Noise, Vibration Air Quality and Dust Management Plan

Site: Adur & Worthing Lot 3
Gardner Road Site

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Overview

This document provides guidance and a noise vibration and dust management plan that forms part of the Construction Phase Plan (CPP). This will be required to be submitted and approved by Adur & Worthing Council before works commence onsite.

Relevant Guidance

The following guidance are considered relevant for the activities proposed and will be always complied with:

- BS5288, 'Code of practice for noise and vibration control on construction and open sites';
- CIRIA Environmental good practice on site
- Guidance on the assessment of dust from demolition and construction, Version 1.1, IAQM October 2018
- Guidance on Monitoring in the Vicinity of Demolition and Construction Sites, Version 1.1, IAQM, October 2018
- Best in Class 'Guidance on Dust and Emissions from Construction' LLECP, March 2019

Site Details

Site details are provided in the form of a plan/map (Figure 1) that locate the site its context within Southwick and depict the site boundary.

Sensitive Receptors

The sensitive receptors are identified based on locations where public could be adversely affected by noise vibration dust and changes in local air quality caused by a development. Higher Sensitive receptors include places such as hospitals, schools/education establishments, theatres, recording studios and residential properties whereas the medium/low sensitivity receptors are shops, workplaces and parks

Residents living within 50m of the site can potentially be affected by noise and vibration therefore all sensitive receptors within 50m of the site boundary should be identified.

Residents living in proximity to such a site can potentially be affected by site dust up to 1 km from the source, although continual or severe concerns about dust sources are most likely to be experienced near to dust sources, generally within 100 metres. In general, large dust particles (greater than 30µm) make up the greatest proportion of dust emitted from construction sites and will largely deposit within 100 m of sources. Intermediate sized particles (10-30µm) are likely to travel up to 250-500m. Smaller particles (less than10µm), which make up a small proportion of the dust emitted, can travel up to 1km from sources.

The proposed site is located at Gardner Road, Southwick

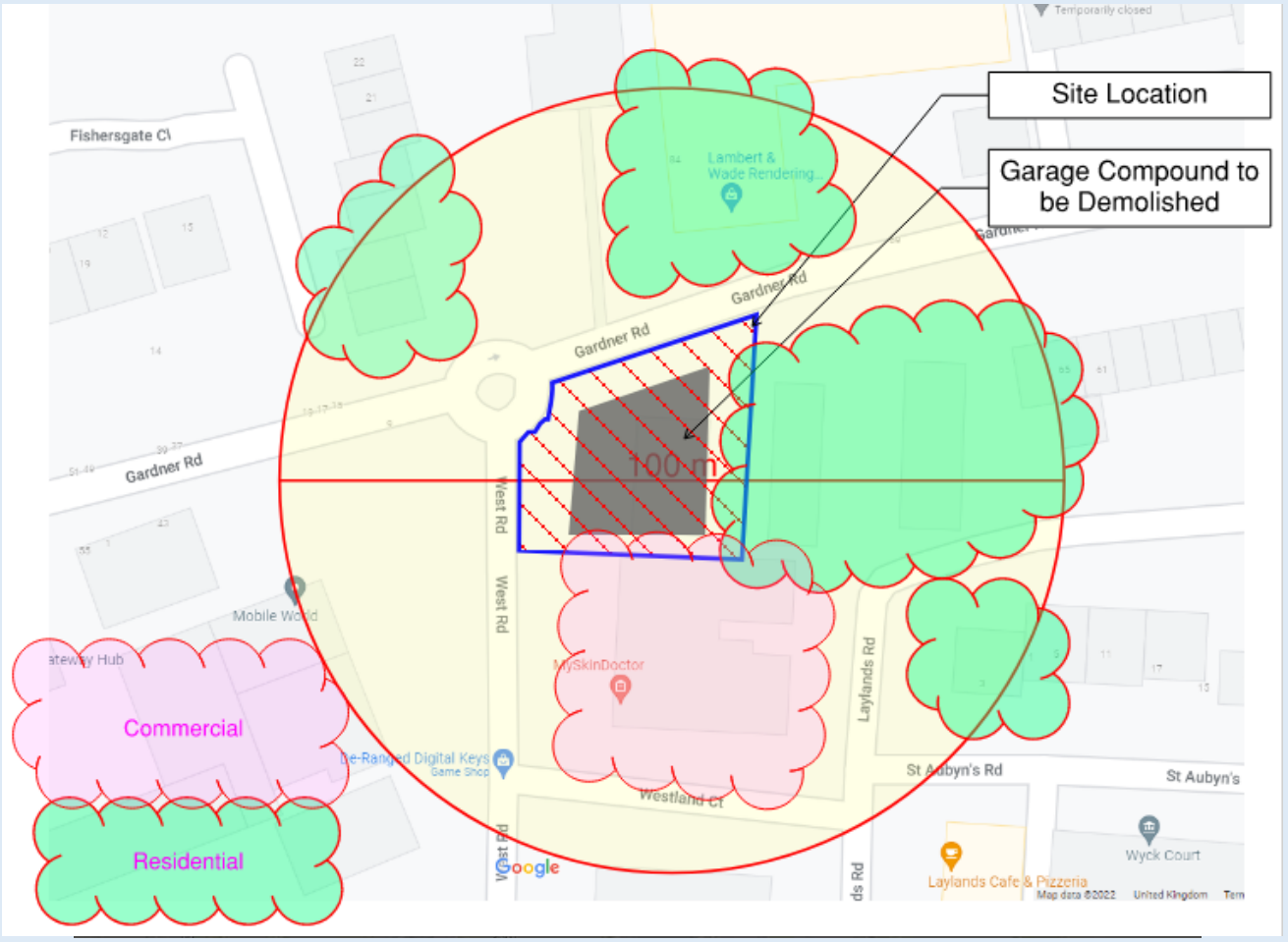


Figure 1

Site Location Plan with a 50m Buffer around the site (sensitive receptors: Green = Residential Pink = Commercial)

The sensitive receptors identified within 50m of the site boundary who are most likely to be impacted by site works (See Figure 1) are as follows:

- 18 residential properties
- 1 commercial properties

Hoarding

The installation of site hoardings is essential for containing construction/demolition dust onsite and to act as a barrier to shield sensitive receptors from noise.

Details of the site hoarding on all site boundaries will be provided along with a plan showing its position.

Hoarding requirements

Prior to any site clearance works a site hoarding will be installed that meets the following standards properties

- A minimum of 2.4-meters in height
- Solid in construction and will be erected on all site boundaries.

Site Layout

Careful planning of site layout can reduce the environmental impact to nearby sensitive receptors. The site will be arranged to maximise the distances between storage areas, points of access and egress, stockpiles and other noise, vibration and dust generating activities to the identified sensitive receptors.

The layout of the site will be designed ensure that the noise vibration and dust generating activities and machinery will be located as far away as practically as possible from the off-site sensitive receptors.

Responsibilities and Site Management

The site is required to have a Site Manager to manage noise, vibration and air quality pollutants from construction and demolition sites. In addition, they should control community relations to liaise with the stakeholders through the duration of the project.

The roles and responsibilities for the site's Key personnel in relation to noise vibration dust and air quality control will be identified within the CPP.

The following roles and Responsibilities table provides an example of the information required.

Roles	**Responsibilities**
Principal Contractor Details	• Woodhart Construction Ltd
Site Manager ***TBC***	• Ensure work is carried out in accordance with the CPP • Ensure Workers are aware of the requirements of environmental plans and procedures • Undertake Subjective and Visual Monitoring emissions as part of general site inspections • Ensure site documentation (method statements and environmental risk assessments) includes noise vibration and dust mitigation • Respond to alerts and complaints and maintain the site diary. • To act as the first and point of contact for the community contact site. • Prepare newsletters communication to neighbours
All Personnel	• Carry out the works in accordance with agreed methods and briefings • Report anything that deviates from agreed processes to site management. • Report all incidents and examples of best practice to section manager • Attend environmental Training and Induction.

Pre commencement Community liaison

Woodhart Construction Ltd are required to notify all identified sensitive receptors/surrounding community association/groups and any other identified stakeholder within 50m of the site boundary. Contact will be made a minimum of 3 weeks before submission of the CPP to Adur & Worthing Council. All points and concerns raised by stakeholders following the notification, are required to be reported along with the measures adopted/implemented by site to address any concerns raised.

In addition to the notification process, the applicant is required to review all representations made during the planning application consultation process. Any concerns or comments made relating to construction impacts are required to be identified and the CPP should set out what action is proposed to address these concerns.

Demolition/Construction Methodology

Site specific methodology for the different phases will be provided. We (Woodhart Construction) will require RAMS and/or health and Safety documentation for all work tasks and these should set out the methodology simply for identified stakeholders to understand.

It is expected that the site will incorporate the following mitigation points as a minimum into the methodology. Further site-specific mitigation will be required, and this is addressed later in the document.

- **For all Phases**
  - Maximise the screening effect of existing buildings and temporary stockpiles through programming / phasing of works
  - Water Suppression will be provided to prevent fugitive air quality emissions.

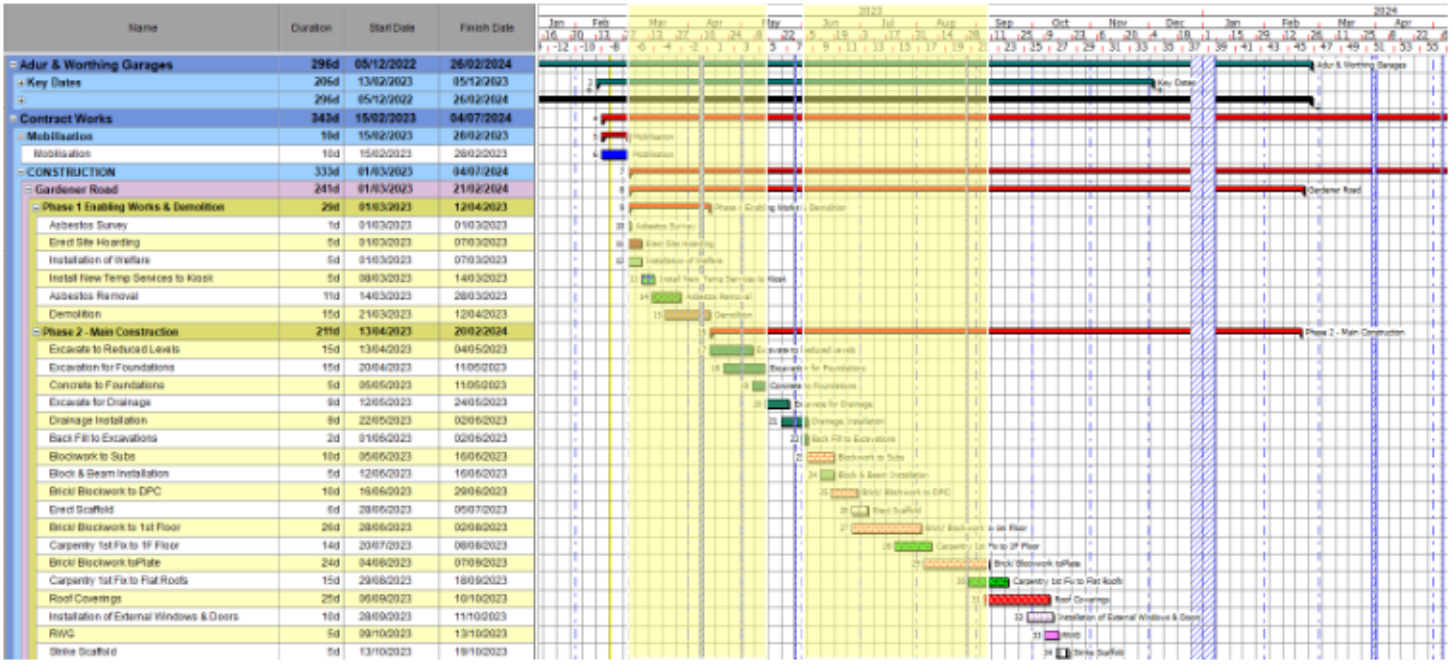
- **Demolition (where being used for basement construction)**
  - Maximise the screening effect of existing buildings and temporary stockpiles through programming / phasing of works

  - Utilise low impact demolition methods such as munching techniques – percussive plant should only be used where there is no viable option.

- **Construction**
  - Use prefabricated building elements where possible to minimise noise and dust onsite
  - Full water dust suppression to be utilised for all masonry cutting

Project Programme of Potential Noise vibration and Dust Generating Activities

The programme below details key periods where there is the possibility for an increased level of dust creation.



Name	Duration	Start Date	Finish Date
Adur & Worthing Garages	296d	05/12/2022	26/02/2024
Key Dates	206d	13/02/2023	05/12/2023
	296d	05/12/2022	26/02/2024
Contract Works	343d	15/02/2023	04/07/2024
Mobilisation	10d	15/02/2023	28/02/2023
Mobilisation	10d	15/02/2023	28/02/2023
CONSTRUCTION	333d	01/03/2023	04/07/2024
Gardener Road	241d	01/03/2023	21/02/2024
Phase 1 Enabling Works & Demolition	29d	01/03/2023	12/04/2023
Asbestos Survey	1d	01/03/2023	01/03/2023
Erect Site Hoarding	5d	01/03/2023	07/03/2023
Installation of Welfare	5d	01/03/2023	07/03/2023
Install New Temp Services to Kiosk	5d	08/03/2023	14/03/2023
Asbestos Removal	11d	14/03/2023	28/03/2023
Demolition	15d	21/03/2023	12/04/2023
Phase 2 - Main Construction	211d	13/04/2023	20/02/2024
Excavate to Reduced Levels	15d	13/04/2023	04/05/2023
Excavation for Foundations	15d	20/04/2023	11/05/2023
Concrete to Foundations	5d	05/05/2023	11/05/2023
Excavate for Drainage	9d	12/05/2023	24/05/2023
Drainage Installation	9d	22/05/2023	02/06/2023
Back Fill to Excavations	2d	01/06/2023	02/06/2023
Blockwork to Subs	10d	05/06/2023	16/06/2023
Block & Beam Installation	5d	12/06/2023	16/06/2023
Brick/ Blockwork to DPC	10d	19/06/2023	29/06/2023
Erect Scaffold	6d	29/06/2023	05/07/2023
Brick/ Blockwork to 1st Floor	26d	29/06/2023	02/08/2023
Carpentry 1st Fix to 1F Floor	14d	20/07/2023	08/08/2023
Brick/ Blockwork toPlate	24d	04/08/2023	07/09/2023
Carpentry 1st Fix to Flat Roofs	15d	29/08/2023	18/09/2023
Roof Coverings	25d	05/09/2023	10/10/2023
Installation of External Windows & Doors	10d	28/09/2023	11/10/2023
RWG	5d	09/10/2023	13/10/2023
Strike Scaffold	5d	13/10/2023	19/10/2023

In addition, all the activities that have the potential to give rise to high noise, vibration and air pollution emissions have been highlighted below

Programme of Noise Vibration and Dust Generating Activities

Month	Responsibilities
Site set-up *Month 1*	Installation of hoarding Site traffic, deliveries and general plant operation Vehicle and plant emissions
Demolition *Month 1-2*	Demolition works Site traffic movement, deliveries and general plant operation Vehicle and plant emissions
Groundworks *Month 2-3*	Site traffic movement, deliveries and general plant operation Vehicle and plant emissions Concrete pumping Dig will require excavator
Construction of structural shell *Month 3-8*	• Site traffic movement, deliveries and general plant operation. Vehicle and plant emissions in connection with the below activities: Brickwork and Blockwork Roofing
General fit-out construction *Month 9-11*	• Site traffic movement, deliveries and general plant operation Vehicle and plant emissions
Site demobilisation and completion activities *Month 12*	Reinstatement of footpath and street furniture Removal of hoarding

Working Hours

The CPP will clearly set out the permitted hours of works and should reference the restriction set by the planning condition.

Permitted working hours are:

Monday to Friday:7.30am to 6.00pm
Saturday:8.00am to 1.00pm

In residential areas noisy works associated with a development or will be limited to weekdays from 0800 to 1800 hours, unless otherwise agreed.

Noisy working is not permitted on Sundays and Bank Holidays.

Noisy operations shall not take place outside these hours without the prior approval of Adur & Worthing Council

Training

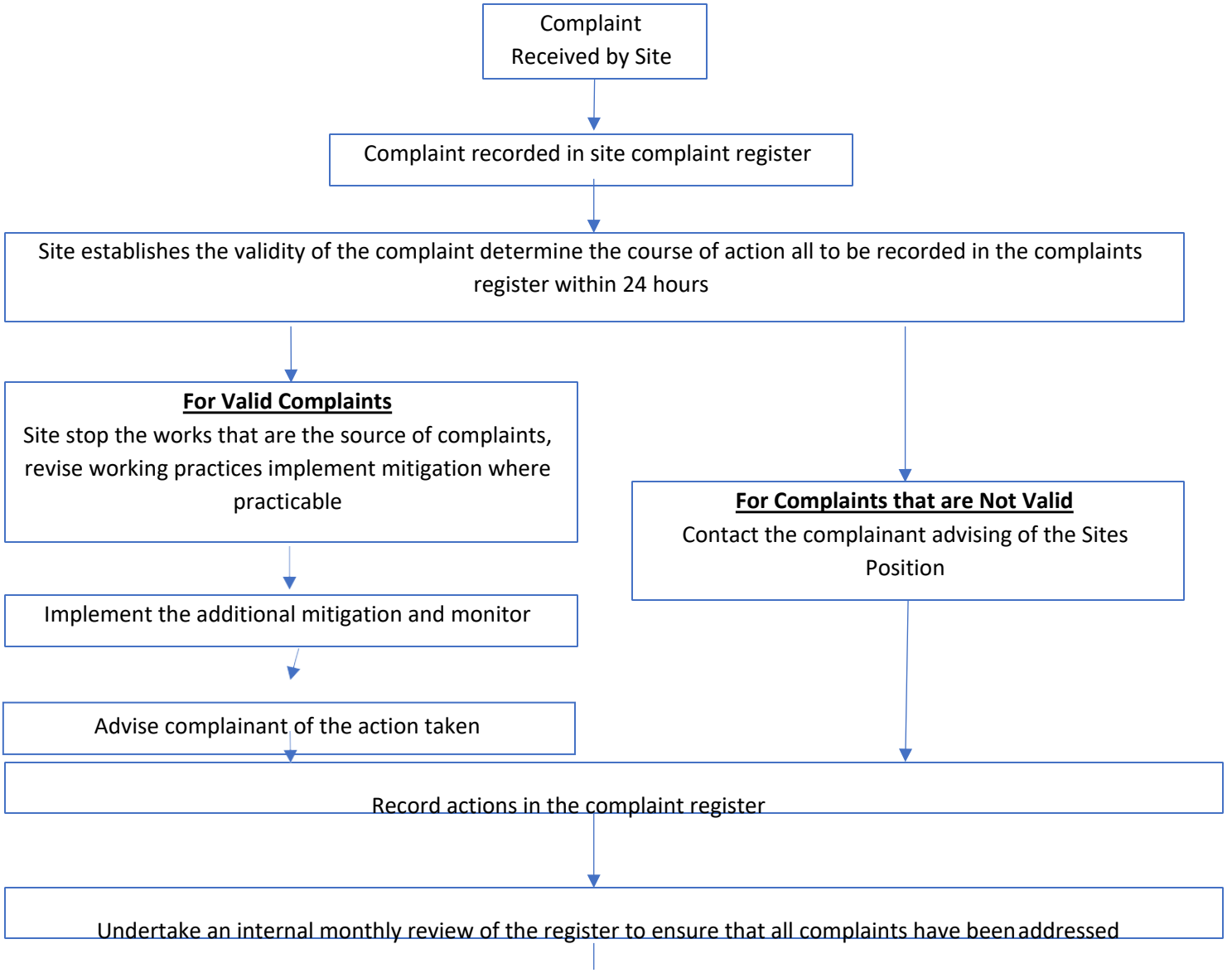
All site personnel are required to be trained and informed about noise vibration, dust and air quality control. Toolbox talks will be delivered to all site operatives weekly to ensure that all aspects of the management plan are understood and put into practice.

A management plan will be implemented alongside this document to ensure operatives are aware of the consequences of not following this plan and know how to respond to any potential incidents.

Managing Complaints Compliments

All complaints of air pollution, noise and vibration are required to be recoded investigated and actioned in a timely manner.

Example complaints procedure



Monitoring

Realtime noise, vibration and dust monitoring will not generally be required for this project unless specifically requested by Adur & Worthing Council. Woodhart Construction projects are required to proactively make boundary assessments of noise and vibration and visual assessments of noise. Where excess noise vibration and dust is noticed by site operatives this should be noted within the site log and action taken to reduce noise, vibration and dust levels.

Subject and Visual assessment procedure

Daily Visual Assessment

A daily inspection of the site will be carried out by the Site Manager or an appropriately trained operator a minimum of two times per day.

The frequency of these inspections will be increased to four times per day when activities with a high potential to produce dust noise and vibration are being carried out on site such as during demolition and foundation excavation. The frequency of inspections should also be increased to four times per day during periods of adverse weather, i.e. during periods of dry weather with high wind speeds. The results of these inspections will be recorded logged in the site diary.

Weekly Visual Assessment (Dust)

A weekly off-site inspection will consist of a walk around the perimeter of site and making observations about dust emissions and dust soiling, particularly focusing of locations upwind of on-site activities. Observations will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 25m of the site boundary. Inspection results will be recorded in the site diary.

Significant Dust and Complaints

If significant dust is identified beyond the site boundary, a monitoring form should be completed, and immediate investigation (e.g. though cross checking of site activities and monitoring data)/remedial action should be undertaken. The Site Manager will ensure that the monitoring form is submitted to Woodhart head office within 2 working days.

Actions will be recorded in the site diary.

Mitigation Measures

All sites are required to mitigate their environmental impact to identified sensitive receptors**.** The Following risk assessments will be required for the project although the mitigation measures that are set out within these documents should be reviewed to set out the mitigation measures that the site should apply.

As the construction process evolves mitigation measures will also evolve.

Noise and Vibration Risk Assessments.
The risk assessments will provide good practice measures for the following stages of the development:

- General Considerations
- Plant Vehicle Activity
- Demolition Phase
- Ground Works and Piling Phase
- Construction Phase
- Monitoring
- Communication and Liaison

The measures identified in the tables are by no means an exhaustive list but do capture good practice measures to help sites mitigate noise and vibration impacts.

Noise Mitigation Measures

The measures set out below are the minimum requirements and Woodhart Construction will also encourage subcontractors to look at innovative approaches to controlling noise and vibration.

The site will always have staff present with the authority to the take the steps necessary to ensure that noise and vibration is controlled.

All staff will be inducted and briefed on their responsibilities to the application of noise control and the use of BPM to minimise noise and vibration impacts. Training will be regularly reviewed and repeated through all phases of the development.

All sites shall be surrounded by solid hoarding to the required height and density appropriate to the noise sensitivity of the location concerned. Where this is not possible the site should be fenced with acoustic blankets. Any damage to the fencing or hoarding surrounding a worksite will be immediately repaired by the nominated representative.

Site should be laid out so that noisy plant or equipment is sited as far away as is practicable from noise sensitive buildings. The use of barriers, (e.g. soil mounds), site huts, acoustic sheds or partitions to deflect noise away from noise sensitive areas must be employed wherever practicable. The sequence of demolition and construction should be planned to leave structures in place or build structures that may shield sensitive buildings from noise for as long as practicable.

All access and egress gates will be controlled to ensure that they are open for the minimum time to allow entry and exit of vehicles minimise noise breakout and should be located as far away from noise sensitive receptors as possible.

Care should be taken when loading or unloading vehicles or dismantling scaffolding or moving materials to reduce impact noise. Loading or unloading including the use of conveyor belts for soil excavation may have to be housed in suitable acoustic enclosures.

Plant and Equipment

Where practicable Woodhart Construction strongly encourage that mains electricity should be provided onsite from the start of the project to prevent the use of generators

Where quieter electrically powered equipment is available or practicable to use, Woodhart recommend that this is used rather than diesel-petrol powered alternatives.

Vehicle and mechanical plant used for the purpose of the works, where epossible shall be fitted with effective exhaust silencers, will be maintained in good and efficient working order and operated in such a manner as to minimise noise emissions.

Fixed position equipment for example generators and compressors must be "sound reduced/silent" models and should be fitted with properly lined and sealed acoustic covers, that must be kept closed whenever the machines are in use. Equipment should be placed to maximize distances from nose sensitive receptors and were practicable enclosed shielded.

Machines in intermittent use should be shut down in the intervening periods between works or throttled down to a minimum.

Vehicle Movements

All vehicle movements must occur within normal hours or at agreed times, considering the primary function of sensitive receptors in the vicinity (i.e. avoiding school drop-off/pick-up periods).

Maximise the reuse of any waste arising on site to minimise vehicle movements.

Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway and enforce a no idling policy for all delivery vehicles.

Plan site layout to ensure that reversing is kept to a minimum, and where possible eliminated altogether. Sites were reversing is permitted ensure that reversing alarms are broadband reversing sirens and where it is safe to disengage all sirens and use a banks person.

Care should be taken when loading or unloading vehicles or moving materials to reduce impact noise. Loading or unloading bays may have to be housed in suitable acoustic enclosures.

Demolition Phase

Equipment that breaks concrete by bending, munching, pulverizing, using rotary drills and “bursters” activated by hydraulic or electrical power, or chemically based expansion compounds, to facilitate fragmentation and excavation of hard material rather than by percussion or such other equipment

Avoid the transfer of noise and vibration from demolition activities to adjoining buildings through cutting any vibration transmission path or by structural separation or isolation.

Rather than breaking in-situ, consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off-site.

Construction Phase

Using prefabricated building structures or elements to minimise noise on site. Where prefabrication is not possible cutting of materials should be undertaken within the building envelope or in an acoustically treated cutting area.

When working within a building ensure all openings (e.g. windows and doors) are closed or sealed up to prevent noise escape.

Where concrete pours are required, consider their sizes and plan the start of concrete pours as early as

possible within normal working hours to avoid the possibility of the site overrunning past normal working hours.

As far as reasonably practicable, the noise from reversing alarms will be controlled and limited. This will be managed through the following hierarchy of techniques:

- the site layout will be designed to limit and where reasonably practicable, avoid the need for the reversing of vehicles however, it is important to note that certain plant must utilise audible warning systems during operation; prior to commencement of works drivers will be made familiar with the worksite layout.

- banksmen will be utilised to avoid, as far as reasonably practicable, the use of reversing alarms. reversing alarms incorporating one of more of the features listed below or any other comparable system will be used where reasonably practicable:

    - highly directional sounders.

    - use of broadband signals.

    - self-adjusting output sounders.

    - flashing warning lights.

Reversing alarms will be set to the minimum output noise level required for health and safety compliance.

Air Quality Dust Risk Assessment

The risk assessment provides good practice measures for the following stages of the development:

- Demolition
- Earthworks
- Construction
- Trackout

Considerate Contractors Scheme
The Gardener Road site is required to be signed up to the Considerate Contractors Scheme (CCS). The Site will be required to provide evidence in that they are members and confirm that they will follow the schemes recommendations.

Community Liaison During site Works
The site is expected to provide regular site updates to all local stakeholders. As a minimum the communication will be made with all stakeholders and all sensitive receptors within 50m from the. Should any additional stakeholders become apparent during the project these should be added.

The following communication strategy will be adopted.

Site Notice Board
A noticeboard will be attached to the site hoarding that includes:

- Named site contact details
- Information about the project and a copy of the monthly newsletter
- Site working hours
- Out of Hours emergency contact details

Monthly Newsletters
Newsletters may be required to be distributed to all identified stakeholders monthly either electronically or

by letter drop. The frequency of newsletters may need to be increases where there are periods of multiple complaints or particularly noisy or high dust generating activities.

The content of newsletter should include:

- Site working hours (including any reduced noise times)
- A monthly look ahead that provides a brief outlie of proposed work packages for the coming month
- Any proposed, agreed out of hours works (e.g., Tower crane erection/large plant delivery).
- Contact names and numbers for site

The frequency of the news letters may be increased at the request of Adur & Worthing Council