – Existing Industrial Noise Level for Amenity Criteria, dB(A)

Location	Time Period	Existing Industrial Noise	INP Base Amenity Criteria	Modified Criteria
R1 – Peak Apartments	Day	55	60	58
	Evening	53	50	43
	Night	51	45	41
R2 – Holiday Inn	Day	57	60	57
	Evening	57	50	47
	Night	51	45	41
R3 - Southern Cross on Harbour	Day	60(57)*	60	57
	Evening	58(57)*	50	47
	Night	51	45	41

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	R4 – Novotel / Day / 58 / 60 / 56 Evening / 56 / 50 / 46 Night / 51 / 45 / 41 *Notes: Day is defined as 7:00am to 6:00pm, Monday to Saturday and 8:00am to 6:00pm Sundays & Public Holidays. Evening is defined as 6:00pm to 10:00pm, Monday to Sunday & Public Holidays. Night is defined as 10:00pm to 7:00am, Monday to Saturday and 10:00pm to 8:00am Sundays & Public Holidays. * Affected by higher traffic exposure, therefore criteria established based on Location R2.*
Contamination As advised in the EPA's letter to the Department of Planning and Infrastructure (DP&I) dated 11 January 2013, the project area is not currently regulated by the EPA under the Contaminated Land Management Act 1997 (the Act), nor has the EPA received any notifications of contaminated sites under section 60 of the Act. The EPA has therefore not completed a detailed assessment of the relevant sections of the EIS and technical papers with regard to contaminated land issues. The EPA has however assessed issues associated with groundwater discharge from the site and possible offsite impacts (see below).	Noted.
The EPA notes that the Section 7.9.1 of the Overarching Remedial Action Plan contained within Appendix K of the EIS states that the Site Auditor would be informed where any unexpected finds cannot be managed in accordance with the Plan. It is not clear whether a Site Auditor will be engaged for the project as this is not stated in any other area of the EIS.	Graeme Nyland, of ENVIRON Australia Pty Limited, an EPA Accredited Site Auditor 9808, has been engaged by Lend Lease as the auditor for the Haymarket Precinct.
The EPA recommends that site-specific remediation action plans, incorporating an unexpected finds protocol, are prepared for future development stages. This may be done via an appropriate CoA.	Noted and agreed. A Site Specific Remedial Action Plan forms part of the three Stage 2 SSDAs submitted to the Department of Planning and Infrastructure. Any future Stage 2 SSDAs for the Haymarket will also include a Site Specific Remedial Action Plan.
Groundwater Director General's Requirement (DGR) 9 requires the EIS to address the likely groundwater risks on the site and measures to ameliorate any impacts, whilst DGR 14 requires the EIS to address water quality impacts during construction including the source, volume, frequency and on-going monitoring methods, as well as provide mitigation measures to minimise impacts on the surrounding area. Given the high water table encountered on site (Preliminary Geotechnical Assessment, Appendix F of EIS) it is possible that dewatering of excavations will be required during construction and basements during operation of	Coffey has prepared a Preliminary Groundwater and Dewatering Assessment (refer to Appendix O). The findings of the Assessment are discussed at Section 2.6 of the Response to Submissions Report. In summary: *Dewatering* Coffey has noted that the proposed development will not involve the construction of basements below the groundwater level. Hence, extensive construction dewatering will not be required. However, elements of

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the development. The EIS does not include an assessment of the likelihood of dewatering during either construction or operation, or any estimate of the likely groundwater inflow volume or rate to excavations or basement areas. The Preliminary Geotechnical Assessment does however recommend that any basement areas should be tanked to prevent groundwater inflow. It is important to note that the GPO Fault and Great Sydney Dyke may pass through the site, and these have the potential to increase groundwater conductivity if intersected during excavation. The EPA considers that the characterisation of groundwater quality in the EIS is not adequate to enable an accurate assessment of the suitability of groundwater to be discharged from site via stormwater or directly to Cockle Bay. The Overarching Remedial Action Plan (Appendix K) states that although groundwater contamination is limited on site, it is likely that deeper excavations requiring dewatering would likely require on site treatment prior to disposal to stormwater or Cockle Bay. The EPA is particularly concerned that the EIS does not contain any groundwater analysis results for iron or manganese, which are commonly found at elevated concentrations in groundwater in the Sydney city area, and may have adverse water quality impacts if discharged to Cockle Bay. In addition, the EIS does not provide an adequate level of information regarding the background water quality conditions of receiving waters and an account of whether groundwater would be suitable for discharge to this environment; the location of any proposed discharge points; the volume and frequency of groundwater expected to require discharge; and monitoring methods to ensure groundwater discharged from the site is suitable on an ongoing basis. The EPA recommends: • Additional information is required prior to approval regarding the need for ongoing dewatering of basement areas during operation of the facility. In particular, information regarding whether it is likely that groundwater will be collected and discharged from excavations and basement areas; the location of any discharges; and details of any treatment required, and commitment to do so. • If groundwater is proposed to be discharged to stormwater or Cockle Bay during construction or operation of the facility, additional groundwater monitoring is required prior to construction, through placement of an appropriate CoA. This monitoring should include (but not be limited to) analysis of iron and manganese concentration. The monitoring report should include: o An assessment of the background conditions of the proposed receiving environment with reference to the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and the Marine Water Quality Objectives for NSW Ocean Waters; o An assessment of the suitability of groundwater for discharge to the local receiving environment (incorporating results from previous groundwater monitoring as well as recent monitoring);	the development may require localised dewatering. These elements could include: trenches for drainage and sewer works, lift pits associated with new tower structures, water retention structures as part of WSUD initiatives and grease traps for trade waste generated from retail uses. These elements fall within two broad categories: ▪ Narrow longitudinal excavations where one side of the excavation area is significantly longer than the other, such as for drainage/sewer lines; and ▪ Rectangular excavations, such as for lift pits and water retention (tank) structures. It is understood that these elements will be tanked, and will not experience groundwater inflow / seepage during operation. However, these elements may require dewatering during construction. On this basis, Coffey has undertaken a preliminary assessment of the likely groundwater inflow during construction for the two types of excavation. The assessment was made on the following assumptions: ▪ Groundwater level 2.4m below ground (based on site measurements); ▪ Hydraulic conductivity of fill 0.2m/d (upper end of falling/rising head test results); ▪ Excavation of pits no more than 2m below the groundwater level and excavation of trenches no more than 1m below groundwater level; ▪ Low permeability rock at a depth of 10m below ground level (typical value from earlier field studies); and ▪ No high permeability features such as gravel filled trenches intersect excavations below the water table. Based on these assumptions it is assessed that inflow to individual open pits of up to 5m x 10m would be unlikely to exceed 0.2L/s and inflows to trenches would be unlikely to exceed 0.5L/s per 100m length of trench. Inflows would be greatest immediately following excavation and would reduce over time as the extent of influence gradually increases. *Water Quality* The findings of the surface water quality assessment are considered to be indicative of a modified and highly trafficked marine environment. The analytical results of samples collected from Cockle Bay suggest that chemical quality of this water body generally meets the trigger levels for the protection of marine aquatic species as set out within ANZECC (2000). The presence of heavy metals such as copper and mercury may be attributable to antifouling measures applied to older ships and other marine structures, and/or derived from runoff from the urban

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o The proposed location of discharge points; o The volume of water expected to be discharged and the frequency of any discharges; o Any treatment required prior to discharge; and o Details of any proposed water quality monitoring. The EPA recommends a CoA requiring that any water discharged from the site must comply with section 120 of the *Protection* of *Environment Operations Act 1997*.	environment which surrounds Cockle Bay, rather than a specific point source. When considered against the visual amenity criteria set out within the Marine Water Quality Objectives for NSW Ocean Waters, it has been determined that Cockle Bay generally meet these criteria, although the presence of occasional floating debris was observed during sampling. *Groundwater Quality* Analysis of groundwater samples collected from across the site indicates a pH neutral, brackish to saline environment which is consistent with historical reclamation of the land and \ the site's proximity to Cockle Bay. Groundwater analytical data collected from previous and recent sampling events is presented at Appendix E of Coffey's Assessment. In summary, Coffey has determined that: ▪ The direct discharge of groundwater abstracted from excavations during construction to Cockle Bay would contribute to the existing contaminant load within Cockle Bay, however it is assessed that any increases in chemical concentrations would generally be below the limits of detection. ▪ Groundwater abstracted from excavations at the site is likely to include suspended solids. Direct discharge of sediment laden groundwater to stormwater drains that discharge to Cockle Bay would almost certainly generate visual sediment 'plumes' which would be not be aesthetically acceptable. ▪ A proportion of the chemical constituents reported within groundwater readily adsorb to sediment, which may lead to further concentration of certain chemical constituents in areas surrounding the existing stormwater outfalls. On the basis of groundwater analytical data available for the site, it is assessed that groundwater abstracted from excavations within the site during construction would not be suitable for direct discharge to existing stormwater drainage or local sewer connection without some prior treatment. Based on the above, Coffey makes a number of recommendations for water monitoring during construction. In summary, groundwater would need to be monitored for the following parameters: ▪ pH;

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	▪ Suspended and total dissolved solids; ▪ Heavy metals including arsenic, cadmium, chromium, copper, iron, lead, nickel, manganese, mercury and zinc; ▪ Inorganics including ammonia, nitrate, sulphide and sulfite; and ▪ Petroleum Hydrocarbons (TPH, BTEX and PAH). Appropriate groundwater management treatment options will be determined and approved in accordance with the relevant regulatory processes during the detailed construction phase, following additional water quality assessment.
Water Quality and Site Management DGR 14 requires the EIS to address construction water quality impacts including details of the source, volume, frequency and monitoring methods and to provide mitigation measures to minimise soil and stormwater impacts to the surrounding area. The EIS not contain any assessment of construction water quality impacts and as such does not satisfy this DGR. The EIS does however commit to the preparation of a Construction Management Plan for each Stage 2 application, which will outline stormwater and erosion control measures to be implemented. The EPA recommends: • All Stage 2 development applications must include an assessment of water quality impacts in accordance with DGR 14 and advice regarding construction water discharges contained within the EPA's letter dated 11 January 2013 and appended to the project DGRs. • An Erosion and Sediment Control Plan, including water discharge considerations, must be prepared prior to construction for all Stage 2 applications in accordance with 'Managing urban stormwater: soils and construction' (Landcom 2004). The EPA recommends a CoA requiring this. • A CoA requiring construction to be undertaken in accordance with the Erosion and Sediment Control Plan.	As described above, the Director-General's Requirements are written to cater for the staged nature and varying scope of the SSDAs and under the Key Assessment Requirements note that the requirements listed are to be provided as relevant for each individual SSDA. The SSDA does not include detailed construction works and monitoring and mitigating measures as it is a Concept Proposal (Stage 1 SSDA) and does not seek approval for those works. In this regard, the extent of the assessment undertaken for the subject SSDA is entirely adequate to meet the requirements outlined in the Director-General Requirements. The assessment of water quality impacts including soil and erosion control during construction will be undertaken as part of each Stage 2 SSDA. This is a matter appropriately dealt with via condition of consent. In addition, Lend Lease will ensure that construction is undertaken in accordance with the soil and erosion control measures. This is a matter appropriately dealt with via a condition of consent on the future Stage 2 SSDAs.