



Our reference: EF14/1796  
Contact: John Goodwin

Ms Sarah Roach  
Department of Planning and Infrastructure  
GPO BOX 39  
SYDNEY 2001

Dear Ms Roach

**WALSH BAY ARTS PRECINCT – STAGED DEVELOPMENT APPLICATION - SSD 6069**

I am writing to you in reply to your invitation to the EPA to comment on the application for the above mentioned project.

The EPA has identified the following site specific concerns based on the information in the Environmental Impact Statement:

- (a) inadequate assessment of contamination of shore-side areas of the site and marine sediments (including ASS and PASS) in the vicinity of the piers;
- (b) demolition-related waste (including potential asbestos and lead paint) handling and management;
- (c) construction-related noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work such as rock breaking and pile driving);
- (d) site preparation, demolition and construction phase dust control and management, including controls for works over harbour waters
- (e) site preparation, demolition and construction phase runoff and sediment control and management of a harbour side work site;
- (f) construction related waste handling and management, particularly concrete waste and rinse water;
- (g) operational noise and vibration impacts on noise sensitive receivers (especially surrounding residences both sides of the harbour) arising from operational activities such as outdoor entertainment events, including sound checks in preparation for those events; and

- (h) operational noise and vibration impacts on noise sensitive receivers (especially surrounding residences) of waste collection, loading dock activities and mechanical services plant.

The EPA expands on its concerns in Attachment A to this letter.

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

Yours sincerely



15-8-14

**FRANK GAROFALOW**  
**Manager Metropolitan Infrastructure**  
**Environment Protection Authority**

Encl. Attachment A

## ATTACHMENT A

### - ENVIRONMENT PROTECTION AUTHORITY COMMENTS -

#### WALSH BAY ARTS PRECINCT (SSD 6069)

#### 1. General

The EPA considers that the project comprises two distinct phases (construction and operational) and has set out its comments on that basis.

#### 2. Construction phase

The EPA anticipates a range of environmental impacts during the construction phase of the development.

The EPA anticipates that construction and construction-related activities will be undertaken in an environmentally responsible manner with particular emphasis on –

- Investigation and remediation of site contamination,
- compliance with recommended standard construction hours,
- waste management consistent with the hierarchy of re-use, recycle and then disposal as the last resort,
- feasible and reasonable noise and vibration minimisation and mitigation,
- intra-day respite periods from high noise generating construction activities (including jack hammering, rock breaking, pile boring or driving, saw cutting and vibratory rolling),
- effective dust control and management,
- effective runoff and sediment control, and
- effective management of concrete wastes and rinse waters to prevent pollution of waters.

#### 2.1 Site investigation and remediation

Appendix 11 "*Phase 1 Environmental Site Assessment*" and Appendix 13 "*Marine and Groundwater Assessment*" appear to provide a preliminary assessment of potential contamination of the project site.

Appendix 11 comprises report 43329-56537 (revision 2) prepared by JBS&G Pty Ltd. Appendix 11 comprises a desk top study which appears to rely on a single sampling location within a filled area of the site. And that sample was undertaken in 1996 by HLA as part of an investigation into the overall Walsh Bay precinct.

The EPA notes that Appendix 11 section 5.1 (5<sup>th</sup> dot point) acknowledges the potential for site contamination by "... heavy metals, OCPs, PCBs, PAHs, PCBs, TPH and asbestos ..." associated with historic uses of the premises.

Accordingly, the EPA does not accept that it is reasonable to conclude (see final paragraph section 5.2 Appendix 11) that the site is suitable for the proposed use and instead considers that more detailed site specific investigation is warranted.

The EPA further notes that contrary to the suggestion in Appendix 11 Section 3.2 (2<sup>nd</sup> paragraph., p.15) the former Millers Point gasworks is subject to ongoing EPA regulation.

Appendix 15 *Maritime Facilities Report* (p.1) confirms that "... the seabed here is extremely soft marine mud and the depth to hard founding materials can exceed 20 metres below seabed level." And, in section 4.1 (p.5) that the Walsh Bay piers operated as commercial wharves until the 1970s with little subsequent use. The EPA notes the previous use of the site as part of the working harbour, the common use of tributyl tin (TBT) antifoulant coatings on commercial hulls and the use of lead and chromium based paints on harbour-side structures. Importantly, section 3.7.2 Appendix 11 *Phase 1 Environmental Site Assessment* (p.18) confirms that in regard to sediments "... no sampling has been undertaken in the vicinity of the Walsh bay Wharves."

Whilst section 3.7.2 (dot point 6, p.18) indicates that a 1996 report by Patterson Britton suggests that steel tube pile drilling was "... considered to have an almost imperceptible disturbance of seabed materials or re-suspension of sediments ...", no evidence appears to have been presented to support that view. Similarly, no evidence appears to have been provided to indicate whether marine sediments may be disturbed during in situ pouring of the concrete pile plugs (presumably using a 'tremie' system) inside the steel tube piles.

Although the site does not appear to be extensively filled and marine sediments may or may not be disturbed in the course of the project, the EPA nevertheless considers that –

- based on the former commercial port uses and the limited information available, further investigations are required,
- the proponent will need to engage a suitably qualified consultant to carry out a more detailed site assessment to establish the potential for contamination at the site.

A site audit statement, prepared by an EPA accredited site auditor under the *Contaminated Land Management Act 1997*, should be prepared and should include a review of the proposed Construction EMP.

### **Recommendation**

Based on the information provided at this stage of the assessment process, consideration should be given to requiring the proponent:

1. to investigate the nature and extent of contamination of marine sediments in the vicinity of the piers and proposed development; and
2. to engage a site auditor accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act 1997-
  - (a) to prepare a Site Audit Statement, certifying that the site is suitable for the proposed use, and
  - (b) to determine the appropriateness of the proposed Construction EMP.

### acid sulphate soils

Any potential acid sulfate soils that need to be excavated or disturbed as part of the site redevelopment must be managed in accordance with the *Waste Classification Guidelines Part 4: Acid Sulfate Soils* which are available at the following web page:

<http://www.environment.nsw.gov.au/resources/waste/08446acidsulfsoils.pdf>

If Acid Sulfate Soils (ASS) or Potential Acid Sulfate Soils (PASS) are to be removed from the site for disposal there is only one landfill currently licensed to accept that type of waste.

### **Recommendation**

Consideration be given to requiring the proponent to assess and manage any acid sulfate soil (ASS) and potential acid sulfate soil (PASS) in accordance with:

- (a) the 1998 *Acid Sulfate Soils Manual* published by the NSW Acid Sulfate Soil Management Advisory Committee (ASSMAC) and ;
- (b) the EPA's *Waste Classification Guidelines Part 4: Acid Sulfate Soils*.

### 2.2 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.

#### Lead and chromium based paint

The EPA has pre-classified lead paint waste (arising otherwise than from residential premises or educational or child care institutions) as hazardous waste. And, emphasises that as such lead paint waste needs to be identified for proper assessment, classification and management in accordance with the EPA's guidelines to ensure proper treatment, transport and disposal at a landfill legally able to accept those particular wastes.

### **Recommendation**

EPA recommends that the proponent be required to identify lead-based paint coatings that have been applied to existing structures (including any flaked-off coatings) and adopt measures for the identification, removal, handling and disposal of such coatings, including –

- assessing any risks to human health and the environment should contaminated dust be emitted from the site or deposited in harbour waters,
- minimising and collecting dust emissions on the site and preventing dust emissions from the site during removal of surface coatings,

- proper handling of lead-based paint wastes, and
- transporting lead-based paint wastes to a place that can lawfully accept it.

#### Concrete wastes and rinse water

The EPA anticipates that there is a significant risk of pollution of waters unless appropriate controls and management measures are adopted in respect of waste concrete and concrete rinse waters from concrete agitator and pump trucks.

Preferably, the proponent should ensure that –

- agitator trucks are not rinsed out at the site but instead return all waste and wastewater to the batching plant,
- concrete pours are actively monitored to ensure that any runoff or spillage is contained so as not to descend or fall into harbour waters and that any such runoff or spillage is promptly cleaned up and removed from the site, and
- where concrete agitator trucks, pump plant and equipment, and other concreting contaminated equipment and footwear are rinsed out on site, all associated runoff and rinse water is collected and stored in dedicated waterproof containers held in a roofed over and bunded storage area for regular removal to a waste facility that may legally accept that waste.

#### **Recommendation**

The proponent be required to ensure all concrete waste and concrete runoff and rinse waters are collected, stored and managed to prevent pollution of waters.

#### Mud tracking and the like

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 :

- 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);
- 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
- 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.

## 2.4 Dust control and management

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

The EPA notes that the harbour-side site is particularly exposed to prevailing winds. And, that site remediation, demolition and construction will inevitably occur immediately adjacent and over harbour waters.

The EPA particularly notes that special controls are warranted to prevent dust and other airborne waste from falling or descending into harbour waters during the removal of surface coatings and general demolition. And, further that control measures are adopted to contain and promptly remove any such dust and other fugitive emissions that nevertheless descend or fall into the harbour.

The EPA also emphasises that any bulk earthworks would inevitably generate dust as a result of –

- (a) the excavation, processing and handling of excavation spoil,
- (b) wind action on spoil stock piles, and
- (c) wind action on and plant movement across areas bare of vegetation or other cover.

### **Recommendation**

The proponent be required commit to:

- (a) minimise dust emissions on the site,
- (b) prevent dust emissions from the site, and
- (c) implement controls to contain and clean up any fugitive dust emissions which fall or descend into harbour waters.

## 2.5 Runoff, spillage and sediment control

The Managing Urban Stormwater Soils and Construction, 4<sup>th</sup> Edition published by Landcom (the so-called 'Blue Book') provides guidance material for achieving effective erosion and sediment control on construction sites.

Additionally, the EPA notes that the project involves works immediately adjacent to and over the waters of Walsh Bay and thus anticipates special environmental controls and measures to prevent pollution of waters.

The EPA emphasises the importance of –

- (a) not commencing demolition or earthmoving until appropriate erosion and sediment controls are in place,
- (b) not commencing removal of surface coatings, demolition, or construction (including pile replacement and installation) until appropriate controls are in place to contain any potential pollution of waters that may arise from those activities,

- (c) implementing active measures for the day-to-day clean up of any loose material or waste whether or not it has descended or fallen into the harbour, and
- (d) daily inspection of runoff, spillage and sediment controls which inspections are considered fundamental to ensuring timely maintenance and repair of those controls.

## 2.6 noise and vibration

Appendix 14 *Noise and Vibration Assessment* (pp. 2 and 23) indicates that the proponent has not undertaken an assessment of construction noise and vibration impacts as the proposal is only at the "... Concept stage ..."

The EPA considers that during construction the project is likely to generate significant noise and vibration impacts on surrounding residences and other noise sensitive land uses. The EPA provides guidance material available on its web site, including downloadable copies of the following publications –

- the Interim Construction Noise Guideline (2009), and
- Assessing Vibration: a technical guideline (2006).

### **Recommendation**

The proponent be required to undertake a comprehensive noise and vibration impact assessment of construction activities, especially any such activities -

- (i) likely to generate noise with annoying or intrusive characteristics,
- (ii) likely to cause vibration (human discomfort) impacts on nearby residences and Botanic Gardens research facilities, and
- (iii) proposed to be undertaken outside the recommended standard hours discussed in Table 1 to the *Interim Construction Noise Guideline*.

#### 2.6.1 *construction hours (including respite periods)*

Whilst the Interim Construction Noise Guideline (ICNG) recommended standard hours for construction (outside of which long experience shows increasing levels of community concern about construction noise impacts), the EPA accepts that certain emergency work may need to be undertaken urgently (other than during the standard recommended hours) in order to avoid –

- loss of life,
- damage to property, or
- environmental harm.

#### Intra-day respite periods

ICNG section 4.5 specifies construction activities proven to be particularly annoying and intrusive to nearby residents and school students. The EPA anticipates that those activities generating noise with particularly annoying or intrusive characteristics would be subject to a regime of intra-day respite periods where –

- (a) those activities are only undertaken over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours, and.
- (b) 'continuous' means any period during which there is less than an uninterrupted 60 minute respite between temporarily halting and recommencing any of the work referred to in ICNG section 4.5

### **Recommendation**

The proponent be required to :

- (a) comply with the standard construction hours as recommended in Table 1 Chapter 2 of the Interim Construction Noise Guideline, July 2009; and
- (b) schedule intra-day 'respite periods' for construction activities identified in the Interim Construction Noise Guideline as being particularly annoying to surrounding residents and other noise sensitive receivers; and
- (c) adopt special local arrangements in negotiation with residents and the occupants of other noise sensitive receivers likely to be affected by demolition, construction and construction-related noise and vibration impacts.

#### *2.6.2 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.

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

### **Recommendation**

The proponent be required to undertake a safety risk assessment of construction 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.

### **3. Operational phase**

The EPA considers that environmental impacts that might arise once the new facilities commence operation can largely be averted by responsible environmental management practices, particularly with regard to:

- (a) feasible and reasonable noise avoidance and minimisation;
- (b) effective controls on the type, number, time of occurrence and duration of outdoor entertainment events likely to generate significant noise impacts;
- (c) impacts of antifoulant used to protect the seawater abstraction cooling system; and

- (d) energy and water conservation.

### 3.1 Noise and vibration impacts

The EPA is aware from long experience that significant risks of unacceptable noise impact arise from inadequate noise management and mitigation measures, particularly in regard to outdoor entertainment events. The EPA has been obliged to undertake extensive investigation of community concerns arising from outdoor entertainment events, including sound checks in preparation for those events.

Similarly, the EPA has been obliged undertake extensive investigation of ongoing community concern about noise from air conditioning plant associated with newly commissioned public buildings.

The EPA anticipates that the proposed facilities may change the character of noise impacts for surrounding noise sensitive receivers including –

- (a) residences at pier 6/7,
- (b) surrounding residences located south of Walsh Bay, and
- (c) (for outdoor entertainment events) residences on the northern side of the harbour.

Whilst, the proponent has determined background noise levels generally in accordance with the 'long-term' method outlined in Table 3.1 to the New South Wales Industrial Noise Policy (INP), the EPA is concerned that Appendix 14 *Noise and Vibration Assessment* indicates that :

- background noise monitoring undertaken at McMahons Point was conducted from 14 March to 19 March 2014 and thus did not provide the required minimum of 7 days of valid assessment data; and
- in referring to “.. with little wind.” (1st para, p. 14) section 3.3.1 does not clearly demonstrate whether wind effects were adequately considered during the background noise monitoring periods. (Note: INP Chapter 5 provides guidance material concerning acceptable meteorological conditions with section 5.3.2 highlighting an upper limit wind speed of 5 metres per second).

#### Mechanical plant and equipment

Appendix 14 Figure 12 identifies existing and proposed mechanical plant noise sources in the nature of rooftop air handling equipment. However, the 'Concept Design Report' page 49 (BATESSMART) includes an indicative cross-section which indicates 'chilled plant below deck'. Accordingly, the EPA remains unclear whether the noise impact assessment has adequately addressed the projected overall impact of mechanical plant noise on noise sensitive receivers.

The Noise Assessment states that all plant and equipment (including air conditioners, and condensers) associated with the proposal will be designed, installed and operated to meet INP criteria. The INP criteria should be achieved with the inclusion of any modifying factor adjustments for annoying characteristics (example: tonality) as outlined in Chapter 4 of the INP.

## Recommendation

That the proponent be required to ensure that all mechanical plant and equipment is designed, installed and operated to meet INP criteria, including any applicable modifying factor adjustments for noise exhibiting annoying characteristics such as tonality.

### Traffic Noise

The EPA accepts the EIS conclusions that traffic noise associated with the proposal is unlikely to trigger noise mitigation requirements which are outlined in the Road Noise Policy.

### Outdoor entertainment events

The EPA understands that outdoor entertainment events are proposed at the Waterfront Square between the southern ends of the piers 2/3 and 4/5. And, a temporary floating stage for occasional deployment to the north of the Square.

The Noise Impact Assessment for outdoor entertainment events appears to conform with the Director General's Requirements to assess noise from outdoor events against the INP and prescribes maximum noise level limits for events in order for the INP criteria not to be exceeded.

The EPA notes that the INP criteria were designed primarily for industrial noise that might operate continuously throughout a day or night. Whilst, the EPA considers that conformance with the INP criteria should prove to be protective, we acknowledge that this may have unintended outcomes if the noise level limits result in an unacceptable patron experience, leading to either the noise limits or the outdoor events becoming unsustainable.

Accordingly, the EPA accepts that other criteria not directly transferable to the Arts Precinct development may also prove useful including –

- such as those developed by the Office of Liquor, Gaming and Racing for nightclubs  
[http://www.olgr.nsw.gov.au/pdfs/bb\\_music/sound\\_advice.pdf](http://www.olgr.nsw.gov.au/pdfs/bb_music/sound_advice.pdf)
- Prevention Notices applied by the EPA to outdoor music events that it regulates such as notices 1002139 (Centennial Park) and 1006659 (Domain), available by searching 'Notices at -

<http://www.epa.nsw.gov.au/prpoeoapp/>

The Department may also find it useful to its deliberations to consider the report, "*Assessment Of Environmental Noise Produced By The Sound System Used In The Sydney International FIFA Fan Fest*" (Report Ref: 100504 Fan Fest v1.0 May 2010)", which was prepared for Department of Premier and Cabinet (Community Engagement and Events).

The EPA anticipates that significant noise impacts would be associated with outdoor events especially those involving the use of amplified sound systems. Whilst the EPA encourages the proponent to develop a comprehensive Noise Management Plan to ensure adequate noise mitigation and management measures for outdoor entertainment events, it is unable (for reasons of maintaining appropriate regulatory 'arms length') to review or endorse such a plan.

The EPA's experience is that in addition to strict curfews (i.e. start and finishing times) for the performance/event strict time limits should also apply to rehearsals and sound checks.

The EPA strongly recommends ongoing community engagement in the development and review of any noise management plan for outdoor entertainment events

### **Recommendation**

That the proponent be required to install an appropriate distributed speaker system to ensure optimal patron experience with minimum offsite impact;

### **Recommendation**

That consideration be given to:

- (a) limiting the number and types of outdoor entertainment events held during each season and the Christmas/New Year festive season
- (b) limiting events on consecutive days and nights to provide respite to affected noise sensitive receivers;
- (c) setting strict curfew times for start and finish of events, rehearsals and sound checks;
- (d) requiring community notification (including letterbox drops, social media, web site notices and newspaper notices) of upcoming events including details of –
  - (i) applicable time restrictions, and
  - (ii) highlighted information explicitly stating how and to whom to lodge a noise complaint;
- (e) community information and consultation plan, incorporating a complaints management protocol; and
- (f) requiring the proponent to provide (throughout the duration and 'shoulder' periods of sound checks, rehearsals and events) a public complaints telephone line, operated by properly trained personnel with the authority to promptly act on complaints received from community members.

### 3.2 Seawater-based air conditioning plant

Appendix 16 section 4.6.4 discusses the energy efficiency gains of adopting a 'harbour heat rejection' or heat exchange system for air cooling. And, section 5.3 recommends that the proponent "Provide Harbour heat Rejection". The 'Concept Design Report' page 49 (BATESSMART) includes an indicative cross-section which indicates 'chilled plant below deck'.

The EPA is unclear whether the proposed heat exchange system is –

- (a) a closed loop system of underwater heat exchange pipes in Sydney Harbour, or
- (b) a seawater abstraction system.

If the heat exchange system does not involve abstraction of seawater from, nor discharge of water to, Sydney Harbour, the EPA does not anticipate water pollution in the normal course of operation of the system.

Should the proponent modify the system design to include abstraction of seawater from and thus discharge of water to Sydney Harbour, it would be necessary to prevent pollution of waters that might arise as a consequence of discharge of –

- (a) water treated with antifoulant chemicals, and/or
- (b) thermal waste (being any liquid which, after being used in or in connection with any activity, is more than 2 degrees Celsius hotter or colder than the water into which it is discharged)

The EPA is aware that seawater abstraction systems necessitate the use of marine growth antifoulants. The EPA notes that antifoulants are 'pesticides' within the meaning of the section 5 of the Pesticides Act 1999. And, must be used in accordance with the approved label.

Similarly, a person must not use, or employ, or engage a person to use a pesticide unless that person is qualified to use that pesticide. And, must make a record of each occasion on which that person uses that pesticide.

If seawater is to be abstracted for the air-conditioning system, the proponent should have provided details of the potential environmental impacts, including –

- (a) the risk of thermal pollution of waters,
- (b) the use of antifoulants which are subject to the provisions of the Pesticides Act and Regulation which are administered by the EPA, and
- (c) a copy of the relevant Material Safety Data Sheet.

The proponent should also consult with the maritime division of Roads and Maritime Services to ascertain what, if any, permits may be required from them.

### **Recommendation**

That the proponent be required to provides details of and assess the likely environmental impacts of the proposed 'harbour heat rejection' heat exchange system, including impacts of any :

- (a) seawater abstraction (if any), and
- (b) associated water pollution (including thermal pollution) and use of antifoulants.

### **3.3 Energy and Water Conservation**

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

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

The EPA considers the design stage of the project to be the optimum time to integrate measures to achieve -

- energy efficiency (with resultant running cost savings),
- water conservation through stormwater collection, treatment and re-use for non-potable purposes such as grounds maintenance, and
- water efficiency

The EPA notes EIS section 5.10 and Appendix 16 *ESD Report* provide an outline of sustainability measures including passive and active measures to minimise for energy. However, the wording of Appendix 16 does not commit the project to adopting measures such as rainwater collection, solar hot water consider a number of the proposed measures are

Similarly, the 'Concept Design Report' page 49 (BATESSMART) includes an indicative cross-section which indicates that "Rainwater recycling can be retrofitted in future". However, the EPA considers that the aforesaid indication does not amount to a form commitment by the proponent.

**Recommendation**

That the proponent be required to integrate passive and active energy and water conservation measures (including rainwater re-use) outlined in the EIS into the design of the project.

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