


PLAN NO. PARTX/0017  
COMP. REC. 11/02/19

# APPENDIX B

<b>SS EMP</b>	<b>NCH Project – Main Contract Phase B</b>			
<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	REV: 11	Date: 25.01.2019	Site Specific EMP



PLAN NO. PARTX/0017  
COMP. REC. 11/02/19

## Environmental Management Plan

### St. James Hospital NCH Project


### Main Contract Phase B

### Site Revision Rev 11

**January 2019**

<b>Environmental Dept. Revision No: 10</b>			
<b>Reason For Issue:</b> For client approval			<b>Client Approval (if required)</b>
<b>Originator</b>	<b>Reviewer</b>	<b>Approver</b>	
Hugh Hackett	Jim Dillon	Howard Mc Donagh	N/A
<b>Signature &amp; Date</b>	<b>Signature &amp; Date</b>	<b>Signature &amp; Date</b>	

<b>Copy</b>	<b>Circulation:</b>	<b>Name</b>	<b>Company</b>	<b>Location</b>
1	Construction Director	Howard Mc Donagh	BAM Building	NCH Site
2	Contract Manager	Aidan O'Connell (Zone 1) Eoghan Brannigan (Zone 2)	BAM Building	NCH Site
3	Project Manager	Padraic Brennan (Zone 1) Sebastian Schneider (Zone 2)	BAM Building	NCH Site
4	General Foreman	Patrick McMenamon (Zone 1) Rory Kenny (Zone 1) Barry Shiels (Zone 2) Ervin Karklitis (Zone 2)	BAM Building	NCH Site
5	Site Health, Safety & Environmental Manager	Derek Sheehan	BAM Building	NCH Site
6	Site Health, Safety & Environmental Officer	Chloe Smullen Paul Mallon Jim Kennedy	BAM Building	NCH Site

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		Hugh Hackett		
7	Co. Environmental Coordinator	Jan Gottsche	BAM Building	Head Office, Kill

## Document Control Sheet for Environmental Management Plans

	<b>Originator</b>	<b>Reviewer/Approver</b>
<b>Name:</b>	Jan Gottsche	Kathy O'Leary
<b>Date:</b>	07.04.2017	07.04.2017

<b>Site Name:</b>	<b>Document to be revised:</b>	<b>Env. Dept Doc Rev No:</b>	<b>Site Rev. Doc No:</b>	<b>Reviewed on site by:</b>	<b>Rev Date</b>
<i>NCH Site</i>	EMP	Rev. 10	Rev. 01	Heidi Murphy	07/11/2017
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<i>NCH Site</i>	EMP	Rev. 10	Rev. 09	Heidi Murphy	13/08/2018
<i>NCH Site</i>	EMP	Rev. 10	Rev. 10	Hugh Hackett	04/01/2019
<i>NCH Site</i>	EMP	Rev. 10	Rev. 11	Hugh Hackett	23/01/2019

<b>Document:</b>	EMP
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<b>Site Rev No:</b>	Rev 01
<b>Changes Made:</b>	Page 1 updated personnel, page 8 updated org chart, page 9 updated responsibilities, page 19 updated environmental management targets, page 27 updated noise & vibration control, page 28 updated air pollution controls, updated appendix 3 ERA, updated appendix 4 site maps & page 9 updated subcontractor details
<b>Site Reviewer:</b>	Heidi Murphy

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 02
<b>Changes Made:</b>	As per Q4 BAM HO environmental audit – (refer to CAR for close out dates)
<b>Site Reviewer:</b>	Heidi Murphy

<b>Document:</b>	EMP
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<b>Changes Made:</b>	Included org chart in appendix 7, updated responsibilities on p8, updated appendix 6, updated section 7.1 responsibilities, inserted updated site map in appendix 4
<b>Site Reviewer:</b>	Heidi Murphy – 20/03/18

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 04
<b>Changes Made:</b>	Inserted updated N&V monitoring map, updated site management on page 1, updated ERA, inserted updated Env policy
<b>Site Reviewer:</b>	Heidi Murphy

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 05
<b>Changes Made:</b>	Updated section 8.5
<b>Site Reviewer:</b>	Heidi Murphy


<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 06
<b>Changes Made:</b>	Updated org chart on page 8, updated targets on page 26, updated BAM targets on page 27 & environmental control measures on page 28, inserted discharge licence in appendix 8
<b>Site Reviewer:</b>	Heidi Murphy – 07/06/18

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 07
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<b>Site Reviewer:</b>	Heidi Murphy – 12/06/2018

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 08
<b>Changes Made:</b>	Updated site personnel throughout document
<b>Site Reviewer:</b>	Heidi Murphy – 13/06/2018


<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 09
<b>Changes Made:</b>	As per Q2 BAM HO Environmental Audit – (Refer to CAR for close out dates). Removed Jack Tuohys & Padraig Cartons name from the plan & included Patrick Owens in the plan. Updated section 8.2.2 – 13/08/2018
<b>Site Reviewer:</b>	Heidi Murphy

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 10
<b>Changes Made:</b>	Updated personnel on pages 1, 8, 9 and 19-25. Updated Document Control Sheet Page 2. Expected completion date Page 5. Section 8.1.1 Page 28, alluded to the fact two silt

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	away tanks were newly established. Section 8.2.2, Page 31 updated the number of noise monitors on site currently. Updated; 04/01/2019.
<b>Site Reviewer:</b>	Hugh Hackett

<b>Document:</b>	EMP
<b>Site Rev No:</b>	Rev 11
<b>Changes Made:</b>	Changed cover page, updated document control sheet, updated personnel accordingly (Page 1, 9, 10) Updated expected completion date Page 6,
<b>Site Reviewer:</b>	Hugh Hackett – 23/01/201

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## 1. General Project Details

<b>Project Name</b>	National Children's Hospital Project – Main Contract Phase B		
<b>Project Location</b>	St. James Hospital, Dublin 8		
<b>Client</b>	National Paediatric Hospital Development Board		
<b>Construction Director</b>	Howard Mc Donagh		
<b>Contract Manager</b>	Aidan O'Connell (Zone 1) Eoghan Brannigan (Zone 2)		
<b>Start Date</b>	August 2017	<b>Duration (Months)</b>	58 months
<b>Completion Date (Expected)</b>	2022 (Phase B)		
<b>Primary Project Type</b>	Main Build		

### Project Description:

#### 1.1 Introduction

This environmental Plan has been written in accordance with BAM Contractors Environmental Procedures. The controlled copy of all environmental procedures is hosted on SharePoint.

This Plan is a working document, clearly stating the arrangements in place to manage the significant environmental aspects and legal requirements of this project. This Plan covers BAM Building activities and that of its Subcontractors.


This Plan has been approved by the HSE Department at Kill and has the commitment of the Project Manager and Engineers to fulfil the requirements of the plan.

#### 1.2 Description of the Works

Existing vehicular traffic and pedestrian access provisions shall be maintained to allow the continuation of SJH operations and emergency access in line with existing.

##### General Description

The NPH is the largest, most complex and significant capital investment project ever undertaken in healthcare in Ireland. It is the catalyst that will enhance how acute health services are delivered and will result in better clinical outcomes for children and young people. The hospital will bring together into one entity the three existing children's hospitals; Our Lady's Children's Hospital Crumlin, Temple Street Children's University Hospital and the National Children's Hospital at Tallaght Hospital. It will be tri-located on one campus with SJH and a planned maternity hospital. This tri-location model of service delivery is being undertaken to ensure the best outcomes for children, young people, mothers and infants.

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The NPH will be a world-class facility providing secondary paediatric services for the greater Dublin area and specialist services for the country as a whole. It will be an academic health sciences hospital that values world-class research, education and innovation, which in turn will drive excellence in clinical care. The proposed development consists of a 7 storey structure over 2/3 below ground levels within a gross internal floor area of 118,113m<sup>2</sup> with an additional 32,000 m<sup>2</sup> provided for underground parking, bringing the total floor area of the building to 150,113m<sup>2</sup>.

The NPH will provide:

- 380 in-patient beds including 60 critical care beds, all in single en-suite rooms;
- 93 day-care beds;
- Provision of outpatient consulting examination rooms ;
- Provision of an Emergency Department and urgent care facilities;
- Purpose built accommodation for parents;
- ED and urgent care facilities; and
- Provision of 1000 car parking spaces.

#### **Site Location**

SJH Campus, James's Street, Dublin that includes the Davitt Road staging area.

This Dublin city centre site is located on a 4.85ha site at the western side of the St. James's Campus that is bound to the east by the existing adult hospital; the north by Mount Brown / Faulkner Terrace; the west by Cameron Square, Brookfield Road and South Circular Road; and to the south by St. James's Walk Park and the Rialto Luas stop. The site comprises of a number of buildings and services which are being decanted and vacated to make way for the new hospital. All Contractor vehicles accessing via Rialto Gate must be approved by SJH and access onto the NPH site from James's Street is strictly prohibited.


#### **Work Sequence**

Bulk Excavation of site  
Management of Groundwater  
Access Road Realignment  
Waterproofing  
Basement Works  
Concrete Placement  
Reinforced concrete Frame  
Structural Steelwork  
Façade Installation  
M&E  
Fitout

#### **Restrictions**

Site Access  
Parking  
Working Hours  
Live Services  
Live Hospital campus  
Noise & Vibration levels  
Aspergillus




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**Other Work Activities on Site:**

Live Hospital Environment

**Sensitive Receptors:**

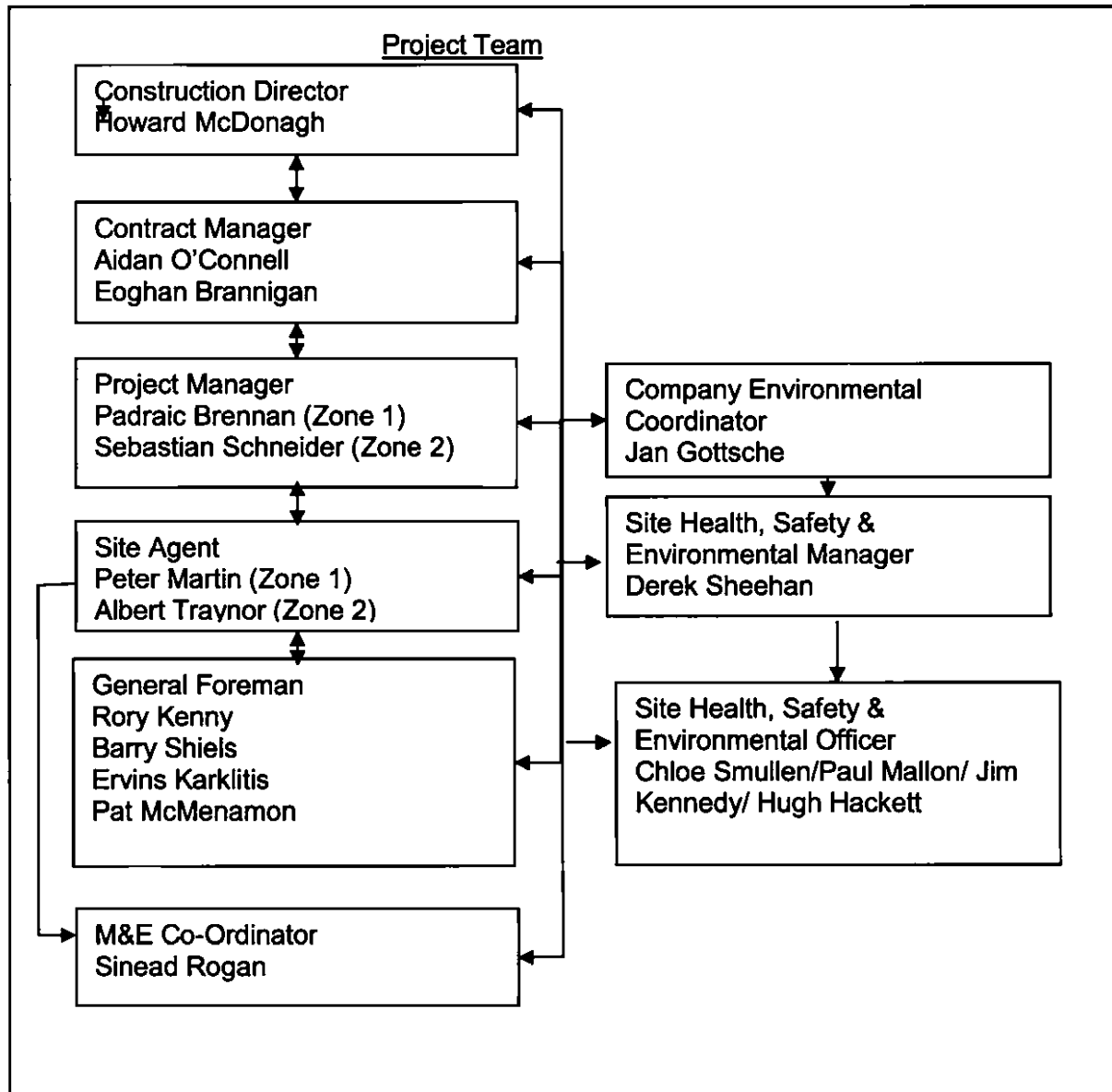
- Nearby live Hospital
- Shops
- Luas Line
- Public Car Parks
- Residential area

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## 2. Environmental Management System

### Project Roles and Responsibilities


#### 2.1 Organisation Chart – (N.B. Refer to org chart in appendix 7)



#### 2.2 Communication


The principal lines of internal communication in relation to the EMP are shown above. Environmental issues are communicated to staff through the site induction, toolbox talks and monthly safety meeting.

Communication with other external parties will be in accordance with the consultation requirements (section 6) and in response to complaints (section 3).

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### 2.3 Responsibilities

Name	Initials	Company	Role (Job title)	Environmental Management Responsibilities
Jan Gottsche	JG	BAM	Company Environmental Coordinator	Conducts Environmental Risk Assessment, advises on environmental issues and controls, and conducts internal environmental audits.
Howard Mc Donagh	HMcD	BAM	Construction Director	Approves and implements EMP
Eoghan Brannigan Aidan O'Connell	EB AO'C	BAM	Contract Manager	Monitors implementation of control measures, ensures that activities, including subcontractor activities, comply with the requirements of the relevant performance requirements.
Padraic Brennan Sebastian Schneider	PB SS	BAM	Project Manager	Monitors implementation of control measures, ensures that activities, including subcontractor activities, comply with the requirements of the relevant performance requirements.
Derek Sheehan	DS	BAM	Site Safety, Health Environmental Manager	Monitors implementation of control measures, ensures that activities, including subcontractor activities, comply with the requirements of the relevant performance requirements.
Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	CS PM HH JK	BAM	Site Safety, Health Environmental Officer	Conducts weekly environmental inspections; carries out toolbox talks on environmental issues. Coordinates emergency response, including spills. Checks spill kits and orders spill control materials when required
Daniel Cafferky Migel Angel Ortega Eoghan McElwee Don Rodgers Andrew Boyle	DC MO EMcE DR AB	BAM	Site Engineer	Ensures that works are carried out in accordance with the EMP and with the approved works method statement. Includes Environmental matters in weekly site inspections.
Rory Kenny Barry Shiels Ervin Karklitis Patrick McMenamon	RK BS EK PM	BAM	Foreman	Carry out toolbox talks; coordinates water/noise/dust monitoring and remedial actions; ensures that works are carried out in accordance with the EMP and with the approved works method statement. Performs environmental inspections.
Seamus Kealy Padraig Rabbitt Brian Shanahan Willet HO	SK PR BS WH	BAM	Quantity Surveyors	Tracks the costs associated with the implementation of environmental matters and forwards to the Company Environmental Coordinator as required.

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### 3. Environmental Management Arrangements

#### 3.1 Environmental Management

The environmental management system (EMS) complies with the ISO 14001:2015 standard. Those aspects of the EMS relevant to this project are outlined in this document which also contains references to specific procedures.

##### 3.1.1 Planning

The environmental planning for the project is based on information from:-

- The clients project information and tender documentation
- Local Authority Planning Permission
- Appropriate Assessments
- Bid Submission

Such information has been used in the environmental assessment of the activities for this project.

##### 3.1.2 Monitoring and checking

The significant environmental aspects of the project are monitored regularly by carrying out the following at the frequency stated below:

<b>Monitoring and Checking</b>	<b>Frequency</b>
Environmental Inspections by Site Managers	Monthly
Environmental Inspection by Foremen	Weekly
Environmental Inspections by HSE Officer	Weekly
Environmental Audits by Env Co-ordinator	Quarterly
Noise and Vibration Monitoring	Daily
Dust deposition monitoring	Daily
Dust Monitoring (visual)	Daily

##### 3.1.3 Action Register

A record of environmental management actions is to be kept on site. The progress for all actions is reported regularly to the appropriate member of the Management Team. Such actions will include information taken from:-


- Environmental inspections
- Audit actions: non-conformances and observations
- Progress of actions following environmental incidents
- Significant communications with stakeholders
- Project issues requiring management action
- Complaints

These actions will be closed out, signed and dated by the appropriate person in the appropriate timeframe.

##### 3.1.4 Performance

Environmental Performance of the project is monitored by:-

- Environmental review meetings as a part of the Monthly Safety Meetings
- Site inspections
- Audits conducted by the HSE Department, by external organisations or by the Client

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- A review of the quantities of waste created
- External communications and feedback
- Review of objectives and targets (targets table section 7)
- Corporate Social Responsibility (CSR) reporting

### **3.2 Communications**

#### **3.2.1 Environmental Complaints**

All environmental complaints will be recorded in the project Complaints Register. The Register is maintained on site by a nominated member of the Management Team who also allocates responsibility for resolving any issues and follows up complaints to ensure they are resolved. Any issues that are deemed to be significant will be reported to the Site Management Team and the relevant authorities as appropriate. Complaints are reviewed during internal audits by the Environmental Coordinator, where any additional measures to improve performance are discussed. Complaints are reported to Head Office also. See EP-24 Complaints Procedures for more details.

All complaints received from external sources and incidents must be reported to the Project Manager and a representative of *St. James Hospital/Dublin City Council*

#### **3.2.2 Environmental Incidents**

Environmental incidents are categorised in terms of major or minor.

**Major environmental incident** is any situation which has resulted in significant pollution requiring high levels of resources for response and remedy and must therefore be reported to Site/Company Management, the Client and or any relevant statutory authority.

**Minor environmental incident** is any situation which has resulted in environmental pollution which required minimal action to aid recovery from Site/Company Management. Non reportable to the Client and/or any relevant statutory authority unless this requirement is stated elsewhere.


Refer to Environmental Procedures EP-06 and EP-24 for more details.

The Site HSE Officer shall:-

- Inform Site Management Team
- Report Environmental Incident immediately to the Environmental Department;
- Investigate and issue reports on environmental incidents (using the Incident Report Form – Dangerous Occurrences / Near Misses / Environmental Incident); and
- Advise the Site Agent (or similar) on corrective action (where necessary)
- Maintain an Environmental Incidents Register

Actions with regard to specific incidents including water pollution and exceeding the limit levels for dust, noise and vibration, are detailed in Section 8.

**Report all Environmental Incidents immediately to the HSE Department 045-886557.**

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### 3.3 Suppliers and Subcontractors

#### 3.3.1 Subcontractors

All subcontractors will be required to work in accordance with BAM Contractors Environmental Management Plan. Work operations will be managed by the relevant Project Managers / Site Agents to ensure appropriate procedures are being followed. ISO 14001 states consideration should be given to the aspects related to the organisations activities, products and services such as environmental performance, lifecycle perspectives and practices of contractors and suppliers. In order to achieve this, we ensure our subcontractors sign contracts which state they must comply with our Environmental Policy, our EMS and work within the Environmental Legal Framework while working for us on our projects.

During the recruitment stage, we would enquire as to whether they had been prosecuted with regard to breaching environmental legislation and this would also be considered. We would also enquire to the progress of their environmental management system (or equivalent) to ensure they were working in a responsible fashion and in a way which would be of a similar fashion to BAM Contractors. Lines of communication would also be outlined during this recruitment stage to ensure they were aware of our environmental management system and how this will affect them and what they need to achieve in order to be suitable candidates for our Projects.

BAM have developed an online appraisal system which assesses the performance of current and previous subcontractors contracted by the company. The system requires project staff to assess and grade individual subcontractors on categories including Health, Safety and Environment, Quality, Programme and Commercial. Under our Commercial procedures, staff contracting and procuring from subcontractors and suppliers must review the appraisal system prior to any contractual agreement. Under the appraisal management system if subcontractors or suppliers fail to meet the minimum rating, a warning is issued and the subcontractor is removed from our approved subcontractors and suppliers list.


A list of subcontractors has been identified below:- Please refer to appendix 6 for details

Contract	Company	Environmental Contact	Commencement Date	Duration

#### 3.3.2 Suppliers

All suppliers and sub-contractors are made aware of the company's environmental and CSR policies and the project specific environmental requirements. BAM aim to collaborate with supply chain partners so as implement circular economic business models and achieve a positive environmental and economic impact. Innovative thinking between suppliers and subcontractors are therefore encouraged to promote recycling of materials and the use of sustainable materials.

An employee supervises all deliveries of environmental hazardous materials.

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**4. Summary of Emergency Procedures**

- Emergency Procedures for sediment release to water (EP-23)
- Containing and cleaning up spills (EP-15)
- Environmental Incident Procedure (EP-06)
- Environmental Complaints and Incidents Procedure (EP-24)
- SharePoint online incident tracking system
- For more detailed information please refer to the Environmental Emergency Plan

**5. Environmental Planning, Aspects and Controls**

**5.1 Environmental Risk Assessment**

During the first visit to site, notes were produced which identified any significant environmental aspects. These notes are compared with the environmental information supplied by the client and used as a basis for performing the environmental risk assessment.

**5.2 Environmental Risk Assessment Report**

The significance of all the environmental aspects for each activity on the project have been assessed. The assessment followed the method defined in EP-02 Environmental Risk Assessment.

Please see appendix 3 for the risk assessment report for this project.

**5.3 Environmental Assessment and Management Controls**

The management controls, which have been put in place, are appropriate to the nature, duration and scale of the activity on this project and the particular sensitivity of the local environment. They will be revised in the event of any significant changes to the scope of the activity during this project, especially when there is additional works, or a change in the method of works.

Additional management controls shall be adopted when there are changes to client requirements, stakeholder interests to a particular local environmental sensitivity.


The significant risks which are highlighted in the risk assessment and the management controls are communicated to the workforce by site inductions and toolbox talks.

**5.4 Method Statements**

The significant environmental aspects and the actions to apply the required controls are described in the method statement.

Method statements are produced in accordance with the contract requirements by the Site Management Team and reviewed by the Project Managers / Site Agents prior to submission for approval. When developing method statements, the EMP, Site Maps and any other relevant environmental management documents shall be reviewed to assess the potential impacts of the particular activity.

All method statements shall include a section entitled "Environmental & Waste Management". For activities that have significant potential to cause adverse environmental impacts reference will be made in this section of the M/S to the control measures in Section 8 of the EMP. Additional control measures may be included where those in Section 8 prove inadequate to suit the local conditions at the site of the activity, and/or where specific measures are required by any of the authorities.

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The method statement must include:-

- Reference to the EMP and WMP
- The proposed method of construction and how impacts shall be mitigated
- Waste (storage, removal, end disposal sites where known)
- Hazardous Substances (storage, removal and end disposal sites where known)
- Works close to waterways (sediment controls if needed)
- Dust
- Noise and Vibrations
- Refuelling
- Fuel storage
- Drip trays/spill kits and other precautionary measures

Prior to the commencement of the works, all Method statements will be reviewed by a competent person by referring to Section 8 of the EMP. Following the review, improvements will be made to the method statements as required.

### 6. Environmental Compliance Requirements

In accordance with Environmental Procedure 01 (EP-01) Environmental Compliance Assessment, a review of all relevant literature and contractual requirements relevant to the contract will be completed.

- Planning Conditions
- Contract Documents
- Preliminary Health and Safety Plan
- All other contractual conditions and documents

These requirements have been tabulated in Appendix 2 (table of contractual requirements) to demonstrate how each of the requirements is addressed in the EMP.

### Evaluation of Compliance

Compliance will be evaluated through inspections and audits and also reviewed at the regular site management meetings.

### 6.1 Consultation with Relevant Authorities

Consultation has been undertaken with the following authorities:

- St. James Hospital
- Dublin City Council
- National Parks and Wildlife Services (NPWS)
- Department of Arts Heritage and Gaeltacht (DAHG)


### 6.2 Site Restrictions & Hold Points

In accordance with the contract clauses or notification from the Client or similar the following environmental restrictions apply to the construction of the works:


### 6.3 Table of Environmental Licences, Permits and Permissions

Clause	Restriction – refer to Contract for complete details
6.	The development shall comply with the following requirement of the City Archaeologist. <ul style="list-style-type: none"> <li>i. The developer shall retain a suitable qualified licenced archaeologist to advise regarding the archaeological implications of site clearance, demolition and/or construction methodology and to make appropriate recommendations for mitigation including the detailed survey as necessary.</li> </ul>



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<b>Clause</b>	<b>Restriction – refer to Contract for complete details</b>
	<ul style="list-style-type: none"> <li>ii. The developers archaeologist shall allow for the resolution of archaeology (both on site and necessary post excavation) in the project budget timetable.</li> <li>iii. The developers archaeologist shall undertake licensed archaeological monitoring or all demolition and sub-surface work associated with the development including the breaking and removal of any floor slabs, levelling of ground etc.</li> <li>iv. The archaeologist shall consult with and forward their Method Statement in advance of commencement to the City Archaeologist.</li> <li>v. In the event of archaeological features being located in the course of the monitoring, the developer shall facilitate the archaeologist in fully recording such features, including if necessary the archaeological excavation of such features, in the event of significant archaeological features on site, the archaeologist retained by the developer shall immediately contract the City Archaeologist. The City Archaeologist (in consultation with the National Monuments Service, Department of Arts Heritage and the Gaeltacht) shall determine the further archaeological resolution of the site.</li> <li>vi. A written and digital report containing the results of the archaeological monitoring shall be forwarded on completion to the City Archaeologist and the National Monuments Service, Department Arts Heritage and the Gaeltacht.</li> <li>vii. Following submission of the final report the City Archaeologist where archaeological materials is shown to be present the archaeological paper archive shall be compiled in accordance with the procedures detailed in the Dublin City Archaeological Archive Guidelines (2008 Dublin City Council) and lodged with the Dublin City Library and Archive 138-144 Pearse Street, Dublin 2.</li> </ul>
<b>8</b>	<p>The development shall comply with the following conditions during the demolition and construction stages: -</p> <ul style="list-style-type: none"> <li>i. During the demolition and construction phase the proposed development shall comply with the British Standard 5228: 2009 – Code of Practice for noise and vibration control on construction and open sites, Part 1 Noise and Part 2; Vibration. In addition the mitigations measures for demolition and construction of works as detailed in volume 2 of the EIS shall be followed.</li> <li>ii. During the demolition and construction phase of the development, Best Practicable Means shall be employed to minimise air blown dust being emitted from the site. This shall include covering skips (including those being transported from the site) and stack-heaps, netting of scaffolding, watering of rubble chutes, daily washing down of pavements or other public areas, and any other precautions necessary to prevent dust nuisance.</li> <li>iii. The watering down of the area should be carried out where necessary to minimise dust transfer into neighbouring premises.</li> <li>iv. Stockpiles of earth shall be damped down or otherwise suitably treated to prevent the emission of dust from the site. The stockpiles should be planned and sited to minimise the potential for dust nuisance.</li> <li>v. Prior to the commencement of development a demolition and construction method statement and plan addressing the issues of noise, dust, vibration (such as from pile driving) odour, construction traffic management, and their mitigation shall be submitted to the Planning Authority for their written agreement.</li> </ul> <p>Reason: In the interest of minimising adverse impact during the demolition and construction phased of development in the interests of amenities and the proper planning and development of the area.</p>
<b>9.</b>	<p>The development shall comply with the following conditions for Waste Management:</p> <ul style="list-style-type: none"> <li>i. Prior to the commencement of any works a Construction and Demolition Waste Management Plan must be furnished to and approved by Dublin City Council.</li> <li>i. Prior to the construction phase the quantity of C&amp;D waste shall be determined in order to ensure that the required regulatory permit (issued by Dublin City Council or Licence issued by the EPA) is in place prior to the commencement of the development.</li> </ul>

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Clause	Restriction – refer to Contract for complete details
	<p>ii. During the Construction phase, Waste Management Services requests the provision of monthly statistics regarding waste arising, verification of quantities recycled and disposed and the location of disposal facilities. A construction Liaison contact should be identified by the developer and the information forwarded electronically to Waste Management Services on a monthly basis in order to ensure compliance with legislation.</p> <p>iii. The works must comply with the following:</p> <ol style="list-style-type: none"> <li>Waste Management Act 1996, as amended.</li> <li>Dublin City Council Commercial Waste Bye-Laws 2008 (Bye-Laws for the storage, separation at source and presentation for collection of commercial waste) as amended.</li> <li>Dublin Region Waste Management Plan 2005 – 2010 as amended.</li> <li>Any other relevant Waste Management related regulations.</li> </ol> <p>Reason: In the interests of the protection of the environment having regard Circular WPR 07/06 – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition published by the DoEHLG 2006 and Dublin City Waste Management Guidelines.</p>
10.	<p>(a) The site and building works required to implement the development shall only be carried out between the hours of</p> <ul style="list-style-type: none"> <li>• Monday to Friday – 7:00am to 7:00pm</li> <li>• Saturday – 8:00am to 2:00pm</li> <li>• Sunday and Public Holidays – No activity on site.</li> </ul> <p>(b) Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from Dublin City Council. Such approval may be given subject to conditions pertaining to the particular circumstance being set by Dublin City Council.</p> <p>Reason: In order to safeguard the amenities of adjoining occupiers.</p>
11.	<p>The site development works and construction works shall be carried out in such a manner as to ensure that the adjoining street(s) are kept clear of debris, soil and other material and if the need arises for cleaning works to be carried out on the adjoining public roads, the said cleaning works shall be carried out at the developer's expense.</p> <p>Reason: To ensure that the adjoin roadways are kept in a clean and safe condition during construction works in the interest of orderly development.</p>
12	<p>The development shall comply with the following requirements.</p> <p>(a) Noise levels from the site, during both the construction and operational phases, measured as a LAeq (5min at night, 15min in day) when all proposed plant is operating, shall not exceed the LA90 by 5dB(A) or more.</p> <p>(b) Noise levels should not be so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause for annoyance to a person in any premises in the neighbourhood or to a person lawfully using any public place. All mechanical plant and ventilation inlets and outlets should be attenuated as necessary to ensure that the noise level as expressed as Laeq over 15 minutes at one metre from the façade of any noise sensitive premises does not exceed the background level by more than 10dB(A) for daytime and shall not exceed the background level for night – time.</p> <p>(C) Details relating to the likely sound power levels of all externally located plant including roof access level and equipment associated with this development shall be submitted to the Planning Department prior to installation.</p> <p>Reason: To protect the amenities of adjoining occupiers.</p>


### 6.3.1 Maintaining arrangements for environmental licence, permits and permissions

These are all legal documents associated with the work and may be from a contractor/supplier/client, or it may be an EPA or Local Authority Licences/Permit and will be maintained by the Management Team on site.

### 6.3.2 Licences and Permits

The Client will be requested to supply information on the licences and permissions that are required for the project. The responsibility for licence applications will be established at the start of the project or when changes occur.

The relevant environmental regulator may be informed early in the project of the environmental aspects of the work. A meeting on site will be arranged where applicable.

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**N.B. a copy of all formal licences is to be sent to the HSE Department, Kill.**

The following table indicates the licences that may be required:-

<b>Licence / Permission</b>	<b>Regulator</b>	<b>Operations</b>
Discharge consent into watercourse or sewer	Local Authority/Irish Water	Any solid or liquid entering controlled waters (river, pond, stream, ditch) unless it is clean water
Permissions / Licences	National Parks and Wildlife Services	Cutting of protected trees, derogation licences for protected species (bats, badgers, frogs etc), work in or near any SPA, SAC, NHA. Licences for managing invasive species
Permissions / Licences	Department of Environmental, Communities and Local Government	Excavation work in any site containing archaeological remains or natural habitat, protected Monument.
Planning Permissions	Bord Pleanala/LA	All planning permissions constraints
Waste licences/permits	EPA/LA/NWCPO	Transport and removal of waste offsite

#### **6.4 Company Policy & Procedures**

A copy of the Company Environmental Policy is displayed at the project site offices. The policy determines the company's overall approach to environmental management, which is developed through the EMS. This EMP has been developed taking into account the:

- Company Environmental Policy;
- Objectives and targets as specified in the Yearly Environment Plan; and
- Requirements of relevant specific procedures as contained in the Environmental Procedures Manual

#### **6.5 Relevant Statutory Provisions**


A library of environmental legislation, relevant codes of practice, standards and best practice guidance documents is maintained at the BAM Head office in Kill, Co. Kildare. This library is updated by the Company Environmental Coordinator through regular reviews or as required by changes in legislation and standards and developments in industry best practice. A register of legal and compliance obligations is on SharePoint for general viewing.

#### **6.6 Design and Life Cycle Perspectives**

The environmental and sustainability requirements for the project design are reviewed by project designers and construction management team and incorporated into the project as appropriate. The design and lifecycle perspectives are also reviewed by the Project Managers and Engineers to ensure that the environmental and sustainability considerations relevant to the construction works are incorporated into the works.

All environmental impacts and aspects of the project's lifecycle, from the raw materials used, procurement processes, the transportation and delivery to site, material use in the building product or service, to the end-of-life treatment and final disposal of the materials and products will be assessed, with the most favourable environmental option used where possible.

Input and consideration from relevant stakeholders will also be incorporated into both the design and construction processes. Communication with stakeholders may take place at various stages and means e.g. planning process, community newsletters, project website, Client meetings etc.

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### 6.7 Control of Documents

All documents relevant to the construction works shall be kept and stored in accordance with the below table. Documents that are part of the site environmental management system, including inspection reports, monitoring records and meeting minutes shall be kept for the duration of the project as per UKAS (United Kingdom accreditation scheme).

No.	Document	Raised By	Retained By	Statute or UKAS	Currently Held	Retention times (years)
1	Register of Environmental Aspects	Env Co-ordinator	Env Co-ordinator	UKAS	Head Office and Sites	3
2	Waste Transfer notes (where applicable)	External	Env Co-ordinator Site	Statute	Sites	3
3	Hazardous waste transfer notes	External	Env Co-ordinator Site	Statute	Sites	5
4	Waste Collection Permits	Local Authority	Env Co-ordinator	UKAS	Sites	Period of validity +1
5	Waste Facility Permits/Licences	Local Authority/EPA	Env Co-ordinator	UKAS	Sites	Period of validity +1
6	Energy Monitoring Records	Env Co-ordinator	Env Co-ordinator	UKAS	Head Office and Sites	3
7	Water Monitoring Records	Env Co-ordinator	Env Co-ordinator	UKAS	Sites	3
8	Local Authority / Environmental Protection Agency Licences	Local Authority / EPA	Env Co-ordinator Site	UKAS	Sites	Period of validity + 1
9	Environmental communication from external sources	External	Env Co-ordinator	UKAS	Sites	3
10	Audit Reports	Env Co-ordinator	Env Co-ordinator Head Office	UKAS	Head Office and Sites	3
11	Corrective Action Forms	Env Co-ordinator	Env Co-ordinator Head Office	UKAS	Head Office and Sites	3
12	Env N/C or Env Incident Report	Any member of staff	Env Co-ordinator Head Office	UKAS	Head Office	3
13	Water treatment log sheets	Site Staff	Site Staff	UKAS	Site	3
14	Calibration Certificates	External testers	Site Staff/ Env Co-ordinator	Statue	Site	3
15	Environmental Management Plans	Site Staff	Site Staff	UKAS	Sites	3
16	Waste Management Plans	Site Staff	Site Staff	UKAS	Sites	3
17	Environmental Risk Assessment	Env Co-ordinator	Env Co-ordinator and HSE Officer	Best Practice	Head Office	3
18	Department of Arts Heritage and Gaeltacht	Env Co-ordinator	Env Co-ordinator Site	Best Practice	Sites	3

Controlled documents will be:

- Reviewed at least annually and updated as appropriate;
- Marked as superseded once obsolete or destroyed;

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- Dated and marked with dates of revisions.

### 7.0. Environmental Objectives & Targets


The objectives and targets are set in relation to the aspects identified from each site in order to reduce our significant aspects. As a minimum they should include:-

- The prevention of pollution, including missions to air, water and land
- Nuisance impacts including dust, noise and vibration
- Protection of habitat areas and individual species, if applicable
- Storage and use of fuels and hazardous substances, including spills
- Waste management


### 7.1 Environmental Management Targets

The environmental management targets for the project are as follows.


<b>Targets</b>	<b>Measurable</b>	<b>Methodology</b>	<b>Responsibility</b>	<b>Timescale</b>
<i>Achieve Zero incidents of contamination to ground water from concrete works</i>	<i>Incidents, site inspections, quarterly audits, complaints</i>	<i>BAM procedures to be followed when working with concrete and washing out concrete chutes</i>	<i>Howard Mc Donagh Jack Curley Eoghan Brannigan Aidan O'Connell Eoghan McElwee Don Rodgers Andrew Boyle Derek Sheehan Sinead Rogan Padraic Brennan Sebastian Schneider Chloe Smullen Hugh Hackett Paul Mallon Jim Kennedy</i>	<i>Start to completion</i>
<i>Ensure sediment on roads is cleared.</i>	<i>Raise needs for road cleaning duties during wet or busy periods</i>	<i>Ensure roads are swept and cleaned on a regular basis. Road conditions within the site should be kept clean at all times.</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Jack Curley Eoghan McElwee Don Rodgers Andrew Boyle Derek Sheehan Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>

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<b>Targets</b>	<b>Measurable</b>	<b>Methodology</b>	<b>Responsibility</b>	<b>Timescale</b>
Generate <9.5t C&D waste per 100m2 (gross internal floor area)	Lean Construction Techniques, segregation more, reuse more (waste hierarchy)	Purchase less, ensure packaging is removed by supplier where possible and other materials reused & recycled	Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Eoghan McElwee Don Rodgers Andrew Boyle Barry Shiels Derek Sheehan Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	Start to completion
Lower fuel and oil spillages from site activities. Bunds to be used with all fuels and oils	Environmental Incidents, spills contained in bunds	Ensure that drip trays are used at all times under static plant, when refilling, & storing, ensure fuel storage areas are bunded.	Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Barry Shiels Ervin Karklitis Don Rodgers Andrew Boyle Rory Kenny Derek Sheehan Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	Start to completion
Ensure correct disposal of all hazardous wastes	Waste segregation, waste costs	All hazardous wastes to be disposed as per Irish Legislation and BAM requirements	Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Rory Kenny Barry Shiels Ervin Karklitis Don Rodgers Eoghan McElwee Andrew Boyle Derek Sheehan Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	Start to completion


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<b>Targets</b>	<b>Measurable</b>	<b>Methodology</b>	<b>Responsibility</b>	<b>Timescale</b>
<i>Ensure no incidents of pollution to water. Where incidents unfortunately occur - target of &lt;7% of total site environmental incidents to be adhered to</i>	<i>Water monitoring and sampling activities. Environmental Incident.</i>	<i>Sediment controls to be used, no waters to be discharged to any controlled waters or drainage systems without approval. Work with CIRIA guidelines and apply BAM precautionary measures</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Don Rodgers Andrew Boyle Barry Shiels Ervin Karklitis Jack Curley Derek Sheehan Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>
<i>Lower consumption of materials and fuel on monthly basis (relative to project revenue)</i>	<i>Smart meters, energy bills, service costs</i>	<i>Ensure all energy using equipment is switched off when not in use. Select best value for money providers where possible</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Don Rodgers Andrew Boyle Barry Shiels Rory Kenny Ervin Karklitis Derek Sheehan Hugh Hackett Chloe Smullen Paul Mallon Jim Kennedy</i>	<i>Start to completion</i>
<i>Reduce site electricity by 2.5% on monthly basis (relative to project revenue)</i>	<i>Smart meters, energy bills, service costs</i>	<i>Ensure all energy using equipment is switched off when not in use. Select best value for money providers where possible</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Don Rodgers Andrew Boyle Sinead Rogan Matthew Byrne Derek Sheehan Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>


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Targets	Measurable	Methodology	Responsibility	Timescale
Lower emissions of dust, smoke and fumes during works	Air quality, dust particle increase	Ensure all equipment is well serviced and maintained. Switch of equipment when not in use. Use dust suppression techniques when applicable	Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jim Dillon Don Rodgers Migel Angel O Andrew Boyle Michael Moloney Jack Curley Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	Start to completion
Reduce amount of Public complaints	Complaints received to Site Management Team	Ensure when works which will impede public access are taking place, all residents are informed for the timescale (where applicable) and all restrictions are kept to a minimum	Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jack Curley Don Rodgers Migel Angel O Andrew Boyle Michael Moloney Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	Start to completion
Minimise water usage consumption	Water charges, waste water disposal (discharge volumes)	All grey water to be reused on site where possible. 'Fresh' water supply to be kept to a minimum where possible. TBT-12 Water on Construction Sites	Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jim Dillon Don Rodgers Migel Angel O Andrew Boyle Jack Curley Barry Shiels Michael Moloney Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy	Start to completion



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<b>Targets</b>	<b>Measurable</b>	<b>Methodology</b>	<b>Responsibility</b>	<b>Timescale</b>
<i>Minimise risk of Aspergillus</i>	<i>Air quality, dust particle increase</i>	<i>National Guidelines for the Prevention of Noncomial Invasive Aspergillus during Construction / Renovation activities on Aspergillus Control will be adhered to</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jim Dillon Don Rodgers Migel Angel O Andrew Boyle Michael Moloney Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>
<i>Minimise airborne &amp; ground bourne noise</i>	<i>Noise triggers breached (where applicable)</i>	<i>All construction noise limits set out in the requirements will be adhered to.</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jim Dillon Don Rodgers Migel Angel O Andrew Boyle Michael Moloney Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>

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<b>Targets</b>	<b>Measurable</b>	<b>Methodology</b>	<b>Responsibility</b>	<b>Timescale</b>
<i>Minimise vibration</i>	<i>Vibration triggers breached (where applicable)</i>	<i>All vibration limits set out in the works requirements will be adhered to.</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jim Dillon Don Rodgers Migel Angel O Andrew Boyle Michael Moloney Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>
<i>Ensure no vehicle movement and material placement does not cause damage to flora and fauna</i>	<i>Correct habitat protection used. Wildlife surveys where applicable</i>	<i>All fauna/animal species to be untouched where possible. Professional advice to be sought on removal procedures</i>	<i>Howard Mc Donagh Eoghan Brannigan Aidan O'Connell Padraic Brennan Sebastian Schneider Jim Dillon Jack Curley Don Rodgers Migel Angel O Andrew Boyle Michael Moloney Derek Sheehan Heidi Murphy Chloe Smullen Paul Mallon Hugh Hackett Jim Kennedy</i>	<i>Start to completion</i>

### **BREEM Targets**


BREEM is a tool to measure the sustainability of new construction. The NCH Project is aiming for level excellent, meaning we are targeting 70% of available credits.

BREEM is a tool to measure the sustainability of new construction. The NCH project is aiming for level Excellent, meaning we are targeting 70% of available credits.

In order to achieve this we are:

Monitoring and striving to reduce consumption of:

- Electricity
- Water

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- Fuel
- Using alternative power sources (solar)
- Procuring environmentally friendly and legally harvested materials
- Segregating and mapping our waste under a minimum of 5 categories and aiming to recycle 95% of this.
- We have registered the site on the Considerate Constructors Scheme which aims to improve the image of the construction industry by protecting the environment, respecting the community, valuing our workforce and caring about appearance

The standard environmental management goals for the project are to:


- Conduct all activities in accordance with the:
  - Company environmental policy and procedures;
  - Relevant statutory regulations and provisions;
  - Contractual requirements with the client; and
  - Requirements of relevant authorities;
- Minimise adverse environmental impacts during construction;
- Enhance natural environments during the course of construction, where practical
- Reduce the significance of our aspects and impacts through our working methods
- Increase subcontractor awareness of our EMS
- Increase company awareness of sustainability issues

BAM Contractors has established company environmental and sustainability targets which are documented in the 2019 Environmental Year Plan. These targets include;

- 12% reduction of total construction waste (*relative to total revenue*) compared to 2015.
- 6% reduction of the relative CO<sub>2</sub> emissions (*total CO<sub>2</sub> per total revenue*) compared to 2015.
- Achieve >97% recovery rate for all C&O waste.
- < 2 reported environmental incidents annually.
- Achieve zero spillages to water courses.
- < 7 reported environmental complaints annually.
- ≤ 9.5t C&D waste generated per 100m<sup>2</sup> (gross internal floor area)\*

*\*Target only applicable to building sites*

In order to help achieve these targets, the below table highlights compliance tools.


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## 7.2 Initiatives to ensure compliance with BAM Targets

Sites	Area	Objectives & Targets	Method for achieving	Assistance by HSE Dept. (method)	Responsibility
All sites and offices	Waste	Eliminate waste sent to landfill	Adhere to the waste hierarchy. Lean construction techniques	EA-30 Excavated materials on site ( <i>Article 27 Notification Forms</i> ). CIRIA documents on Lean Construction	Site Teams and HSE Dept.
		Increase site segregation of construction waste by 10%	Additional recycling skips on site Increase staff knowledge and participation	EP-16 waste definitions and classifications, TBT-03 Managing Waste, TBT-02 Environmental Awareness, EB-11 Site Set up	Site Teams and HSE dept.
		Increase recycling rates	Increase site awareness of improved waste management practices	Waste posters, environmental alerts and bullets to be issued focusing on new waste strategies	Site Teams and HSE Dept.
All sites and offices	Energy	SMART Meters for all sites	SMART meters installed in cabins	Advice on installation and data collected	Site Teams and HSE Dept
		Reduce CO <sub>2</sub> emissions by 4%	Implement an energy reduction initiative in sites and offices	Environmental information to be issued focusing on new waste strategies	Site Teams and HSE Dept
		Temperature control in cabins	Thermostats installed	Advice on installation and data collected	Site Teams and HSE Dept
		Energy initiatives	SEAI Initiatives	<ul style="list-style-type: none"> <li>Online calculation tools (energy)</li> <li>Energy posters</li> <li>Relatively paperless sites</li> </ul>	HSE Dept IT Dept.
		Reduction in fuel usage / air emissions	Car Purchasing	Procurement of low emissions vehicles by Plant Department. Video conferencing capabilities in Offices to cut down on travel times, emissions.	Site Teams and HSE Dept
All sites and offices	Env Auditing & Performance	All sites to achieve 'Pass' mark from quarterly audits >91%	Quarterly audits	Regular environmental information and directions to be issued to the sites	Sites Teams and HSE Dept.
		Appraisal system for environmental performance	Subcontractor appraisal system (COINS)	Detailed information of the systems and scores circulated to all.	Sites Teams and HSE Dept.

## 8.0. Environmental Control Measures

Control measures will be implemented both on an activity specific basis for the area of works, and independently of any specific activities as part of the general site management. Throughout this section reference may be made to standard procedures contained in the

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Environmental Procedures Manual that shall be adopted on site. The Environmental Procedures are available on SharePoint.

The project shall be developed in accordance with the control measures and with reference to the following guidance documents:-

- BRE (2003) Control of dust from construction and demolition activities;
- BS 5228-1: 2009+A1:2014 CoP for Noise and vibration control on construction and open sites: Part 1: Noise
- BS 5228-2: 2009+A1:2014 CoP for Noise and vibration control on construction and open sites: Part 2: Vibration
- BS 5837: 2012 Trees in relation to design, demolition and construction works
- BS8895-1:2013 Designing material efficiency in building projects Part 1: CoP for strategic definition
- CIRIA 741 (2015) Environmental Good Practice On Site (Fourth Edition);
- CIRIA 532 (2001) Control of Water Pollution from Construction Sites – Guidance for consultants and contractors;
- IFI (2016) Guidelines on Protection of Fisheries during Construction Works in adjacent to Waters
- Fisheries Guidelines for Local Authority Works (Department of Marine and Natural Resources, 1998).

Other guidance documents may be referenced for specific issues throughout this section. Copies of these documents are held by the Company Environmental Coordinator and on SharePoint.

The control measures and monitoring requirements listed in this section must be implemented throughout the project.

### 8.1 Water Pollution Control


All watercourses that are potentially impacted by the works are identified on the site maps included in Appendix 4.

#### 8.1.1 Water Pollution Control Measures

All water run off or ground water encountered in excavations will be treated prior to discharge into any conduit. Depending on the quantity of the water there will be two distinct methods of treatment:

- A. For small quantities, usually to dewater a trench that has no significant water ingress, the water will be pumped and dispersed in adjacent landscape areas which will act as a filter.
- B. There are two silt traps in place, one in each zone to eliminate suspended solids and improve water quality.

The potential for the construction works to have an impact on the quality of the local watercourses shall be minimised through the implementation of the following control measures, which have been developed with reference to the guidance contained in EP-10 Surface Water Control, EP-13 Bulk Fuel & Oil Storage, EP-14 Storage & Handling of

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Hazardous Substances and EP-15 Containing & Cleaning Up Spills and the IFI (2016) Guidelines on Protection of Fisheries during Construction Works in adjacent to Waters.

Control measures to be implemented include;

- *Care shall be taken to avoid interference with the supply or quality of any groundwater resource.*
- *Waste products associated with the works shall not be permitted to enter watercourses adjacent to the works through the use of French drains, petrol interceptors or other agreed methods.*
- *Water that is high in solids or contaminated with cement or oil, shall not be pumped from excavations directly to watercourses without pre-treatment (e.g. sedimentation/ filtration and oil separation).*
- *All site run-off associated with the construction shall be directed to storm control areas or tanks*
- *Spill kits will be provided at all river locations identified.*
- *Fuels, oils, greases and hydraulic fluids shall be stored in bunded compounds well away from watercourses. Refueling of machinery, etc. must be carried out in bunded areas. Fuels shall be stored during the construction phase in bunded fuel storage tanks with a 110% holding capacity. Where it is necessary to dispense fuels on site, this shall be undertaken in areas covered with an impermeable surface to protect surface water and ground water;*
- *Construction works, especially ones involving the pouring of concrete, shall be conducted in the dry. Precast concrete shall be used in preference to uncured concrete, which kills aquatic fauna through alteration of stream pH. When cast-in-place concrete is required, all work shall be done in the dry and allowed cure for 48 hours before re-flooding.*
- *To help prevent the contamination of the ground and groundwater, contaminated materials (oils, fuels, chemicals etc.) will be used and stored in an appropriate manner as outlined in the relevant guidance, i.e. CIRIA (2001) and DMRB Volume 11 (1994).*

### 8.1.2 Water Quality Monitoring

- Refer to Appendix 8 in relation to the discharge licence. Weekly water sampling takes place on site wherever water is discharged.


### 8.1.3 Water Pollution Incidents

Should any monitoring or inspection indicate that pollution of the St. James NCH Phase B Works site has occurred then the Site Management Team shall immediately inspect the all work activities to ascertain whether they are operating effectively. All works may be stopped and/or additional control measures installed to prevent further pollution or discharge to the watercourse. Appropriate action shall be taken in consultation with the Site Agent. Water samples shall be taken at the watercourse if required. The incident shall be logged in the Incident Register.

## 8.2 Noise & Vibration Control

The primary sources of noise and vibration associated with the contract have been identified as follows:

- *Vibrating rollers*
- *Plate Compactors*
- *Concrete vibration*

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- *Site vehicle movements*
- *Excavators*
- *Demolition Equipment*

Noise limit criteria:

<b>Period which criterion applies</b>	<b>Hours</b>	<b>Noise Impact Criterion LAEQ1hr n</b>
Mon - Fri		
Day	07:00 – 19:00	70dB
Evening	19:00 – 22:00	60dB
Night	22:00 – 07:00	The higher of 45DB or the ambient level
Sat		
Day	08:00 – 14:00 (work outside these hours no higher than 45DB or ambient noise level)	65dB
Sun & Bank Hol	No work on Sunday or Bank Hol	N/A

Allowable vibration for sensitive and residential buildings:

<b>Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of the vibration, at a frequency of:</b>		
Less than 10 Hz	10-50 HZ	50-100HZ (and above)
10 to 50 Hz	12.5mm/s	10mm/s
3mm/s	3-8mm/s	8-10mm/s


All works are scheduled to be completed within the *relevant* working hours as specified in the contract.

Best practicable means should be employed to minimise noise levels, in accordance with the British Standard BS 522: 2009+A1:2014. Noise and vibration control on construction and open sites (Parts 1 and 2) for basic information and procedures for noise and vibration control. A copy of this standard is available at the site or from sharepoint.

### 8.2.1 Noise & Vibration Control Measures

Noise reduction measures will be undertaken in accordance with the Procedure EP-09 Noise and Vibration Control, which has been developed taking into account the requirements of BS 5528, particularly Section 10, and include:

- *Communicate with neighbours and appropriate local authority*
- *TBT's to be undertaken to alert site operatives to appropriate environmental controls*

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- *Ensure all plant and equipment is well maintained*
- *Daily plant and equipment checks undertaken*
- *Installation of hoarding and other noise baffling equipment where deemed necessary by risk assessment*
- *Works to take place during agreed times only*
- *Condition surveys, baseline and ongoing construction phase monitoring in sensitive locations as and when required*
- *Adoption of appropriate work plan to minimise vibration in sensitive areas*
- *Works to be carried out in environments not local to sensitive receptors*

### 8.2.2 Noise & Vibration Monitoring

- Noise monitoring in compliance with project requirements

There are 16 noise units on site placed at strategic positions where noise from the site could affect the residents living in the vicinity of the National Children's Hospital site. Trigger values have been set at amber at 65dB and red at 70dB. The noise monitoring units will send a message or an email alert to all parties concerned if a 'trigger' value has been breached. Trigger levels for Noise Monitor 003 have been adjusted to allow for ambient noise levels at South Circular Road. Trigger levels for Noise Monitor 004 have been adjusted to allow for ambient noise levels at Mount Brown. The red trigger level is now set at 73dB at South Circular Road location and 77dB at Mount Brown Location

- Vibration monitoring in compliance with project requirements

There are 14 vibration units on site placed at strategic positions where vibration from the site could affect the residents living in the vicinity of the National Children's Hospital Site. The trigger values have been set at amber at 2.5mm/s and red at 3mm/s. The vibration monitoring units will send a message or an email to all parties concerned if a trigger value has been breached.

### 8.2.3 Noise & Vibration Incidents


Should any monitoring indicate that noise or vibration levels have exceeded the intervention values then the plant or equipment causing the noise / vibration shall be powered down immediately. Appropriate action shall be taken in consultation with the Site Agent to reduce the noise and/or vibration levels. Actions may include:

- Servicing and or modifying the plant / equipment;
- Replacing the plant / equipment;
- Moving the operation away from sensitive receptors;
- Rescheduling the activity;
- Erecting noise barriers where other measures are not practical

When noise and vibration monitoring is taking place, all monitors should take into account the background noise and situation when monitoring. External noise and vibration reports to reference to this fact also.

The incident shall be logged in the Incident Register if levels have been breached and background noise was deemed not a factor at the time of the occurrence.



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### 8.3 Air Pollution Control

The main types of air pollution that will result from the works are dust and exhaust emissions from combustion engines, and plant machinery and vehicles. Activities with the potential to produce to dust are:

- *Plant and vehicle movement;*
- *Bulk materials handling;*
- *Vehicle movement off site.*

#### 8.3.1 Dust Minimisation Plan

Dust shall be minimised on site through the implementation of the following control measures developed in accordance with the Procedure EP-08 Air Pollution Control:

- *Dust netting will be erected on scaffolding*
- *Water bowsers will be used to keep down dust on site*
- *Water spray guns will minimise dust in bigger, exposed areas not yet covered by concrete*
- *Stone/Sand trucks will be required to have covers on trailers*
- *Aspergillus control plan put in place*
- *Covered skips*

#### 8.3.2 Other Air Quality Control Measures

- Exhaust emissions where practical shall be minimised by ensuring that all plant, equipment and vehicles are in good working order and regularly serviced to ensure efficient running, by using the smallest engine-sized plant and equipment suitable for the task and by ensuring that engines are not left idling unnecessarily.
- Burning of materials on site shall not be permitted.

#### 8.3.3 Dust Monitoring


- Dust monitoring in compliance with project requirements –

There are eleven dust units on site placed at strategic positions where dust from the site could affect the residents living around the site area. The dust monitoring units (glass jar) will be taken off site each month for testing and replaced with a new monitoring unit (glass jar).

The dust fall limit is 350mg/m<sup>2</sup>/day.

### 8.4 Habitat (Flora & Fauna) Protection

Generally ecological mitigation measures are incorporated into the project design and the requirement during the construction stage is to ensure that all mitigations are fully implemented. Additional measures may be implemented during construction to limit additional habitat and fauna disturbance outside the area of works as listed below.

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All work activities will comply with the Environmental Protection Agency Act 1992 and Wildlife Act 1976 and amendments 2000 to 2010 and the European Communities (Birds and Natural Habitats) Regulations 2011.

#### 8.4.1 Construction Mitigation Measures

Control measures shall be implemented in accordance with EP-12 Habitat, Flora and Fauna Protection are as follows:

- All licences to be in place before any work which may impinge on trees, hedges or another protected species. Liaison with Client, Clients Rep and Local Authority to be encouraged before works start.
- If invasive plants are to be moved, contact department of Arts, Heritage and Gaeltacht (DAHG) for permission and licences and invasive species management plan to be implemented.
- Protected species to be identified prior to commencement of works and all mitigation measures related to each species to be fully adhered to.
- Site set up to be carefully selected and reinstated on completion
- Vegetation clearance to be undertaken outside the bird breeding season i.e. 1<sup>st</sup> March to 31<sup>st</sup> August. Licence required to remove mature trees.
- Trees felled from September to November to be left for 24 hours to allow bats to escape

#### 8.5 Waste Management (incl. Hazardous Waste)

A Waste Management Plan will be instituted during the works and the waste management measures for the project are detailed in this separate document, which includes:

- Waste management targets
- The potential waste materials produced during the project;
- Waste handling procedures;
- Waste Permits required;
- Waste reuse, recycling and disposal techniques; and
- A map showing designated waste handling areas.

The Waste Management Plan also covers the handling and disposal of hazardous wastes such as asbestos, fuels and used absorbent materials.

With regard to potential nuisance from temporary site offices and canteen, the following measures shall be observed:


- Site offices shall be maintained in a tidy condition.
- Litter shall be cleaned up daily, particularly around skip bins, in accordance with EP-19 Litter Management.

#### Dealing with Contamination

- A. Assess in conjunction with G.I.R
- B. Test to classification
- C. Dispose to appropriate facility

#### Areas of Potential Contamination

- A. Mount Brown – TBC on testing, area inaccessible at present

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### Areas of Known Contamination

- All known areas of contamination were removed effectively during phase A, for example H7 and Mount Brown. This was completed in conjunction with a licensed hauler whom transferred the contaminant to an appropriate waste facility whereby it was disposed of and treated accordingly.
- Pending other contaminants are noticed they too will be dealt with in a similar and pragmatic fashion. Contaminants are realised via investigation / testing of soil.

### **8.6 Hazardous Materials Handling & Storage**

During the works there will be a requirement for the use of hazardous substances, including but not limited to:

- Fuel oil
- Diesel
- Hydraulic Oil
- Shuttering Oil
- Liquid cement
- Concrete Curing Agent

The management of such substances shall be carried out in accordance with the procedures for:

- Bulk Fuel and Oil Storage (EP-13);
- Storage and Handling of Hazardous Substances (EP-14);
- Containing and Cleaning Up Spills (EP-15).

All chemicals not covered by EP13, EP14 and EP15 shall be managed in accordance with the requirements of the relevant safety data sheet (SDS) and the Health and Safety Plan.


- Hazardous materials are kept in lockable stores at site compound locations. Spill kits are also kept at these locations. Any hazardous materials must be returned to the stores at the end of each day and not left on site.
- Oil and fuel will be stored in bunded areas and shall be stored well away from any water discharge point or, where not possible, the discharge point will be adequately protected to prevent spills from entering.
- Diesel pumps, generators or similar shall be placed on impervious drip trays to capture minor spills and leaks and located at least 10m from any water discharge point.
- Tools and equipment shall not be washed in or near any watercourses and if undertaken on site wash water shall be directed to appropriate retention controls and not allowed to directly enter any watercourse.

Fuels, lubricants and hydraulic fluids for equipment used on the construction site shall be carefully handled to avoid spillage, properly secured against unauthorised access and provided with spill containment. Fuelling and lubrication of equipment shall not be carried out in the vicinity of water discharge points. Waste oils and hydraulic fluids shall be collected in leak-proof containers and transported off-site for disposal or recycling at appropriately licensed facilities.

### **8.7 Vermin Control**

Control measures associated with vermin are as follows:

- All work and canteen areas will be tidied, cleaned and free from waste on a daily basis.
- Employ a pest control company (Rentokil) to lay traps around the site and monitor same on a monthly basis.

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### **8.8 Landscape**

Landscape measures shall be implemented in accordance with the Landscape Design required by the contract, to be prepared by the Designer.

### **8.9 Archaeology**

All archaeology licences and permits to be in place before works commence. Licenced archaeologist will be on site full time, if any materials or remains are encountered after archaeological digs, all works must stop and all to refer to EP-26 Archaeology procedure.

## **9. Management Review**

The implementation of the EMP is reviewed monthly on site at the internal site meetings. These meetings are attended by site management and by personnel responsible for the implementation of the EMP. During the meeting all aspects of the environmental management are considered, including:

- Upcoming work
- Environments risks foreseen
- Control measures for the protection of the environment
- Internal and external audit results
- Inspection and monitoring results;
- Environmental alerts and bullet-ins
- Any issues raised by site staff or in relation to environmental management
- Site goals and targets
- Control measures for protection of the environment
- Any other significant issues;


Changes are made to the on-site management as required to achieve a continual improvement in environmental performance.

Environmental issues will be brought to the attention of the workforce through toolbox talks and through the Monthly HSE Meeting.

The EMP itself shall be reviewed at least every three months by the Site Management Team to ensure that it continues to be adequate and effective and changes made as required. Any changes shall be made by the Site HSE Officer and a new revision of the EMP issued to all personnel on the circulation list on page 1 of this document.

## **10. Training & Competence**

The environmental management goals and strategy shall be communicated to all staff and contractors at the safety and environmental induction. All employees and contractors are required to undertake a site induction prior to conducting any work on site (for further details refer to the Health and Safety Plan) and employees shall be made aware of their responsibilities in accordance with this management plan. A record of inductions shall be kept by the Safety, Health & Environmental Officer.


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Toolbox talks will be conducted with relevant employees on various aspects of the environmental management plan, activity control measures and environmental procedures. Three toolbox talks on environmental or waste issues must be conducted per quarter.


Toolbox talks shall be conducted by the Site HSE Officer, Section Engineers or others nominated by the Site HSE Officer. The schedule for toolbox talks shall be at the discretion of the Site Management Team and additional toolbox talks will be given in response to complaints, or where the particular environmental risks have been identified.

### 10.1 Recommended Toolbox Talks

Toolbox Talk Topic	Reference Material	When*	Recipients
<b>Environmental Management</b>	Environmental Policy, EMP, Environmental Procedures Manual	Commencement of site activities	All site crews
<b>TBT 01</b>	Hazardous Substances	Regular Intervals	All site crews
<b>TBT 02</b>	Environmental Awareness	Regular Intervals	All site crews
<b>TBT 03</b>	Managing Waste	Regular Intervals	All site crews
<b>TBT 04</b>	Spill Control	Regular Intervals	All site crews
<b>TBT 05</b>	Waste Pollution Prevention (Fuel & Oil)	Regular Intervals	All site crews
<b>TBT 06</b>	Silt Management	Regular Intervals	All site crews
<b>TBT 07</b>	Fire	Regular Intervals	All site crews
<b>TBT 08</b>	Storage of Hazardous Waste on Site	Regular Intervals	All site crews
<b>TBT 09</b>	Japanese Knotweed	Regular Intervals	All site crews
<b>TBT 10</b>	Chemical & Fuel on site	Regular Intervals	All site crews
<b>TBT 11</b>	Trees	Regular Intervals	All site crews
<b>TBT 12</b>	Water on Construction Sites	Regular Intervals	All site crews
<b>TBT 13</b>	Dust and Air Quality	Regular Intervals	All site crews
<b>TBT 14</b>	Noise and Vibration	Regular Intervals	All site crews
<b>TBT 15</b>	Archaeology	Regular Intervals	All site crews
<b>TBT 16</b>	Working in previous developed areas	Regular Intervals	All site crews
<b>TBT 17</b>	Pumping and over pumping	Regular Intervals	All site crews
<b>TBT 18</b>	Water pollution - cement and concrete	Regular Intervals	All site crews
<b>TBT 19</b>	Material handling and housekeeping	Regular Intervals	All site crews


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<b>TBT 20</b>	Washing down plant and equipment	Regular Intervals	All site crews
<b>TBT 21</b>	Energy conservation - electricity and fuel	Regular Intervals	All site crews
<b>TBT 22</b>	Bentonite	Regular Intervals	All site crews
<b>TBT 23</b>	Be a good neighbour	Regular Intervals	All site crews
<b>TBT 24</b>	Sustainability	Regular Intervals	All site crews
<b>TBT 25</b>	Eco driving	Regular Intervals	All site crews
<b>TBT 26</b>	Fuel efficiency	Regular Intervals	All site crews
<b>TBT 27</b>	Material handling and storage	Regular Intervals	All site crews
<b>TBT 28</b>	Segregation of waste	Regular Intervals	All site crews
<b>TBT 29</b>	Storage of waste	Regular Intervals	All site crews
<b>TBT 30</b>	Energy efficiency	Regular Intervals	All site crews
<b>TBT 31</b>	Void space	Regular Intervals	All site crews
<b>TBT 32</b>	Waste hierarchy	Regular Intervals	All site crews

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## Appendix 1: Table of Requirements for ISO14001:2015

	<b>ISO14001:2015</b>	<b>EMP</b>	<b>Section</b>
5.2	Environmental Policy	Company Environmental Policy	Appendix 5
6.1.2	Environmental aspects	Environmental planning, aspects and control Site Environmental Risk Assessment	5 5.1
6.1.3	Compliance obligations	Relevant Statutory Provisions	6.5
		Contract Requirements/ ERA	Appendix 2 & 3
6.2	Environmental objectives and planning to achieve them	Environmental objectives and targets	7
6.2.1 6.2.2			
5.3	Organizational roles, responsibilities and authorities	Organisation & Responsibilities	2.1 2.3
7.2 7.3	Competence and awareness	Training and competence	10
7.4	Communication	Environmental Management Arrangements Communication	3 2.2
7.5.3	Control of documented information	Control of Documents	6.7
8.1	Operational planning and control	Environmental Control Measures	8
8.2	Emergency preparedness and response	Summary of emergency procedure	4
9.1	Monitoring, measurement, analysis and evaluation	Environmental management	3.1
9.1.2	Evaluation of compliance	Environmental compliance requirements	6
10.2	Nonconformity and corrective action	Environmental incidents	3.2.2
9.2	Internal audit	Environmental management	3.1
9.3	Management review	Management Review	9


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## Appendix 2: Table of Contractual Requirements for Environmental Management


Table of Contractual Requirements for Environmental Management  
(From Project Specific Construction Requirements)

Clause	Restriction – refer to Contract for complete details
6.	<p>The development shall comply with the following requirement of the City Archaeologist.</p> <ul style="list-style-type: none"> <li>viii. The developer shall retain a suitable qualified licenced archaeologist to advise regarding the archaeological implications of site clearance, demolition and/or construction methodology and to make appropriate recommendations for mitigation including the detailed survey as necessary.</li> <li>ix. The developers archaeologist shall allow for the resolution of archaeology (both on site and necessary post excavation) in the project budget timetable.</li> <li>x. The developers archaeologist shall undertake licensed archaeological monitoring or all demolition and sub-surface work associated with the development including the breaking and removal of any floor slabs, levelling of ground etc.</li> <li>xi. The archaeologist shall consult with and forward their Method Statement in advance of commencement to the City Archaeologist.</li> <li>xii. In the event of archaeological features being located in the course of the monitoring, the developer shall facilitate the archaeologist in fully recording such features, including if necessary the archaeological excavation of such features, in the event of significant archaeological features on site, the archaeologist retained by the developer shall immediately contract the City Archaeologist. The City Archaeologist (in consultation with the National Monuments Service, Department of Arts Heritage and the Gaeltacht) shall determine the further archaeological resolution of the site.</li> <li>xiii. A written and digital report containing the results of the archaeological monitoring shall be forwarded on completion to the City Archaeologist and the National Monuments Service, Department Arts Heritage and the Gaeltacht.</li> <li>xiv. Following submission of the final report the City Archaeologist where archaeological materials is shown to be present the archaeological paper archive shall be compiled in accordance with the procedures detailed in the Dublin City Archaeological Archive Guidelines (2008 Dublin City Council) and lodged with the Dublin City Library and Archive 138-144 Pearse Street, Dublin 2.</li> </ul>
8	<p>The development shall comply with the following conditions during the demolition and construction stages: -</p> <ul style="list-style-type: none"> <li>i. During the demolition and construction phase the proposed development shall comply with the British Standard 5228: 2009 – Code of Practice for noise and vibration control on construction and open sites, Part 1 Noise and Part 2; Vibration. In addition the mitigations measures for demolition and construction of works as detailed in volume 2 of the EIS shall be followed.</li> <li>ii. During the demolition and construction phase of the development, Best Practicable Means shall be employed to minimise air blown dust being emitted from the site. This shall include covering skips (including those being transported from the site) and stack-heaps, netting of scaffolding, watering of rubble chutes, daily washing down of pavements or other public areas, and any other precautions necessary to prevent dust nuisance.</li> </ul>




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	<p>iii. The watering down of the area should be carried out where necessary to minimise dust transfer into neighbouring premises.</p> <p>iv. Stockpiles of earth shall be damped down or otherwise suitably treated to prevent the emission of dust from the site. The stockpiles should be planned and sited to minimise the potential for dust nuisance.</p> <p>v. Prior to the commencement of development a demolition and construction method statement and plan addressing the issues of noise, dust, vibration (such as from pile driving) odour, construction traffic management, and their mitigation shall be submitted to the Planning Authority for their written agreement.</p> <p>Reason:</p> <p>In the interest of minimising adverse impact during the demolition and construction phased of development in the interests of amenities and the proper planning and development of the area.</p>
9.	<p>The development shall comply with the following conditions for Waste Management:</p> <p>i. Prior to the commencement of any works a Construction and Demolition Waste Management Plan must be furnished to and approved by Dublin City Council.</p> <p>i. Prior to the construction phase the quantity of C&amp;D waste shall be determined in order to ensure that the required regulatory permit (issued by Dublin City Council or Licence issued by the EPA) is in place prior to the commencement of the development.</p> <p>ii. During the Construction phase, Waste Management Services requests the provision of monthly statistics regarding waste arising, verification of quantities recycled and disposed and the location of disposal facilities. A construction Liaison contact should be identified by the developer and the information forwarded electronically to Waste Management Services on a monthly basis in order to ensure compliance with legislation.</p> <p>iii. The works must comply with the following:</p> <ul style="list-style-type: none"> <li>e. Waste Management Act 1996, as amended.</li> <li>f. Dublin City Council Commercial Waste Bye-Laws 2008 (Bye-Laws for the storage, separation at source and presentation for collection of commercial waste) as amended.</li> <li>g. Dublin Region Waste Management Plan 2005 – 2010 as amended.</li> <li>h. Any other relevant Waste Management related regulations.</li> </ul> <p>Reason: In the interests of the protection of the environment having regard Circular WPR 07/06 – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition published by the DoEHLG 2006 and Dublin City Waste Management Guidelines.</p>
10.	<p>(a) The site and building works required to implement the development shall only be carried out between the hours of</p> <ul style="list-style-type: none"> <li>• Monday to Friday – 7:00am to 6:00pm</li> <li>• Saturday – 8:00am to 2:00pm</li> <li>• Sunday and Public Holidays – No activity on site.</li> </ul> <p>(b) Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from Dublin City Council. Such approval may be given subject to conditions pertaining to the particular circumstance being set by Dublin City Council.</p> <p>Reason: In order to safeguard the amenities of adjoining occupiers.</p>

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11.	<p>The site development works and construction works shall be carried out in such a manner as to ensure that the adjoining street(s) are kept clear of debris, soil and other material and if the need arises for cleaning works to be carried out on the adjoining public roads, the said cleaning works shall be carried out at the developers expense.</p> <p>Reason: To ensure that the adjoin roadways are kept in a clean and safe condition during construction works in the interest of orderly development.</p>
12	<p>The development shall comply with the following requirements.</p> <p>(a) Noise levels from the site, during both the construction and operational phases, measured as a LAeq (5min at night, 15min in day) when all proposed plant is operating, shall not exceed the LA90 by 5dB(A) or more.</p> <p>(b) Noise levels should not be so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause for annoyance to a person in any premises in the neighbourhood or to a person lawfully using any public place. All mechanical plant and ventilation inlets and outlets should be attenuated as necessary to ensure that the noise level as expressed as Laeq over 15 minutes at one metre from the façade of any noise sensitive premises does not exceed the background level by more than 10dB(A) for daytime and shall not exceed the background level for night – time.</p> <p>(C) Details relating to the likely sound power levels of all externally located plant including roof access level and equipment associated with this development shall be submitted to the Planning Department prior to installation.</p> <p>Reason: To protect the amenities of adjoining occupiers.</p>

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<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	REV: 11	Date: 25.01.2019	<b>Site Specific EMP</b>


## **Appendix 3: Environmental Risk Assessment Report**

<b>SS EMP</b>	<i>NCH Project – Main Contract Phase B</i>			
<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	<b>REV: 11</b>	<b>Date: 25.01.2019</b>	<b>Site Specific EMP</b>

## **Appendix 4: Site Maps**


<b>SS EMP</b>	<i>NCH Project – Main Contract Phase B</i>			
<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	REV: 11	Date: 25.01.2019	<b>Site Specific EMP</b>

## **Appendix 5: Environmental Policy**


<b>SS EMP</b>	<b>NCH Project – Main Contract Phase B</b>			
<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	REV: 11	Date: 25.01.2019	<b>Site Specific EMP</b>

## Appendix 6: Subcontractor Details

Contract	Company	Environmental Contact	Commencement Date	Duration
C6027	Mulroy Environmental	Padraic Mulroy	05/09/17	9 Months
C6027	THM	David Lewis – 085 8878128	01/09/17	10 Months
C6027	Cloncad	Niall Caffrey – 087 0575504	01/09/17	10 Months
C6027	Paul Mc Gee Construction	Paul Mc Gee 086 3837656	08/08/17	12 Months
C6027	Jones Engineering	Andrew Byrne	01/09/17	12 Months
C6027	McGuire Haulage	Mike O'Brien	08/08/17	11 Months
C6027	Topline	Sean Cunningham	01/09/17	10 Months
C6027	Dawson Wam	John Gallagher	14/09/17	4 Months
C6027	PJ Edwards	Conor Smith	17/08/17	9 Months
C6027	Advanced Flooring	Gerry	March 2017	12 Months
C6027	Barridek	Declan Conlon	17/11/17	12 Months
C6027	Cumiskey Scaffolding	Robert Cumiskey	01/09/17	12 Months
C6027	Diamond Drilling	James Donnelly	05/03/18	2 Months
C6027	John Ryan Construction & Demolition	John Ryan	27/10/17	4 Months
C6027	Kwik Structures	Brian Kirwan	23/02/18	12 Months
C6027	Lynskey	Colm Gahan	13/03/18	4 Months
C6027	Palmira	Alan Maunsell	01/11/17	6 Months
C6027	Terra	Andrew Lambe	14/11/17	7 Months

<b>SS EMP</b>	<i>NCH Project – Main Contract Phase B</i>			
<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	REV: 11	Date: 25.01.2019	<b>Site Specific EMP</b>

## **Appendix 7: Org Chart**

<b>SS EMP</b>	<i>NCH Project – Main Contract Phase B</i>			
<b>Site Specific EMP</b>	Note: Always print or copy to double-sided pages	<b>REV: 11</b>	<b>Date: 25.01.2019</b>	<b>Site Specific EMP</b>

## **Appendix 8: Discharge Licence**