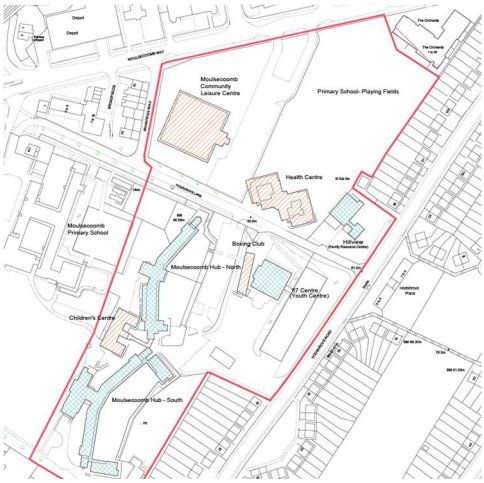
DEMOLITION ENVIRONMENTAL MANAGEMENT PLAN



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	PRINT NAME	SIGNATURE	POSITION	DATE
AUTHOR	Lewis Smith	[redacted]	Project Manager	06.03.24
CHECKED BY:	Darren Hedges	[redacted]	SHEQ Manager	06.03.24
ACCEPTED BY:				

HEAD OFFICE
11 Flathouse Road, Portsmouth
Hampshire PO1 4QS

Tel 02392 753733
Fax 02392 755189

HEATHROW OFFICE
Room 107-111, Epsom Square
Eastern Business Park TW6 2BJ

Tel 02392 753733
Fax 02392 755189

www.hughesandsalvidge.co.uk

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All revisions to the Environmental Management Plan will be recorded on this page.

The author of the amendment(s), or other authorised person, must explain the details of the amendment (s) to the Site Manager/Site Supervisor. The author must ensure that the Site Manager/Site Supervisor signs off the amendment to confirm that he has received and understood it, and that the Site Manager/Site Supervisor returns the signed off front page so that the author can file it in the project office file.

The Site Manager/Site Supervisor must sign off and return the copy of this Amendment page, as explained above, and carefully insert this page and the amendments into the project site file. He must also clearly line through the existing pages to indicate they have been superseded.

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SECTION 1 - INTRODUCTION

The Environmental Management Plan includes full details of:

- Roles and responsibilities
- Communication and co-ordination
- Training and awareness
- Operational control
- Checking and corrective action
- Environmental control measures

Aspect	Objective	Targets
Waste	To attain industry best practice by implementing the Waste management Hierarchy.	To achieve an 95% landfill diversion and 90% reuse/recycle target of all construction wastes produced.
Nuisance	Works undertaken without causing nuisance.	Zero complaints
Air / Land / water/ waste	To prevent pollution	Target Zero Pollution Incidents
Resource Use Water	To minimise water usage during construction	Only targeted water suppression to be used during external demolition. Minimal water suppression to be used on internal demolition.
Resource Use Energy Emissions to air	To minimise Fuel usage and CO2 emissions during contraction	Monitor CO2 emissions from Project deliveries. Record and monitor CO2 emissions from construction fuel use. Report fuel usage to client on a monthly basis.

SECTION 2 - ROLES AND RESPONSIBILITIES

Members of the project team will be assigned specific roles and will be responsible for the correct application of the EMP. Individual specialists may also be appointed to provide expert advice.

Project Manager

The project manager would have overall responsibility for environmental performance throughout the demolition phase and would ensure that appropriate resources are made available and environmental control and any agreed or appropriate protection measures are implemented.

- Monitor construction activities and performance to ensure compliance with the EMP and that identified and appropriate control measures are being effective.
- Act as a main point of contact between the regulatory authorities (if required), Client and the project on environmental issues.

Site Manager

A full-time site manager would be responsible for recording the progress of the Environmental Works. The Site Manager would carry out the following duties:

- Support the Project Manager in delivering the environmental component of the project.
- Monitor Demolition activities and performance to ensure control measures are effective.
- Maintain full records of the progress of the Environmental Works.
- Implement an auditable environment record filing system.
- Always ensure compliance with Duty of Care.
- Implement and monitor measures to ensure correct waste minimisation, segregation, and disposal.

Environmental and Sustainability Manager/SHEQ Manager

Hughes and Salvidge's Environmental and Sustainability Manager/SHEQ Manager will be responsible for implementing, advising, and inspecting the environmental management on site. These duties will include:

- Provide management of waste streams, disposal, management and reporting to comply with the projects Site Waste and Resource Management Plan.
- Perform audits as required by the EMP.
- Interpreting and analysing environmental data from on-site monitors if required.
- Providing advice on site for suggestions of innovations and opportunities relating to environmental and sustainability performance.
- Liaising with client environmental team and performing site visits.

SECTION 3 - COMMUNICATIONS AND CO-ORDINATION

Co-ordination within the project would be achieved through periodic meetings attended by representatives from the Demolition team and client.

The meetings would consider past performance – from the results of inspections, environmental monitoring, and any complaints - and would look ahead to plan actions required to prevent or mitigate forthcoming risks and disseminate best practice.

SECTION 4 - TRAINING AND AWARENESS

As a minimum, all staff would receive an environmental briefing as part of their site induction.
Supervisors would support information provided at induction through completing briefings and 'toolbox talks' prior to specific activities commencing.

SECTION 5 - OPERATIONAL CONTROLS

All activities on site would be reviewed against the requirements of the EMP via an integrated risk assessment (Appendix 1). The demolition teams would review the environmental risks associated with the demolition process and appropriate control measures.

SECTION 6 - CHECKING AND CORRECTIVE ACTION

The demolition team would carry out day to day monitoring of demolition activities and maintain a record on site. The results of these inspections would be discussed at the Progress Meeting.

Regular audits would be completed to verify that the project is compliant with the established EMP, contractual requirements and legislation. This project would also fall within our ISO14001 Registration and as such would receive regular independent audits by the certification body.

SECTION 7 - ENVIRONMENTAL CONTROL MEASURES

7.1 Noise and Vibration Management

Predicted noise levels, based on the requirements of BS5228, have been calculated for Demolition activities associated with the works.

Equipment	Weighted Sound pressure level at 10m (dB)
Pulveriser mounted on excavator	72
Breaking and spreading rubble	82
Shearing Steel	82
Clearing Site	77
Loading Lorries	79
Mobile Telescopic Crane (100t)	71
Diesel Scissor Lift	78
Road Sweeper	76
Skip Wagon	78
Diesel Generator	59
Lorry Movements on Access Road	83

7.1.1 Noise and Vibration Management

To reduce the potential of nuisance being caused by Demolition activities, Hughes and Salvidge would introduce control measures when developing methods of work. Strict controls on the sequencing of works and providing noise protection would be developed on an activity-by-activity basis.

The adoption of Best Practicable Means, as defined in the Control of Pollution Act 1974 is usually the most effective means of controlling noise from construction sites. In addition, the following measures should be considered, where appropriate:

- All pneumatic tools would be fitted with silencers or mufflers.
- Deliveries would be programmed to arrive during daytime hours only. Care would be taken when unloading vehicles to minimise noise. Delivery vehicles would be routed to minimise disturbance to residents. Delivery vehicles would be prohibited from waiting within the site with their engines running.
- All plant items would be properly maintained and operated according to manufacturer's recommendations in such a manner as to avoid causing excessive noise. All plant would be sited so that the noise impact at nearby noise sensitive properties is minimised.
- On site noise levels will be monitored throughout the project, Monitoring would be in accordance with the guidance set out in Annex E of BS5228: Part 1:1997.

The noise limits will be as followed:

- Pre-limit: 80dB

- Limit: 85bB

The vibration limits will be as followed:

- Pre-limit: 5mm/s
- Limit: 10mm/s

Noise survey readings will be completed by site managers when required.
Example of record sheet shown below:

HSF 25

Noise Survey Readings				
INSTRUMENTS:	CIRRUS CR:162A NOISE LEVEL METER			
SERIAL NUMBER:	G056440			
CALIBRATION CERT. NUMBER:	264561			
NEXT CALIBRATION:	16 OCT 2019			
SITE ADDRESS:	SABIC North Tees		Tank Farm & Riverside	
WEATHER CONDITIONS:				
DATE OF READINGS:		WHO BY:		
TOR Area & Pipework (Refer to location indicated on the Plot Plan)	READING dB(A) L_{eq}	TIME 30 Second Interval	NOTES Activities providing noise sources	
AREA 1		to		
AREA 2		to		
AREA 3		to		
AREA 4		to		
AREA 1		to		
AREA 2		to		
AREA 3		to		
AREA 4		to		
AREA 1		to		
AREA 2		to		
AREA 3		to		
AREA 4		to		
AREA 1		to		
AREA 2		to		
AREA 3		to		
AREA 4		to		

7.2 Dust and Air Quality

Keeping dust levels to a minimum is essential throughout the works, therefore dust suppression will be required throughout. Care is required to maintain dust emissions at the site boundary adjacent to neighbouring properties. A monitoring regime is to be adopted throughout the works to regularly check that levels are dust are being kept to a minimum. The use of Best Practicable Means (BPM) (as defined in Part III of the Environmental Protection Act 1990) would be employed.

7.2.1 Dust and Air Quality Management

- Sheeting vehicles transporting materials to and from site.
- Enforcing speed limits of site vehicles to 10mph.
- Handling and storage of materials used on site will be performed by trained operators.
- Vehicles and plant to be on suitable hardstanding whenever possible.
- Plant, machinery, and vehicles will be as far from sensitive areas as possible.
- Engines to be switched off whenever not in use.
- Haul roads will be dampened down and kept clear with a road sweeper whenever required.
- Any accumulation of dirt from demolition works will be cleared.
- Use of Euro 5/6 Ultra Low Emission Vehicles
- Ensuring all plant and machinery is regularly serviced and in good working order. On-site service and maintenance will be performed where possible.
- Plant fitted with dust particle filters (DPF's).
- Fuel saving systems fitted to site plant.
- No burning should take place onsite.
- Visual monitoring will be performed daily.

If required, the following dust suppression will also be used:

- Water hoses rigged to plant to target water suppression to demolition source.

A handheld monitoring system will also be available to monitor particulate matter (PM2 and PM10) on the site, allowing for us to record air quality of the surrounding areas to site.

The PM10 limit will be as followed:

- 190 µg/m3

A dust monitoring sheet will be completed by site management when required.

Dust Monitoring Record			
SITE ADDRESS:	SABIC North Tees		Tank Farm & Riverside
WEATHER CONDITIONS:			
DATE OF READINGS:	/ /	WHO BY:	
TOR Area & Pipework (Refer to location indicated on the Plot Plan)	VISUAL CHECK	TIME	NOTES – ACTION TAKEN IF REQUIRED
		to	
		to	
		to	
		to	
		to	
		to	
		to	
		to	
		to	

7.3 Water Pollution

Suitable protection for watercourses potentially affected by the works would be installed prior to relevant works proceeding. These measures would be in-line with Environment Agency Pollution Prevention Guidelines.

The main identified **sources** of contamination are as followed:

- Dust suppression run-off
- Construction site plant and equipment

The potential **pathways** for contamination are:

- Entering existing drainage/surface water systems.

The **receptors** have been detailed as:

- Surface water
- Ground water

7.3.1 Refuelling Management

- A defined refuelling area will be established on a hardstanding area, and the refuelling area will be equipped with a 110% bunded bowser, a spill kit, fire management equipment and in an excluded area away from any works.
- Hoses from the bowser will always be placed over plant nappies.
- The bowser, pump and connections will be serviced in line with manufactures guidance.
- Bund will be checked weekly to ensure integrity.
- The bowser will be within a heras enclosed area to reduce the likelihood of unauthorised tampering or damage from plant/machinery.
- Spill kits will always be placed at fuel bowsers, with each plant/machinery and at various places around site.
- Spill kits will be fully equipped with booms, pads, granules, bags, and nitrile gloves all designed to capture hydrocarbons and have inventories weekly to ensure they contain the correct equipment.
- Site operatives will receive regular 'toolbox talks' on the water pollution related topics.
- Refuelling will only be performed by trained operatives.

7.3.2 Plant and Machinery Management

- All plant and machinery used on site will be regularly inspected, serviced, and in full working order.
- When not in use, all plant will be equipped with plant nappies underneath to capture potential spills.
- Plant and equipment to be stored in areas less susceptible to pollution incidents or on a dedicated hard standing.
- Any attachments off machines will also be laid onto hardstanding and all pipes will be placed into a plant nappy.
- All plant/machinery will have own fully equipped spill kits and spill kit training will be provided to key on-site personnel.
- Machine operators and site managements will perform daily visual inspections and the inspections will be recorded on a weekly inspection sheet.

7.3.3 Dust Suppression Management

- Dust levels will be kept to a minimum using water suppression via targeted hose pipes or an atomised dust boss.
- Dust suppression works will be continuously manned by trained operatives and operatives will be checking vigilantly for leaks in any pipework or hoses to ensure no water is wasted or runs off site directly into drains.
- Draining within proximity of works will be protected with a silt sock or drain protection, and these will be assessed regularly and replaced when required.

- Waste stockpiles will be minimised when possible and when required, will be dampened to reduce dust pollution.

7.3.4 Additional Water Pollution Management

- Regular briefings and toolbox talk to reiterate the importance of environmental controls and water pollution controls.
- A contingency response plan will be situated around site on spill kits and in site office.
- Site auditing will occur on a routine basis from an internal auditor.

7.3.5 Contingency Response Plan

In the event of a spill or environmental incident the works will immediately cease. Operatives will assess the area and, if safe and reasonably practicable to do so, attempt to contain the spill using the appropriate spill response kit. Hughes and Salvidge site management if not already aware, will be informed of the spill. In the event of the spill entering the surface water network the site drainage plans and network owner will be consulted to determine the appropriate manhole(s) that need to be blocked to prevent the contamination from progressing through the network. If manholes elsewhere within the proximity are blocked because of a spill, the appropriate measures will be taken to ensure that the overflow does not end up contaminating the area.

7.4 Carbon Emissions

Reducing our carbon footprint throughout the project will be enforced wherever possible and innovations will be explored regularly. Our carbon reduction plan follows as:

The below CRP is devised to demonstrate how we will reduce our Scope 1, 2 and 3 emissions during the demolition period.

Scope 1: Direct Emissions
Scope 2: Indirect Emissions from imported energy
Scope 3: Indirect emissions from:

- Transportation
- Products used by organisation.
- Associated with use of products from organisation.
- Other sources

7.4.1 Scope 1 Emissions Management

We plan to reduce direct emissions from on-site works by implementing the following:

- Any requirements to use diesel plant or machinery, when possible, will be ran from 100% off Hydro-Treated Vegetable Oil: an ultra-low carbon emissions drop-in replacement fuel.
- All plant required for internal demolition to be electric powered or hybrid when possible.
- When plant cannot be electric, it will be Euro 5/6 Ultra Low Emission Vehicles and a fuel saving system will be fitted to plant.
- Limiting speed of site vehicles to 10mph.
- Switching off engines when not in use.
- Ensuring all plant and machinery is regularly services and is in good working order. On site servicing and maintenance is carried out where possible.
- Promoted transport to and around site via Cycles and walking when possible.
- Implementing Single-Use Plastic policy on site and adhering to site welfare facilities recycling programmes.
- All machine operatives will receive up-to-date machine training and toolbox talks on carbon reduction in machines operation efficiency.

- Strategically monitoring our waste recycling through SmartWaste tool to ensure we have full transparency with the waste streams and disposal.

7.4.2 Scope 2 Emissions Management

- Using solar-powered welfare units when possible.
- All welfare units to have motion-sensor lights, which switches off when no motion is detected, when possible.
- Additional equipment that may be required for works on site will be charged via solar power when possible.

7.4.3 Scope 3 Emissions Management

- All senior management driving Hybrid Electric Vehicles (HEV), Plug-in Hybrid Electric Vehicle (PHEV) or Electric Vehicle (EV) cars.
- Car-pooling to work will be encouraged if compliant with current COVID-19 measures.
- Using local suppliers and subcontractors, when possible, to lower indirect transport emissions.
- Procuring materials from organisations that have sustainability standards and carbon reduction plans that align with our companies' policies and values.
- All staff will use PPE that have been sourced from an ethical PPE supplier and used PPE will be disposed of using the correct waste streams when required.
- Tracking our fuel use and waste streams through SmartWaste and having an external certified carbon reduction plan (Achilles) to monitor our exact carbon emissions from the project and following our company plan to reduce carbon emissions.
- Assigning operatives that live local to the site for works, when possible, to reduce emissions from travel.

7.4.4 Emission Reporting

In-line with our HSL carbon emission reporting targets, we will report our scope 1, 2 and 3 emissions produced specifically from the project via internal records and an external emissions management system to ensure our emissions are captured accurately.

We will use Achilles Carbon Management E-Manage Portal which produces certified figures from the carbon emissions generated on site and breaks down the carbon production into transportation (to and from site), plant machinery and waste recycling under ISO14064-1 regulations.

Our emissions will be internally audited, and all emissions data can be sent monthly with Waste Summary Reports to client if contractually required.

7.5 Biodiversity

Appropriate regard for the protection of local habitats and protected species during the demolition works. Under The Wildlife and Countryside Act 1981, wildlife protection must be implemented prior to demolition occurs. The following management strategies will be applied.

7.5.1 Bird Management

- Pre-demolition surveys to identify nesting birds will occur before works.
- All demolition will be undertaken outside nesting bird season when possible. If this is not possible, alternatives measures to prevent nesting within the demolition phases between March and August.
- An ecologist will be required to attend site to verify the structure being free from nesting birds during works between March and August.
- Modifications to the demolition programme may be required to avoid disturbing nesting birds.

- Visual deterrents such as predator decoys or bird tape may be installed if deemed necessary.
- Bird spikes will be installed to areas before nesting seasons to deter birds from nesting in an area.
- Alternative habitats to protected bird species will be provided.

7.5.2 Bat Management

- Ecologist site surveys and watching briefs may be required and recommendations from the ecologists will be undertaken promptly.
- Exclusion zones or temporary roosting structures to provide alternative habitats for bats may be used if deemed appropriate from an ecologist.
- Artificial lighting used on site must be managed and not left on over night to prevent creating disturbances to bats.
- Noise control management will be implemented to avoid disturbance.

7.5.3 Additional Ecological Management

- An ecologist would carry out a survey immediately prior to site clearance works to ensure that there are no protected species present. In the event of protected species being found, works would be delayed until mitigation measures have been agreed with English Nature.

- Protection would be provided to create physical separation between demolition operations and ecologically sensitive areas where necessary.

7.6 Waste Control

Waste management will be controlled throughout the demolition works and will be recorded daily.
Only approved waste carriers and approved waste facilities will be used, and records of their licenses will be held on site. At the start of the project a SWRMP (Site Waste and Resource Management Plan) will be produced to estimate the arising material produced during the works. This will then be completed with the actual at the end of the project for comparison and an overall recycling percentage will be shown.

7.6.1 Waste Control Management

- Storing and reusing demolition materials to negate the export or import of inert materials.
- Reduction of site generated waste through waste minimisation and re-cycling initiatives, Including the source-segregation of re-usable and recyclable materials.
- Up cycling will be utilised wherever possible.
- Appropriate methods of waste disposal linked to a robust waste disposal audit trail.
- Site office wastes would be collected in separate containers to maximise the opportunities for recycling, this would include cans, bottle, and paper banks.

For control of potentially hazardous waste, please refer to the project SWRMP.

7.7 Traffic Management

Access/egress to the site is shown within the project traffic management plan. Vehicle speed limits of 10 mph will also be in place on site.

Local transport companies will be used to minimise the carbon emissions on the project. All companies and vehicles will be issued information highlighting preferred traffic routes to minimise traffic through residential areas. This will also state PPE requirements and the site rules which they should always adhere to whilst on site.

7.8 COSHH

Demolition woks will be planned to minimise the requirement for hazardous substances whenever possible. Hughes and Salvidge will maintain an inventory of hazardous substances brought onto the site. Management of COSHH control is listed below.

7.8.1 COSHH Management

- All static generators used on site will have a secondary containment of at least 110%.
- Refuelling of small items of plant is necessary fire extinguishers, earthing, warning signs, bunding and proper fuel dispensers shall be provided.
- Designated refuelling areas will be bunded to avoid spills. Any refuelling is to be carried out under a safe system of work by competent operatives, with spill kits readily available.
- Spill kits will be supplied to all plant and in specific locations around the site. A spill kit inventory is to be maintained, and spill kits re-stocked as and when needed.
- Any COSHH materials will be stored in a COSHH compound/store. Compound/store will be bunded and well ventilated. There will be relevant warning signs and compound/store will be always locked. MSDS sheets will be readily available for all COSHH items stored.
- Any items stored will be clearly labelled and contained in a suitable container. Heavy containers will always be stored towards the bottom and never stored at height.

SECTION 8 - SIGN OFF SHEET

I confirm I have read and understood this Environmental Management Plan and that I must not deviate from the information containing within.

Name	Date	Signature