

WARNER BROS. STUDIO TOUR

Backlot Kitchen Expansion

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Address

J Stage Kitchen,
Warner Bros. Studio Tour,
Leavesden,
Watford,
WD25 7LR

Client

Warner Bros. Studio Tour

Version

A

Report Date

1st February 2024

Version Control Record

Issue	Description of Status	Date	Reviewer Initials	Author Initials
A	Draft	23/01/24		RA
B	Final	01/02/24		RA

Table of Contents

1 Introduction4

 1.0 Background 4

 1.1 Contact & Responsibilities 4

2 Scope of Works5

 2.0 Location 5

 2.1 Works Description 5

3 Construction Programme.....5

4 Site Security & Traffic Management.....6

 4.0 General Guidance 6

 4.1 Security Provisions 6

 4.2 Management Controls 6

 4.3 Monitoring Activities 7

 4.4 Documentation 7

5 Site Management8

 5.0 Responsibilities of the Main Contractor 8

 5.1 Amenity 8

 5.2 Parking of Vehicles 8

 5.3 Traffic Management Plan 9

 5.4 Access Routes 9

 5.5 Site Access 10

 5.6 Vehicle Emissions 10

 5.7 Waste Removal 10

 5.8 Loading & Unloading of Vehicles 10

 5.9 Storage of Materials 10

 5.10 Wheel Washing Facilities 10

6 Noise Control11

 6.0 General Guidance 11

 6.1 Noise Management Controls 11

 6.2 Monitoring Activities 13

 6.3 Noise Monitoring Strategy 13

6.4	Documentation	13
7	Air Quality & Dust	14
7.0	Relevant Air Legislation	14
7.1	General Guidance	14
7.2	Management Controls	15
7.3	Monitoring Activities	17
7.4	Documentation	17
8	Water	18
8.0	Table 8.1: Relevant Water Legislation	18
8.1	General Guidance	18
8.2	Management Controls	18
8.3	Discharges to Controlled Waters	19
8.4	Discharges to Foul Sewer	20
8.5	Wheel Washing Facility	20
8.6	Road Cleaning	20
8.7	Fuel and Chemicals Storage	20
8.8	Plant Maintenance Area	21
8.9	Refuelling Protocol	21
8.10	Monitoring Activities	21
8.11	Documentation	22
9	Contamination.....	23
9.0	Ground Contamination	23
9.1	Contamination Watching Brief	23
9.2	Unexpected Finds	24
9.3	Post-Development Verification Reporting	24
9.4	Environmental Analysis Updates	24
10	Waste Management	25
10.0	General	25
10.1	Waste Management Principles	25
10.2	Training and Competence	25
10.3	Monitoring, Auditing and Reporting	26
APPENDIX 1 – Site Setup		27

1 Introduction

1.0 Background

Watts have been appointed by Warner Bros. Studio Tour to act as Project Managers, Employers Agent and Contract Administrators for the Warner Bros. Studio Tour Backlot Kitchen Expansion project. The purpose of the proposed project is to increase revenue and improve visitor experience through expanding the existing Tours café which is currently overstretched. The overall aim of this project is to encouraging more visitors to purchase food and beverages. A subsequential requirement of the project is to provide additional seating and toilet facilities for these additional customers.

Following a number of iterations of the design, a circa 740sqm extension to the kitchen area in the space adjacent to the Tour Backlot is being proposed. The existing space is currently being utilised for storage and additional external refrigeration for the existing kitchen. The extension is to include a specific “Butterbeer” bar which will double up as an event space.

1.1 Contact & Responsibilities

The following people currently have an interest in the project and are contactable as follows:

Role	Firm	Name	Contact Number
Planning Consultant	TOR	Bridget Pearce	07770 347029
Architect	DNA	Stuart McLarty	07843 014823
Acoustic Consultant	Acoustics Central	Lee Montague	07547 614072
Employers Agent / Project Manager	Watts	Rupert Atkins	07977 112861
Principal Designer	Watts	Martin Pascoe	0750 1466657
Warner Bros. Project Manager	Warner Bros	Damian Milne	07929 658695
WB Operations	Warner Bros	Toby Dickens	02034 277000

The Tour will be using a main contractor to carry out the works. This contractor is yet to be appointed but will also have Principal Contractor responsibilities under CDM requirements. Watts will be acting as Project Manager, Quantity Surveyor and Principal Designer.

2 Scope of Works

2.0 Location



2.1 Works Description

The single storey extension will be of a steel portal frame structure clad in steel PIR insulated panels on the north and east elevations. The colour of the panels will be straw (RAL 080 70 30), to match the existing theme around the site. The south elevation will be non-structural glass in order to allow visitors to look out onto the existing backlot. The extended floor area will total to 740m² and have 4no access/egress points. The floor will be made of painted concrete with all internal services being surface mounted. Heating, ventilation and cooling will be present with all MEP equipment being placed in the ceiling above the new kitchen area.

3 Construction Programme

Warner Bros. Discovery: Backlot Café Extension	326 days	Fri 01/09/23	Thu 19/12/24	10%
▸ RIBA Stage 0-2 Design	30 days	Fri 01/09/23	Thu 12/10/23	100%
▸ Feasibility	51 days	Fri 13/10/23	Fri 05/01/24	69%
▸ Design Team Procurement	25 days	Mon 08/01/24	Fri 09/02/24	0%
▸ RIBA Stage 3 Design & Planning Permission	55 days	Mon 12/02/24	Tue 30/04/24	0%
▸ Procurement of Main Contractor (Two Stage Procurement - PCSA)	55 days	Mon 12/02/24	Tue 30/04/24	0%
▸ Contractor PCSA Works	20 days	Wed 01/05/24	Thu 30/05/24	0%
▸ RIBA Stage 4 Design	66 days	Mon 26/02/24	Fri 31/05/24	0%
▸ Procurement (Stage Two) of Main Contractor	31 days	Wed 01/05/24	Fri 14/06/24	0%
▸ Procurement of Long Lead Items & Off Site Manufacturing	10 days	Mon 17/06/24	Fri 28/06/24	0%
▸ Phase 2 - Substructure & Superstructure	46 days	Mon 01/07/24	Mon 02/09/24	0%
▸ Phase 3 - Fit-out of New Extension	55 days	Mon 02/09/24	Sat 16/11/24	0%
▸ Phase 4 - Strip-out & Fit Out of Existing Area	28 days	Mon 11/11/24	Wed 18/12/24	0%
▸ Handover & Use (incl Hoarding Removal & PC)	1 day	Thu 19/12/24	Thu 19/12/24	0%

4 Site Security & Traffic Management

4.0 General Guidance

The Principal Contractor will be responsible for ensuring that the site is safe and secure during the construction works and will seek to minimise the impact of traffic movements arising from project activities by way of a traffic management plan.

4.1 Security Provisions

- 4.1.1 The Principal Contractor will provide temporary construction site fencing to the site perimeter. Heras type fencing will be used to separate vehicle movement and pedestrian movement corridors on the site.
- 4.1.2 Signage will be provided at regular intervals around the site perimeter, including details of pedestrian access diversions, and site contacts for complaints. The Principal Contractor will also provide signage for internal traffic management, zones of work, and pedestrian access where applicable.
- 4.1.3 Principal Contractor staff and all sub-contractor personnel are to comply with the local traffic management regulations and parking restrictions. Parking will only be permitted within a secure, on-site facility. Parking in other areas of the site, on site access roads or on the public highway will not be permitted.
- 4.1.4 Details of any requirements for abnormal or large loads, in connection with the project, are to be provided in advance by the Principal Contractor for agreement of routing and timing with the Local Authority.

4.2 Management Controls

The proposed hours of work for all contractors and sub-contractors are:

- Monday to Friday: 0800 – 1800 hrs.
- Saturday: 0800 – 1300 hrs.

Deliveries outside the standard working hours will only be permitted by prior arrangement between the Principal Contractor and the Local Authority. Deliveries will be programmed to avoid peak traffic periods associated with morning and evening rush hour traffic and school runs.

- All deliveries and traffic entering and exiting the site will be controlled by the Principal Contractor. Contractors will be required to maintain clear and safe pedestrian access to all office accommodation, and maintain existing easements, access and egress.
- An approved road sweeper / cleaner will be available during the project to carry out periodic cleaning of roadways / highways or as deemed necessary, or on request from the Local Authority.
- Contractors will be required to regularly maintain plant and equipment in accordance with manufacturers specifications. Copies of vehicle maintenance records will be maintained in a designated file and made available to the Local Authority on request.
- On site routes are restricted to a maximum speed limit of 10 mph.

- No site vehicles will be permitted to access or egress the site through Ashfields, Abbots Langley or South Way.

4.3 Monitoring Activities

4.3.1 The Principal Contractor will conduct regular inspections of the construction site to ensure that works are being undertaken in accordance with CDM Regulations 2015.

4.4 Documentation

4.4.1 The Principal Contractor will maintain and manage all documentation related to traffic management on-site and the off-site signage requirements.

4.4.2 Environmental incidents involving traffic movements (e.g. fuel spillage) will be recorded by the Principal Contractor and all developers in an environmental incident logbook.

4.4.3 An example of the site security and traffic management key issues to be addressed by the Principal Contractor is set out in the below table:

Task	Y/N	Comment/Action	Owner
Has a protected access to the site office been provided? Is it well signed, lit and usable?			
Has site hoarding been provided to pedestrian footpaths and sensitive neighbours along site boundaries?			
Are accidents and near-hits relating to traffic management being recorded?			
Has safe pedestrian access been maintained around the site?			
Has an area been provided for queuing deliveries off the public highway?			
Has appropriate site signage been installed externally and internally?			

5 Site Management

5.0 Responsibilities of the Main Contractor

- Parking of vehicles of site operatives and visitors
- Access arrangements including the routing of vehicles away from residential roads – Traffic Management.
- Management of deliveries to avoid peak times.
- Loading and unloading of plant and materials.
- Storage of plant and materials.
- The erection and maintenance of security hoarding, where appropriate
- Measures to control the emission of dust and dirt during demolition and construction
- Measures to minimise noise emissions during demolition and construction.
- Hours of working.
- The siting and types of fencing to protect all trees, hedges and habitats to be retained and all watercourses.
- Measures to manage ecological habitats during demolition and construction.
- Safe access to site offices.
- Construction noise and vibration management.
- Sustainable waste management.
- Water management (surface & groundwater).
- Contaminated land management.

5.1 Amenity

- 5.1 The visual amenity of existing residential receptors in close proximity to the site, will be protected by:
- Maintaining a 'clean site' policy.
 - Maintaining aesthetically appropriate site hoardings in accordance with the Developer's Hoarding Strategy.
 - directing site lighting away from sensitive receptors.
 - Turning site lighting off outside of normal working hours, with the exception of required security lighting.
 - Implementing the air quality and noise control measures set out in this document.

5.2 Parking of Vehicles

- 5.2 An area of hardstanding adjacent to the site accommodation will be reserved for vehicle parking, please refer to attached site layout.

5.3 Traffic Management Plan

- 5.3.1 The construction team will reduce as far as possible any potential impacts of construction on the studio and highway network during the construction of the new extension.
- 5.3.2 A traffic management plan will be drawn up by the Main Contractor with input from the Warner Bros. Studio Operations Team.
- 5.3.3 The principal materials for the project will be ordered using a ‘just-in-time’ process, reducing the requirement for excess storage areas on-site and minimising the number of oversized vehicles passing through the local area.
- 5.3.4 The number of estimated deliveries is summarised in the below table:

Description	Estimated Deliveries Over 15T Loads
Concrete	16
Aggregates	6
Steel Products	4
Miscellaneous	15
TOTAL	41

- 5.3.5 These deliveries will take place over a period of 24 weeks, commencing on 1st July 2024. The average number of vehicles per day would equate to approx. 2, based on a 5-day week. The actual number of deliveries will be monitored to identify any peaks and minimise impact.
- 5.3.6 There are no predicted deliveries or plant movements, which will be outside the permitted weight limits on the local road network.

5.4 Access Routes

- 5.4.1 The agreed access of all site traffic, including HGV’s, to the construction site is via Gatehouse B off Aerodrome Way. Access to the site via Gatehouse B is subject to operating hour’s restrictions; Monday – Friday 08:00 – 18:00, Saturday 09:00 – 13:00 and not at any time on Sundays or Bank Holidays.
- 5.4.2 The prescribed access route (from the south, via A41 North Western Avenue) will be a condition of all supply orders and subcontracts, and no local roads will therefore be impacted. A log of all regular drivers will be maintained including records of agreements with organisations.
- 5.4.3 Work packages that involve multiple deliveries of bulk materials i.e. concrete pouring, steel frame erection etc. will be assessed with the respective subcontractor and suitable delivery time slots and standing arrangements will be agreed within the studio boundary to mitigate impact on the highway network. The site itself has sufficient areas available for all lorries to be accepted directly, and no holding areas will be required.
- 5.4.4 As the route to the Tour is well signposted it is not considered necessary to erect additional signs on the approach roads. These will only be positioned within the Tour area itself to ensure the operations of the studios are not impacted.

5.5 Site Access

5.5.1 The main site access will initially allow all vehicles to enter the site in a forward direction. Reversing will be required for the final stretch whereby a competent Banksman will be in attendance at all times.

5.6 Vehicle Emissions

5.6.1 All construction vehicles are required to comply with relevant UK standards. Suppliers and drivers are required to:

- Switch off their vehicle's engine when stationary to prevent exhaust emissions.
- Maintain vehicles including engines in tune and catalyts working efficiently.
- All vehicles used by contractors must comply with MOT emissions standards at all times.

5.7 Waste Removal

5.7.1 The removal of waste products from the site will be minimised by recycling excess materials wherever possible.

5.8 Loading & Unloading of Vehicles

5.8.1 The site has been laid out to provide marshalling areas for vehicles, such that off-site holding areas will not be required. Deliveries will be scheduled with the main contractor and WB Security.

5.9 Storage of Materials

5.9.1 Materials will be stored on site. A storage yard has been allocated within the site.

5.10 Wheel Washing Facilities

5.10.1 The entirety of the site area is currently covered by hardstanding and the materials to be used for the construction will predominantly be of a granular nature. The potential for mud is therefore greatly reduced. There will therefore be no provision for wheel washing.

6 Noise Control

6.0 General Guidance

6.0.1 The potential sources of noise from work undertaken in connection with this project are likely to include:

- Earthworks
- Excavations
- Transportation
- Cleaning
- Construction
- Waste management

The works are taking place adjacent to the existing active Harry Potter Tour. Therefore, it will be in the client's best interest for noise to be kept to a minimum.

6.0.2 The Principal Contractor will implement the necessary management and operational controls in order to minimise any adverse impacts on the local community from construction activities. The timing and duration of works, and specific mitigation measures used are to be designed by the Principal Contractor to minimise impact on nearby receptors.

6.0.3 Work and noise outside the agreed hours of work is strictly prohibited, without the prior agreement of the Local Planning Authority.

6.0.4 The Principal Contractor will ensure that background and on-going noise monitoring is undertaken during the construction phase, to ensure worker protection and to mitigate adverse impacts on sensitive neighbours.

6.1 Noise Management Controls

6.1.1 The Principal Contractor will ensure the implementation of best practicable means to reduce levels of noise and to ensure compliance with acceptable levels. Noise is to be controlled at source where practicable.

6.1.2 Options for the control and mitigation of construction impacts include effective site management; engineering control; acoustic screening; restricted hours of working; and the provision of sound insulation and noise monitoring.

6.1.3 The proposed hours of work for all contractors and sub-contractors are:

- Monday to Friday: 0800 – 1800 hrs.
- Saturday: 0800 – 1300 hrs.

6.1.4 No work will be allowed on Sundays or Public Holidays. These may be varied in exceptional instances subject to approval with the Local Planning Authority and subject also to any restrictions or requirements that they may impose.

6.1.5 The proposed target criteria for construction are as follows (expressed as residential façade noise levels, LAeq(T)):

- 75 dB(A) T: 10.5hrs.
 - 65 dB(A) T: 5.5hrs.
- 6.1.6 Contractors are to control construction noise and vibration emission in accordance with the recommendations established in BS5228-1:2009+A1:2014 - Control of Noise on Construction and Open Sites, Parts I and II and the Noise at Work Regulations 2005. Additional reference should be made to BS4142 entitled "Methods of Rating Industrial Noise affecting Mixed Residential and Industrial Areas", which, although not entirely applicable to construction operations, provides useful guidance on assessing potential noise nuisance.
- 6.1.7 A method statement detailing the works description, programme of work, predicted noise levels and manufacturers specifications for equipment and plant will be prepared by the Principal Contractor. Sub-contractors are to submit a 'Noise Management Scheme' to the Principal Contractor for approval which covers their area of work. This management scheme must refer specifically to the area of development work concerned, the plant to be used, the control measures to be used and any monitoring requirements.
- 6.1.8 Sensitive site boundaries will be protected by appropriate measures. During particularly noisy operations where noise may pose a nuisance to noise sensitive properties, then additional protection measures may be required.
- 6.1.9 Fixed items of plant will be electrically driven where possible. In all instances noise generating operations e.g. concrete grinding, will be sited as far as possible from noise sensitive areas of the site and will employ suitable noise control measures. Other control measures are to include:
- All vehicles, compressors and plant will be equipped with effective silencers and noise reducing insulation to BS5228.
 - Work practices will be adopted such that noise emissions are kept to a minimum, i.e. plant not in constant operational use will be switched off and noise suppression covers will be closed at all times.
 - Vehicle noise will be kept as low as possible (e.g. Excessive revving of vehicles will not be permitted).
 - Where possible noisy plant and equipment will be sited away from sensitive noise boundaries. Where this is not possible, noise emissions will be controlled by erection of acoustic shielding, or by siting behind site accommodation or spoil heaps.
 - Loading and unloading of vehicles, dismantling of site equipment such as scaffolding or moving equipment or materials around site will be conducted in such a manner as to minimise noise generation and where possible will be conducted away from noise sensitive areas. Reversing alarms should be set to the minimum required setting allowed by HSE.
 - Noise complaints, or exceedances of action levels will be investigated by the Principal Contractor immediately; and no site traffic will be permitted to access the site through South Way or Abbots Langley.

6.2 Monitoring Activities

- 6.2.1 Contractors must demonstrate that noise levels are maintained at acceptable levels and comply with the agreed maximum levels, throughout the duration of the construction phase. Warner Bros. have appointed the firm Acoustics Central to assess and advise upon noise during the construction phase.
- 6.2.2 Acoustics Central shall be responsible for monitoring noise to minimise disturbance to the local community and comply with the agreed noise control limits. Monitoring shall be undertaken in accordance with a schedule agreed with the Local Planning Authority in accordance with the following noise monitoring strategy. Additional noise monitoring may also be required to investigate complaints, and/or at the request of the Local Authority.

6.3 Noise Monitoring Strategy

- 6.3.1 Where it is felt that noise emissions will cause a nuisance to the Tour's neighbours, Contractors shall ensure that a portable sound level meter is available on site for the entire duration of the construction phase. This is to be used for short-term monitoring of noise sources and at potentially noise sensitive locations off-site to detect any actual or potential breach of the agreed control limits. Construction personnel shall be trained in its operation and record noise levels in locations, at a frequency set out in the above-mentioned schedule.
- 6.3.2 The microphone for each measurement system shall be suitably weather protected without compromising the Type 1 performance requirements of the measurement system.
- 6.3.3 All sound measurement systems will be calibrated on-site using a sound level calibrator which itself has, within the previous 12 months, been tested for compliance with BS 7189 or tested against a reference set that has been so tested. The tests for compliance with BS 7189 shall be carried out by a calibration laboratory that holds UKAS accreditation.

6.4 Documentation

- 6.4.1 The Principal Contractor will keep records of noise monitoring. Details of incidents associated with noise and remedial action taken are to be kept by the Contractor in an environmental incident logbook. Complaints received will also be recorded. Contractors are required to maintain records of all correspondence with the Local Authority and site neighbours regarding noise for the duration of the project.
- 6.4.2 Contractors will maintain records of construction plant and equipment maintenance, and these will be made available to the Local Planning Authority as required.
- 6.4.3 An example of some of the key tasks required of the Principal Contractor is set out in the below table:

Task	Y/N	Comment/Action	Owner
Review site layout, including location of plant, routing of vehicles, delivery points to ensure impacts on neighbours are minimised.			
Standard site working hours set and communicated to staff;			
Consider use of site hoarding, temporary works (e.g. bunding) to act as sound baffle			
All plant to fitted with working silencers, as appropriate and maintained to appropriate standard			
Complaints handling procedure established			
Information on site working hours, overall programme, noisy works, works likely to cause noise provided to site neighbours.			

7 Air Quality & Dust

7.0 Relevant Air Legislation

7.0.1 Contractors will be required to comply with all relevant UK legislation surrounding the maintenance of air quality.

7.1 General Guidance

7.1.1 The Principal Contractor will be responsible for controlling dust emissions during the construction work. Dusty emissions escaping the work area may cause nuisance through for example, surface soiling, loss of visual amenity through deposition, and effects on flora and fauna. Dust particles are generally too big to be inhaled but can cause eye, nose and throat irritation.

7.1.2 It is difficult to suppress dust once it is airborne, therefore controls adopt the following hierarchy to reduce human exposure:

- prevention;
- suppression; and
- containment.

7.1.3 Typical control measures will include:

- Machinery, fuel and chemical storage and dust generating activities should not be located close to boundaries and sensitive receptors if at all possible.
- Erect effective barriers around dusty activities or the site boundary.
- Use agreed wet cleaning methods or mechanical road sweepers on all roads during periods of dry weather.
- Clean road edges and pavements using agreed wet cleaning methods.
- All vehicles should switch off engines - no idling.

- Clean or wash all vehicles effectively before they leave a site if there is a risk of affecting nearby sensitive receptors.
- All loads entering and leaving site to be covered.
- No site vehicles will be permitted to access or egress the site through Abbots Langley or South Way.

- 7.1.4 Control measures and dust suppression techniques are to be implemented in order to protect, development activities, the health of construction workers and the general public, and to ensure compliance with the occupational exposure standards (COSHH Regulations 2002, as amended).
- 7.1.5 Plant generating exhaust gases must be maintained and monitored to ensure that emission standards are met, and planned maintenance records properly kept.

7.2 Management Controls

- 7.2.1 The potential for construction works to impact sensitive receptors is dependent on factors, which include the following:
- Location of the works within the building site i.e. away from sensitive receptors/neighbouring residents.
 - Proximity to sensitive receptors.
 - Extent of any intended excavation.
 - Nature, location and size of stockpiles and the length of time they are to be on-site.
 - Occurrence and scale of dust generating activities - including cutting, grinding and sawing.
 - Number and type of vehicles and plant required on-site.
 - Potential for dirt or mud to be made airborne through vehicle movements; and weather conditions.
- 7.2.2 The Principal Contractor will provide a method statement for the control of dust which will comprise the following:
- Summary of work to be carried out.
 - Description of site layout and access – including proposed haul routes, location of site equipment including supply of water for damping down, source of water (wherever possible from dewatering or extraction), drainage and enclosed areas.
 - Inventory and timetable of all dust generating activities.
 - List of all dust and emission control methods to be used;
 - Identification of an authorised responsible person on-site for air quality. Ideally this person needs to have knowledge of pollution control and vehicle emissions; and
 - Summary of monitoring protocols and procedures for the notification to the local
 - Authority nominated person(s).
- 7.2.3 A site log book will be maintained to record details and action taken in response to exceptional incidents or dust-causing episodes. It should also be used to record the routine site audits and any corrective actions.
- 7.2.4 The Principal Contractor will plan, locate and control construction activities that have the potential to generate dust or other emissions so that nearby sensitive receptors are not

significantly affected. Contractors must also consider additional protection measures such as screening and covering stockpiles of fine materials.

- 7.2.5 The Principal Contractor will provide induction and further training, on the need to minimise dust emissions to neighbouring property and residents and of the health hazards associated with exposure to emissions. Training will include advice on the proper use and maintenance of tools and equipment, the correct storage of chemicals and the location of sensitive neighbours and site boundaries.
- 7.2.6 Spraying of water mist at work faces or during loading operations during enabling works will be undertaken, where necessary. No toxic or potentially polluting binders in water sprays will be employed. Water used to suppress dust raising should be recycled where possible. Disposal of water used for dust suppression will only be permitted where discharge consents have been obtained from the EA.
- 7.2.7 Contractors are to ensure that all plant and vehicles are in good repair and conform to the relevant legislative and British Standards emission standards. The use of plant and equipment that fails to meet current emission limits will not be permitted until such time as it has been serviced and retested. Records of plant maintenance and defect reports will be maintained by the Principal Contractor.
- 7.2.8 Other control measures include:
- Vehicle exhausts to be directed vertically upwards where possible and directed away from the ground at minimum. Stationery plant shall be sited as far from inhabited buildings as possible.
 - Wherever possible, plant and equipment shall not be left running for long periods when not directly in use. Where appropriate, electrically powered plant shall be used instead of petrol or diesel.
 - Stationery plant shall be required to be located as far from sensitive receptors and inhabited buildings as is reasonably practical.
 - Vehicles transporting materials, capable of generating dust, to and from site shall be suitably sheeted on each journey to prevent release of materials and particulate matter. The sheeting material will be maintained in good order.
 - A maximum speed of 10 miles per hour will be strictly enforced. Reductions to this speed limit may be applied at the discretion of the contractor where dust problems dictate.
 - Any dusty roads will be damped down during dry periods where necessary.
 - Burning of wastes or unwanted materials will not be permitted on site.
 - All hazardous materials including, chemicals, cleaning agents, solvents and solvent containing products will be properly sealed in sealed containers at the end of each day by the contractor prior to storage in appropriately protected and bunded storage areas; and

Monitoring Activities

- 7.2.9 Routine audits will identify risk of environmental nuisance and corrective actions. A site log book will be maintained to record details and action taken in response to exceptional incidents or dust-causing episodes. It should also be used to record the routine site audits and any corrective actions.
- 7.2.10 Dust monitoring can be carried out in response to complaints. In this event a suitable methodology will be developed by the Principal Contractor, e.g. soiling rate measurement/deposit gauges, and will be agreed with the Local Authority.

7.3 Documentation

- 7.3.1 The Principal Contractor will retain records of all construction environmental audits and air quality monitoring. The Principal Contractor will keep a record of all environmental incidents that result in air pollution and remedial action taken in an environmental incident log book.
- 7.3.2 Complaints received will be recorded and investigated and all records of correspondence with site neighbours and/or the Local Authority will be retained. Contractors will maintain records of plant and equipment maintenance and these will be made available upon request.
- 7.3.3 An example of some of the key control measures to be implemented by the Principal Contractor is set out in the below table:

Task	Y/N	Comment/Action	Owner
Dust suppression equipment available for use during dry, windy weather and during dust generating works			
All loaded wagons are sheeted when appropriate before travelling on the public highway			
Waste skips are covered to prevent windblown litter			

8 Water

8.0 Table 8.1: Relevant Water Legislation

Relevant Legislation	Description
Control of Pollution (Oil Storage) (England) Regulations 2001 SI 2954	Imposes general requirements for preventing pollution of controlled waters from oil storage, particularly fixed tanks or mobile bowzers. Makes contravention a criminal offence.
Environmental Damage (Prevention and Remediation) Regulations 2009 SI 153	Guidance on Environmental Damage Regulations 2009
Groundwater Regulations 1998 SI 2746	Empowers the Environment Agency (EA) in England and Wales to prevent direct or indirect discharge of certain dangerous substances to groundwater and control pollution resulting from the discharge of those and other substances
Trade Effluent (Prescribed Processes and Substances) Regulations 1989 SI 1156 (as amended)	Specifies which categories of trade effluent have their discharge to public sewers controlled. Also requires sewerage undertakers to notify EA if they intend to vary existing trade effluent consents
Water Resources Act 1991	Sets up the regime, now controlled by the EA, to conserve, manage and control pollution of water resources, abstraction and impoundment, and offences for contravening and organising flood defences.

8.1 General Guidance

8.1.1 Surface water and effluent discharge will be managed and controlled on site to prevent any significant impact on to controlled waters. Possible sources of water pollution are listed below:

- Potential to generate contaminated effluent from e.g. waste storage area, vehicle parking areas.
- Dewatering of excavations and discharge of dewatered effluents.
- Movement and storage of contaminated soil.
- Earthworks having the potential to create preferential flow paths.
- Storage and movement of fuel and chemicals on site.
- Discharge from temporary toilets to foul sewer.
- Use of herbicides, pesticides and fertilisers adjacent to water courses during ground maintenance activities.

8.2 Management Controls

8.2.1 The Principal Contractor will implement pollution prevention measures which will include the following:

- design and provision of separate surface and foul water drainage systems. Ensure no surface drains are located in areas with the potential to generate polluting effluent or to discharge polluting effluent to surface waters;
- the use of plant nappies where necessary to stop the possibility of local drain / water contamination.
- marking of drainage points to differentiate foul (red) and surface water (blue) drains in line with EA recommendations;
- water treatment and/or settlement prior to discharge;
- effluent monitoring for suspended solids and flow rate;
- install and maintain adequate and appropriate erosion protection measures for incomplete and unseeded earthworks and stockpiles if necessary.
- location of all batching and mixing plant on designated hard surfacing with perimeter bunding to prevent surface run-off;
- use of EA approved double skinned integrally-bunded fuel bowzers for refuelling of plant where use of dedicated refuelling area is impractical;
- provision of 'spill kits', sand or other suitable containment and absorbent materials;
- consents to discharge to foul sewer/surface water obtained; and
- EA consent for discharge to and/or abstraction from controlled waters.

8.2.2 The Principal Contractor and all sub-contractors are required to manage and control surface waters on the site to ensure that potentially contaminated run-off does not impact on local water quality. The Principal Contractor will provide induction and further training, on the need to manage water discharges and hazardous materials management.

8.3 Discharges to Controlled Waters

- 8.3.1 Discharges to surface water systems (controlled waters) are only permitted with prior consent from the EA. No wastewater (either surface water or foul water) discharges will be permitted.
- 8.3.2 No sewage or trade effluent, including any vehicle wash waters, steam cleaning, pressure wash or other effluents are permitted to be discharged to surface water systems (controlled waters).
- 8.3.3 If the area being excavated for foundations fills with water prior to the concrete being poured, the ground works contractor will need to dewater. If this is required, suitably sized settlement lagoons will be hired to hold the water. This will reduce the number of suspended solids prior to the water being let into the drainage system. If this is required, the groundworks contractor will submit a detailed methodology for water management.
- 8.3.4 The Principal Contractor will maintain a register of all discharge consents. Sub-contractors must consult the Principal Contractor prior to any activity resulting in discharges to controlled waters.
- 8.3.5 All Contractors are prohibited from washing out tools or equipment or disposing of surplus materials to surface water drains.

8.4 Discharges to Foul Sewer

- 8.4.1 Discharges to foul sewer will only be permitted by prior consent from the Water Authority. Contractors must ensure that any consent limits (e.g. suspended solids content) are complied with. Contractors will be required to demonstrate compliance with monitoring requirements attached to relevant discharge consents.

8.5 Wheel Washing Facility

- 8.5.1 The entirety of the site area is currently covered by hardstanding and the materials to be used for the construction will predominantly be of a granular nature. The potential for mud is therefore greatly reduced. If there is a need for vehicle wheels to be washed, the Principal Contractor or designated sub-contractors will arrange for the periodic removal and disposal of contaminated sludges / waters in order to maintain the effectiveness of the units. All materials shall be disposed of at a suitably licensed waste disposal facility.

8.6 Road Cleaning

- 8.6.1 Not foreseen as required given that all surfaces are hard standing, if during the works it becomes required, the Principal Contractor or nominated sub-contractors will provide an approved Mechanical Road sweeper with vacuum facilities, spray facilities and on-board storage. This shall be used for the sweeping and cleaning of the roadway system and the public highway immediately adjacent to the site, on a regular basis or as deemed necessary to prevent nuisance or hazards to other highway users. Collected debris is to be disposed of at a suitably licensed waste disposal facility.

8.7 Fuel and Chemicals Storage

- 8.7.1 The Principal Contractor will be responsible for the storage, or the management of storage of fuels and chemicals on the project. All subcontractors will be responsible for ensuring that all fuels and chemicals are properly stored in a dedicated fully protected secure, storage area. Any plant or equipment not able to be refuelled off-site will be refuelled by the use of EA approved double skinned bowsers operated by the contractor. During the process of refuelling, a fuel spillage kit must be available in order to contain any spillage and to prevent contamination. Refuelling must take place in a designated area of the site that is provided with containment facilities, such as a temporary bunded hardstand area constructed of impervious concrete.
- 8.7.2 If fuels are stored on site during the construction phase, the Principal Contractor will be responsible for the construction of an appropriate bunded fuel storage facility on an impervious concrete base, in accordance with best practice and applicable legislation. The fuel storage area will be surrounded by a secure impervious bund providing a containment capacity of at least 110% of the largest tank, or 25% of the total capacity of the tanks whichever is the greater.

- 8.7.3 All items of small plant, such as dewatering pumps and generators must be kept away from surface water drains or surface water courses and placed on a suitable 'drip tray' in order to contain any spillage or leakage.
- 8.7.4 Areas used for waste (including stockpiles of soil arisings) are to be protected in a manner, which also prevents the escape of contaminants and water pollution via the site drainage and surface water systems.

8.8 Plant Maintenance Area

- 8.8.1 No dedicated plant maintenance area will be necessary due to the relatively small scale of the project. Any vehicles requiring maintenance will be off-hired and swapped for replacements by the suppliers.
- 8.8.2 Washout of trucks, hoppers and mixers will be sited away from storm water sewers, grids channels and water courses to prevent water pollution. Where possible washout water will be stored, treated and reused.

8.9 Refuelling Protocol

- 8.9.1 The following refuelling protocol will apply to all deliveries of fuel and refuelling operations:
- Refuelling and all tank filling to be carried out in the designated protected refuelling area.
 - The use of remote filling points using suitably protected bowsers are only to be used where refuelling at protected area is impractical due to nature of machinery/equipment in use.
 - An emergency spill kit containing sand or suitable absorbent materials to be kept readily available in case of spillage in the main fuel storage area.
 - All bowsers to carry an emergency spill kit where mobile refuelling is necessary;
 - bowsers must be equipped with an automatic cut-out mechanism.
 - All refuelling operations must be supervised by trained personnel.
 - Valves and taps must not be left open unattended and must be locked when not in use.
 - Personnel carrying out refuelling to be made aware of this refuelling protocol and trained in the use of spill kits and emergency procedures.

8.10 Monitoring Activities

- 8.10.1 Control limits will be set in accordance with discharge consents to foul sewers or controlled waters. Contractors discharging liquids must ensure that appropriate monitoring is undertaken to demonstrate compliance with all applicable consent limits.
- 8.10.2 Contractors will be required to demonstrate that volume estimates for water produced during dewatering operations and for trade discharges are correct, and that monitoring of the discharges are in accordance with the discharge consent requirements.
- 8.10.3 Inspections of refuelling areas, fuel, chemical and waste storage areas (for sheens, odour or discolouration) will be conducted on a daily basis and a record of the inspection, any corrective actions required and confirmation of the corrective action having been implemented will be kept in the site log.

8.11 Documentation

- 8.11.1 Contractors are to maintain records of all discharges to foul sewer and surface water systems. Records should include the date and time of the monitoring period and relate to the relevant consent conditions.
- 8.11.2 Waste transfer notes for all wastes dispatched from site will be retained for a period of three years.
- 8.11.3 The Principal Contractor will provide a record of all environmental incidents that result in water contamination and remedial action taken to be recorded in an environmental incident logbook. Records of correspondence with environmental regulators and copies of all discharge consents will also be maintained for a minimum period of two years.
- 8.11.4 An example of the key issues to be addressed by the Principal Contractor can be seen below:

Task	Y/N	Comment/Action	Owner
Drainage layout plans available for consideration?			
Discharge consents granted for discharges to foul sewer, or surface water sewer?			
SUDS water treatment established for treating construction site surface water and excavation dewatering?			
Monitoring, testing and reporting of discharges carried out in accordance with consent?			

Oil & Hazardous Material storage issues will be addressed as follows:

Task	Y/N	Comment/Action	Owner
Is the tank fit for purpose and in good condition (unlikely to leak or burst)?			
Are tanks and ancillary equipment (e.g. taps/valves/fill points) located or protected so to prevent damage from an impact or collision?			
Could spilt oil enter open drains, loose fitting manhole covers or soak into the ground where it could pollute groundwater?			
Are all tanks situated more than 50 m from a watercourse, well or borehole?			
Are tanks situated in an area suitable for deliveries?			
Appropriate spill prevention (e.g. drip trays) and control arrangements in place around oil and chemical storage areas with spill kits readily available?			
Are Emergency/accident response procedures in place?			

9 Contamination

9.0 Ground Contamination

- 9.0.1 The Principal Contractor appointed to undertake the groundworks at the site will be responsible for alerting the Client/its advisors immediately to any unforeseen contamination or existing potentially contaminative structures (e.g. underground tanks, sumps). To date no such structures have been identified during the course of the groundworks and investigations of the site. In general, unexpected contamination could include free phase product (i.e. neat fuel), substantial amounts of ash within the shallow made ground, asbestos fragments and/or unusual colouring or odour of subsurface soils, which may be potentially indicative of contamination (e.g. fuel or solvent odours/black staining of soils).
- 9.0.2 Depending on the nature of the observations, additional consideration of risk mitigation requirements may be necessary. Any unexpected contamination that is encountered and deemed necessary to be addressed will be notified to the Local Authority.
- 9.0.3 Should unforeseen contamination be identified during the groundworks, which are considered to require inspection on site the Principal Contractor shall request the Client/it's advisors to attend the site to assess the nature, level and extent of the contamination and if required to obtain soil and/or groundwater samples. Should contamination be identified which is assessed to represent a potential risk to future site users any remediation measures will be agreed with the Local Authority, and if required, Environment Agency, before commencement of works.
- 9.0.4 Appropriate mitigation measures will need to be in place should made ground containing asbestos fibres be identified during the earthworks.
- 9.0.5 Undertaking works in accordance with UK best practice and construction health and safety requirements when working with potentially contaminated land would be expected to be implemented to the sufficient protection of construction workers. The assessment of risk to construction workers and future maintenance workers will take place under Construction (Design and Management) Regulations 2015(CDM).

9.1 Contamination Watching Brief

- 9.1.1 The Earthworks Contractor will be provided with a brief toolbox talk in potential for contamination at the site. A watching brief will be maintained where major groundworks (e.g. deep excavations) are required, or unexpected sources of contamination are identified (e.g. notable staining, unusual odours, visual contamination such as asbestos containing materials).
- 9.1.2 For deep excavations the Earthworks Contractor will assess material arisings for potential signs of contamination. In the event that potentially contaminated soils are observed the 'unexpected finds' protocol detailed within this section will be applied.
- 9.1.3 If potentially contaminative structures or objects (such as pipes, tanks, interceptors or other buried items) are observed during the excavation works the earthworks contractor will

contact the Project Management Consultant to attend the site to complete a watching brief during removal of the structure/ object and as further excavation continues in the area.

9.1.4 Records of watching briefs carried out by the Project Management Consultant will be recorded.

9.2 Unexpected Finds

9.2.1 Examples of an 'unexpected find' include:

- Areas of contamination staining or noticeable contaminant odours.
- Visual evidence of asbestos containing materials.
- Buried structures, infrastructure or unidentified objects.
- Presence of oily liquids / other separate phase liquids.

9.2.2 In the event of an 'unexpected find' the following procedure will be followed by the earthworks contractor:

- Immediately cease work and record details of the 'unexpected find'. Inform the Watts Project Manager.
- Construct temporary barricading to prevent access to the 'unexpected find' and install (if appropriate) storm water and sediment controls.
- WBSL to contact the Environmental Consultant to arrange a site inspection.
- Environmental Consultant to inspect the 'unexpected find' and collect (soil, water or product) samples if required.
- Assessment of the situation is then to be undertaken following completion of the site visit and review of analysis results (if samples were collected). The assessment will determine if there is a potential for risk to environmental and human health receptors. If it is determined that remedial measures are required, a remediation strategy is to be prepared and submitted to Council representatives for agreement, prior to works continuing.

9.2.3 If there is a notable presence of ACMs during excavation the works will be stopped, and samples of the materials will be collected by the Environmental Consultant. Depending upon the nature of the ACM encountered (materials state and quantity), and the results of laboratory analysis, ACM may be suitably isolated by hand. Alternatively, a suitably licensed contractor may need to be appointed to remove the materials and arrange for appropriate disposal.

9.3 Post-Development Verification Reporting

9.3.1 Not deemed necessary for this project.

9.4 Environmental Analysis Updates

9.4.1 During the course of the development Warner Bros. will keep Three Rivers District Council representatives and the Environment Agency, updated by email in relation to the results of environmental samples if there are reported to be results that are considered to be significant in terms of risk to sensitive receptors.

10 Waste Management

10.0 General

10.0.1 WBSL will prepare a Site Waste Management Plan (SWMP) for the Site as a whole. The Principal Contractor will be responsible for waste management on the site.

10.0.2 An off-site waste segregator will be used with construction waste removed by lorry at the end of the working shift and taken to a local transfer station for sorting.

10.1 Waste Management Principles

10.1.1 The following principles will inform the approach to waste management during the works:

- Legal compliance with the appropriate legislation and regulations as set out in this CEMP.
- Re-use of excavation surplus material arisings elsewhere within the site (subject to approval and material suitability)
- The burning of wastes on-site will be strictly prohibited.

10.1.2 In addition, the following waste management measures will be followed within the construction materials supply chain:

- Avoiding over-ordering of materials.
- Minimising the time between delivery and installation and hence the risk of damage and waste.
- Selecting products with minimal packaging and requiring suppliers to use returnable transit packaging (e.g. return of storage pallets) where possible.

10.2 Training and Competence

10.2.1 All site personnel including contractors will be made aware of relevant health, safety and other management procedures and a training programme will be developed for all site personnel and delivered by WBSL. The aim of the training will be to ensure that all personnel are fully conversant with the:

- The objectives and targets set in the Site Waste Management Plan and other in-house documents, and their on-site implementation.
- On-site procedures for waste segregation, where applicable.
- On-site procedures for waste removal.
- Role of the Site Manager and each individual with respect to waste segregation, storage and removal.
- Legal compliance requirements.

10.2.2 Records will be kept of the training given to individual staff. Additional tool-box talks will be given as necessary. Assessment of the effectiveness of the training programme will form part of the audit procedures.

10.3 Monitoring, Auditing and Reporting

- 10.3.1 A key element of a SWMP is monitoring the implementation of the materials re-use and waste reduction measures, auditing against specific targets, and amending the SWMP to reflect changes in objectives, targets, or where more effective waste management measures are identified.
- 10.3.2 DEFRA Guidance suggests that regular monitoring and auditing is carried out for SWMPs.
- 10.3.3 The most appropriate way to demonstrate on-going monitoring is identification and completion of actions and recording of these within the SWMP. It is expected that WBSL will monitor and update the SWMP during the course of the construction works.
- 10.3.4 Guidance recommends that regular audits are carried out in order to ensure compliance with the requirements of the SWMP Regulations and other waste-related legislation. It is expected that WBSL will develop auditing schedules.
- 10.3.5 There is no specific regulatory requirement for reporting on the outcomes from completed SWMPs. A summary report will be produced by WBSL, which can be made available on request. It is expected that the summary report will contain the following themes:
- Summary of achievements with respect to targets set at outset.
 - Lessons learned.
 - Estimation of cost savings.
- 10.3.6 The updated SWMP and associated documents must be stored at the site office, and will be available for inspection.

APPENDIX 1 – Site Setup



Watts.

CONTACT DETAILS

London.

0207 280 8000

london@watts.co.uk

Manchester.

0161 831 6180

manchester@watts.co.uk

Bristol.

0117 927 5800

bristol@watts.co.uk

Belfast.

028 9024 8222

belfast@watts.co.uk

Cardiff.

02920 508 625

cardiff@watts.co.uk

Leeds.

0113 245 3555

leeds@watts.co.uk

Glasgow.

0141 353 2211

glasgow@watts.co.uk



watts.co.uk