

SAFETY, HEALTH,
AND
ENVIRONMENT

Contents

PREFACE	3
SECTION 1: GENERAL	4
1. RISK ASSESSMENTS	4
2. COMPANY REQUIREMENTS	4
3. REPORTING ACCIDENTS AND INCIDENTS TO THE HSE	4
4. PERSONAL PROTECTIVE EQUIPMENT	5
5. CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS.....	6
Worker Duties	6
Contractor Duties.....	6
Principal Contractor Duties.....	7
6. COMMUNICATION AND CONSULTATION	7
Monitoring and Review of Health & Safety Policy.....	7
Inspection and Monitoring	8
Annual Review / Audit	8
Co-operation and Co-ordination on Site.....	8
SECTION 2: SAFETY.....	10
7. SITE ACCESS AND EGRESS	10
8. FIRE PREVENTION.....	10
9. HOT WORKS	10
10. WORKING NEAR PLANT.....	11
11. WORKING AT HEIGHT.....	12
12. EXCAVATIONS	13
13. BURIED SERVICES	14
14. ELECTRICITY.....	14
15. WORKING IN CONFINED SPACES	15
16. CORONAVIRUS MANAGEMENT	16
SECTION 3: OCCUPATIONAL HEALTH ON SITE	17
17. OCCUPATIONAL ASTHMA	17
18. ASBESTOS.....	17
19. SILICOSIS.....	18
20. NOISE	19
21. HAND / ARM VIBRATION	20
22. CARPAL TUNNEL SYNDROME.....	21
23. OCCUPATIONAL DERMATITIS.....	21

24.	LEPTOSPIROSIS (WEIL'S DISEASE)	22
25.	CONTAMINATED LAND	23
26.	BIRD DROPPINGS	23
27.	DRUGS AND ALCOHOL	23
28.	HOSTILE ENVIRONMENTS	23
29.	ENVIRONMENTAL EXPOSURE	24
30.	SUN SAFETY	24
31.	PERSONAL HYGIENE	24
32.	HAZARDOUS SUBSTANCES	24
33.	DANGEROUS MATERIALS	24
34.	STRESS	25
35.	MANUAL HANDLING	25
36.	DRIVING	26
37.	YOUNG PERSONS	26
38.	FEMALE STAFF	26
39.	BEHAVIOURAL SAFETY	26
40.	WORKING ALONE	26
41.	SLEEP	27
SECTION 4: ENVIRONMENT		28
42.	PREVENTING POLLUTION	28
43.	PROTECTING ANIMALS, PLANTS AND THEIR HABITATS	28
44.	INVASIVE SPECIES	28
45.	WASTE MANAGEMENT	28

PREFACE

This document is an introduction to safety, health and environmental (“SHE”) issues for all Land Science staff working on site. It is important that all members of Land Science staff visiting sites are trained in respect of SHE, to ensure a safe working environment.

The primary hazards and risks likely to be encountered on sites are identified, not only in terms of our employees, but also with respect to operatives, visitors, members of the public, and the wider environment. In turn the Company’s primary policies and procedures for risk mitigation are outlined, including the roles and responsibilities of all members of staff.

The document refers to both existing constructions sites or operational facilities (where specific Health and Safety provisions may have been made by others) and other sites such as derelict land (where Land Science has specific responsibilities in managing overall Health and Safety).

SECTION 1: GENERAL

1. RISK ASSESSMENTS

The principle of risk assessment is fundamental to the management of health and safety in the workplace. The Management of Health and Safety at Work Regulations place a legal duty on employers to assess the risks to the health and safety of their employees and any other person who are not their employees that arise out of their work activities. The regulations also require that arrangements are made for the effective planning, organisation, control, monitoring and review of the preventive and protective measures found necessary to control the risks to health and safety identified by the risk assessment.

2. COMPANY REQUIREMENTS

It is a minimum requirement that every employee at Land Science carries out basic awareness training in the following areas:

- 1) Workplace First Aid
- 2) Working At Height
- 3) Manual Handling Awareness
- 4) Control of Substances Hazardous to Health (COSHH)
- 5) Fire Safety
- 6) Noise Awareness
- 7) Electrical Safety
- 8) Managing Health & Safety

In addition, it is also company policy that all staff supervising site works will:

- 1) Obtains and brings to every site a valid and appropriate CSCS card
- 2) Completes training in the use of Cable Avoidance Tools
- 3) Comply with the requirements and policy set out in this document
- 4) Become familiar with the process of risk assessment

You will be provided with the relevant training to comply with the above, and you should also actively liaise with your manager as appropriate.

3. REPORTING ACCIDENTS AND INCIDENTS TO THE HSE

In the case of an over 7-day injury or dangerous occurrence which is reportable under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations) the Contracts Manager will ensure that the HSE Incident Contact Centre is notified within 15 days of the incident using the online form at website www.hse.gov.uk/riddor/.

In the case of an occupational disease which is reportable under RIDDOR the Contracts Manager will ensure that the HSE Incident Contact Centre is notified within 15 days of diagnosis of the occupational health condition using the online form at website www.hse.gov.uk/riddor/.

In the case of a fatality or a specified injury to workers the Contracts Manager will ensure that the HSE Incident Contact Centre is notified as soon as possible by phone on 0345 3009924 or using the online reporting facility www.hse.gov.uk/riddor/. A follow up report will be submitted within 10 days.

In the case of a dangerous occurrence or injury to the public involving treatment at a hospital, the Contracts Manager will ensure that the HSE Incident Contact Centre is notified as soon as possible using the online reporting facility www.hse.gov.uk/riddor/report.htm.

The Safety Administrator will ensure a copy of any reportable injury, disease or dangerous occurrence report is kept on file in the office and retained for a minimum of three years. The report will include the date and method of reporting, the date, time and place of the event, personal details of those involved and a brief description of the nature of the event or disease. All reports will be filed securely in accordance with the requirements of the Data Protection Act 2018 and General Data Protection Regulations (GDPR).

The Company accepts that failure to report these types of accidents or incidents could result in a criminal prosecution.

4. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) is any item of equipment or clothing that is used or worn by a person to protect them from a risk to their health and safety. A 'subgroup' of PPE that is designed to protect the wearer against respiratory (breathing) hazards, such as the inhalation of dust and fumes, is known as respiratory protection equipment (RPE).

The Health and Safety at Work Act 1974, requires that employees look after their own health and safety, and follow their employer's safe systems of work including using anything provided for their health and safety as instructed.

The Personal Protective Equipment at Work Regulations 1992, place duties on employees to use any PPE provided in accordance with the instruction and training provided, and to report to the employer the loss of or defect in any PPE provided.

Before using any PPE make sure that it is not damaged and correct for the type of hazard posed to you. If you feel that the equipment provided is not suitable to carry out a task safely, stop work and report it to the site manager or supervisor in charge.

It is policy that all Land Science employees wear the appropriate PPE when on site to protect against the risks posed on site. A risk assessment will be carried out by a senior member of staff to ensure what PPE is required for a site.

Minimum PPE requirements for all staff on all sites include:

- Ankle supporting boots with reinforced soles and steel toe caps
- High visibility jacket (winter) or vest (summer)
- A hard hat
- Hearing protection including ear defenders and/or high-quality ear plugs (when working with drilling equipment etc.)
- Gloves (when handling soil or other materials)
- Dust masks (when working in dusty conditions)

Additional PPE may be required on a site-specific basis as identified in the Health and Safety Risk Assessment for each project, it is important that staff check the protection requirements for each site on case-by-case basis and work together in ensuring the risk assessment continues to be up to date on the project processes.

5. CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS

The CDM Regulations are intended to ensure the complete safety of any building from design through construction and working life to, ultimately, demolition.

The CDM 2015 Regulations apply to both domestic and commercial projects. A “notifiable” project is one which lasts more than 30 working days and has more than 20 workers working on the project at any one time or exceeds 500 person days.

When there is more than one Contractor involved in a project, regardless of duration, then the project will require a Principal Contractor and Principal Designer to be appointed by the Client. Specific duties as applicable to the Company are detailed below.

Worker Duties

For all **Workers** working on all types of domestic or commercial projects **Workers** must:

- Be consulted about matters which affect their health, safety, and welfare.
- Take care of their own health and safety and others who may be affected by their actions.
- Report anything they see which is likely to endanger either their own or others’ health and safety;
- Cooperate with their employer, fellow workers, contractors, and other duty holders.
- Comply with legal health and safety requirements for construction sites.

Contractor Duties

On all types of construction projects, the Company will:

- Plan, manage and monitor own work and that of workers and subcontractors
- Co-operate and co-ordinate activities with the other duty holders
- Appoint competent contractors and workers
- Provide the right supervision
- Consult with workers
- Prepare a Construction Phase Plan (when the Company is the only Contractor on site)
- Ensure welfare facilities are provided
- Ensure a site induction is provided
- Ensure the site is secure
- Provide information to the **Principal Contractor** (where applicable), **Workers** and **Subcontractors**
- Comply with the specific requirements in Part 4 of the CDM Regulations

Principal Contractor Duties

When appointed as **Principal Contractor** the Company will:

- Ensure the **Client** is aware of their duties (on commercial projects), has prepared a Client Brief and has appointed a **Principal Designer** before starting work
- Liaise and co-operate with the **Principal Designer** during the preconstruction and construction phase
- Plan the construction phase and prepare the construction phase plan
- Ensure welfare facilities are provided
- Provide site induction
- Ensure the site is secure
- Appoint competent **Contractors** and **Workers**
- Ensure adequate arrangements in place for managing and supervising
- Engage **Contractors** and **Workers** – through information, communication, consultation, co-operation, and co-ordination
- Maintain health and safety standards and monitor risks on site
- Provide information for the health & safety file to the **Principal Designer**
- Liaise with the **Client** and **Principal Designer** throughout the project, including during the pre-construction phase

6. COMMUNICATION AND CONSULTATION

The Management of the Company will communicate to employees their commitment to safety and ensure that employees are familiar with the contents of the Company health and safety policy.

Communication and consultation will take place through the general daily interaction and supervision process, morning briefings and toolbox talks.

Monitoring and Review of Health & Safety Policy

The Policy will be reviewed annually by the **Managing Director** to ensure that all of the information given in it is still valid. Advice will be obtained from the Company's **Safety Advisor** to ensure that the Policy remains compliant with legislation.

Any updates or amendments will be brought to the attention of the employees, and information, instruction and training provided where necessary.

Inspection and Monitoring

The **Managing Director** is ultimately responsible for monitoring of health and safety on site and will undertake informal monitoring of health and safety on site during site visits.

The **Site Managers** will be responsible for formal weekly monitoring of health and safety on site and will undertake informal monitoring of health and safety throughout the working day. It will be the **Site Managers** responsibility to implement corrective action when required.

The Company's nominated **Safety Advisors** will also undertake formal monthly inspections on CDM notifiable projects using a Site Inspection Report form.

Copies of the site inspection report will be copied to the **Managing Director** for information and actioning where appropriate and filed in the contract file and in the health & safety project file on site.

Workplace inspections will also provide an opportunity to review the continuing effectiveness of the policy and identify areas where revision of the policy may be necessary.

Annual Review / Audit

The Company's nominated safety advisors will review / audit the safety management system annually to:

- Ensure that the Health & Safety Policy remains up to date and effective
- Ensure that the safety management system is being implemented correctly together with any recommendations for improvement

An Annual H&S Review report will be prepared after the review detailing the points discussed and any recommendations/actions.

Co-operation and Co-ordination on Site

The Company recognises that good co-operation and co-ordination on a shared site is essential to ensure that risks affecting everyone on site are identified in good time and suitable control measures implemented and followed.

As a **Contractor** on site the Company recognises that the **Principal Contractor** will take the lead during the construction phase of a project, in encouraging all parties to interact at an early stage and throughout the project.

As **Contractor** the company will ensure that information about risks and precautions are shared effectively and appropriately with those who need to know, and we will make sure that design changes are communicated as soon as possible to the relevant managers and employees.

As **Subcontractor** on a managed site, communication will take place at morning briefings, between the **Principal Contractor's Site Manager** and our **Site Manager/Foreman**, and between other trade **Managers/Foremen** and our **Site Manager/Foreman** as required.

Employees will be briefed by our **Site Manager/Foreman** about activities undertaken by others in the morning before work commences or as required throughout the working day.

The Company's method statement will identify any activity that may affect others on site and will identify the means of co-ordinating that activity.

The **Site Manager/Foreman** will ensure that effective inductions are given to all our employees before they start work relating both to the health and safety provisions on the site and to the work which is to be carried out.

SECTION 2: SAFETY

7. SITE ACCESS AND EGRESS

The client should always be made aware when personnel or operatives are going on site, as specific access arrangements may need to be made. Only access a site if it is safe to do so. Special care should be taken when entering or leaving a site, such as manoeuvring plant onto site on busy roads or over pedestrian walkways etc.

If the site is a construction site or an operational facility, report to reception on arrival; you should undergo any site induction required, and enquire about any existing health and safety provisions such as fire prevention, etc.

When you are leaving the site, make sure the site is left securely or at least in the same state of security as when you arrived. Any problems with the security of the site should be reported immediately. The site should not under any circumstances be left in a condition that is unsafe.

See also, lone working

8. FIRE PREVENTION

In general, for all working environments, a fire safety plan must be drawn up to outline the measures that must be taken to reduce the chances of a fire breaking out and to ensure that persons can escape if a fire was to occur. A fire safety plan should generally include:

- The identity of staff with responsibility for fire safety
- The locations and type of fire-fighting appliances and fire alarm bells
- The locations of assembly points
- Fire escape routes
- Arrangements for the storage of highly flammable materials
- Details of any hot works permit scheme

When on any existing site or facility, please make sure that you have read the fire safety plan so that you know where the fire assembly points are in case of a fire. When on any other site, it is the responsibility of Land Science and its employees to formulate a fire safety plan.

It is important that only people who have been trained to select and use fire extinguishers attempt to fight fires. Fire extinguishers must not be moved from their allocated positions and immediately report any fire extinguisher that appears to have been used, misused, or damaged.

Water (red) fire extinguishers are used for Class A fires; they are not suitable for Class B (liquid) fires, or where electricity is involved. Dry powder (Blue) fire extinguishers are used for Class A, B and C fires, but are best for liquid fires (Class B).

9. HOT WORKS

An activity being carried out that may create an enhanced risk of fire is known as 'Hot Works'.

No member of staff should ever have cause to undertake hot works of any kind. Where there is a possible need to undertake any hot works, the express permission of the Company should be sought. A detailed risk assessment will be required, and any necessary safety equipment and training provided.

Staff may however be supervisors on site where hot works are to be carried-out by operatives (such as sub-contractor drillers) for example:

- Drillers using a portable gas stove to melt wax in order to seal U100 samples
- Labourers using angle grinders or disk cutters to cut through materials such as concrete

It is important for staff to understand the risks involved with hot works, and that such activities are supervised and managed appropriately.

On existing construction sites, the method by which the work is carried out is normally controlled by a permit to work, usually in the form of a 'hot permit'. The conditions of such as permit will specify the prevention measures that must be taken before, during and after the work such as:

- The need for serviceable fire extinguisher of an appropriate type, located at the place where the work is being carried out
- A requirement that the person carrying out the work has been trained in the selection and use of fire extinguishers
- The need for fire-proof screens or mats to protect adjacent flammable materials or people passing by
- A completion time for the work that will allow sufficient time for a slowly developing fire to be discovered before the site is vacated at the end of the day.

10. WORKING NEAR PLANT

Land Science personnel and operatives routinely work on sites near operating plant, and particular care should be taken as this is a high-risk activity. Typical injuries involve workers being hit and crushed by moving plant.

Detailed traffic and plant management plans may have been devised for larger construction sites, and Land Science personnel should familiarise themselves with any specific provisions by means of the site induction.

For other sites, it is necessary for Land Science to consider the risks posed. For major projects, the list below identifies some of the control measures which may be considered:

- Isolating vehicles and plant from persons on site
- Using fencing, barriers, barricades, temporary warning or control signs
- Planning the direction that plant moves, so visibility is not restricted
- Implementing safe working distances
- Using clear communications systems
- Minimising the amount of plant working at one time
- Using demarcation lines or zones
- Using audible reversing alarms
- Using reversing sensors
- Using reversing cameras

- Using flashing lights
- Using high visibility garments
- Using spotters or observers.

It is policy that Land Science employees wear visibly jackets when plant is operating on site.

11. WORKING AT HEIGHT

Our business activities do not routinely require staff or personnel to work at height. It is critical that no work at height is carried out without the express prior approval of a senior member of staff, who will be responsible for providing the necessary site-specific risk assessments and providing appropriate safety equipment and/or training.

All work at height must be carried out in compliance with the Work at Height Regulations 2005. Employers, managers and supervisors must be aware of the key provisions of the regulations:

- Where it is reasonably practicable, avoid the need to carry out work at height by doing the work another way
- Where work at height cannot be avoided, select the most appropriate work equipment for the work
- Ensure that the way of work is carried out is based upon the findings of a risk assessment
- As far as practicable, organise work at height so as to prevent falls and falling objects, such as tools and materials.
- Reduce the distance of and potential consequences of any fall that does occur by giving priority to the use of passive fall prevention measures.
- Ensure that those who have to work at height are competent to do so

Ladders and stepladders must only be used where it can be shown, through a risk assessment, that it is not reasonably practicable to use safer types of access equipment and the remaining risks are low. HSE guidance is that ladders and stepladders should only be used as a place of work when the nature of the work:

- Is of short duration (a few minutes rather than hours)
- Is of a 'light nature' (requires no heavy lifting, carrying or a destabilising pressure applied to the users or equipment in carrying out the work-minimal manual handling)
- Allows one hand to be available at all times for holding on to the ladder or stepladder
- Requires nothing to be carried that would cause instability of the ladder, stepladder or user
- Does not necessitate using the top third of the ladder or stepladder.

Additionally, when stepladders are used as a place of work, they must be positioned so that the user faces the work as the stepladder is climbed. A stepladder must not be positioned so that the user is 'side on' to the work.

Ladders should be used as follows:

- Should be set up at an angle of 75° (1m out of every 4m up)
- Must be positioned on a suitably firm and level surface
- Not vulnerable to impact by pedestrians or traffic
- Be used in accordance with the manufacturer's instructions
- Be the right ladder for the job

- Ideally, lashed at or near the upper point of rest by the styles not the rungs
- Only be erected by someone who has been trained to do so and is competent.

It is policy that Land Science employees do not work at height without the approval of a senior member of staff, and when it is necessary to undertake work at height, the employee must be trained and competent to do so.

12. EXCAVATIONS

Work in and around excavations is potentially a significantly hazardous activity and can result in serious injury and death. Risks include:

- Collapse of the sides
- Falls of materials, people and plant/vehicles into the excavation
- Undermining nearby structures
- Contact with underground services, or undermining
- Ingress of water or other fluids
- Working with excavation plant
- Accumulation of heavier-than-air gases (such as LPG)
- Seepage of naturally occurring gases, such as methane or Carbon Dioxide

It is the policy of Land Science that personnel should not enter **any** excavation that is:

- Unsafe
- Unstable, or
- Deeper than 1.20m

Otherwise, a site-specific risk assessment carried out by a senior member of staff will be required, and appropriate safety provisions made. It is also the policy of Land Science that operatives working adjacent to an excavation should always:

- Stand back from the excavation and only approach when necessary
- Be constantly vigilant to signs of possible instability, and to act on this accordingly
- Be aware of plant, machinery, and other personnel around them
- Take samples from the spoil arisings and not enter the trial hole
- Ensure other unauthorised persons (e.g., members of the public, visitors, clients, etc) maintain a safe distance
- Ensure any barriers etc are erected and properly maintained
- Always stand to the opposite side of an excavation when instructing plant operatives digging the excavation
- Use appropriate signals for easy communication with plant operatives
- For high-risk excavations, such as those on open sites, construction developments, mass excavations, etc, the following may be considered:

Supports may need to be used if there is a risk of collapse. Barriers may be erected around any excavation into which a person could fall or suffer personal injury. During periods of reduced visibility, such as the hours of darkness, excavations or the guarding surrounding them may need to be lit. There must be adequate and safe arrangements for getting into and out of excavations. Under

no circumstances should any side supports or underground services be used as footholds to climb into or out of an excavation. The layout of the site must be planned to avoid, as far as possible, surcharging the sides of any excavation. When vehicles/plant are required to approach an excavation, there must be protective measures put in place. It may be necessary to wear respiratory protective equipment (RPE).

13. BURIED SERVICES

There is a risk in any excavation of striking buried services. Such occurrences are potentially extremely dangerous and may cause very serious or fatal injury. Risks include:

- Electrocution
- Explosion
- Fire
- Pressurised releases and projectiles

To identify if services are within your site or area, indicator posts, service cupboards, manholes, trench lines (e.g., different tarmac, linear settlement, or grass, etc.), valve covers etc. are clues to the route of buried services in the area.

A CAT should be used prior to all excavations; the operatives should be properly trained, use the instrument correctly, and ensure that the CAT is functioning properly and routinely serviced.

Trial holes should be hand excavated where possible (and in any case where there is doubt over the location of services) to establish that the position is clear. These are usually excavated down to either natural soils or 1.20mbgl (whichever is shallower).

Pea shingle or other granular engineering material is often used as a trench backfill. Often marker tape or tiles are laid directly over a service. However, the absence of such evidence is not always a guarantee that a position is clear of services.

Do not use power tools or excavators within 500mm of the indicated line of any pipe or cable. If a power tool or a hydraulic breaker is used to break paved surfaces, take special care to avoid striking any pipe, etc. that may have been buried at a shallow depth.

Use spades and shovels when digging in preference to picks or forks, which are more likely to pierce cables and pipes.

Unless you have proof that a buried service has been made safe, assume that it is 'live'.

14. ELECTRICITY

Working with electricity is potentially a significant hazardous activity and can result in serious injury and death. Risks include:

- Electrocution
- Explosion
- Fire

The safest electrical hand tools operate from low voltage batteries. Otherwise, all non-battery hand tools used on building or construction sites tend to operate from an 110V supply. Where plugging-in to a standard household 240v power supply, an 110v transformer and a portable residual current device (RCD) must be used.

Before starting work, a brief visual inspection should always be made for cables that are cut, abraded or pulled out from the plug, damaged plugs, and damaged cables.

Electrical hand tools used commercially should be subject to a periodic test of their electrical safety, known as 'portable appliance testing' (PAT). A sticker should be affixed to hand tools that pass the test, showing when it is next due. If an electrical hand tool becomes defective whilst in use, the user should stop work immediately and disconnect the tool from the supply and it should not be used again until it has been repaired.

15. WORKING IN CONFINED SPACES

A confined space has two defining features:

- A space which is substantially, though not always entirely, enclosed
- A place where there is a reasonably foreseeable risk of serious injury from hazardous substances or conditions within the space or nearby.

The main hazards in confined spaces include:

- Oxygen deprivation and suffocation
- Toxic atmospheres
- Flammable atmospheres
- Temperature changes
- Difficulty of getting in and out of, and working in a confined space
- Hazardous influx of water, gas, sludge etc

Examples of confined spaces that may be encountered by Land Science staff and operatives include deep excavations (where heavier than air gases may accumulate), and underground structures such as shafts, manholes, or chambers (where hazardous gas concentrations may accumulate), and basements (where the use of plant and machinery may generate toxic atmospheres).

Under law, it is the duty of the employer to plan work such that it avoids the need for anyone to enter a confined space by carrying out work by alternative means where it is practicable to do so. Where entry into a confined space is unavoidable, a risk assessment by a competent person, under the Management of Health and Safety at Work Regulations 1999 is required. The outcome of the risk assessment will provide the basis for the development of a full and effective safe of work, including the provision of rescue arrangements.

It is policy that no Land Science employee enters a confined space unless a site-specific risk assessment has been carried out by a senior member of staff, and appropriate measures have been used to control the risk.

16. CORONAVIRUS MANAGEMENT

The Company will prepare a risk assessment / procedure for controlling the risks of exposure to and the spread of the Coronavirus. The crucial requirement is to always maintain social distancing (compliant with the latest HSE guidance) and maintain a high level of cleanliness through handwashing, use of sanitisers etc.

Operatives will be required to travel to the site alone.

The risk assessment / procedure will be based on current government / HSE guidance and will be reviewed periodically.

All operatives will be briefed in accordance with the procedures as the outset and when they change.

Operatives will be advised of the procedures should they show signs of having contracted Covid-19.

The Company will ensure that vulnerable operatives stay at home and only return to work under guidance from their medical practitioner.

The Company will provide the relevant PPE in support of the procedures.

Operatives working on site will follow the specific procedures and rules laid down by the Client / Principal contractor.

SECTION 3: OCCUPATIONAL HEALTH ON SITE

Occupational ill health is the term used with regard to health issues that arise out of work activities. This section will provide information regarding possible occupational health risks associated with work activities.

17. OCCUPATIONAL ASTHMA

It is widely known that many airborne dust, fibres, particulates or fumes etc. in excess can cause respiratory (breathing) health problems such as asthma. These are known as respiratory sensitisers, which cause an allergic reaction. Dust is known to be hazardous to health, especially when breathed in for long periods.

The effects of exposure may be immediate, or it may take years for symptoms of ill health to become apparent. The inhalation of hazardous airborne contaminants can cause wheezing, coughing, breathlessness, bronchitis, and other respiratory diseases including various types of cancer.

Stomach disorders may be brought on by the ingestion of the dust of some substances, due to eating food with dirty and contaminated hands, or simply eating in a dusty environment.

The main respiratory hazards that may be encountered on site are:

- Dusts: Produced when solid materials are broken down into finer particles. The longer that the dust stays in the air the easier it is to breathe in.
- Mists: Tiny liquid droplets formed by the atomisation of a liquid for example, when spraying or using an aerosol. Mists may be a combination of several hazardous substances.
- Gases: Airborne at room temperature. These normally mix with the air that we breathe, for example propane, butane, acetylene, carbon monoxide, hydrogen sulphide and can spread very quickly.
- Vapours: The gaseous state of substances that are liquids or solids at room temperature. They usually form when substances evaporate. For example, vapour from a tin of glue or solvent left open.

Practical control measures that may be taken where circumstances permit are:

- Wet-cutting to damp down the dust that would have been created when using angle grinders, table saws etc.
- Extraction of the dust at the point it is created into a collector.

Where exposure to hazardous airborne contaminants cannot be controlled at source, or they cannot otherwise be rendered harmless, it will be necessary for the person(s) at risk to wear appropriate respiratory protective equipment (RPE).

18. ASBESTOS

Asbestos is a group of six naturally occurring long fibrous silicate minerals used historically in a wide range of applications on account of their high thermal, chemical, electrical and fire resistance, high

tensile strength, and sound absorption properties. Their use is now banned but building materials and soils may still contain asbestos bearing materials.

The inhalation of asbestos fibres can cause serious illnesses, including malignant lung cancer, mesothelioma, and asbestosis (a type of pneumoconiosis). Prolonged exposure to high concentrations of asbestos fibers over time is more likely to cause health problems than short-term exposure. There is no known cure for such asbestos-related diseases.

Within the ground, asbestos containing materials (ACM's) primarily comprise cement board sheeting with asbestos fibres (used as reinforcement and fire retardant); such materials are not significantly hazardous in themselves as the asbestos is a minor constituent and bound into the material with cement, however, they must never be burnt, crushed, broken, eaten, smelt, etc.

Rarely, more fibrous unbound forms of asbestos may have become entrained within the ground, such as pipe lagging mixed in with the arisings from a demolished building. Such materials may be very hazardous. Where any evidence of such materials is encountered, notes should be made and the advice of a senior member of staff should be sought immediately. It is likely that the excavation will need to be backfilled with the suspect materials buried pending specialist investigation. It is unlikely that Land Science activities will involve dealing with asbestos in buildings; any works where we are to disturb the existing fabric of structure will usually require that an asbestos survey and/or removal has previously been undertaken.

It is important the records of the suspected occurrence of asbestos containing materials are made wherever suspect materials are identified, whatever your reason for being on a particular site, whether you are there specifically to investigate ground contamination or not.

Where inert samples of possible ACM's such as cement board are collected for laboratory analysis, samples should be double bagged, labelled as potentially containing asbestos, and the receiving laboratory advised accordingly. Specialist equipment and training are required where other fibrous ACM's are encountered and should never be attempted by staff at Land Science.

19. SILICOSIS

Silicosis is an occupational lung disease that develops over time when dust that contains silica is inhaled into the lungs. The cause of the disease is silica which, in crystalline form, is toxic to the lining of the lungs. When the two come into contact, a strong inflammatory reaction causes the lung tissue to become irreversibly thickened and scarred-a condition known as fibrosis.

Damage to the lung tissue means the lungs cannot perform their function of supplying oxygen to the blood as well as they should. The symptoms resulting from this include:

- A cough, with or without sputum
- Shortness of breath, particularly on exertion
- Chest tightness

The most common form of the disease, chronic silicosis develops over many years of exposure; the lung tissue becomes irreversibly damaged by fibrosis and is replaced with solid nodules of scar tissue. The rarer form, acute silicosis, the symptoms develop after only a short period of exposure to high levels of silica dust; the damage leaves a person susceptible to lung infections, in particular Tuberculosis. Smoking not only aggravates the symptoms of silicosis but also speeds up the progress of the disease.

Common sources of crystalline silica dust include:

- Sandstone
- Granite
- Slate
- Coal
- Pure silica sand

The main control measures to reduce the risks of Silicosis are wet-drilling, appropriate ventilation, dust-control facilities, showers, and the use of face masks.

It is policy that Land Science employees and sub-contractors should a) avoid b) carry out a risk assessment and take appropriate measures.

20. NOISE

Noise is often taken for granted as an everyday feature of working on sites. Many activities such as window sampling and drilling create a level of noise that have the potential to cause permanent hearing damage (e.g., tinnitus, loss of hearing, and deafness) if protective measures are not taken. As well as hearing problems, excess noise is also known to cause:

- Annoyance and irritation
- Loss of concentration
- Reduces efficiency
- Fatigue
- Increase accident proneness
- Masking of warning signals

The Control of Noise at Work Regulations 2006 (CNAWR) set out exposure action levels of noise to which employees may be exposed as follows:

- A lower exposure action value of 80dB (A)
- An upper exposure action value of 85dB (A)
- An exposure limit value of 87dB (A)

The exposure limit value 87 (A) is the maximum level of noise to which anyone may be exposed, as measured at the ear. Ambient noise levels can exceed that value providing that any control measures used (including PPE) limit the level of noise sensed by an individual to below that limit.

The lower exposure action level value of 80dB (A) is the level that employers must assess the risks to the hearing of employees from noise and identify the measures necessary to comply with CNAWR. Ear protection must be available to anyone who requests it, and employees must be made aware of the dangers of exposure to noise, and what they must do to protect themselves.

The upper exposure action level 85dB and above is the level that employers reduce the noise levels to as low is reasonably practicable other than by the provision of ear protectors, identify areas of the site in which employees will be subjected to this level of noise and display signs in appropriate places to indicate 'hearing protection zones', and provide a health surveillance and supply appropriate hearing protection devices ensuring that these are in the 'hearing protection zone'.

It is not possible to measure noise levels on every site.

It is the policy of Land Science that suitable hearing protection should be worn at all times when working in close proximity to noisy plant and machinery do the following:

- Window sampling
- Cable percussion drilling
- Breaking-out hardstandings

21. HAND / ARM VIBRATION

It is company policy to comply with the Control of Vibration at Work Regulations. The Company will take all reasonably practicable steps to reduce the likelihood of any employee/operative contracting the condition known as Hand/Arm Vibration Syndrome (HAVS).

The **Site Managers / Foremen** will procure or hire work equipment with preference given to equipment with the lowest published vibration emission levels. The vibration levels for each type of equipment will be obtained from the equipment manufacturer or hire company. The instruction leaflet normally contains this information.

Where vibration levels are not known for particular equipment, a look up HAVS chart will be referenced to establish the approximate vibration levels for that equipment. The chart will be positioned in a prominent position in the office for reference.

The **Site Managers / Trades Foremen** will ensure that the risks of HAVS to operatives is minimised by planning, managing and supervising work activities such that exposure levels are below the 2.5m/s^2 (A8) Exposure Action Value (EAV). In situations where the EAV could be exceeded, then technical and organisational measures will be implemented to that exposure levels do not exceed the 5.0m/s^2 (A8) Exposure Limit Value (ELV).

As part of the risk assessment process, the management will prepare and/or provide a list of equipment generally used by the Company which states the exposure times to reach EAV and ELV. The HSE website (<http://www.hse.gov.uk/vibration/hav/vibrationcalc.htm>) will be used to determine the EAV and ELV values.

Employees/operatives will be provided with information on recognising symptoms of HAVS and about the measures required to reduce the risks. This will be undertaken through provision of HSE leaflet INDG296, toolbox talks and by giving them a copy of the equipment list showing vibration exposure limits.

The **Site Managers / Trades Foremen** will ensure that employees/operatives using vibrating equipment are provided with suitable equipment, suitable gloves, have adequate rest breaks and a place for warming hands in cold weather.

Vibrating equipment will be well maintained to ensure that the levels of vibration do not increase over time and use.

Employees/operatives will be instructed to report any signs of HAVS or any concerns with the equipment being used.

The Management will record typical usage of work equipment and undertake a risk assessment to establish whether individual employees are being exposed to vibration levels in excess of the EAV (but below the ELV). If this is the case, then the individuals will be subject to annual health surveillance to check whether there is onset of HAVS symptoms. This will be undertaken using a checklist. Those individuals who report HAVS symptoms will be consulted in confidence to establish possible causes and be referred to an occupational health specialist for diagnosis, prognosis, and treatment.

Employees with a record of previous HAVS conditions will also be subject to annual health surveillance.

Health surveillance records will be retained by the Company for 40 years.

22. CARPAL TUNNEL SYNDROME

Carpal tunnel syndrome occurs when the median nerve, which runs from the forearm into the hand, becomes pressed or squeezed at the wrist. The median nerve controls sensations to the palm side of the thumb and fingers, as well as impulses to some small muscles in the hand that allow the fingers and thumb to move. The carpal tunnel is a narrow, rigid passageway of ligament and bones at the base of the hand, houses the median nerve and tendons. Sometimes, thickening from irritated tendons or other swelling narrows the tunnel and causes the median nerve to be compressed. The result may be pain, weakness or numbness in the hand or wrist.

The symptoms usually start gradually, with frequent burning, tingling, or itching numbness in the palm of the hand and the fingers, especially the thumb and the index and middle fingers. As the symptoms worsen, people might feel tingling during the day, and decreased grip strength may make it difficult to form a fist, grasp small objects, or perform manual activities. In chronic and/or untreated cases, the muscle at the base of the thumb may waste away. Some people are unable to tell between hot and cold by touch.

The causes of carpal tunnel syndrome are often the result of a combination of factors that increase pressure on the median nerve and tendons in the carpal tunnel. Contributing factors include trauma or injury to the wrist that cause swelling, such as a sprain or fracture, rheumatoid arthritis; mechanical problems in the wrist joint; work stress, and repeated use of vibrating tools. Carpal tunnel syndrome can be prevented by performing stretching exercises, taking frequent rest breaks, wear splints to keep wrists straight, and use the correct posture and wrist position.

It is policy that all Land Science employees and sub-contractors avoid activities which result in repetitive movements, do not use equipment which gives excessive vibration, and take regular breaks.

If you think that you are developing carpal tunnel syndrome, seek medical attention and report the problem you must report it to Land Science.

23. OCCUPATIONAL DERMATITIS

Dermatitis is a serious skin condition that it caused by irritants contained in many industrial materials. There are two general types of dermatitis; irritant and sensitive, both of which can result in serious injury and death; these are irritant and sensitive dermatitis.

An example of this included a student labourer on a building site working with concrete, who developed a severe reaction to chromium compounds, and had both legs amputated to avoid death.

Irritant dermatitis is usually caused by the skin coming into contact with an irritant substance, which is usually a chemical or dust. Repeated exposure to extreme heat or cold can damage the skin, which makes it more likely that irritant dermatitis will occur. The length of exposure, together with the strength of the irritant substance, will also affect the seriousness of the complaint.

Sensitive dermatitis is caused by an allergic reaction to a specific substance. The reaction will vary from person to person; the reaction may only be mild redness, or it can be developed into swelling, blisters and septic ulcers.

It is policy that no Land Science employees and sub-contractors use hazardous substance, unless a risk assessment has been carried out by a senior member of staff and that appropriate precautions have been made when working with materials that may be irritants. The use PPE (gloves) when using a hazardous substance, and immediate washing of hands or other affected skin and the use of reconditioning cream or barrier cream to be used after using a hazardous substance

If you think you have occupational dermatitis seek medical attention and report the problem, you must report it to Land Science. In addition, you must inform Land Science if you have (or suspect you have) any known allergies to specific substances (e.g., Nickel, chromium etc.).

24. LEPTOSPIROSIS (WEIL'S DISEASE)

Leptospirosis can be caught from coming into contact with the urine of rats, voles, mice and other small animals. It can be fatal if not diagnosed and treated quickly. The disease is usually associated with working in old farm buildings and on sites close to rivers or canal banks but can be caught anywhere where small mammals that carry the disease exist. A less serious form of Leptospirosis can be caught from the urine of infected cattle.

The routes of entry into the body are through the eyes, nose, mouth, and unbroken skin. A safe system of work should be devised in order to reduce or prevent exposure, with PPE being used necessary.

It is policy that Land Science employees or sub-contractors wear or carry either a 'Leptospirosis Risk' card or neck-tag and does not work in an area with a risk of Leptospirosis if they have broken skin. A site-specific risk assessment must be undertaken before by a senior member of staff and appropriate precautions made (e.g., to ensure that no one is at risk of falling into contaminated water, and that no one with broken skin is exposed to the risk, adequate washing and, if necessary showering facilities may be required).

If you have come into contact with water that is likely to be contaminated should seek prompt medical attention, particularly if the water is swallowed. In addition, you must inform Land Science if any symptoms similar to influenza are noted.

25. CONTAMINATED LAND

Many of the sites may involve land that has been previously contaminated by materials that were stored, dumped, or used there. Contaminants may include asbestos, lead, chemicals, or micro-organisms.

It is policy that Land Science employees wear PPE (gloves, safety boots etc.) on sites potentially contaminated. A site-specific risk assessment may be carried out to identify any further potential risks and appropriate control or protective measures put in place.

26. BIRD DROPPINGS

Dry bird droppings such as those from pigeons, if disturbed, can become a hazardous airborne dust that can cause a severe respiratory illness. Exposure to bird droppings and nesting materials under ideal conditions can result in a number of diseases including histoplasmosis, Newcastle disease, cryptococcosis, pseudotuberculosis and other avian transmitted diseases. Another major condition of concern would be hypersensitivity pneumonitis. This disease is generally contracted by inhaling a specific type of bacteria known as thermophilic actinomycetes.

If work is to be carried out in an area where pigeons have been nesting or congregating, the area must be thoroughly decontaminated first. It is policy that no Land Science employee avoids work in an area where pigeons have been nesting or congregating. If working in such conditions are unavoidable, PPE must be worn, and the use of disinfectant shall be used to prevent the hazard becoming airborne.

27. DRUGS AND ALCOHOL

The use of illegal drugs or alcohol gives rise to the risk of underperformance and the possibility that an employee will compromise their own health and safety or that of other people including members of the public.

It is policy that no Land Science employee or sub-contractor be under the influence of drugs or alcohol during work hours.

28. HOSTILE ENVIRONMENTS

Some sites may expose employees to hostile environments whereby employees may have to deal with either an individual or a group of people who may be hostile.

The best way to deal with this situation listed below:

- Do not respond aggressively
- Listen to their concerns
- Never argue back

It is policy that Land Science employees make sure that if a hostile situation arises, you do not aggravate the problem, leave the site, and seek advice from a senior member of staff at Land Science.

You must also be aware that our work can be sensitive in nature, particularly in redevelopment projects, and you are not to divulge any plans, drawings, schemes etc to any third party. It is the client's responsibility to liaise with interested parties, not ours.

29. ENVIRONMENTAL EXPOSURE

Extremes of excess heat and cold can have adverse effects on health. It is important that employees wear appropriate dress in such conditions. In cold weather it is important to keep warm as this can also affect other occupational health problems such as HAVS. In the summer it is best to keep cool, drink plenty and keep in the shade where possible.

30. SUN SAFETY

Working outside for long periods of time with unprotected skin will mean that you are at a greater risk of developing skin cancer. In the short term, excess exposure of unprotected skin to the sun causes sunburn, which can blister the skin and make it peel. Even a mild reddening of the skin is a sign of skin damage. In the long term, too much sun will speed up the ageing of skin, making it leathery, mottled and wrinkled.

It is policy that Land Science employees and sub-contractors on site in sunny weather should use sun cream on throughout the day to make sure their skin is protected (particularly on the neck and forearms) and take breaks in the shade when necessary.

31. PERSONAL HYGIENE

Personal hygiene is important when working outside in conditions whereby materials may be contaminated. PPE (gloves) must be worn when on site. Immediate washing of hands or other affected skin and the use of reconditioning cream must be used after site work. It is also important to wash hands before eating.

32. HAZARDOUS SUBSTANCES

Many substances that are either used or are created as a by-product of a work activity have the potential to harm. Hazardous substances on construction sites are usually in the form of dust, fumes, vapour and gas, and include: cement plaster, the dust of some woods, pain, adhesives, acids, vehicle fuels, hydraulic oil, and other oils. Other hazardous substances such as contaminated soil, fumes, bird droppings etc. are dealt with elsewhere in this document. Hazardous substances may be inhaled, swallowed, or absorbed through the skin (broken or unbroken).

It is policy that Land Science employees and sub-contractors should not handle (or create as a product) any hazardous substances unless a COSHH assessment has been undertaken, a risk assessment carried out by a senior member of staff, and appropriate safe systems of work that either eliminate exposure or control it to an acceptable level.

33. DANGEROUS MATERIALS

In addition to hazardous substances, a number of dangerous materials may be encountered on site, such as:

- Broken glass
- Nails in wood
- Discarded hypodermic needles
- Wire and reinforced bar
- Fly tipped wastes etc.

Special care should be taken on all sides, particularly derelict land, to avoid coming into accidental contact with such items. No such materials should be handled, particularly glass and needles.

34. STRESS

Work-related stress is a major cause of occupational ill health, poor productivity, and human error. It can result in sickness absence, high staff turnover and poor performance and a possible increase in accidents due to human error.

The primary sources of stress include:

- Demand-this includes issues such as workload, work patterns and the work environment
- Control-how much say the person has in the way they do their work
- Support-this includes the encouragement, sponsorship and resources provided by the organisation, line management and colleagues
- Role-whether people understand their role within the organisation and whether the organisation ensures they do not have conflicting roles
- Change-how organisational change (large or small) is managed and communicated in the organisation.

It is policy that Land Science employees inform a senior member of staff if they are experiencing high stress levels related to the job or if a personal-related stress problem is affecting their ability to work affectively and which may result in an occupational injury. A risk assessment must be carried out by a senior member of staff to ensure that work related stress is minimised.

35. MANUAL HANDLING

The Manual Handling Operations Regulations 1992 place legal duties and responsibilities on both employers and employees to ensure that manual handling activities are planned and carried out so that injury is avoided.

The main types of injuries resulting from unsafe or incorrect manual handling can affect the whole body, the back, shoulders, arms, hands, feet and toes.

Legislation requires that adequate and appropriate protective clothing and equipment be provided by the employer and worn by the employee. Gloves, footwear, hard hats, and overalls all play an important part in reducing the type and severity of accidents arising from manual handling.

When manually handling an object, let the legs and thigh muscles do the work. Try to keep your spine straight once you have started to lift don't flex your back and avoid twisting the back or leaning sideways. Plan in advance how to lift, and what do to with the objects in transit.

36. DRIVING

When driving to sites, no mobile phones must be used unless the phone is connected to a hands-free kit. If you feel it necessary to use a mobile phone it is advised to stop when it is safe to do so. Regular breaks must be taken for journeys longer than 2 hours or whenever the driver is feeling tired.

37. YOUNG PERSONS

A young person is classified in law as anyone who is older than the minimum school-leaving age but not yet 18. A risk assessment for a work activity in which a young person will be involved must take account of their experience, lack of awareness and immaturity, the layout of the workplace (will they be working in an excavation or at height), the nature, degree and duration of exposure (noise and vibration), the type of equipment that the young person would be expected to operate, the amount of health and safety training they have received, and possible exposure to extremes of heat or cold.

It is policy that any Land Science employee or sub-contractor classified as a young person must follow the risk assessment set to them by a senior member of staff.

38. FEMALE STAFF

Special consideration must be given within risk assessments to any female employee who is pregnant, has given birth within the past six months or who is breast feeding, where the nature of the work would put her at risk because of her condition.

The employer should consider altering the employee's conditions and/or hours of work, or where this is not practical, suspend the person from work for as long as necessary to avoid the risks.

Any female employee, who is pregnant, has given birth within the past six months or who is breastfeeding must notify her employer in writing of her condition within a reasonable length of time.

39. BEHAVIOURAL SAFETY

Employees on sites must work safely to not only reduce the risks which could potentially affect their health and safety, but to take the lead and set an example to others. The employee should be empowered to stop work if they feel that working conditions are not safe and encouraged to report the incident to someone in authority at site level.

40. WORKING ALONE

The requirement within the Management of Health and Safety at Work Regulations means that in any job or task where a person may work alone, the risks must be assessed taking account of the differences that will exist because the employee is unaccompanied.

Lone workers are defined as those who work by themselves without close or direct supervision i.e., employees who work alone both in and outside of normal working hours e.g., mobile operatives,

liaison and or co-ordinator workers (i.e., management, office staff etc visiting domestic and commercial premises), cleaners, security etc.

Personnel working alone must:

- be able to recognise and ensure a safe place of work.
- have adequate training both technically and in safe systems of work.
- have adequate equipment so that there is no need for improvisation.
- have clear instructions on how to summon help in an emergency.

Management will also ensure that lone workers are subject to a system of surveillance by means of checks and monitoring.

41. SLEEP

Getting enough sleep is critical in being able to perform your work duties properly. There is a wealth of scientific research showing sleep deprivation is mentally, emotionally, and physically damaging. This is particularly relevant as staff from time to time must make early starts in the morning. Benefits of getting a good night's sleep for you, your colleagues and the company include:

- Helping you to avoid making costly mistakes or cause accidents.
- For the team, avoiding grouchy people who are difficult to work with.

It is not the company's business to interfere in the personal lives of employees, but we want to give you the information needed to "make the right choices". Here are some tips for better sleeping:

- Make time for yourself during the working day, take moments to switch off
- Set an alarm to go to bed
- Stop watching box sets until late at night
- Don't have your mobile phone in your bedroom, the blue light it emits reduces sleep quality
- Try and maintain a routine
- Avoid late nights the evenings before work

Everyone has a different inbuilt, genetic number of hours they need to sleep ranging from four to 12 hours. Most people (90%) need between seven and eight hours sleep a night. There is evidence to suggest that sleeping longer than 8hrs is beneficial for all, and younger persons can need in excess of 10 hours per night. During sleep your brain detoxifies and repairs itself, so depriving yourself of sleep is not good for you.

SECTION 4: ENVIRONMENT

42. PREVENTING POLLUTION

Pollution can occur at any stage of any sized development. There is the potential for a pathway to be created when drilling into soils, and therefore it is essential to plan ahead, with prevention measures in place to reduce the risk of pollution. Most pollution incidents can be avoided by particular housekeeping techniques. When taking water samples, it is best to put discharge water

43. PROTECTING ANIMALS, PLANTS AND THEIR HABITATS

Damaging, disturbing, or removing protected species can result in prosecution under a range of environmental legislation. Potential impacts on the ecological environment include:

- Disturbance of birds, badgers, bats, and other protected species
- Removal and fragmentation of habitats
- Disturbance to aquatic wildlife and water quality
- Disturbance to wildlife from noise and vibration
- Damage to trees and hedgerows.

44. INVASIVE SPECIES

Species of plants that do not naturally occur but have been introduced are known as non-native species. A number of these species have become 'invasive' because native species are unable to compete against these bigger, faster growing and/or more aggressive introductions.

It is an offence to plant the following or otherwise cause them to grow in the wild:

- Giant Hogweed
- Giant Kelp
- Japanese Knotweed
- Himalayan Balsam

If these species are identified on site, advice should be sought by specialists who will provide further details on how to best treat or dispose of these plants in each instance.

With regards all environmentally sensitive areas, it is policy that all Land Science employees and sub-contractors try as reasonably possible not to destroy any ecosystem in or around the site. For environmentally sensitive sites, a risk assessment may need to be carried out to ensure protection measures to prevent environmental damage.

45. WASTE MANAGEMENT

Soil arising's and other waste from site must be properly characterised prior to disposal at a safety licenced waste recycling facility. Under no circumstances should Land Science encourage illegal waste acts such as fly tipping or use of unlicensed carriers.