ENVIRONMENTAL PROTECTION: CONSTRUCTION AND MAINTENANCE WORKS

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This Guidance Note has been issued to advise members of the University and appointed contractors on the environmental aspects of construction and maintenance works. Any comments or enquiries should be addressed to the Environmental Manager or Sustainability Manager.

1.0 INTRODUCTION & INDUCTION

It is the responsibility of all individuals to comply with environmental regulations and for preventing pollution of air, land and water. Many thousands of pollution incidents occur each year and each one is an offence which can result in prosecution as well as environmental damage. Most cases however are avoidable given careful planning of operations, responsible waste management and suitable facilities to reduce the risk of spillage - along with simple precautions to deal with any spillages, should they occur. The Environment Agency (EA) has a policy of prosecuting in the event of incidents (even if accidental), with penalties of up to £20,000, or unlimited fines or imprisonment in serious cases.

The aim of this guide is to highlight the procedures applicable to all maintenance and construction contractors employed by the University, which must be followed in order to conform to all relevant legislation and to avoid the risk of prosecution.

All contractors working at Loughborough University must undergo a Health, Safety and Environment Induction before commencing work on site. This is your opportunity to ensure you are aware of the procedures on site and clarify any concerns you may have with regards to the University’s Health, Safety and Environment Policies, Standards and Procedures.

Further advice on the Environmental aspects can be sought from the University's
- Environmental Manager on 01509 228083 or email n.o.hunt@lboro.ac.uk
- Sustainability Manager on 01509 222110 or email j.shields@lboro.ac.uk
2.0 SITE DRAINAGE
Across the campus there are generally two types of drains, these are:

1. Surface Water or Storm Drains
2. Foul or Effluent Drains

2.1 Surface water drains are generally external to a building but can be internal where rainwater pipes run inside. These drains capture rainwater off buildings, paths, roads and car parks and generally feed into brooks, streams, rivers and lakes. They are for rain water only and under NO CIRCUMSTANCES must any other liquid (or solid for that matter) be disposed of down them. That means no oils, chemicals, food products or even soapy water, it also means no water from the draining or flushing out of any systems even if you believe the water to be uncontaminated. Many of the University’s surface water drains lead to the brooks which adjoin the campus and therefore the contamination of these drains will very quickly lead to the contamination of the brook and may be harmful to the Environment. Were such an incident to occur, then both the University AND any individual at fault would be at risk of prosecution.

2.2 Foul or effluent drains are generally inside a building and capture what we flush down the toilet and pour down sinks. The University is permitted to dispose of some liquids down the foul/effluent drains on the basis that the material must be rendered non-hazardous, e.g. by treatment such as neutralisation or it must be diluted beyond a concentration at which it could be classified as hazardous. Oils and fuels must never be disposed of down these drains and these, along with other hazardous liquids must be stored in suitable containers and disposed of appropriately. There are, in addition, other chemicals which must never be disposed of down these drains irrespective of their concentration or state and those handling these materials should already be aware of these restrictions, however a full list is available from the Environmental Manager.

Any activities requiring the discharge of water to the drainage system should be identified prior to the commencement of any work, and discussed with the University Project Manager or the Environmental Manager.

2.3 In planning and carrying out any work, precautions must be taken to ensure the complete protection of watercourses and groundwater against pollution. These should include an investigation of past use of the site to ensure that the operations will not disturb contaminated land, and a survey of the siting and contents of all storage tanks and pipelines. It is the contractor's responsibility to ensure that all drainage systems are correctly identified prior to the commencement of works, to avoid the possibility of incorrect disposal of contaminated water. The drainage systems at Loughborough University are varied depending on location so advice should be sought prior to the commencement of works.

Any works that are carried out in a watercourse or adjacent to a watercourse may require special consent from, or notification to, the Environment Agency. Further guidance can be obtained from the EA’s PPG5, Section 1d. Advice on this can also be obtained from the Facilities Management department or the Environmental Manager.
3.0 POLLUTANTS

3.1 Silt causes lasting damage to river life such as fish, insects and plants and can also build up to cause flooding. Water containing silt should never be pumped or allowed to flow directly into a river, stream or surface water drain. Silty water can arise from dewatering excavations, exposed ground, stockpiles, plant and wheel washing, site roads and disturbance of the riverbed. Where possible, silty water should be disposed of to the foul sewer with the prior agreement of the sewerage undertaker. Discharges to streams, watercourses or soakaways must have the approval of the University and the Environment Agency, which should be obtained well in advance. Suitable treatment will be required, such as the use of a lagoon, tank or grassed area to settle solids.

3.2 Concrete and cement are very alkaline and corrosive and can cause serious pollution in watercourses. It is essential to ensure that the use of wet concrete and cement in or close to any watercourse is carefully controlled so as to minimise the risk of any material entering the water, particularly from the washing of equipment. The use of quick setting mixes may be appropriate. For long-term projects involving on-site concrete production, careful initial siting of concrete mixing facilities is vital. A settlement and recirculation system for water reuse should be considered. This will minimise the risk of pollution and reduce water usage. Washing out and cleaning of concrete batching plant or ready mix lorries should be carried out in a contained area as far from the watercourse as practical. There must be no release of runoff from these facilities during their operation.

3.3 Oil / Fuel pollution is the main cause of pollution incidents, and care should be taken to prevent vandalism and the risk of damage by manoeuvring vehicles on sites where oil or fuel is stored. Any fuel/oil storage tank and fuel/oil stored in drums should be sited on an impervious base within an oil-tight bund with no drainage outlet. All fill pipes, draw pipes and sight gauges should be enclosed within the bund, and the tank vent pipe should be directed downwards into it. Oil and Fuel storage must be in secure locations well away from watercourses and surface water drains. Further advice can be obtained from the Project Manager or Environmental Manager. All new oil storage facilities must comply with the Control of Pollution (Oil Storage) (England) Regulations 2001. Further guidance can be obtained from the EA’s PPG2.

3.4 Herbicides – the use of herbicides in or near rivers is not permitted.

3.5 Detergents - Wash waters from mobile pressure washers should not be discharged to surface water drains, watercourses or soakaways. Even if described as bio-degradable, detergents are not suitable for discharge to surface drains, so such activities should be carried out in designated areas draining to the foul sewer, subject to the approval of Facilities Management and the local sewerage undertaker. Detergents should also not be used in locations where interceptors are installed. Contractors vehicles are not to be washed on site unless the use of a designated area is approved in advance, or as part of a major construction site where an approved process and designated area is to be confirmed as part of the project planning.

3.6 Heating and other cooling systems - Recirculated heating and cooling systems contain a variety of substances which are unsuitable for discharge to surface water drains, including corrosion inhibitors, biocides and anti-freeze. Any water from these systems should be drained only to the suitable foul sewer.
3.7 **Dye Testing** - Large quantities of dyed water used to test the integrity of the roofs and guttering should not be discharged into the surface water drainage system. After the completion of testing any dyed water should be diverted to foul sewer. Drainage dyes used to trace the routes of surface water drainage systems must be used sparingly to prevent undue discoloration of downstream watercourses. The Environmental or Sustainability Managers' are to be notified in advance of any tests.

3.8 **Paints and varnishes** – as well as glues, bituminous based substances, cleaning materials and other substances used in the maintenance and upkeep of buildings and roofs should not be allowed to be discharged to the surface water drains. Any unused or unwanted paint should be disposed of as hazardous waste. On no account should any brush-cleaning agent, such as white spirit, be poured directly into any drain. Any left-over paint should be removed from site.

3.9 **All other substances** - It is the duty of the user to ensure that all substances that may be considered as potential pollutants should be used so that they may not be discharged to the drainage system or allowed to come into contact with the soil, without prior advice from Facilities Management or the Environmental Manager.

3.10 **Security** - Vandalism and theft are frequent causes of pollution. Lockable valves must be fitted on all storage tanks, fences should be secure, and doors and gates kept locked. Where possible, materials should be stored under cover and potential pollutants should be transferred into safe storage without delay.

3.11 **Pollution prevention** – Contractors should undertake all precautions necessary to prevent pollution. Where vehicles carry liquids, the vehicles should be specifically designed for this purpose and/or liquids should always be carried in secondary containment, e.g. plastic boxes or trays. Vehicles which routinely carry liquids should carry spill kits / containment controls such as drain mats/covers and absorbent materials.

4.0 **DELIVERIES**

4.1 **Special care** should be taken during deliveries, particularly when hazardous materials are involved. Deliveries should be supervised at all times, tanks and containers should be labelled with the nature and volume of their contents, and the levels should be checked before delivery to prevent overflowing. See also section 3.11 above on pollution prevention.

4.2 **Where possible**, loading and unloading areas should be roofed and drained to the foul sewer. If not, they should be clearly marked and isolated from the surface water drainage system, either by catch-pits or sumps with isolating valves. Cut-off valves in the drainage system and raised kerb surrounds may be needed. Delivery pipes should be fitted with automatic cut-off valves to prevent overfilling.

5.0 **WASTE STORAGE AND DISPOSAL**

5.1 **The Duty of Care for waste**, as documented by environmental legislation such as the Duty of Care Regulations 1991 and The Environmental Protection Act 1990, is applicable to everybody. The Waste (England & Wales) Regulations 2011 now require all producers of waste to adhere to and apply the Waste Hierarchy of Reduce, Reuse and Recycle before disposal through Energy recovery or, as a last resort, landfill. Further advice on waste management may be sought from the Environmental Manager.
5.2 To prevent fly tipping, producers of waste must ensure that it remains under their control until correctly disposed of. Contractors are to arrange for the removal of their waste by a registered waste carrier or to a licensed landfill or processing site, in accordance with the Duty of Care provisions. Particular attention should be paid to waste that is designated as hazardous waste under The Hazardous Waste (England and Wales) Regulations 2005 (and amendments), such as waste oils, which must be stored separately and disposed of by registered waste carriers using the required consignment note system.

5.3 All wastes must be stored in designated areas that are isolated from surface drains. The wastes should be placed into these areas so that accidental spillages will not occur, and that any loose material will not be subject to unwanted action by the elements. Also, precautions should be taken in order to ensure that the waste is not accessible to unauthorised individuals. Further guidance on waste and skips can be seen in the documents “8.1.48. Small Works Waste Process” or “8.1.49. Construction Site Waste Management Process”.

5.4 Litter. Contractors are to ensure that they, and their staff, do not drop litter. Under section 87 of the Environmental Protection Act 1990 Act it is an offence to throw down, drop or otherwise deposit, and then leave, litter. This applies to all places that are open to the air, including private land and land covered by water. Litter includes cigarette ends and discarded chewing gum. A person found guilty of the litter offence may be fined up to level 4 on the standard scale (currently £2,500) in a magistrates’ court alternatively Enforcement Officers can issue fixed penalty notices to anyone seen dropping litter.

6.0 CONSERVATION OF BIODIVERSITY ON CAMPUS
6.1 All trees, hedges, ponds, streams and other wildlife features should be protected from damage during construction works. This includes works arising from contact with machinery, chemical contamination, smothering by soil or other debris and storage of building materials or other items.

6.2 The University has an active Biodiversity Action Plan and accepts its responsibility to protect and enhance biodiversity on campus. An Ecological survey has been conducted of the campus and a biodiversity strategy is also available. Both of these documents help inform any decisions about habitat loss or enhancement during a development. Contractors are expected to work sensitively in and around areas of ecological value on campus. Further information and advice can be obtained from the Sustainability Manager or Project Manager.

7.0 NUISANCE
Nuisance can be described as causing discomfort by one person or entity to another. There are four main types of nuisance:

7.1 Private Nuisance is where a civil wrong (a “tort”) has been committed which gives rise to civil liability (when a landowner interferes with another’s use, enjoyment or right to use their land). Remedies could be abatement of the nuisance (stopping it out of court), court injunction (ordering the nuisance to be abated) or/and damages payment.

7.2 Public Nuisance is a criminal offence. Defined as an inconvenient or troublesome offence which annoys the community in general rather than individuals.
Local Authorities (LA) usually prosecute the party causing the nuisance. Following trial in either magistrates or crown court a guilty offender can face unlimited fines and imprisonment.

7.3 Statutory Nuisance as defined under Part III of the Environmental Protection Act 1990 this nuisance type covers more specific areas of nuisance. For example; vermin, dust, smells, rubbish, animals and noise. Abatement notices can be issued by LA as detailed in Part III (EPA 1990), if the LA fails to act abatements can be issued by individuals through a magistrates’ court.

7.4 Other Categories of Nuisance Nuisance in its broadest sense also encompasses many other obligations not to interfere with others’ use of land. Some are statutory, others common law, some arise contractually, from the restrictive covenants registered against land or in leases or restrictions in planning permissions.

All individuals are to ensure that in the process of carrying out their duties they do not knowingly create what constitutes a nuisance.

8.0 Emissions To Air (F-Gas)
Harmful emissions to air in a construction environment can take a number of forms and occur in a number of ways including, but not limited to, dust, smoke from generators and the release of Fluorinated Greenhouse Gases. All need to be controlled but the latter poses the biggest risk. Fluorinated Greenhouse Gases can cause significant environmental harm if released to the atmosphere and The Fluorinated Greenhouse Gases Regulations 2015 require these gases to be very carefully managed. Anyone working on these systems and with these gases must be suitably trained and care should be taken to avoid accidental release during the commissioning or decommissioning of systems containing an F-Gas. Any such releases must be reported to the Environmental Manager.

9.0 ENVIRONMENTAL INCIDENTS
9.1 Spills - Any person discovering a major spill should take the following immediate actions:

- Stop the flow if possible. Where a spillage occurs during a pipeline receipt, pumping should cease immediately.
- Take measures to protect life, administer first aid and remove any casualties from danger.
- Prevent the spillage from entering the drains, and try to protect the earth and surrounding grassed areas.
- Contact the Security Dept. (Tel: 01509 222141), who will co-ordinate a response by the relevant departments including the despatch of necessary spill kits to the site as soon as possible.
- If there are any concerns about the Health and Safety implications of the materials spilt, or clean-up procedures, then contact the University Environmental Manager and Health and Safety Manager.

The University’s full incident response procedures can be seen at: [http://www.lboro.ac.uk/sustainability/policy/Incident.html](http://www.lboro.ac.uk/sustainability/policy/Incident.html)

9.2 Contractors – operating major construction sites on campus are required to have an Environmental Incident Response Plan which should work in conjunction with the University’s Response Plan.
9.3 Reporting - Report the incident to the Environmental Manager, who will notify the appropriate authority. If the Environmental Manager is not available a description of the incident should be left with Security, who will then notify the appropriate authority.

10.0 USEFUL CONTACT NUMBERS
Facilities Management Helpdesk: 01509 222121
Environmental Manager: 01509 228083 (07800 602960)
Sustainability Manager 01509 222110
University Security: 01509 222141
Health & Safety Manager 01509 222180