



# Purfleet Centre Regeneration

# **Construction Management Plan**

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December 2017





## Document Purpose

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This document has been prepared in support of an outline application for the regeneration of Purfleet, Thurrock on behalf of Purfleet Centre Regeneration Ltd (PCRL)

Prepared by:



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On behalf of:

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PCRL

Masterplan Project Team:

**urban catalyst**

Development Manager



Landscape Architects



Project Manager  
&  
Construction Manager



Quantity Surveyors



Architects & Masterplanners



Community Engagement



Multidisciplinary Engineers



Property Strategy Consultants



Estate Management



Planning Consultant

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Film & Television Studio Project Team:

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Film & Television Studios Operator

ARUP

Civil & Services Engineering

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Development Manager



Structural Engineering



Architects



Quantity Surveyor

# Document verification sheet

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	Final Issue	Dec 2017	Final planning submission issue	MW	JC

## **Introduction and Scope of the Construction Management Plan**

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The Construction Management Plan sets out how the scheme will be built safely, responsibly and considerately for Purfleet Centre Regeneration Limited (PCRL).

This plan should be read alongside the wide range of other materials that comprise the planning application as it has been submitted for the Thurrock Council for their determination.

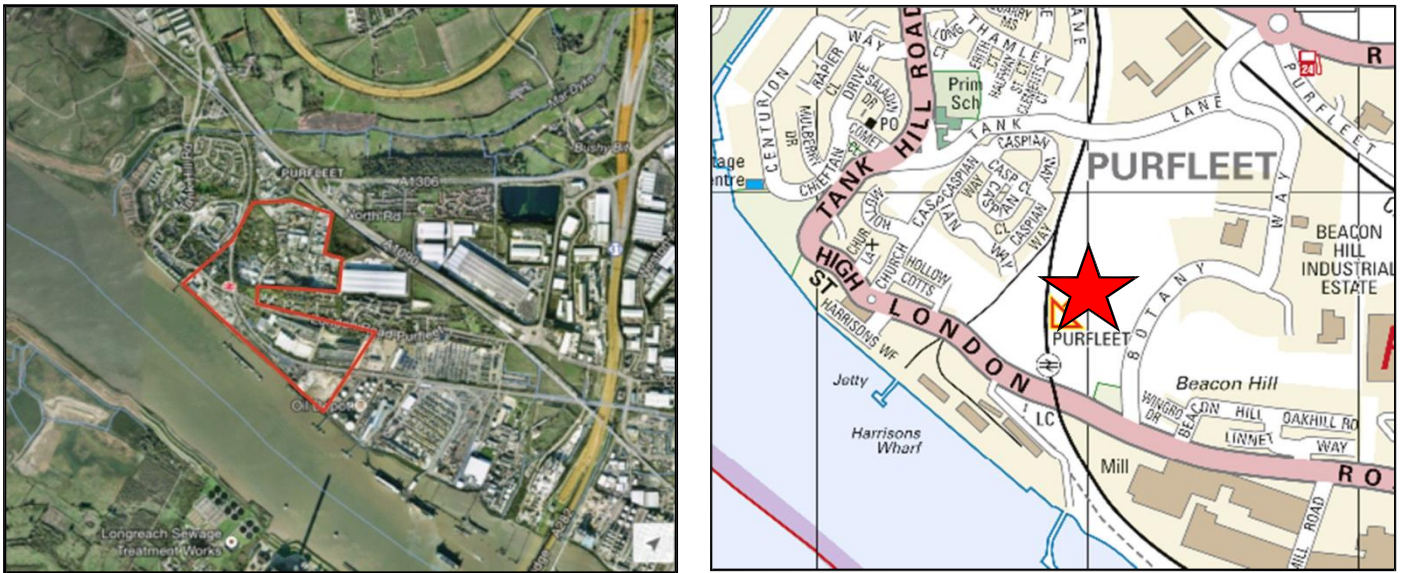
The aim of the report is to confirm commitment to the London Gateway Construction Code of Practice ensuring that residents and businesses are protected from environmental disturbance during construction. A full Environmental Impact Management Plan will be developed to comply with Environmental Code of Practice for each stage of construction as the design and construction approach is developed and the specific mitigation requirements are known.

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## Site Location and Existing Use

Purfleet is located outside Greater London, in Thurrock, on the north bank of the River Thames. It forms part of the Thames Gateway regeneration and growth area and is bounded to the north by Tank Lane and the High Speed 1 Rail Link; to the east by the chalk cliffs of Botany Quarry, the Carpetright storage and distribution centre and to the south-east by Esso Petroleum storage facility; to the south-west and south by the River Thames and to the west / north-west by residential properties and the Essex Thameside railway line. The site currently includes a former chalk quarry, a range of industrial buildings and open land uses. Some areas of the site have been cleared and remediated.

Purfleet is well linked to major transport infrastructure, with its own mainline rail station providing services between central London/ Shoeburyness and convenient road access to the A13/M25. With a population of around 3,000 people, it relies on adjacent areas for many key services, with residents required to make the majority of their journeys to shops, schools and work by private vehicle.



Picture 1: Existing site and location



## Project Brief and Aim

Due to its strategic location, Purfleet's economic base is heavily reliant on industrial, warehousing and distribution activity - associated with movements by water, road and rail. Despite good strategic transport links, the area has struggled to establish itself as a location for other employment uses, such as office or workshop development.

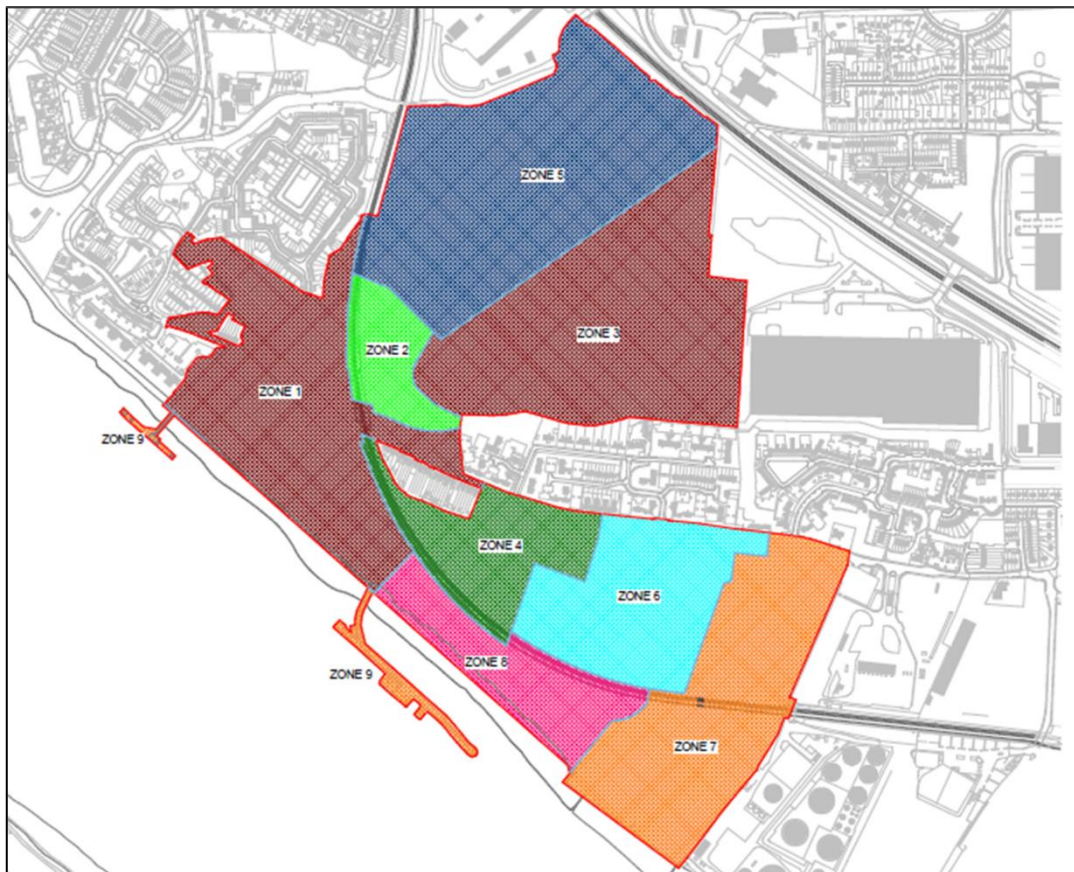
The Purfleet development site, covering approximately 62.85 hectares, represents a key regeneration area within the Thames Gateway. The project has been promoted by Thurrock Council (TC) who hold the freehold interest for approximately 60% of the site area. The remaining c 40% will be procured by the council, either through negotiated land purchases or by CPO.

Purfleet Centre Regeneration Limited (PCRL) was selected as TC's development partner following an OJEU procurement process. Since its appointment it has developed a masterplan that proposes the introduction of up to 2,850 homes, a new town centre, a media studios complex, schools and major improvements to the railway station, all over 9 phases.

The overall aim is to create a desirable place where people will want to live and work that capitalises on Purfleet's natural advantages including proximity to the River Thames and M25. The development will focus on:

- a centre and sense of place for an area which currently consists of isolated residential developments with few facilities;
- housing in a location with good communication links by train and car;
- a high quality employment hub through developing a major media studio complex and ancillary industrial uses;
- access to the extensive riverfront for the public which is currently inaccessible.

Residents will benefit from new schools, health centre and community facilities, shops, restaurants, play and amenity spaces and modern amenities which focus on a sense of community and place making. The inclusion of the film studios will directly and indirectly provide substantial employment and educational opportunities to the local population.



Picture 2: Proposed Development Zones

PCRL is seeking outline planning permission for the redevelopment of the site and this document is written in support of this application.

The outline planning permission for the proposed scheme is described as:

*'Application for outline planning permission, with all matters reserved for subsequent approval, except for means of access, for mixed-use redevelopment involving the demolition of existing buildings and other structures; site preparation works; and the development of up to 2,850 Dwellinghouses (Use Class C3) comprising a mix of 1, 2, 3 and 4 bedroom units including affordable housing; up to 11,000 sq.m (floorspace) of Business uses (Use Class B1); up to 8,880 sq.m (floorspace) of Shops (Use Class A1); up to 5,220 sq.m (floorspace) of Restaurants and Cafes (Use Class A3); up to 900 sq.m (floorspace) Drinking Establishments (Use Class A4); up to 20,000 sq.m (floorspace) of Hotel accommodation (Use Class C1); up to 18,300 sq.m (floorspace) of Non-residential Institutions uses, comprising a Primary School, Secondary School and Sixth Form, Medical and Community uses (Use Class D1); up to 6,200 sq.m (floorspace) of Assembly and Leisure Uses (Use Class D2); up to 135,000 sq.m (floorspace together with external backlot production space) film and television production space including ancillary workshops, offices and post production facilities and ancillary infrastructure, together with ancillary car park; provision of temporary railway station facilities, up to 1,600 sq.m (floorspace) of upgraded railway station facilities and local waste and power facilities (Sui Generis); all together with associated vehicle parking, open space, landscape and public realm provision, ecological mitigation, highways, pedestrian and vehicular access routes, and other associated engineering, utilities and infrastructure works including but not limited to, rebuilding, repairing, replacing and upgrading of river wall and flood defence wall and associated works of repair and reinstatement of the former Yara Purfleet Terminal Jetty and the former Cory's Wharf Jetty to facilitate the river wall and flood defence works, the provision of four grade separated railway crossings including a new bridge as part of the reprofiling and realignment of London Road'.*

The development site is split into a number of zones. Zone 1 comprises c.23 acres and will deliver in the region of 1000 homes, retail units, a health centre and other riverside facilities, together with the station building and bridge over the railway. Construction work is due to commence in 2018 after initial site preparation works, with the first new homes to be completed in 2021.

Construction work across Zone 1 comprises:

- demolition of existing buildings and removal of existing structures
- design and construction of all related services, infrastructure and external works, including realignment of London Rd and the repair and improvement of river and flood walls
- design and construction of the station building and rail crossing bridge
- design and construction of residential units
- design and construction of commercial areas, excluding the studios
- design and construction of retail areas
  
- design and construction of at-grade and podium parking areas for cars, motorcycles and cycles
- design and construction of Section 278 works to the adjacent public footpaths/new crossovers etc

Initial demolition, remediation and infrastructure works will be undertaken by appointed contractor who will then pass the site to Swan/NU living to undertake main construction works across Zone 1.

Subsequent development Zones will be developed by PCRL directly contracted to Swan/NU living or let to sub developers as appropriate.

Construction of the new studios in Zone 3 will be let as a sub development package on behalf of Quartermaster Collective Limited.

The outline planning application includes a secondary school within zone 4, as this forms an important part of the masterplan. However, the Harris Academy secured planning permission on 10 November 2017 for a new secondary school in this location. This is intended to be separately funded and delivered by an EFA appointed team, with an anticipated opening date of September 2019.

In all cases PCRL will establish construction interface groups to coordinate and manage construction activities being undertaken concurrently by separate contractors/ developers across the site.

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## Proposed Construction Form

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The buildings generally range in height between 8-40m high and between 2-10 storeys above ground. Parameter plan ref. PTF-KSS-00-ZZ-DR-A-0100-013 provides proposed buildings' heights in all zones.

The intention is to deliver the development through a mixture of both off-site modular construction, via Swan's NU build factory, and traditional construction. The appropriate approach for each phase and building will be decided as the design proposals are progressed, taking account of the nature of the building and site, the most suitable construction method and its location. Further information about proposed construction form and management will be provided as separate reserved matters applications are progressed for each phase of the development. At concept stage buildings will be designed to enable them to be delivered via either modular or traditional construction as required.

Foundations and substructure – blocks will generally be piling, (mini, CFA, driven, contiguous or sheet to suit location), with concrete pile caps, ground beams and piled raft floors in contact with the ground. Houses will be based on foundations designed for modular structures or traditional strip footings.

Superstructure – Modular construction is in cross laminated timber, with modules fully fitted out within the factory and assembled on site. Modular has many benefits when compared to traditional building methods, including reduced waste, use of renewable and sustainably sourced timber as the main construction material, reduced carbon footprint, quicker delivery, better quality control in a factory environment and reduced disturbance to residents during construction due to reduced construction traffic, less noise and dust.

Where modular construction is not used, generally low rise buildings will be traditional construction with higher blocks in concrete frame with SFS external / internal partitions.

The construction form of specialist buildings (i.e. the studios) will be determined during detailed design.

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## Programme

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Development of Zone 1 is likely to span over 6-8 years with initial site preparation works commencing in 2018 following receipt of planning permission and discharge of pre-commencement conditions.

The following indicative programme shows milestones as a guide for initial works to Zone 1. Please note it is subject to change:

- Site investigation: 1Q 2018
- Anticipated planning permission: 3Q 2018
- Construction site set up intention: 3 Q'2018
- Demolition, remediation and site preparation works: 3Q'2018
- Zone 1 construction: 2Q 2019
- Zone 1 completion: 2024

The sales and marketing strategy is to use a temporary area within Zone 1 to provide a sales and marketing suite, with a safe public access link to show units.

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## Compliance

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Our approach to all hazards and risks is to critically assess them, eliminate them where possible and address the remainder by adopting best practice methodology.

All measures included in this Construction Statement will be monitored frequently, reviewed at least weekly, and may be subject to inspection by Officers from the Environmental Health Department.

We will work with the H&S Executive, Building Control and always comply with the provisions of:

- The Control of Pollution Act 1974 Part IV
- The Health and Safety at Work Act 1974
- The Clean Air Act 1993
- The Environmental Protection Act 1990

We also have regard to the London Best Practice Guidance:

- “The control of dust and emissions from construction and demolition”

Contractors will be required to ensure that disturbances due to noise, vibration, dust and smoke arising from demolition and construction works on this site, including works to the Public Highway, are kept to acceptable levels.

We will ensure that all plant and equipment, including any which may be on hire, is well maintained, properly silenced and used in accordance with the manufacturer’s instructions and BS 5228.

Prior to any works starting, we will inform occupiers of all properties which may be affected by noise, dust, vibration or smoke arising from our construction works of the nature of these works, the proposed start time of the works and their expected duration. Notices will be placed in a conspicuous position, informing all of our agreed hours of work.

Publicity will include the name and telephone number of the main contact within our organisation who is able to give further information and deal with any complaints or emergencies that may arise at any time.

Following the demolition of any buildings on site any disused drain runs will be “sealed off” at the junction with the sewer under the public road.

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## Construction Traffic

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Construction traffic routes are likely to be via the A13 and M25 and travelling along Arterial Way. From there, depending on the location of the particular phase, traffic would then use Botany Way, New Tank Hill Road or Stonehouse Lane. Alternative supply routes using the river and train lines will be considered and implemented where feasible and economic. The Contractor shall prepare and agree a Construction Traffic Management Plan with TC in advance of the commencement of demolition and construction works for each phase or zone, which shall include, inter alia, the routes, site access and parking arrangements.

The Transport Coordinator, as nominated by the Contractor, shall be responsible for managing traffic and ensuring that drivers adhere to the transport protocols. All staff shall be responsible for complying with this procedure.

All deliveries shall be controlled, to minimize disruption to traffic during peak periods, such as deliveries taking place on a 'just in time' basis to limit waiting times. Deliveries shall be made within the specified working hours, unless otherwise agreed with TC.

Vehicle queuing to the Site shall be avoided at all times, by, for example, phased deliveries and communication with drivers. The public highway shall not be used for the loading or unloading of materials wherever possible and a construction vehicle holding area and operative parking will be established within the site boundary when space permits.

Construction activities shall be separated from publicly accessible areas using hoardings, barriers or fences. Signage shall be provided at entrances to provide advance warning of the presence of heavy vehicles maneuvering on the Site.

Wheel washing facilities will be provided at site vehicle exit points to minimize transfer of mud and debris from the site onto the public highway.

Approval and a permit from TC shall be obtained in the event of alterations to any public footpaths. Similarly, where road closures are required, appropriate approvals shall be obtained and safety measures shall be installed and signs and barriers erected.

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## Noise and Vibration

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Our aim is to protect any residents or users of buildings close by and any passers-by from nuisance or harm. We also need to protect the new construction and any nearby buildings from physical damage caused by vibration.

Noise levels will be monitored during the course of the works by Swan/NU living. Noise monitors will comply with BS EN 60651:1994 and conform to a minimum Type 2 integrating sound level meter that simultaneously records LAeq (5min, 1 hour and 12 hour), LMAX, L90 and L10 noise levels. The vibration monitors must continuously sample the vibration levels and record the maximum vertical Peak Particle Velocity (PPV) and frequency every 5-minute period for continuous vibration monitoring. The vibration monitors will be capable of measuring 3-dimensional levels of vibration.

Although it is accepted that noise and dust during the construction phases cannot be eliminated, reasonable steps will be taken to reduce the potential interference to occupied premises in the surrounding areas.

Barriers (e.g. site huts, acoustic sheds or partitions) will be used where practicable to reduce the noise reaching noise sensitive buildings.

All plant being used on site will have engines compliant with the emission regulations EU Stage 3. Percussion tools will be fitted with effective silencers of a type recommended by the manufacturer of the equipment. Noisy plant or equipment will be situated as far as possible from noise sensitive buildings.

Contractors will be mindful of and comply with, Part 111 of the Environmental Protection Act 1990, the Control of Noise at Work Regulations 2005 and the Control of Vibration at Work Regulations 2005 at all times.

Where residential occupiers are likely to be affected by noise, the hours of noisy works shall be restricted to:

- Monday to Friday 8.00am to 6.00pm
- Saturday 8.00am to 1.00pm
- Sunday and Bank Holidays No working

We will ensure that vehicles and plant arriving at and leaving the site comply with these stated hours of work.

Where appropriate, consideration will be given to:

- Screening to reduce noise levels
  - Publicised "rest periods" during which noisy operations are temporarily ceased
  - The provision of public refuges away from severe noisy works
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## **Piling**

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The noise sensitivity of the area was considered when determining the methods of piling to be used. Sheet piling will, wherever practicable, be carried out using hydraulically operated or vibratory hammers. The use of conventional impact hammers will, wherever possible, be avoided.

Where practicable, jacked piles will be used in preference to piles driven using other methods. Any pile driving will be carried out by plant equipped with a recognized noise reducing system. Where surface contamination is present on site, appropriate piling techniques will be adopted.

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## Dust, Smoke and Air Pollution

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Although it is accepted that dust during the construction phases cannot be eliminated, reasonable steps will be taken to reduce the potential interference to occupied premises in the surrounding areas.

Contractors will be required to mitigate emissions of dust and other pollutants as follows:

- In operations creating potential dust, regular dampening down will take place to reduce air borne particles
- Burning of materials on site is not permitted
- We will use processes which do not generate hazardous fumes and hazardous dust
- We will ensure that airborne hazards do not escape from the site to affect members of the public and surrounding environment
- Dust pollution will be minimized during demolition by the complete screening, if practicable, of the building or structure to be demolished with debris screens or sheets
- Wheel wash facilities will be provided at the site vehicular exits
- Any stockpiles of earth will be damped down or otherwise suitably treated to prevent the emission of dust from the site. Stockpiles will be planned and sited to minimize the potential for dust generation. The handling of spoil will be kept to a minimum and when materials are deposited onto a stockpile it will be from the minimum possible height
- We will ensure that the area around the site, including the public highway, is regularly and adequately swept to prevent any accumulation of dust and dirt
- Skips and removal vehicles shall be properly covered when leaving the site. Spoil will be handled in such a way so that it does not give rise to excessive dust
- Watering of rubble chutes will be undertaken where necessary to prevent dust emissions
- We will take all necessary precautions to prevent smoke emissions or fumes from plant or stored fuel oils from drifting into residential areas. In particular, measures will be taken to ensure that all plant is well maintained and not left running for long periods when not in use

### Dust Monitoring:

- Background monitoring will be carried out prior to the commencement of works
  - Readings will be taken on one occasion each day at three monitoring points located around the Site.
  - In accordance with the guidance laid out in the Greater London Authority and London Councils best practice document, an Action Level of 250µg/m<sup>3</sup> be adopted for PM<sub>10</sub>
  - Where monitoring shows this action level and warning level to have been exceeded, action will be taken to reduce the level of particulate matter arising from Site activities
  - A warning level of 250µg/m<sup>3</sup> TSP or 200 µg/m<sup>3</sup> for PM<sub>10</sub> will also be adopted. Should this warning level be triggered, consideration should be given to the working practices to avoid the risk of breaching the Action Level
  - Dust monitoring will be carried out by the Demolition Contractor. Final details of dust monitoring (measured as TSP and PM<sub>10</sub>) will be agreed with Thurrock Borough Council
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## Plant

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Contractors will be required to ensure that all plant complies with the relevant statutory requirements and mitigate environmental issues as follows:

- Machines in intermittent use will be shut down or throttled down to a minimum when not in use
- Compressors will be fitted with properly lined and sealed acoustic covers which will be kept closed whenever in use
- Pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturer
- Equipment which breaks concrete, brickwork or masonry by bending, bursting or “nibbling” will be used in preference to percussive tools where practicable.
- We will avoid the use of impact tools where the site is close to occupied premises where practicable
- Where practicable, rotary drills and busters activated by hydraulic, chemical or electrical power will be used for excavating hard or extrusive material
- Where practicable, equipment powered by mains electricity will be used in preference to equipment powered by internal combustion engines or locally generated electricity
- Neither any part of the works nor any maintenance of plant will be carried out in such a manner as to cause unnecessary noise or vibration, except in the case of an emergency when the work is absolutely necessary for the saving of life or property or the safety of the works
- Plant will be maintained in good working order so that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum
- Noise emitting machinery which is required to run continuously will be housed in a suitable acoustically lined enclosure, wherever practicable
- Care will be taken to reduce noise when loading or unloading vehicles, dismantling scaffolding or moving materials etc.



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