



DOC17/599447-01
SSD 8647

Mr David Gibson
Department of Planning and Environment
GPO BOX 39
SYDNEY NSW 2001

13 December 2017

Dear Mr Gibson

SSD 8647 – HORNSBY HOSPITAL RE-DEVELOPMENT – ENVIRONMENTAL IMPACT STATEMENT (EIS)

I am writing to you in reply to your invitation to the NSW Environment Protection Authority (EPA) to make a submission concerning the above project EIS.

The EPA requests that this submission be read in conjunction with its letter dated 4 August 2017 in respect of the draft SEARs for the project.

The EPA emphasises that it does not review or endorse environmental management plans or the like for reasons of maintaining regulatory 'arms length' and therefore has not reviewed any environmental management plan forming part of or referred to in the EIS.

The EPA notes the proximity of surrounding residences, child care centres and Waitara Anglican church and thus anticipates significant noise impacts particularly during demolition, site preparation, bulk earthworks, construction and construction-related activities as well as the operational phase of the project.

The EPA anticipates cumulative impacts of various operational activities. However, the EIS does not appear to fully consider those cumulative impacts.

The EPA understands that the imaging building and multi-storey car park were approved under separate assessment processes. Nevertheless, the EPA anticipates that the proponent would ensure that any imaging building and multi-storey car park demolition, site preparation, bulk earthworks, construction and construction-related activities would be undertaken in a manner not inconsistent with advice and recommendations concerning similar activities referred to in this submission.

The EPA is concerned that EIS section 5.2.2 *Other Relevant NSW State Legislation* indicates that the following environment protection legislation was not considered during preparation of the EIS:

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- Protection of the Environment Administration Act 1991,
- Protection of the Environment Operations Act 1997,
- Protection of the Environment Operations (Waste) Regulation 2014,
- Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2014,
- Radiation Control Act 1990, and
- Radiation Control Regulation 2013.

The EPA has identified the following site specific concerns based on the project information available on the Department of Planning and Environment major projects web site:

- (a) the need for additional detailed assessment of potential site contamination, including information about groundwater and a detailed assessment of the footprint and surrounds of existing buildings following their demolition;
- (b) construction phase noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work) on noise sensitive receivers such as surrounding residences and child care centres;
- (c) construction phase dust control and management,
- (e) construction phase erosion and sediment control and management;
- (f) operational noise impacts on noise sensitive receivers (especially surrounding residences) arising from operational activities such as emergency vehicle manoeuvring on site, waste collection services and mechanical services (especially air conditioning plant);
- (g) the need to assess feasible and reasonable noise mitigation and management measures to minimise operational noise impacts on surrounding residences, child care centres and place of public worship;
- (h) practical opportunities to implement water sensitive urban design principles, including stormwater re-use; and
- (i) practical opportunities to minimise consumption of energy generated from non-renewable sources and to implement effective energy efficiency measures.

Should you require clarification of any of the above please contact John Goodwin on 9995 6838.

Yours sincerely



JACINTA HANEMANN
Regional Manager Operations, Metropolitan Infrastructure
NSW Environment Protection Authority

Attachment A

Contact officer: JOHN GOODWIN
[Click here to enter text.](#)

ATTACHMENT A

- ENVIRONMENT PROTECTION AUTHORITY COMMENTS –

HORNSBY HOSPITAL RE-DEVELOPMENT STAGE 2 EIS

1. General

The EPA considers that the project comprises distinct phases of construction and operation and has set out its comments on that basis.

The EPA notes the proximity of surrounding residences which may be adversely affected by noise impacts during demolition, site preparation, construction and operation phases of the project.

2. Construction phase

The EPA anticipates that site establishment, demolition, bulk earthworks, construction and construction-related activities will be undertaken in an environmentally responsible manner with particular emphasis on –

- the site contamination remediation action plan accompanying the EIS,
- compliance with recommended standard construction hours,
- intra-day respite periods from high noise generating construction activities (including jack hammering, rock breaking, pile boring or driving, saw cutting),
- feasible and reasonable noise and vibration minimisation and mitigation,
- effective dust control and management,
- erosion and sediment control, and
- waste handling and management, particularly concrete waste and rinse water.

2.1 Site contamination

The EPA notes the age of buildings proposed to be demolished and anticipates that at least some may contain –

- (a) asbestos containing materials (with the potential to encounter friable asbestos as insulation around hot water pipes and boilers, if any);
- (b) lead-based paint, and
- (c) polychlorinated biphenyls (PCBs) associated with older electrical equipment and light fittings.

The EPA is concerned that a hazardous material survey report did not accompany the EIS and notes that Section 13 to EIS Appendix S recommends that –

- (a) further site investigation be undertaken to determine the extent of asbestos contaminated soils especially in the vicinity of borehole 114, and

- (b) any buildings proposed for demolition or refurbishment be subject to a pre-demolition hazardous materials assessment.

The EPA understands from Appendix K to the Stage 1 EIS (re: SSD 5356) that as part of Stage 1 of the hospital re-development, a decommissioned underground petroleum storage tank (UPSS) was to be removed from the hospital campus. However, the EPA is unclear whether the proponent undertook the recommended detailed site contamination investigation and obtained a validation certificate - vide Stage 1 EIS Appendix K (section 9.0).

Recommendation

The proponent be required to undertake a hazardous materials survey of buildings and infrastructure prior to commencing any demolition or construction work.

Recommendation

The proponent be required prior to commencing any demolition or construction work, to prepare and implement an appropriate procedure for identifying and dealing with unexpected finds of site contamination, including –

- (i) asbestos containing materials,
- (ii) lead-based paint, and
- (iii) PCBs

Recommendation

The proponent be required to ensure that following demolition of any existing structures and in ground utilities further investigation be undertaken of soil contamination within the footprint of those structures and utilities prior to undertaking any construction.

Recommendation

The proponent be required to satisfy the requirements of the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 'asbestos wastes'.

Recommendation

The proponent be required to consult with Safework NSW concerning the handling of any asbestos waste that may be encountered during the course of the project.

Recommendation

The proponent be required to provide a copy of the validation report prepared in accordance with the requirements of the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2014 following removal of a de-commissioned Underground Petroleum Storage System during Stage 1.

2.2 noise and vibration

The EPA anticipates that demolition, site preparation (including tree clearing), bulk earthworks, construction and construction-related activities are likely to have significant noise and vibration impacts on surrounding residences.

2.2.1 *general construction hours*

The EPA emphasises that demolition, site preparation, bulk earthworks, construction and construction-related activities should be undertaken during the recommended standard construction hours.

The EPA notes that NSW Health and Northern Sydney Local Health District are each a 'public authority' within the meaning of the *Protection of the Environment Administration Act 1991* and that the EPA has general responsibility under that Act for, amongst other things,:

- (a) ensuring that the best practicable measures are taken for environment protection in accordance with the environment protection legislation and other legislation, and
- (b) coordinating the activities of all public authorities in respect of those measures,

The EPA's Interim Construction Noise Guideline recommends standard hours of construction as a best practicable environment protection measure. However, EIS section 3.14 proposes Saturday construction hours that are inconsistent with the standard construction hours recommended in Table 1 to the EPA's Interim Construction Noise Guideline and provides no strong justification for the proposed departure from the standard hours.

Recommendation

The proponent be required to ensure that as far as practicable all demolition, site preparation, bulk earthworks, construction and construction-related activities likely to be audible at any noise sensitive receivers such as surrounding residences and child care centres are only undertaken during the standard construction hours, being -

- (a) 7.00 am to 6.00 pm Monday to Friday,
- (b) 8.00 am to 1.00 pm Saturday, and
- (c) no work on Sundays or gazetted public holidays.

2.2.2 *intra-day respite periods*

The EPA anticipates that those demolition, site preparation, bulk earthworks, construction and construction-related activities generating noise with particularly annoying or intrusive characteristics (such as those identified as particularly annoying in section 4.5 of the Interim Construction Noise Guideline) would be subject to a regime of intra-day respite periods where –

- (a) they are only undertaken after 8.00 am,
- (b) they are only undertaken over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours, and.

- (c) 'continuous' means any period during which there is less than an uninterrupted 60 minute respite between temporarily halting and recommencing any of the intrusive and annoying work referred to in Interim Construction Noise Guideline section 4.5

The EPA emphasises that intra-day respite periods are not proposed to apply to those demolition, site preparation, bulk earthworks, construction and construction-related activities that do not generate noise with particularly annoying or intrusive characteristics.

Recommendation

The proponent be required to schedule intra-day 'respite periods' for all demolition, site preparation, bulk earthworks, construction and construction-related activities identified in section 4.5 of the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers, including surrounding residents.

2.2.3 idling and queuing construction vehicles

The EPA is aware from previous major infrastructure projects that community concerns are likely to arise from noise impacts associated with the early arrival and idling of construction vehicles (including concrete agitator trucks) at the development site and in the residential precincts surrounding that site.

Recommendation

The proponent be required to ensure construction vehicles (including concrete agitator trucks) involved in demolition, site preparation, bulk earthworks, construction and construction-related activities do not arrive at the project site or in surrounding residential precincts outside approved construction hours.

2.2.4 reversing and movement alarms

The EPA has identified the noise from 'beeper' type plant movement alarms to be particularly intrusive and is aware of feasible and reasonable alternatives. Transport for NSW (nee Transport Construction Authority), Barangaroo Delivery Authority/Lend Lease and Leighton Contractors (M2 Upgrade project) have undertaken safety risk assessments of alternatives to the traditional 'beeper' alarms. Each determined that adoption of 'quacker' type movement/reversing alarms instead of traditional beepers on all plant and vehicles would not only maintain a safe workplace but also deliver improved outcomes of reduced noise impacts on surrounding residents and occupants of other noise sensitive receivers.

Interim Construction Noise Guideline Appendix C provides additional background material on this issue.

Recommendation

The proponent be required to consider undertaking a safety risk assessment of demolition, site preparation, bulk earth works, construction and construction-related activities to determine whether it is practicable to use audible movement alarms of a type that would minimise the noise impact on surrounding noise sensitive receivers, without compromising safety.

2.4 Dust control and management

The EPA considers dust control and management to be an important air quality issue during demolition, site preparation, bulk earthworks and subsequent construction.

Recommendation

The proponent be required to :

- (a) minimise dust emissions on the site, and
- (b) prevent dust emissions from the site.

2.5 Sediment control

Managing Urban Stormwater Soils and Construction, 4th Edition published by Landcom (the so-called 'Blue Book') provides guidance material for achieving effective sediment control on construction sites. The proponent should implement all such feasible and reasonable measures as may be necessary to prevent water pollution in the course of developing the site.

The EPA emphasises the importance of –

- (a) not commencing demolition, site preparation, bulk earthworks, construction and construction-related activities until appropriate and effective sediment controls are in place, and
- (b) daily inspection of sediment controls which is fundamental to ensuring timely maintenance and repair of those controls.

2.6 Waste control and management (general)

The proponent should manage waste in accordance with the waste management hierarchy. The waste hierarchy, established under the [Waste Avoidance and Resource Recovery Act 2001](#), is one that ensures that resource management options are considered against the following priorities:

Avoidance including action to reduce the amount of waste generated by households, industry and all levels of government

Resource recovery including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources

Disposal including management of all disposal options in the most environmentally responsible manner.

All wastes generated during the project must be properly assessed, classified and managed in accordance with the EPA's guidelines to ensure proper treatment, transport and disposal at a landfill legally able to accept those wastes.

The EPA further anticipates that, without proper site controls and management, mud and waste may be tracked off the site during the course of the project.

Recommendation

The proponent be required to ensure that :

- (1) all waste generated during the project is assessed, classified and managed in accordance with the “*Waste Classification Guidelines Part 1: Classifying Waste*” (Department of Environment Climate Change and Water, December 2009);
- (2) the body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste, or spoil from the vehicle or trailer; and
- (3) mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the site, is removed before the vehicle, trailer or motorised plant leaves the premises.

2.7 Waste control and management (concrete and concrete rinse water)

The EPA anticipates that during the course of the project concrete deliveries and pumping are likely to generate significant volumes of concrete waste and rinse water. The proponent should ensure that concrete waste and rinse water is not disposed of on the project site and instead that –

- (a) waste concrete is either returned in the agitator trucks to the supplier or directed to a dedicated watertight skip protected from the entry of precipitation, and
- (b) concrete rinse water is directed to a dedicated watertight skip protected from the entry of precipitation or a suitable water treatment plant.

Recommendation

The proponent be required to ensure that concrete waste and rinse water are

- (a) not disposed of on the development site, and
- (b) prevented from entering waters, including any natural or artificial watercourse.

3. Operational phase

The EPA considers that environmental impacts that arise once the development is operational should be able to be largely averted by responsible environmental management practices, particularly with regard to:

- (a) feasible and reasonable noise mitigation measures;
- (b) waste management in accordance with the waste management hierarchy;
- (c) the management of clinical and related waste,
- (d) radiation control,
- (c) water conservation and efficiency; and
- (d) energy conservation and efficiency.

3.1 Noise and vibration impacts

The EPA anticipates the proposed development may have significant operational noise impacts on nearby sensitive receivers, especially surrounding residences, child care centres and places of public worship.

background noise measurement

As outlined above, the NSW Health and Northern Sydney Local Health District are each a 'public authority' within the meaning of the Protection of the Environment Administration Act 1991 and the EPA has general responsibility under that Act for amongst other things:

- (a) ensuring that the best practicable measures are taken for environment protection in accordance with the environment protection legislation and other legislation, and
- (b) coordinating the activities of all public authorities in respect of those measures,

The EPA emphasises that properly establishing background noise levels in accordance with guidance material in the New South Wales Industrial Noise Policy (INP) is fundamental to a consistent approach to the quantitative assessment of noise impacts of development. And that, any background noise monitoring undertaken must provide at least a '... week's worth ...' of valid data.

The NSW Industrial Noise Policy (INP) requires monitoring at the potentially most affected noise sensitive locations, which are usually residences. The EPA is aware from its review of numerous acoustic impact assessments that other proponents have obtained owner consent and securely located unattended noise monitoring equipment at residential premises.

unattended background noise monitoring

Section 4 to EIS Appendix Q indicates that background noise monitoring was undertaken at three locations on the campus of the existing hospital and suggests that measurements at those locations are representative of existing levels at the nearest residences. Appendix Q further states that it was not possible to locate the noise monitoring equipment any closer to the residences "... without compromising the security of the noise monitoring equipment." The proponent omits any justification for arriving at the conclusion that monitoring in accordance with INP guidance could not be securely undertaken off campus. For instance, the EIS is unclear whether the proponent sought consent from the owners of residences (most affected or likely to be most affected by noise impacts) to install unattended noise monitoring equipment at those residences.

Appendix Q states that all loggers (i.e. unattended background noise monitoring equipment) "... were free of any noise from hospital plant..." but does not include photographs of logger locations to substantiate that statement. The EPA notes for instance that 'street view' of the hospital campus noise logger locations (as identified in Figure 1, Appendix Q) indicates that hospital plant and equipment items are located near the logger locations. Accordingly, the EPA considers it likely that hospital plant and equipment are potential noise sources that would influence measurements at the on campus logger locations and that by installing noise monitoring equipment at the development site (i.e. hospital campus) rather than at the most affected residences is not likely to be representative of the background noise.

The final paragraph to section 4 to EIS Appendix Q misconstrues the INP by suggesting that section 3.5 requires "... one week of noise monitoring ..." at each background noise logger location. Instead, INP section 3.5 advises that to meaningfully determine the existing noise environment (i.e. background noise) what is required is typically "one week's worth of valid data". The proponent undertook unattended monitoring for one week and nominated data in that week that is potentially affected by rain or wind, using weather data from Observatory Hill. The proponent offers no explanation why weather observations were not undertaken concurrent with noise monitoring or why observations from Terrey Hills automatic weather station were not used (given that the Observatory Hill station is about twice the distance from the hospital and thus less likely to be representative of conditions at the campus).

Section 4.1 to Appendix Q states that "[o]n review of the monitoring data, the measured L_{90} noise levels during high wind speed days generally do not increase background noise level significantly". The EPA considers the foregoing statement to be inaccurate for the graphs presented of the Burnett Street data, which show exactly the opposite for the evening of 6 June and all the data for 7 June.

The EPA thus considers that the proponent has not provided the required 'equivalent to one week's worth of valid data'.

attended background noise monitoring

Appendix Q states that the measured ambient and background noise levels are based on both unattended and attended measurements. Figure 1 to EIS Appendix Q indicates attended monitoring locations but omits –

- details of the attended noise monitoring,
- the results of the attended noise monitoring, and
- details of details of how the attended monitoring was used with the unattended measurement results in arriving at the noise levels presented in Table 1.

The EPA further notes that the EIS does not appear to include Assessment Background Levels, which would have provided important information concerning diurnal, and weekday to weekend variation of the noise levels.

data gaps and lack of calibration information

The EPA is concerned that the noise monitoring graphs presented in 'Appendix 2 - Noise Monitoring Along **Derby Street**' to EIS Appendix Q appear instead to be a duplicate of graphs for Burnett Street and thus that the data for Derby Street appears to have been omitted from the EIS.

The EPA is further concerned that in respect to the background noise monitoring graphs appended to EIS Appendix Q –

- (a) the legends to some monitoring graphs appear to be misaligned (e.g. wind speed, rain period),

- (b) the legends to monitoring graphs includes a blue marker for 'rain period' and although rain was observed on several days during the various monitoring periods (i.e. 24 May to 7 June 2017), no rain periods are represented in the graphs, and
- (c) some of the monitoring graphs include sections of red highlight, but there is no red marker in the legend to those graphs to identify the meaning of those red highlighted periods, and
- (d) Appendix Q does not appear to identify when noise monitoring loggers were last laboratory calibrated which brings into question reliability of the recorded data.

Recommendation

The proponent be required to undertake noise background noise monitoring and report the results of that noise monitoring in accordance with the guidance material provided in the New South Wales Industrial Noise Policy and the EPA's application notes thereto, including inter alia:

- (a) the equivalent of a week's worth of valid data, measured at the potentially most affected noise sensitive receiver locations in Burdett Street, Derby Street and Palmertson Road; and
- (b) the results of attended monitoring, graphical results of unattended monitoring with a complete and accurate legend together with a table of assessment background and daily ambient levels.

mechanical plant and equipment

EIS section 6.5.2 under the heading 'Mechanical plant' and section 6.3.3 to EIS Appendix Q *Acoustic Assessment* indicate that details of mechanical services, plant and equipment are yet to be determined. However, the EIS does indicate the location of the existing back-up generator (proposed to also serve stage 2) and roof top plant rooms.

Recommendation

The proponent be required to:

- (a) provide a comprehensive quantitative assessment of operational noise impacts on surrounding noise sensitive receivers, especially surrounding residences, child care centres and places of public worship;
- (b) ensure mechanical plant and equipment installed on the development site does not generate noise that –
 - (i) exceeds 5 dBA above the rating background noise level (day, evening and night) measured at the western boundary of the development site, and
 - (ii) exhibits tonal or other annoying characteristics;
- (c) undertake compliance noise monitoring during commissioning of stage 2 to confirm that the operation of mechanical plant and equipment, including emergency back-up generators, does not emit noise in excess of the criteria referred to in preceding paragraph (b);
- (d) undertake compliance noise monitoring during commissioning of stage 2 to confirm that the reversing of ambulances and other emergency vehicles within the hospital campus does not emit noise that would interfere unreasonably with the comfort or repose of –

- (i) residents of Burdett Street and Palmerston Road, or
- (ii) worshippers at Waitara Anglican church; and
- (e) implement all such feasible and reasonable noise mitigation and management measures as may be necessary to minimise the impact of noise on surrounding residences, child care centres and places of public worship.

waste collection services

The EPA notes numerous reports of community concern arising from waste collection services undertaken during early morning, evening and night times (i.e. between 6.00 pm and 7.00 am Monday to Saturday) as well as on weekends and public holidays.

Recommendation

The proponent be required to ensure waste collection services are not undertaken outside the hours of 7.30 am to 6.00 pm Monday to Saturday.

delivery of goods

EIS section 6.2.6 The EPA understands that the loading dock serving Stage 1 of the hospital re-development was designed to also serve Stage 2

The EPA notes reports of community concern arising from goods deliveries to hospitals undertaken during early morning, evening and night times (i.e. between 6.00 pm and 7.00 am Monday to Saturday) as well as on weekends and public holidays.

The proponent be required to ensure goods deliveries are not undertaken outside the hours of –

- (a) 7.00 am to 6.00 pm Monday to Saturday, and
- (b) 8.00 am to 6.00pm Sundays and public holidays.

grounds maintenance using powered equipment

The EPA notes numerous reports of community concern arising from grounds maintenance involving the use of powered equipment (example: leaf blowers, lawn mowers, brush cutters) during early morning and evening periods as well as on weekends and public holidays.

Recommendation

The proponent be required ensure grounds maintenance involving the use of powered equipment is not undertaken outside the hours of 7.30 am to 6.00 pm Monday to Friday.

3.2 Waste management

The proponent should manage waste in accordance with the waste management hierarchy. The waste hierarchy, established under the [Waste Avoidance and Resource Recovery Act 2001](#), is one that ensures that resource management options are considered against the following priorities:

Avoidance including action to reduce the amount of waste generated by households, industry and all levels of government

Resource recovery including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources

Disposal including management of all disposal options in the most environmentally responsible manner.

Recommendation

The proponent be required to identify and implement feasible and reasonable opportunities for the re-use and recycling of waste, including food waste.

clinical and related waste

The EPA anticipates that the development will generate 'clinical and related waste' which are defined under the Protection of the Environment Operations Act 1997, as follows -

'Clinical and related waste' includes clinical waste; cytotoxic waste; pharmaceutical, drug or medicine waste; and sharps waste.

"Clinical waste means any waste resulting from medical, nursing, dental, pharmaceutical, skin penetration or other related clinical activity, being waste that has the potential to cause injury, infection or offence, and includes waste containing any of the following:

- (a) human tissue (other than hair, teeth and nails),*
- (b) bulk body fluids or blood,*
- (c) visibly blood-stained body fluids, materials or equipment,*
- (d) laboratory specimens or cultures,*
- (e) animal tissue, carcasses or other waste from animals used for medical research,*

but does not include any such waste that has been treated by a method approved in writing by the Director-General of the Department of Health."

The occupier of any premises comprising a hospital, day procedure centre, pathology laboratory, mortuary or medical research facility where clinical and related waste is generated, must ensure that there is a waste management plan, in respect of that waste, for the premises. And, should prepare that plan with due regard to the relevant provisions of clause 113 of the Protection of the Environment Operations (Waste) Regulation 2014.

Recommendation

The proponent be required to properly classify and manage clinical and related waste in accordance with the EPA's Waste Classification Guidelines.

Recommendation

The proponent be required to ensure that the occupier of the hospital prepares and implements a revised waste management plan, in respect of clinical and related waste generated at the development site in accordance with the publication entitled *Waste Management Guidelines for Health Care Facilities (ISBN 0 7313 4060 4)*, issued by NSW Health in August 1998.

3.3 Radiation control

The EPA understands that Hornsby hospital currently provides diagnostic imaging but not nuclear medicine or radio-therapy and thus no part of the existing radiology unit could have become activated.

The EPA further understands that –

- (a) the medical imaging building was approved by NSW Health (or the Northern Sydney Local Health District) under Part 5 of Environmental Planning and Assessment Act, and
- (b) the project (i.e. Stage 2) includes demolition of the building housing the existing radiology unit.

The EPA notes that –

- (a) EIS section 3.1.4 ‘construction phasing’ mentions early handover of the new medical imaging building,
- (b) the EIS does not appear to acknowledge any implications for the radiation management licence held by Northern Sydney Local Health District, including during any relocation of existing imaging equipment, and
- (c) the EIS omits any detail concerning assessment and classification of potentially hazardous waste materials arising from demolition of the existing radiology unit (albeit that it proposes at Table 13 to include in the detailed design “... the findings of hazardous materials assessment report for all buildings to be demolished.”

The EPA administers the Radiation Control Act 1990 (and Radiation Control Regulation 2013) and anticipates that ‘regulated material’ will be stored and possessed on the hospital campus. ‘Regulated material’ means -

- (a) radioactive substances,
- (b) ionising radiation apparatus,
- (c) non-ionising radiation apparatus of a kind prescribed by the regulations, and
- (d) sealed source devices.

A ‘person responsible’ within the meaning of section 6 of the Radiation Control Act 1990 is obliged to hold an appropriate ‘radiation management licence’ in respect of regulated material at the university campus.

A natural person who uses regulated material at the hospital campus must hold a ‘radiation user licence’ and must comply with any conditions to which the licence is subject.

Recommendation

The proponent be required to apply for and obtain any necessary amendment to the ‘radiation management licence’ currently held under the name of the Northern Sydney Local Health District in respect of regulated material at the new facilities and the management and handling of any waste containing radioactive material.

3.4 Back-up Generator and Underground Petroleum Storage System

EIS section 3.11.1 indicates that stage 2 of the hospital is to be served the existing back-up/emergency generator and the EPA anticipates that that generator will be served in turn by a Underground Petroleum Storage System (UPSS).

The proponent may only use a UPSS in accordance with the requirements of the Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2014. And, any such UPSS must be designed, installed and operated with regard to Guidelines issued by the EPA.

Recommendation

The proponent be required to clarify –

- (a) whether it designed, installed and operates any underground petroleum storage system to fuel the back-up emergency power generator proposed to serve stage 2 of the hospital re-development, and
- (b) provide details of the location, design and installation of any such underground petroleum storage system.

3.5 Water cycle management

Water conservation and efficiency are essential components of ecologically sustainable development particularly pursuant to the principle of inter-generational equity.

Hospitals are typically heavy consumers of potable water which is expensive and energy intensive to deliver on demand at a quality consistent with NHMRC Drinking Water Quality Guidelines.

The EPA anticipates that stage 2 and the overall hospital campus would be a major consumer of potable water and that practical opportunities exist to minimise water consumption without compromising patient care and comfort.

EIS section 3.10 suggests that the collection, storage and re-use of stormwater on the hospital campus is considered inappropriate on the grounds of "... health risks associated with standing water within a hospital environment.". Whilst the EPA acknowledges the health risks associated with standing water, it is unclear why stormwater is unable to be collected, treated and stored (other than in open ponds) for re-use on the hospital campus.

The EIS appears to be mute concerning practical measures (e.g. water efficient fixtures, porous paving and xeriscape) to minimise the consumption of potable water.

Recommendation

The proponent be required to provide a detailed assessment of the range of practical measures proposed to be adopted to minimise the consumption of potable water.

3.6 Energy conservation and efficiency

Energy conservation and efficiency are essential components of ecologically sustainable development particularly pursuant to the principle of inter-generational equity.

Hospitals are typically heavy users of electricity which in NSW is for the most part generated by burning non-renewable fossil fuel resources.

EIS section 3.11.1 proposes the installation of a "... 2 x 1500kVA chamber substation ..." to satisfy the energy demand arising from operation of stage 2.

EIS section 3.12 states that environmental performance of stage 2 "... has been assessed using the NSW Health Guideline (published 26/08/2016) and Section J – Energy Efficiency of the Building Code of Australia 2010." And, refers broadly to "... efficient lighting, lighting control and energy metering."

However, the EIS does not appear to detail proposed passive and active measures proposed to maximise energy efficiency and minimise energy consumption.

Recommendation

The proponent be required to provide a detailed assessment of the range of passive and active measures proposed to maximise energy efficiency and minimise energy consumption.
