

## **Annexure 5**

Hazardous Substances Advisor Assessment

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Commercial-in-Confidence

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## Hazardous Substances Assessment of Application SR S14663, 1 Molesworth Street, Wellington

### 1.0 Introduction

AECOM New Zealand Limited (AECOM) has been engaged by Wellington City Council to undertake a technical review of the documentation provided as part of a resource consent application for the proposed new building within the Parliamentary precinct at Museum Street, Pipitea Wellington.

The document is intended as a peer review of the management and appropriate considerations for the use and storage of hazardous substances within the facility.

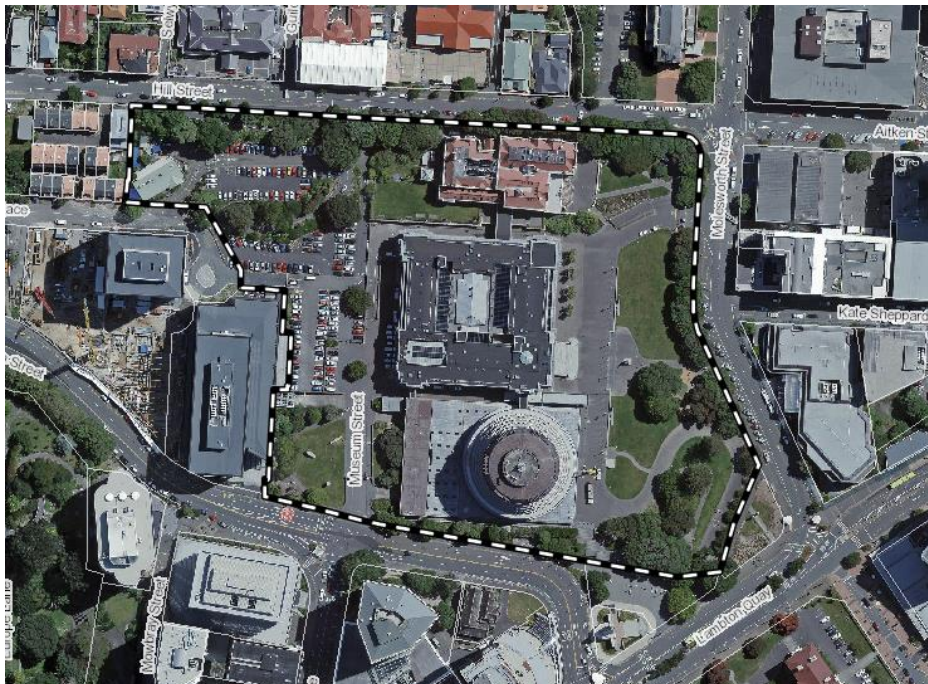
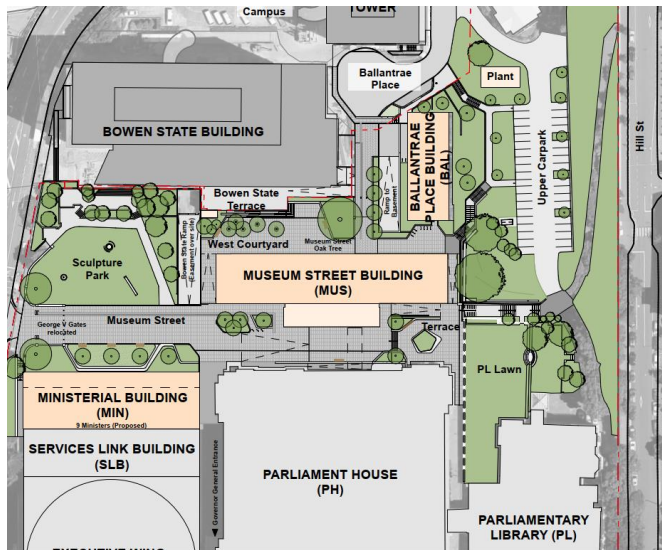


Figure 1: Existing Parliament Precinct



**Figure 2: Proposed New Museum Street Building housing diesel fuel supply in basement**

The location at the Parliamentary Precinct within the city centre zone in Wellington City. The site has an area of approximately 4.56ha and is zoned 'Central Area' in the WCC District Plan (WCCDP).

The proposal involves installation of new tanks for the storage of diesel within the basement of the proposed building called the Museum Street building and additional hazardous substances listed in section 2.0 of this document (also provided in Section 2: Hazardous Substances on site of the Hazardous Substance Assessment report by ENGEO Ltd dated 26 July 2022). These are necessary as fuel supply for the emergency generators that are proposed within the basement.

**2.0 Assessment on Hazardous substance Inventory**

- Diesel HSNO review is based on the following associated classes 3.1D, 6.1E, 6.3B, 6.7B, 9.1B which has been reviewed as part of the HSNO report.

Existing Hazardous Substance on site

- An existing in-ground fuel tank storing diesel (to be removed as part of the redevelopment works).
- Two existing Caterpillar 3,408 diesel-powered generators located in the basement of the Parliament House building. Each assumed to contain 46 litres of CAT DEO 15W-40 Engine Oil.
- Three existing transformers located in the basement of a Parliament House building. Two of these transformers are 1.5MVA and the third is 750kVA. Assumed that these transformers contain 1,215 litres and 730 litres of Savita transformers oil respectively

As a result of the proposed site development works additional hazardous substances will be present on- site in the following locations / equipment:

- Two new diesel- powered generators located on the ground floor of the Museum Street building. Each generator will contain 62 litres of CI-4 15 W lubricating oil. Each generator will have an associated 500 litre diesel standalone double skinned Super Vault day tank which will be located in the basement of the Museum Street Building.
- Four SVR 7000 ( 7216 litres) standalone double-skinned Fuel Chief SuperVault diesel located near in the basement of the Museum Street building.
- One SV3 11,000 (11,400 litres) standalone double – skinned Fuel Chief SuperVault diesel tanks located near to the existing generators in the parliament house carpark, to the east of the Museum Street building.

- The roof of Ballantrae Place building which will include four heat pump chiller units, each containing 160kg of R134A refrigerant gas and 25L of lubricating oil (Assumed Trane Oil 0057E).
- An external plant room area of the Museum Street building to include four chiller units. Assumed same volumes of refrigerant gas and lubricating oil as the Ballantrae Place building (R134A refrigerant gas and 25 L lubricating oil Trane Oil, 0057E).

**3.0 Statutory Assessment Hazardous Substances**

The following documents have been reviewed as part of the Hazardous Substance review

- Assessment of Environmental Effects Report, Parliamentary Precinct, 1 Molesworth Street, Wellington (the AEE report)
- HSNO Report ENGEO Limited, 17 September 2021 (Appendix 16 of the AEE report) (the HSNO report); and
- Hazardous Substances Assessment in response to RFI letter Ref 1199795 – Parliamentary Services, Museum Street, Pipitea, Wellington, prepared by Engeo Ltd 26 July 2022 (the Hazardous Substances Assessment).

**4.0 WCC Operative District Plan**

To prevent or mitigate any adverse effects of hazardous substances the proposed activity is assessed using the Hazardous Facility Screening Procedure (HFSP).

The HFSP is incorporated within the WCCDP and is covered in section 13.6.2.3 of the WCCDP

**4.1 Hazardous Facility Screening Procedure Review**

The approach taken by ENGEO in relation to the HFSP assessment was done based on all the expected hazardous substances within 30m of the proposed development area that are present within the site to recognize Section 3.5 WCDP ‘in some cases, proposals involving the establishment of new hazardous facility may add to the number of hazardous facilities already existing on a site’.

AECOM believe this to be a sensible approach.

The Effect Ratio calculated using the HFSP was provided in the Hazardous Substance Assessment – ref 19261.000.001\_04 document dated 26 July 2022. The effects ratio has been calculated for each of the effects (fire/explosion, human health, and environment) and divided based on location.

AECOM confirm the quantities, methodology and calculation has been checked and appropriately verified in accordance with the guidance provided in Section 3.5 WCCDP for substances with a HSNO classification and with reference to relevant safety data sheets (SDS) supplied for diesel and Trane Oil (As part of Safety Management Plan (SMP) draft provided by ENGEO dated 26 July 2022)

The HFSP concluded that the activity is a discretionary (restricted) activity in a ‘Hazard Area’ as the effects ratio exceeds both fire explosion and environmental effects under section 13.6.2.3 for the ‘use, storage and handling of hazardous substances’ at the site. AECOM concur with the conclusion of the assessment.

**Table 1: HFSP classification criteria WCCDP**

Location	Hazard Area	Non-Hazard Area	Either Area
Effects Ratio	0.002 <ER <- 0.05	0.002 < ER <0.1	<0.002
Conditions applying	13.6.2.3.2 to 13.6.2.3.12	13.6.2.3.2 to 13.6.2.3.12	13.6.2.3.9, 13.6.2.3.9 and 13.6.2.3.12

**5.0 Chapter 13 Central Area Rules**

The hazardous substance assessment considers the rules to be applied against section 13 Central Area Rules of the WCCDP. The calculated cumulative effects ratio has determined this to be a

discretionary (restricted) activity which must be assessed against Rules 13.6.2.3.2 - 13.6.2.3.12 of the WCCDP.

AECOM consider reviewing the assessment against the relevant matter of Policy 12.2.14.5 is useful for verification.

Matter	Comment
<p>Site layout design and management to avoid, remedy or mitigate any adverse effects of the activity.</p>	<p>The AEE states that proposal of the storage of diesel tanks within the basement of the Museum Street building and references as part of the report – Appendix 16 is an assessment of this aspect prepared by ENGEO Ltd dated 17 September 2021. As noted, ‘The report makes several recommendations for the design and commissioning of the proposed new tanks’ which the application accepts.</p> <p>AECOM conclude that the HSNO report has thoroughly considered the risks and suggested mitigation associated with the four SVR 7000 standalone diesel tanks in the basement with the relevant regulations that considers hazardous substances i.e., HSW (Hazardous Substances) 2017 pertaining on.</p> <p>AECOM has not sighted any review either under the HSNO report or relevant assessments that include the other additional hazardous substances to be present on-site specifically considerations for the SV3 11,000 (11,400 litres) standalone double- skinned diesel tank located near the existing generators in the Parliament House carpark and the 500 litre diesel service tanks to be in the basement of the museum street building.</p>
<p>The adequacy of the design, construction, and management of any part of a hazardous facility site where hazardous substances are used for their intended function, stored, manufactured, mixed, packaged, loaded, unloaded, or otherwise handled such that:</p> <ul style="list-style-type: none"> <li>• any significant adverse effects of the intended use from occurring outside the intended use, handling or storage area is prevented</li> <li>• the contamination of any land in the event of a spill or other unintentional release of hazardous substances is prevented</li> <li>• the entry or discharge of the hazardous substances into surface or groundwater, the stormwater drainage system or into the sewerage system (unless permitted under a regional plan, resource consent or trade waste permit) is prevented.</li> </ul>	<p>The HSNO report, Hazardous Substance Assessment, and associated request for information (RFI’s) adequately cover the accepted recommendations in the AEE under Section 4.2.11.</p> <p>AECOM request the consideration of the HSNO assessment be amended to the transfer of fuel considered from the fuel tank outside the building and the location where loading and unloading of fuel processes are in place i.e., interceptor at fuel transfer locations. Washdown areas and discharge and effluent spill prevention consideration by design to separate from stormwater drainage system and surface groundwater system.</p>



Matter	Comment
<p>Necessity for secondary containment of bulk storage vessels</p>	<p>The bulk storage vessels require to allow for a holding capacity of 110% for secondary containment for each tank. The stationary container tanks are Super Vault double skinned stationary container systems with an acceptable standard under the Health and Safety Work (Hazardous Substance) Regulations 2017 (HSW(HS)Regs 2017) i.e., SwRi 95-03. The tanks are double skinned and 4- hour fire exposure resistant with a 240/240/240 rating, this is standard and widely acceptable means of compliance within the industry for the requirements of secondary containment.</p> <p>AECOM recommend that the HSNO report scope be extended to include the suitability of the 11,400 litre Standalone tank located near the parliament building as part of the overall assessment as well as the associated waste storage tanks where applicable</p>
<p>Location of and separation distance between the hazardous facility and residential activities</p>	<p>The area being within the parliament precinct, residential activities are not present.</p>
<p>Location of and separation distance between the hazardous facility and critical facilities and lifelines</p>	<p>The hazard facility of importance with accumulated volumes of 28,000 litres is located at the basement of the Museum Street Building this meets the requirement on mitigation with respect to stationary tanks being located at the lowest level of a building.</p> <p>Compliance with this requirement satisfies the requirement to be away from critical facilities and lifelines.</p>
<p>Location of the facility in relation to the nearest waterbody or the coastal marine area.</p>	<p>The application states that the site is well separated from the coastal marine area or the waterbody.</p> <p>This has also been considered as part of the HFSP</p> <p>There is potential of stormwater discharge to provide a pathway to surface water and should be reviewed upon design.</p>
<p>Access routes to the facility, location and separation distance between the facility and sensitive activities and uses, sensitive environments and areas of high population density.</p>	<p>The HSNO report concludes that as per regulations 17.63 (3) if the internal combustion engine / generator of a stationary container system is in a building, the PCBU (stands for Person Conduction a Business or Undertaking) must ensure that a stationary tank is part of the system located (a) outside the building; (b) in that building; (c) in another building (d) in any building</p> <p>The HSNO report concludes that because the generators fuelled by the fuel tanks are in the</p>

Matter	Comment
	<p>same building for the Museum Street building and a different building referring to the Parliamentary House generators; the location of the fuel system looks at the most suited clause to be 17.63 (d) 'in any building'</p> <p>As the locations where the stationary tanks to be placed are known; AECOM's opinion is that the clauses best suited to the arrangement should consider a review of: -</p> <ul style="list-style-type: none"> <li>• 17.63 (3) (b) for stationary tanks 'inside that building' to consider the tanks being in the same building as the Museum Street building where Regulations 17.63 (4) will need to be reviewed; and</li> <li>• 17.63 (3) (c) for stationary tanks 'in another building' for generators in the Parliamentary house or if it is determined that the fuel tank that is located near the Parliament carpark is to fuel the generator in that building then clause 17.63 (3) (a) will apply.</li> </ul>
<p>Transport of hazardous substance to and from the site, including the tracking of wastewater it is disposed off-site</p>	<p>The application does not detail the transport considerations of hazardous substances on site. No information is provided about frequency of delivery of substances on site and recommend further consideration.</p> <p>Whilst there are wastewater tanks shown in the basement level; no information on volume, tracking and disposal of wastewater off site has been provided. Further consideration is recommended further.</p>
<p>Existing and proposed (if any currently under consideration by Council) neighbouring uses.</p>	<p>The application considers the activity of neighbouring buildings under the WCCDP Compliance assessment. AECOM considers this adequate.</p>
<p>Potential cumulative hazards presented in conjunction with nearby facilities.</p>	<p>The HFSP considers cumulative volumes of hazardous substances on site.</p>
<p>Potential for contamination of the surroundings of the site and sensitivity of the surrounding environment</p>	<p>Containment, site procedures and trade waste / stormwater treatment will be key to preventing contamination.</p>
<p>Fire safety and fire water management</p>	<p>The application does not make any reference to fuel supply with respect to fire safety and fire water considerations.</p>
<p>Site drainage and utility infrastructure</p>	<p>Site drainage and trade waste treatment will be key to preventing contamination.</p>
<p>Whether the site has adequate signage to indicate the presence of hazardous substances.</p>	<p>The SMP and HSNO Report specifies the signage requirements for the hazardous substances for the site.</p>
<p>Whether adequate arrangement has been made for the environmentally safe disposal of any hazardous substance or hazardous wastes generated.</p>	<p>The application has not considered hazardous waste generated from the generators and the appropriate disposal off it.</p>

Matter	Comment
	The wastewater tanks will also need to be considered on whether it has an appropriate HSNO classification that applies.
Whether the site design has been subject to risk analysis, such as Hazop (Hazard and Operability's Studies), to identify the potential hazards, failure modes and exposure pathways.	A HAZOP or relevant risk assessment has not been completed. AECOM recommend a 'What if' analysis at the concept stage and a Sustainability and Safety in Design (SSID) prior to every construction stage.
Where the hazardous facility is located within a Hazard Area, any additional requirements to mitigate the potential effect of a natural hazard event.	The application indicates that the proposed building will be constructed to IL4 seismic resilience standard and with plant and other facilities to be self – sufficient – designed to enable essential parliamentary functions to be continued after a major natural disaster. This provides adequate mitigative measures for environment effects and potential for exposure of hazardous substances to be low risk.
Type and nature of the existing facility.	The proposed Museum Street Building is not an existing facility
Whether appropriate contingency measures and emergency plans are in place.	A draft SMP has been sited and it understood that this will evolve to incorporate the specific requirements of the Emergency Response Plan as required under the consent conditions and encompassing the Hazardous Substance management requirements stated in Appendix 16, Section 4.4 of the application.
Whether the facility complies with the provisions of the Hazardous Substances and New Organisms Act 1996, and whether more stringent controls are required to take account of site-specific conditions.	<p>The application has considered the controls under the relevant regulations for HSW (HS) Act 2017 with reference to Appendix 16 -HSNO report by Engeo Ltd. AECOM agree that the approach stated is adequate to ensure the adverse environmental effects of hazardous substances, including any potential effects are avoided remedied or mitigated.</p> <p>Additional consideration to the HSNO report to be looked at further is as below</p> <ol style="list-style-type: none"> <li>1) The SV3 11,000 (11,400 litre) double skinned tank including pipe connections, location w.r.t facilities, emergency management and separation distances</li> <li>2) Consideration to tanks in that building for the Museum building and tanks in another building for generators in the Parliament building</li> <li>3) Consideration on Waste water tanks on whether hazardous and appropriate controls associated to the overall design</li> </ol>



## 6.0 Suggested conditions (with regards to Hazardous Substances)

AECOM agree with proposed conditions as per section 4.2.11 to follow through with recommendations as listed in Appendix 16 – HSNO report by ENGEO Ltd dated 17 September 2021: with the exception of the following points below:

- AECOM conclude that the 4 x 7216 Litre fuel tanks SVR 7000 Fuel-Chief Super Vault tanks situated in the museum street building are to supply fuel to the generators in the same building. As a result AECOM believe that the appropriate Regulation 17.63 (3) (b) for the Museum Street building holding fuel should be looked at under as per requirements that fall under fuel supply 'in that building' (17.63 Subclause 4 under HSW (HS) Regs 2017) and 'in another building' (17.63 Subclause 6 under HSW (HS) Regs 2017) if the same SV4 fuel tanks are to supply fuel to the generators housed in the Parliament building.
- As a consequence of the above, the separation distances in section 4.4 of the HSNO report will need to be reviewed

AECOM recommend that an addendum to the HSNO report be provided to include:

- A review of the SV3 11000 diesel fuel tank (11,400 Litres)
- A review of hazardous classifications required for the wastewater tanks situated in the museum building and appropriate controls associated to the overall design has been verified and deemed sufficient.

Kind regards,

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