Persimmon | Health, Safety & Environment Department

Emissions to Land & Air Standards

Contents

1. Introduction

The purpose of these emissions to land and air standards is to set out the requirements for how we should manage our activities so as not to cause a nuisance to sensitive receptors such as local residents, schools, hospitals, businesses and wildlife. Nuisance can arise through the generation of noise, vibration, dust, fumes, mud on roads, odour or light pollution.

It is the responsibility of the Technical Department to commission relevant monitoring at the pre-construction stage e.g. baseline assessments. These results should be passed to the construction team prior to start on site. This must be recorded through the pre-start meeting process. All relevant information / licences etc. must be filed in the Project Environmental Plan (green folder).

We must ensure adequate provision is made, where applicable, to protect sensitive receptors from nuisance. Furthermore, if the site is identified as high risk, ongoing monitoring is required.

The Group Health, Safety and Environment Advisors will support constructions teams throughout the build process, through regular site visits.

2. Definitions & Acronyms

Section 61 Prior Consent (Control of Pollution Act 1974)	Under section 61 of the Control of Pollution Act, contractors and businesses are able to apply for formal consent in relation to noise prior to starting work. The agreement may include details of the works and the methods by which they are to be carried out and the steps proposed to minimise noise. Working within the parameters of a section 61 prior consent can protect the business from further restrictions imposed by local authorities should any complaints bemade to the environmental health officers of the local authority.
Section 60 Notice (Control of Pollution Act 1974)	A section 60 notice can be issued to a contractor / business by a local authority either in response to complaints or concerns regarding noise from construction sites or as a restriction imposed on the contractor (sometimes before works have started on the site). The Section 60 Notice may specify thehours of work, plant / machinery that should or should not be used and noise limits. A section 60 notice must be complied with and should there be any contravention of the restrictions imposed by a section 60 notice, it is likely thatthe local authority would prosecute the contractor responsible.
Section 80 Notice (Environmental Protection Act 1990)	A section 80 notice is an abatement notice relating to statutory nuisance (including noise, dust, smoke, fumes, vibration, light pollution, odour etc.).Local authorities have the powers to issue Section 80 Notices to stop nuisance occurring. The notice can specify a period of time by which the nuisance must be stopped. Non-compliance with a section 80 notice is anoffence which may lead to prosecution.
Environmental Health Officer (EHO)	Local authority enforcement officer for nuisance issues.
Volatile Organic Compound(VOC)	Organic chemicals that have a low boiling point (e.g., room temperature) resulting in evaporation of the substance, often creating scents or odours. Some VOCs are dangerous to human health or can damage the environment.

2. Definitions & Acronyms

Best Practicable Means (BPM)	In the Environmental Protection Act 1990, this term is used to describe the measures that should be taken to reduce nuisance from noise, vibration etc.“Practicable” means reasonably practicable having regard to local conditionsand circumstances, to the current state of technical knowledge and to financial implications. The means to be employed include the design, installation, maintenance and manner and periods of operation of plant and machinery.
Statutory Nuisance	Under the Environmental Protection Act (1990), statutory nuisance isdefined as: ▪ any premises in such a state as to be prejudicial to health or a nuisance; ▪ smoke emitted from premises so as to be prejudicial to health or a nuisance; ▪ fumes or gases emitted from premises so as to be prejudicial tohealth or a nuisance; ▪ any dust, steam, smell or other effluvia arising on industrial, trade orbusiness premises and being prejudicial to health or a nuisance; ▪ any accumulation or deposit which is prejudicial to health or a nuisance; ▪ any animal kept in such a place or manner as to be prejudicial tohealth or a nuisance; ▪ any insects emanating from relevant industrial, trade or businesspremises and being prejudicial to health or a nuisance; ▪ artificial light emitted from premises so as to be prejudicial to health or a nuisance; ▪ noise emitted from premises so as to be prejudicial to health or a nuisance; ▪ noise that is prejudicial to health or a nuisance and is emitted from orcaused by a vehicle, machinery or equipment in a street; ▪ any other matter declared by any enactment to be a statutory nuisance.

3. Emissions

Emissions from our site activities can be in various forms, including dust particulates, noise, vibration etc. The release of these substances into the environment can have a range of negative impacts including affecting local air quality (and therefore human health) and contributing to climate change.

There may be monitoring requirements where emissions have the potential to cause nuisance beyond our site boundaries. These can be in form of planning requirements.

4. Managing nuisance

Prior to any works commencing, the potential impacts on nearby receptors by our work activities must be assessed by the Technical Department (and in conjunction with the Construction team) using relevant pre-construction information and completion of the environmental aspect & impact assessment form. This initial assessment must identify any control measures required to reduce the impact of our activities on potential receptors. Relevant control measures should be in place prior to PC start on site, where appropriate.

If any of our activities are identified as posing a significant risk /impact, monitoring will be required (see below).

Refer to:
EMS form 002 – Environmental Aspect and Impact Assessment

4.1 Assessments

Where it is identified that there will be a significant impact on a receptor, our work activities must ensure that they have in place the appropriate controls to avoid causing a nuisance. These control measures should be considered on a site-specific basis and comply with relevant standards and legislation e.g. BS 5228-1 (Code of practice for noise and vibration control on construction and open sites).

As part of the assessment, we must also identify and consider any local restrictions regarding noise and dust limits, lighting levels, working hours and delivery times.

Any specific limits / trigger levels for noise, dust, vibration etc. must be identified, along with actions to be taken in the event that limits are breached.

The hours a construction site can work, and any noise, odour or dust limits may form part of the planning conditions and must be clearly stated in any contract specification to contractors.

4. Managing nuisance

4.1 Assessments continued

Everyone involved in the development must be aware of the required control measures to avoid causing a nuisance, including site hours restrictions etc.

If required to adhere to relevant British Standards, there may specific requirements in relation to nuisance management and community liaison that need to be addressed.

Potential impacts and control measures must be communicated to all relevant staff and contractors. This should be done using site specific inductions and Toolbox Talks.

Everyone, including suppliers must be made aware of the permitted working hours as the restrictions also apply to deliveries. Permitted working hours should also be included in the site-specific rules and at induction.

Control measures must be monitored to ensure they are in place when required, effective and maintained throughout the works. Ongoing monitoring throughout project duration may also be required.

5. Baseline assessments

On some sites it will be a planning condition to carry out a monitoring programme for noise, dust, vibration etc. including a baseline assessment.

Baseline conditions can be established by:

- Conducting pre-start noise monitoring (noise);
- Pre-start dust monitoring (dust);
- Structural or condition surveys on sensitive buildings (vibration);
- Traffic movement assessments (noise, traffic); and
- Light surveys (light).

Baseline data can then be used for:

- Effective settings of plant or equipment to reduce nuisance impact;
- Effective routing of traffic to minimise nuisance impact;
- Identification of effective mitigation control measures for plant and operations; and
- Defending unsubstantiated complaints.

5. Baseline assessments

5.1 Dust baseline

Where it is a planning condition, or where the site has been identified as posing a significant risk, baseline assessments must be carried out prior to the commencement of site works.

Monitoring must be undertaken; this can be in the form of visual checks (with photographs), stationary frisbee's (also known as dust deposit gauge), handheld devices or specialist static equipment. The results must be recorded on a dust monitoring form or presented in a report by the appointed consultant.

To establish good baseline data, the monitoring period should cover a minimum period of 5 days, prior to commencement of works..

Refer to EMS form 008 – Dust Monitoring

5.2 Noise baseline

Where nearby receptors are sensitive (e.g. residential properties, schools etc.) sites must undertake a baseline assessment, prior to start. Basic noise monitoring can be undertaken by us or a consultant. The noise monitoring equipment must conform to BS EN 61672-1.

When using a consultant for noise assessments we must use consultants who are members of the Institute of Acoustics or Association of Noise Consultants. Assessments must adhere to BS 5228-1:2009 + A1:2014 (Code of practice for noise and vibration control on construction and open sites).

The noise instrumentation system must be either Class 1 or Class 2 level standard and be designed to determine equivalent continuous A-weighted sound pressure level (LAeq, T). It must also be regularly calibrated.

When undertaking monitoring in-house, monitoring locations should be agreed with the local Group Health, Safety and Environment Advisor and recorded on a noise monitoring form.

Refer to EMS form 009 – Noise Monitoring

When using consultants' reports can be presented in their own format.

6. Dust

If not adequately controlled dust emissions from developments will lead to increases in dust concentrations beyond the site boundary, which may affect local amenity and influence local air quality.

It is more effective to address dust emissions at the design and planning stage of new development proposals, than to seek to deal with dust problems retrospectively. Likewise, it is more effective to deal with potential dust emissions at source, rather than once airborne.

Dust suppression may be required during earthworks, demolition, vehicle movements, and other activities.

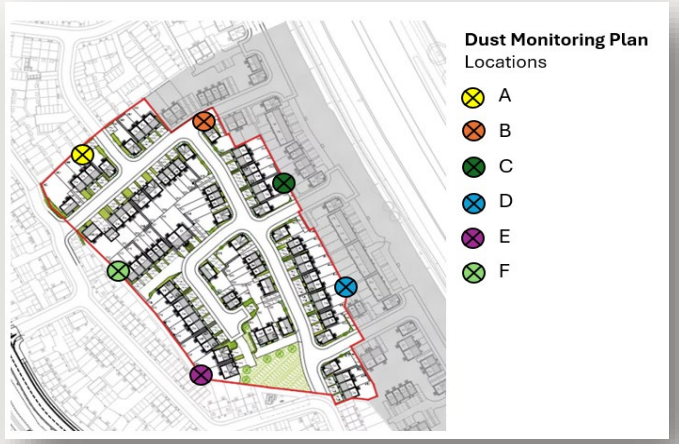
The risk of dust emissions from a demolition/construction site causing loss of amenity and/or health or ecological impacts is related to:

- the activities being undertaken (demolition, number of vehicles and plant etc.);
- the duration of these activities;
- the size of the site;
- the meteorological conditions (wind speed, direction and rainfall);
- the proximity of receptors to the activities; and
- the adequacy of the mitigation measures applied to reduce or eliminate dust; and the sensitivity of the receptors to dust.

Where the potential exists for activities to cause a nuisance from dust, we must ensure that suitable, adequate and effective control measures are put in place prior to the activity commencing e.g. seeding/covering soil stockpiles, damping down haul roads, erecting screens or barriers, siting plant or dusty activities away from receptors, provide mobile sprinkler systems or mobile water bowsers etc.

Refer to EMS guidance - Managing Dust

6. Dust



Example of a Dust Monitoring Plan

6.1 Monitoring

Visual daily checks should be carried out as part of Site Managers general walkaround, to ensure windblown dust is not causing a nuisance or leaving site.

Where it is identified that an activity is giving rise to dust the activity must be stopped, and adequate control measures put in place.

If the site is considered sensitive (e.g. close to residential properties, hospitals & nursing homes, schools & colleges) or complaints are being received from nearby properties and or the Local Planning Authority, then monitoring must be undertaken using the form below.

A **Dust Monitoring Plan** should be agreed with your Group, Health, Safety and Environment Advisor, prior to commencing monitoring.

Nuisance related dust monitoring may include regular recorded visual assessments, or where there is the potential for enforcement action, or specific limits or trigger levels, the use of specialist monitoring equipment is advised.

Various equipment is available, including dust frisbees, sticky pads, web-based systems etc. Please speak to your Group, Health, Safety & Environmental Advisor for advice, prior to hiring / purchasing any equipment.

Refer to EMS form 008 – Dust Monitoring

7. Noise

Control measures must be identified in the environmental aspect and impact assessment. Activities and or equipment likely to give rise to noise includes use of plant (during enabling works, earthworks etc.) and vehicles, piling, generators etc.

Where it is identified that an activity is causing nuisance the activity must be stopped, and the cause of the complaint investigated. Where appropriate, adequate controls measures should put in place to reduce the impact of noise.

Controls which must be considered but are not limited to:

- Maintain ongoing communication with neighbours (informing them of upcoming works);
- Siting of plant away from receptors;
- Acoustic screening / fencing (around equipment or boundary line, if appropriate);
- Monitoring of weather conditions;
- Use of hybrid / battery powered plant and equipment (hybrid generators etc.); and
- For piling activities – face rear of rig away from properties, prioritise alternatives to driven piles etc.

Refer to EMS guidance - Managing Noise & Vibration

7. Noise

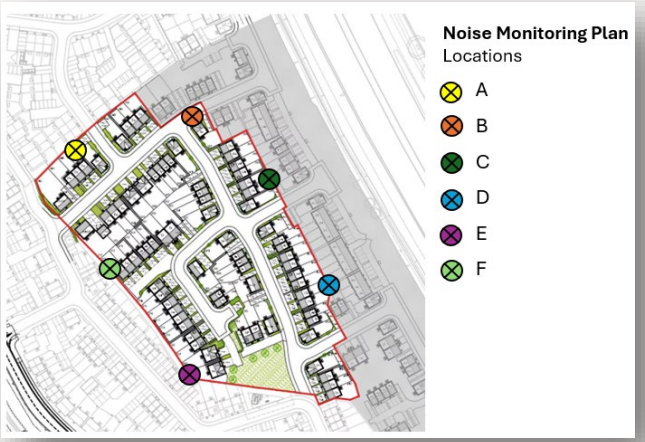
7.1 Monitoring

If the site is considered sensitive (e.g. close to residential properties, hospitals & nursing homes, schools & colleges) or complaints are being received from nearby properties and or the Local Planning Authority, then noise monitoring must be undertaken. Similarly, sites may wish to be proactive and monitor for noise throughout the development.

If there is the potential for enforcement action from the Local Planning Authority, or a particularly noisy activity is to be undertaken e.g. demolition and or piling, it is advised that specialist monitoring equipment is used/installed, under the guidance of appropriately qualified consultants.

How to monitor

Firstly, sites need to establish a **Noise Monitoring Plan**, which should be agreed with your Group, Health, Safety and Environment Advisor or an appropriately qualified consultant, prior to commencing monitoring. This will identify the correct locations to monitor and the frequency of checks.



Example of a Noise Monitoring Plan

7.1 Monitoring

Equipment

Ideally, sites should monitor for noise using specialist equipment (see Section 5.2). Where specialist equipment is not available, sites should use a noise monitoring app installed on a mobile phone. Note that monitoring using a phone app will only give indicative results, unlike specialist equipment.

Where specialist equipment is used, records must be retained to prove that the equipment has been routinely calibrated.

If using a noise monitoring app, ensure that the average dB reading is recorded for the period monitored in each location, not the minimum or maximum dB reading.

Any persons undertaking specific environmental monitoring should be competent in the use of the equipment, any monitoring plan and the details required to be recorded. Records of this should be retained.

For further advice speak to your Group, Health, Safety and Environment Advisor.

Monitoring must be recorded using the form below.

Refer to EMS form 009 – Noise Monitoring

8. Vibration

Vibration monitoring must be carried out by an appropriate Consultant and adhere to BS 5228-2:2009 + A1:2014 (Code of practice for noise and vibration control on construction and open sites). Control measures must also comply with the relevant British Standard (BS 5228-1).

Refer to EMS guidance - Managing Noise & Vibration

9. Prior consents and notices

9.1 Noise & Vibration – section 61 prior consent

Where construction work is likely to have a significant potential to impact on local residents / businesses we should consider applying to the local authority for section 61 consent. This is a voluntary agreement between us as and the local authority on how the works will be carried out.

It requires us to adopt the best practicable means of carrying out the works with regard to the generation of noise (and also dust and vibration, if applicable). This should be done through consultation with the local authority EHO and the local Group Health, Safety and Environment Advisor.

Having section 61 consent in place can significantly reduce the risk of both prosecution and delay to a project as a result of local authority intervention.

9. Prior consents and notices

9.2 Noise & Vibration – section 60 & 80 notices

Excessive noise, vibration or dust and working outside stipulated hours, especially if it causes noise and / or vibration, is likely to cause nuisance to our neighbours who may then complain to the local authority's EHO. Because of such a complaint, the local authority can serve a notice, under section 60 of the Control of Pollution Act 1974, or a nuisance abatement notice under section 80 of the Environmental Protection Act 1990, on the site or premises.

Either notice can require that the activity causing the noise or nuisance is stopped immediately and the notice can impose severe restrictions on hours of work, machinery that can be used, noise limits etc. Failure to comply with the requirements of either a section 60 or an 80 notice is likely to result in a prosecution.

In the event that a section 60 or section 80 notice is received on site or at any office, staff must notify the relevant local Group Health, Safety and Environment Advisor giving as much detail as possible about the events leading up to the receipt of the notice.

In the event that any conditions imposed on the site through section 61, section 60 or planning requirements are likely to be breached, for example if it is necessary to work outside the permitted hours, site management must contact the local authority EHO and the local Group Health, Safety and Environment Advisor in advance to discuss how best to proceed. Any changes agreed with regard to working hours etc. should be confirmed in writing.

10. Odour

Our activities that may cause significant odour generation include the management of waste and excavations on contaminated sites. Odours are generated from the decomposition of waste materials or the release of volatile organic compounds (VOCs) related to chemicals.

Construction sites working on contaminated land may need to assess the impact of odours from contamination and implement odour control systems.

Odour control may be in the form of chemical scrubbers, bio-scrubbers / filters, activated carbon filters, odour neutralising fogging / mist sprays (available as static or mobile units) etc. The best option should be chosen in relation to the scale of the impact (duration, concentration etc.) and the sensitivity and number of receptors that could be impacted.

11. Light pollution and visual impact

Where the potential exists for activities to cause a nuisance from light pollution or visual impact, we must ensure that suitable, adequate, and effective control measures are put in place prior to the activity commencing.

Lighting should be directed away from sensitive receptors, such as bats and other sensitive species, and consideration given to minimising lighting left on during the hours of darkness.

Hoardings and site entrances should be well maintained to reduce negative visual impact. Mud should not be allowed to accumulate on roads adjacent to site, therefore suitable wheel cleaning facilities should be provided (contaminated effluent must not be allowed to run off site or enter surface water drains), or road sweepers employed to clean highways.

Refer to EMS standards – Waste Management

The appropriate permissions should be obtained in writing from the Local Authority and or Highways Dept prior to the erection of any signage on street furniture.

12. Traffic and Plant

All sites must have a traffic management plan, and this should include any access restrictions in relation to neighbours such as schools, hospitals etc.

The environmental aspect & impact assessment should identify and include any potential environmental impacts associated with traffic such as mud on the road, noise and vibration nuisance towards sensitive local receptors, and include suitable and effective control measures against any such impact. Relevant items should be marked on the traffic management plan.

The plan should include setting on-site speed restrictions to minimise dust, noise and vibration impacts. On-road vehicles and plant should be in good working order. Vehicles must hold a valid MOT certificate and be taxed and insured.

All off-road mobile plant must comply with the emission standards and directives outlined within the European particulate matter emission standards (all such plant should carry an EC approval number to indicate that it conforms to the levels given in the regulations for that type of machinery).

12. Traffic and Plant

All plant should be well maintained; any production of visible smoke (except on start-up) should result in the machine being stopped until any problems have been rectified or the plant replaced. Vehicles and plant should not be left idling when not in use.

Engines and exhaust systems should be regularly serviced according to the manufacturer's recommendations and meet the relevant emission standards. Exhaust filters should be fitted to plant and equipment to reduce smoke and particulate emissions.

Plant and equipment must be sited away from the noise sensitive areas and if used intermittently shut down when not in use. Engine compartment doors should be closed and where it is necessary suitable noise screening must be provided. Consideration should also be given to selecting work methods that do not generate vibration or excessive noise.

12. Traffic and Plant

12.1 Clean air zones

There are 4 types of Clean Air Zones, Class A to D. Several cities are covered by a clean air zone (CAZ) and / or a low emissions zone (LEV).

Types of Clean Air Zones:

Class	Vehicle type
A	Buses, coaches, taxis, private hire vehicles
B	Buses, coaches, taxis, private hire vehicles, heavy goods vehicles
C	Buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses
D	Buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses, cars, the local authority has the option to include motorcycles

12. Traffic and Plant

12.1 Clean air zones continued

Minimum emission standards:

Each vehicle type has a minimum emission standard. The vehicle's emission standard can be found in the vehicle logbook or from the vehicle manufacturer.

To avoid being charged in a Clean Air Zone, the vehicle must meet the following minimum standard:

Vehicle type	Clean Air Zone minimum standard
Buses, coaches, heavy goods vehicles	Euro VI
Vans, minibuses, taxis, private hire vehicles, cars	Euro 6 (diesel) and Euro 4 (petrol)
Motorcycles	Euro 3

12. Traffic and Plant

12.2 Non-road mobile machinery (NRMM)

Non-road mobile machinery (NRMM) is defined as any mobile machine or vehicle that is not solely intended for carrying passengers or goods on the road.

The emissions requirements are only applicable to NRMM that is powered by diesel, including diesel hybrids.

Examples of non-road mobile machinery include, but are not limited to:

- garden equipment, such as hedge trimmers and hand-held chainsaws;
- generators;
- bulldozers;
- pumps;
- construction machinery;
- industrial trucks;
- forklifts; and
- mobile cranes

The NRMM Regulations must be adhered to when working within designated air quality zones.

13. Litter

Litter from site must not be allowed to escape and cause a nuisance. All waste must be managed in accordance with the Waste Management Standard, including provision of suitable waste containers at all sites and premises.

14. Communication

Where our activities could cause nuisance to the local community, we must contact local residents and any affected businesses, schools, or hospitals etc. prior to the activity taking place.

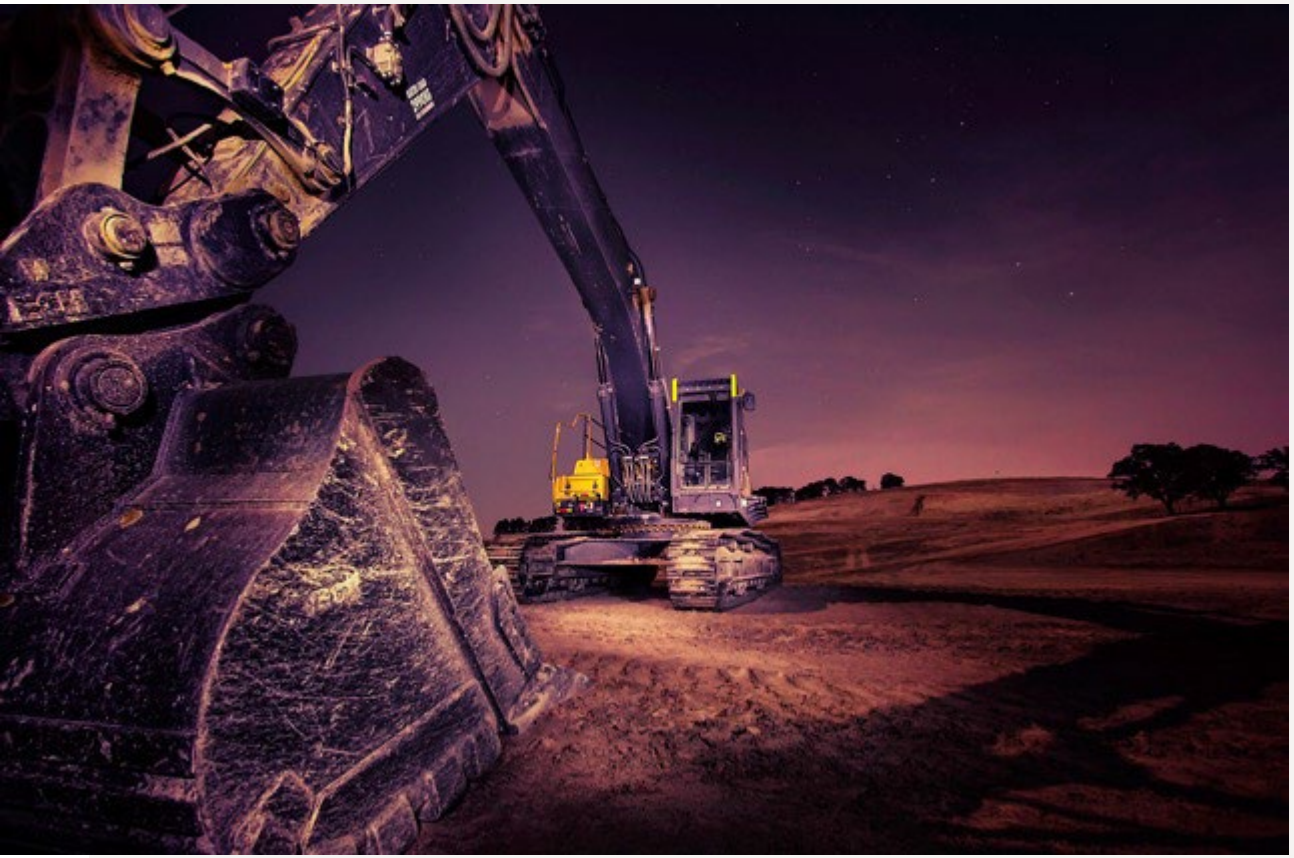
We must then ensure that these parties are kept up to date with the progress of the works and the measures that will be put in place to minimise any potential nuisance that may arise as a result of these.

We must provide the potentially affected parties with contact details of a member of the management team and the Persimmon concerns email below, should they have any issues or complaints they wish to discuss.

Email: plc.safetyconcerns@persimmonhomes.com

Staff are encouraged to build and maintain a positive relationship with the local community to avoid the need for nuisance related complaints.

All subcontractors are expected to minimise the impact of their works on the local community. We must identify potential nuisance issues as early as possible and ensure that they are included in site inductions.



14. Communication

14.1 Out of Hours

Sites must ensure that suitable out-of-hours contact arrangements are in place in the event that an incident occurs outside of normal working hours (e.g. an alarm sounds, or a break-in is reported).

Contact details must be displayed outside the site. Contacts must be reviewed and updated in relation to annual leave or other absence of site staff.

15. Further Reading

Refer to:
EMS guidance – Managing Dust
EMS guidance – Managing Noise and Vibration
EMS guidance – Environment Guide Getting Your Site Right