HAZARDOUS CHEMICAL REPORT

CONCORD HOSPITAL
REDEVELOPMENT
STAGE 1 AND CONCEPT

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<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Reason for Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft</td>
<td>June 25, 2018</td>
<td>Draft for comment</td>
</tr>
<tr>
<td>Issue 1</td>
<td>June 29, 2018</td>
<td>Current chemical inventories confirmed from current Manifest and Notification (no substantive changes to this report resulting)</td>
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Introduction

This SSDA report seeks consent for the proposed redevelopment of Concord Repatriation General Hospital to improve and replace outmoded facilities to meet the substantial growth in clinical service demand across the hospital’s catchment:

- Concept approval is sought for the redevelopment indicatively comprising 82,000sqm GFA, to be undertaken in two (2) stages including:
  - Clinical Services Building (CSB) and multi storey carpark (Stage 1); and
  - Acute Services Building (ASB) and multistorey carpark (Stage 2).

- Detailed approval is sought for the Stage 1 construction of the proposed CSB (44,000sqm GFA) and the construction of a multi-storey car park located to the north of Hospital Road.

Detailed development approval for the proposed Stage 2 works will be completed at a later date and does form not part of this SSDA. The Stage 1 Detailed works are estimated to be completed by end 2021.

The proposed Concept redevelopment is in accordance with the concept architectural package prepared by Jacobs.

The proposed Stage 1 detailed development (CSB and multistorey carpark) is in accordance with the architectural drawings prepared by Jacobs.

The areas in the below staging plans have been assessed and are included within this report.
STAGE 1 PROPOSAL

STAGE 2 (FUTURE EXPANSION)
Executive Summary

The purpose of this report is to document the planning status of the Stage 1 development under State Environmental Planning Policy No.33, “Hazardous and Offensive Development Application Guidelines” (“SEPP33”). Inventories of the various classes of chemicals are compared to the threshold requirements set out in SEPP33. In all cases these inventories and/or their locations are less than the threshold quantities or distances and therefore it is concluded that the development should be assessed as not hazardous under the SEPP.

None of the chemicals stored on site (with the exception of extremely small quantities associated with pharmacy stores) are located in the new Stage 1 building nor in the new car-park, so the proposed development, with two exceptions, has limited impact on the storages. The exceptions are back-up generator diesel fuel (in an underground tank) and the back-up liquid oxygen tank. The diesel tank will be removed completely and replaced by a new generator and tank in the area to the south of the new building. The relocation of a bulk Liquid Oxygen tank, together with medical gas cylinders, has been dealt with in a separate report, Document No.: CH-O233-0218), and does not form part of this development.
### Hazardous Chemicals Stored

<table>
<thead>
<tr>
<th>Class</th>
<th>Material</th>
<th>Inventory</th>
<th>SEPP33 Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Flammable gases</td>
<td>Nil*</td>
<td>16cbm</td>
</tr>
<tr>
<td>2.2</td>
<td>Inert gases</td>
<td>1700 litres (w/c)</td>
<td>Not subject to SEPP33</td>
</tr>
<tr>
<td>2.1/5.1</td>
<td>Oxidizing gases</td>
<td>Refer separate report</td>
<td>Refer separate report</td>
</tr>
<tr>
<td>2.3</td>
<td>Toxic gases</td>
<td>0.002 cbm</td>
<td>10 cbm</td>
</tr>
<tr>
<td>3</td>
<td>Flammable liquids</td>
<td>3000 litres</td>
<td>Threshold is a combination of inventory and separation from boundary – see below</td>
</tr>
<tr>
<td>4</td>
<td>Reactive solids</td>
<td>Nil</td>
<td>1 tonne</td>
</tr>
<tr>
<td>5</td>
<td>Oxidisers</td>
<td>0.5 tonnes</td>
<td>5 tonnes</td>
</tr>
<tr>
<td>6.1</td>
<td>Toxics</td>
<td>0.6 cbm</td>
<td>2.5 cbm</td>
</tr>
<tr>
<td>6.2</td>
<td>Clinical Waste</td>
<td>TBA</td>
<td>0.5 tonnes</td>
</tr>
<tr>
<td>7</td>
<td>Radioactives</td>
<td>Isotope doses only</td>
<td>Compliance with Australian codes</td>
</tr>
<tr>
<td>8</td>
<td>Corrosives</td>
<td>0.7 tonnes</td>
<td>50 tonnes</td>
</tr>
<tr>
<td>9</td>
<td>Environmentally hazardous</td>
<td>Nil**</td>
<td>Not subject to SEPP33</td>
</tr>
<tr>
<td>C1 (flammable liquids category 4)</td>
<td>Diesel fuel (stored away from flammable liquids)</td>
<td>2500 litres</td>
<td>Not subject to SEPP33</td>
</tr>
</tbody>
</table>

* It is probable that there will be a very small number of Class 2.1 cylinders on site from time to time, in particular acetylene for maintenance welding and LPG for maintenance and barbeque use. Total inventory will not exceed say 10 cylinders, equivalent to less than 0.5cbm.

** Class 9 materials are not usually encountered in a hospital, except for incidental amounts which may be used in landscaping or similar.
Comments on Hazardous Chemicals Stored

The following comments deal with hazardous chemicals which are already stored on site and will remain in use. The proposed development has no impact on the storage location and usage of these chemicals, with the exceptions of liquid oxygen and diesel fuel. Some comment is offered on how each class of material relates to the screening thresholds in SEPP33. This comment is included to assist a proper assessment of the proposed development with regard to hazardous chemicals. In fact the proposal does not introduce any new chemicals above those existing under current consents.

**Flammable gases (Class 2.1)**

The only flammable gases used on site are small amounts of acetylene for maintenance welding and LPG for maintenance and for barbeque fuel. Inventory is minimal and they are stored away from incompatible materials (such as oxidizers) and from sources of heat.

**Cryogenic (liquefied) gases (Class 2.2)**

There is a requirement for small amounts of liquid nitrogen, for example for preservation and transport of tissue samples. Maximum inventory is 160 litres in dewars and appropriate risk management is in place.

The existing MRI machine uses liquid helium (1500 litres). It will remain in its current location in the existing main building. The only implication of the proposed development is that top-up quantities of helium will be unloaded in the loading dock of the new building and transported in the goods lift, which will be equipped with “unaccompanied” function so that there is no need to personnel to travel in the lift with the gas.

SEPP33 does not apply to Class 2.2 materials.
Medical Gases in Cylinders and in Bulk (Class 2.2 and 2.2/5.1)

These are subject to a separate approval, for which a Preliminary Hazard Analysis was prepared – refer Document No.: CH-O233-0218. This Analysis discussed the relocation of a bulk oxygen tank and adjacent gas cylinder stores. The conclusion of this report was that the proposal was not potentially hazardous under SEPP33, by virtue of rigorous compliance with the relevant Standards.

Toxic gases (Class 2.1)

Extremely small amounts of sterilising gas (less than 10kg) are used under controlled conditions. There are no SEPP33 implications.

Class 3 Flammable Liquids

Flammable liquids are stored in various laboratories located in existing buildings. Significant volumes in these locations are stored in Flammable Liquids Cabinets. Larger inventories (capacity 8000 litres, although typical stockholdings are much less, approximately 2000 litres) are stored in two roofed stores located in open land to the south of the main buildings, near the Helipad. Capacity of these stores is 3000 litres each, but actual inventory held is much less, typically less than 3000 litres total. The screening method set out in SEPP33 involves a determination of inventory and separation of the storage from the site boundary – for a storage of 6000 litres capacity (taking the worst case), the threshold boundary separation is 7 metres. The actual separation is more than 50 metres.
Class 5 oxidising agents

Apart from minute amounts of reagent materials in the laboratories, the only significant storage is a hypochlorite tank in the laundry, which is less than 10% of the SEPP33 threshold.

Class 6.1 toxic materials

Some laboratory reagents and some pharmaceuticals are toxic materials but inventories are very low. One of the flammable liquids stored (methanol, typically 100 litres)) is also classified as toxic, but inventory is well below SEPP33 threshold.

Class 6.2 Biologically hazardous materials

Bio-waste is covered by Department of Health Regulations, not the WHS Regulation which covers most other classes. Existing arrangements for safe storage and disposal, for example by autoclave, will remain.

Class 7 Radioactive materials

Class 7 radioactive materials in the form of medical isotopes are used in accordance with the Hospital’s storage and handling procedures. Inventories are very low. There are no implication for SEPP33 assessment.
**Class 8 Corrosives**

Inventory of corrosive materials (Class 8) consists of small quantities in laboratory areas, cleaning materials and bulk caustic and acid in the laundry. Inventories are very minor in relation to SEPP33 threshold.

**Class 9 Environmentally damaging materials**

These are unlikely to be encountered in significant quantities.

**Combustible Liquids**

Diesel is present in underground tanks and is used as back-up generator fuel. The existing underground tanks will need to be decommissioned in accordance with the protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation. The generator will be replaced by a new generator complete with an above-ground tank, which will be located on open land to the south of the existing buildings. Diesel stored without the presence of flammable liquids is not subject to SEPP33.
Work Health and Safety Regulation Requirements

The proposed development has minimal implications for management of chemicals on site, but some issues will need attention:

- Transport of hazardous chemicals through the new loading dock and between levels will require a risk review. It is likely that existing procedures can be easily adapted.

- Notification of Hazardous Chemicals on Premises and Site Manifest will need to be updated to show the new buildings and relocated storages.

- Review of Emergency Plan - the revised Site Emergency Plan should be resubmitted to Fire and Rescue NSW, in the format required on their website.