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1. Health and Safety Policy Statement:

In view of its size and risk potential, the Department is classified as a Type 1 Department (i.e., a Department in the highest risk category). For this reason, the health and safety of staff and visitors is given the highest priority. To this end, every effort is made not only to comply with relevant regulations but to encourage a culture in which issues of health and safety are anticipated (and problems thereby avoided) rather than one in which attempts are merely made to comply with regulations. The Head of Department will ensure that adequate resources, time, training, and funding, are at the disposal of the Departmental Safety Officer and nominated members of staff to ensure that Health and Safety issues raised within the Department are appropriately resolved.

To this end, the Department’s intent is to follow closely the University’s policy statement (25 April 2013) and to ensure that individuals fully appreciate the extent of their own responsibilities (as outlined in this Departmental policy statement).

The Head of Department, ex-officio, is responsible at Departmental level for safety measures generally and therefore assumes employer’s responsibility for compliance with the University’s Health and Safety Policy within the areas under their control.

The Head of Department has appointed a Departmental Safety Committee, a Departmental Safety Officer, a Biological Safety Officer, a Laser Safety Officer and a Departmental Radiation Supervisor. The officers have the full authority of the Head of Department when acting in their respective roles.

Further it is the policy of the Department of Civil and Structural Engineering to:

- Maintain a safe and healthy working environment, safe methods of operation and to ensure that, at the very least, the minimum legal standard of health and safety is achieved.
- Ensure plant and equipment under the Department’s control are provided, and maintained at safe levels.
- Provide necessary information, instruction, training and supervision, to ensure the health and safety of employees at work and to ensure continuing development of health and safety awareness.
- Ensure that, where a risk is identified, the line manager makes certain that approved safety equipment and protective clothing is provided and that it is used by the employee.
- Through use of regular meetings, encourage discussion between management and employees on safety, health and welfare matters and to ensure that the Departmental Health and Safety Committee, which will meet six times a year, will be used as a forum by all staff for health and safety issues. Health and safety will be a standing agenda item at Staff Meetings. Recommendations made by the Health and Safety Committee to the Head of Department will be acted on as appropriate.
- Treat students on placement within the Department as University employees for the placement period.
- Ensure all students within the Department receive appropriate training to complete their studies safely.
- Ensure immediate and accurate reporting and investigation of accidents and incidents.
Policy Implementation Date:

Date for Policy Review: 1 October 2016

Signed: .....Harm Askes.

Head of Department of Civil and Structural Engineering.

Date: ....9 November 2016..............................................
2. General Statement of Health and Safety Responsibilities

2.1 Head of Department -

The Head of Department has ultimate responsibility for health and safety within the Department of Civil and Structural Engineering. To achieve this they will ensure that the Departmental Health and Safety Policy is adopted and fully implemented, that safety procedures are published for staff and that a Departmental Safety Officer is nominated. Full responsibilities are defined in the University “Health and Safety Policy and Arrangements” document.

2.2 Departmental Safety Officer

The Head of Department will appoint a Departmental Safety Officer (DSO) whose primary task will be to act as liaison officer between the Department and the University Health and Safety Department and to advise the Head of Department on health and safety matters as they relate to the Department.

Current DSO for Department of Civil and Structural Engineering is 'Andrew Fairburn'

2.3 All Supervisory Staff

Supervisory staff will:

- Be fully familiar with the Department and the University's policy statement and Safety Policies and understand and apply them within all areas of their responsibility.
- Ensure that their staff work in accordance with the University Health and Safety Policy as relevant to their work, and that staff will have sufficient training/instruction relative to the risks they take to ensure safe working.
- Conduct risk assessments and implement adequate control measures on the significant hazards associated with the work. They will also ensure that all those affected by the work are aware of, and have access to, the risk assessments.

2.4 All Employees

The Health and Safety at Work Act 1974 states that EVERYONE has a responsibility for safety. It is important that everyone appreciates the extent of their responsibilities, namely that they:

- Make themselves familiar with the Health and Safety Policies of the University and of the Department, and shall be fully familiar with sections of these policies which directly affect their particular activities.
- Accept individual responsibility:
  - To take all reasonable care for the health and safety of themselves and of any other person who may be affected by their acts or omissions.
  - To co-operate with their line manager and other University officers so far as is necessary to enable the University and Department to comply with all legal requirements.
- Report to supervisory staff any accidents, near misses or dangerous occurrences, whether or not injury is sustained, and any unsafe practices; and report systems of work or conditions which they consider may create risks to their own health and safety or damage to equipment and premises.
- Not, intentionally or recklessly, interfere with or misuse anything provided by the University in the interests of health, safety or welfare.
• Conform to all instructions, written and oral, given to ensure their personal safety and the safety of others.
• Attend training courses designed to further the needs of health and safety as required.
• At all times make full use of appropriate protective clothing and appropriate safety equipment and devices provided.
• Maintain tools and equipment in good condition, reporting any defects to their supervisor.

Comprehensive details with regard to responsibilities and arrangements for staff health and safety training are to be found within the University's dedicated policy at: https://hs.shef.ac.uk/attachments/181?updated=1460035252

3. Implementation and Monitoring of the Departmental Health and Safety Policy

3.1 Department Health & Safety Committee

The Health and Safety Committee will comprise of “core members” who will be expected to attend every meeting and “members” who will attend meetings as required. The core members will be the Departmental Safety Officer, the Biological Safety Officer, the Laser Safety Officer and Departmental Radiation Supervisor, plus representatives from the administrative, academic and technical staff. Safety Committee members are the academic, technical and administrative, area managers.

Every member of staff will have the opportunity to have issues raised/discussed at the Health and Safety Committee meeting via their representative. Where issues are not resolved to staff satisfaction they can refer them to the University Health and Safety Department.

Core Members

Andrew Fairburn  Departmental Safety Officer
Radiation Protection Supervisor
Biological Safety Officer
Dr Paul Bentley  Deputy Safety Officer
Laser Safety Officer
Kieran Nash  First Aid/Technical Representative
Jean Darnbrough  Administrative Representative
Steph O’Neill  Administrative Representative
Dr Jim Warren  Harpur Hill Research Labs, Buxton, Representative
Glenn Brawn  Laboratory Superintendent/Exec Safety Rep
David Callaghan  Pressure, Local Extract & Lifting Equipment

Members

Dr Jonathan Black  Laboratory Manager, Geotechnical Engineering
Dr Jim Warren  Laboratory Manager, Structures & Materials
Prof. Joby Boxall  Laboratory Manager, Water Engineering
Dr Steve Thornton  Laboratory Manager, Groundwater Protection & Restoration
3.2 Safety Audits

Safety Audits form a key tool in monitoring the effective application of the Departmental Policy and are carried out by an independent panel.

- Health and safety audits are the responsibility of the University's Head of Health and Safety who will enlist members of the team with relevant expertise to carry out audits in a timely manner (i.e. Health & Safety Officer, Biological Health & Safety Officer, Radiation Health & Safety Officer and Fire Safety Officer), as appropriate.
- Health and Safety audits and surveys will be carried out as appropriate to monitor the effectiveness of specific policy areas.
- Health and safety audits will provide assurance on departmental compliance to University Health and Safety standards.

3.3 Safety Inspections

Safety Inspections of the areas occupied by the Department will be carried out on a regular basis by Departmental staff who will undertake informal walkabouts of their areas to identify hazards.

- Formal inspections/walkabouts will be carried out on a regular basis; the Laboratory areas of the Department will be inspected at least three times a year and administrative areas at least once a year.
- The results will be reported to the Head of Department and area Supervisors.

3.4 Review of the Departmental Health and Safety Policy

The Departmental Health and Safety Policy will be reviewed by the DSO on an annual basis and submitted to the Departmental Health & Safety Committee for discussion. It will be reviewed, as necessary, to ensure consistency with University Policy. Any changes to the document will be authorised by the HoD and then reported at the next available Departmental Staff Meeting.

The date of the next review will be 01 October 2017.

4. Specific Health and Safety Procedures within Civil & Structural Engineering.

4.1 Safety Induction Training

4.1.1 New Staff:

Automated access to the online training system is available to all new staff with contracts of employment, University Associates (e.g. visitors with teaching responsibilities), and postgraduate researchers. The fire training is MANDATORY. All courses can be accessed once the individual has a Ucard.

All new staff must receive General Safety Induction Training from the DSO or his deputy and undertake the following online training:

- Fire and Emergency Procedure. FIRE
- Display Screen Equipment. Display Screen Equipment
- General Risk Assessment Techniques. (Under General Health & Safety) General Risk Assessments
4.1.2 New Undergraduate Students:
The Departmental Safety Officer or his deputy will arrange to give a Health and Safety Induction lecture to all new Undergraduate students during "Intro week".

4.1.3 New Taught Course Postgraduate Students:
The Departmental Safety Officer will arrange to give a Health and Safety Induction lecture to all new Taught Course Postgraduate students.

4.1.4 New Research Postgraduates:
Automatic access to the online training system is available to all new staff with contracts of employment, University Associates (e.g. visitors with teaching responsibilities), and postgraduate researchers. The fire training is MANDATORY. All courses can be accessed once the individual has a Ucard.

- Fire training
- Other courses as required these should include Out of Hours, manual handling, risk assessment, display screen equipment and the Universities Health & Safety Induction

In addition, new starters will be given specific inductions in the areas in which they will be working.

4.1.5 Induction process
Any long stay visitors must be included in this process and the Departmental Safety Officer informed as early as possible by the member of staff hosting the visitor in order to arrange a suitable time for a Safety Induction to take place. Access to the online training system can be arranged for casual staff, visitors (paid) and agency staff who are working in the Department for at least 2 months.

Short stay visitors [less than 2 months] should be inducted in the area that they are working in. The induction should cover fire and welfare arrangements. The induction should be recorded and the visitor should sign to say that they have completed the induction. Short stay visitors are not allowed to work out of hours unless supervised and a relevant risk assessment has been completed.

Cleaners should be given an induction to any laboratory or workshop area that they have to work in. As part of the induction topics that should be covered should include but not be limited to any areas that they should not enter, told about any personal protective equipment requirements (for example safety foot ware or laboratory coats) warned about any potential hazards, what to do if there's a spillage or leak, any signs to observe, which bins to empty and surfaces they can clean.

4.2 Workplace Environment and Welfare Facilities
In accordance with the Workplace (Health, Safety and Welfare) Regulations, the University has a duty of care to ensure that the working environment is safe, clean, tidy, hygienic, and comfortable. Where required, this shall be achieved in a collaborative manner with Estates & Facilities Management and other Heads of Department who share the same work environment.

Specifically within the context of the Regulation stated above - The Head of Department shall:
• ensure buildings and workspaces (including common areas) are fit for purpose, are in a good state of repair, and satisfy the requirements of the Building Regulations, including (but not limited to) construct, doors, windows, etc.;
• give due consideration to access/egress and facilities for people with disabilities (except where health and safety legislation takes precedence over disability legislation);
• ensure a reasonable workplace temperature (minimum of 16°C) except where significant physical exertion is required or where hot processes take place (in which case the minimum temperature should be 13°C) - there is no legal upper temperature limit but control measures should be implemented to mitigate against the effects of higher temperature extremes;
• ensure the provision of suitable and sufficient lighting (including emergency lighting);
• ensure that enclosed work environments are ventilated by a sufficient source of fresh air, including the provision of extraction systems to remove contaminants from the air;
• ensure noise levels are controlled so as not to cause harm;
• ensure the provision of safe furniture, workstations, fixtures and fittings including sufficient safe storage;
• ensure housekeeping is kept to a satisfactory standard with regard to cleanliness, hygiene and tidiness;
• ensure the provision and upkeep of sufficient welfare facilities including adequately resourced toilets (with sanitary conveniences), and food/drink preparation areas with a supply of clean fresh drinking water;
• where required, the provision of specialist welfare facilities (i.e. scrub down areas, showers, etc.), and areas for individuals to change in/out of work clothes including accommodation of regular/work clothes when not being worn;
• the provision of rest facilities away from workstations and areas, with specific provision made for pregnant women and/or nursing mothers;
• ensure safe access/egress and traffic routes for pedestrians.
The Department Safety Officer shall:
• monitor workplace environment and welfare facilities to ensure the upkeep of the above arrangements, and report any deficiencies to the Head of Department.
All Department Staff shall:
• report any issues or concerns with regard to the workplace environment or welfare facilities to the DSO;
• not abuse welfare facilities, and only use them in manner for which they are intended;

4.3 Fire Safety

In accordance with the Regulatory Reform (Fire Safety) Order, the University has a duty of care to ensure the safety of individuals from fire. In addition to staff and students, this may include visitors, contractors, the general public and the community at large. Fire can result in catastrophic loss of life, injury, damage/loss to property or inventory, and disruption to academic activities. An increased risk exists within the Department due to the nature of work taking place and the flammable substances stored on site. University fire safety arrangements are the joint responsibility of the Fire Safety Team and Estates & Facilities Management in conjunction with the Head of Department. Where areas of the Department are shared with another faculty/department, a collaborative approach shall be taken between the respective Heads to mitigate against the risk of fire. Ultimately, it is the collective responsibility of everybody to prevent fires from occurring.
Specifically within the context of the legislation stated above -

The Head of Department shall:
- ensure compliance with all fire safety arrangements as directed by the Fire Safety Team and Estates & Facilities Management;
- ensure fire safety is a consideration when risk assessments are undertaken by the Department, and that all control measures are implemented and adhered to;
- ensure the preparation of a Personal Emergency Egress Plan (PEEP) for staff or students with visual, auditory, cognitive or mobility problems – for visitors, a General Emergency Egress Plan (GEEP) shall be prepared;
- provide sufficient Fire Marshals in each area/floor and to provide the necessary time for them to attend training;
- identify activities that present a higher risk of fire, and provide the necessary time for staff to attend training in the use of fire fighting equipment;
- inform the Fire Safety Officer if there is a notable increase in staff/student occupation of the Building, where there is a significant change in building use, or a specific process that results in an increased risk from fire;

The Department Safety Officer shall:
- support the Head of Department to carry out fire safety related duties;
- monitor risk assessments to ensure they take account of fire hazards;
- report any fire safety concerns to the Head of Department and University Fire Safety Team;

Managers/Supervisors/Academics shall:
- ensure that all staff under their control complete the University’s mandatory fire safety training within their first week of starting at the University, and that refresher training is undertaken annually;
- ensure that all staff/students under their control are provided with the necessary information and instruction with regard to evacuation routes, exit doors and assembly points;
- identify and arrange completion of a PEEP for those members of staff or students who have visual, auditory, cognitive or mobility impairment (including those with temporary circumstances, for example, someone with a broken leg using crutches) and communicate the findings to relevant staff.

Fire Marshals:
- There will be a minimum two nominated fire marshals for each level in all relevant buildings and the DSO on behalf of the Head of Department will nominate Fire Marshals who will undertake the online training which can be found at training and refresher training;
- work in accordance with the training provided and University guidance.

Current Departmental Fire Marshals are:
- Steph O’Neill, Harm Askes, Andrew Fairburn (Kroto), Kypros Pilakoutas, Stevie Bratt, David Callaghan, & Paul Osborne

Door Guards:
- members of the Department will be nominated to stand by the fire doors on Broad Lane and the Structures Laboratory to prevent people entering the building before the fire alarm has been cancelled. Door guards may also be Fire Marshals.

All Department Staff shall:
- complete fire safety training within their first week of employment, and refresher training annually as directed by their supervisor/line manager;
- take all reasonable care to prevent the risk or spread of fire;
- make evacuation a priority and not fight fires unless trained to do so;
• keep all fire exit routes and final exit doors unobstructed (both front and rear), and not prop/wedge fire doors open;
• not move or tamper with anything provided for fire safety (i.e. smoke/heat detectors, fire extinguishers, etc.);
• not smoke inside any University building;
• familiarise themselves with evacuation procedures, and comply with all University fire safety arrangements;
• dial 4444 in an emergency.

Comprehensive details with regard to responsibilities and arrangements for fire safety are to be found within the University’s dedicated policy

4.4 Fire Safety Arrangements
On hearing the continuous alarm all occupants must:
• Leave the building immediately by the nearest signed exit route,
  o The assembly point for the Mappin Building is St George's Churchyard NOT ON MAPPIN STREET.
  o The assembly point for the Kroto Building is outside the Kroto gate house.
• Do not re-enter the building until the all clear has been given.
• Anyone discovering a fire must raise the alarm by either one of:
  o breaking a red fire alarm call point or
  o by shouting “FIRE”
  o if safe to do so, calling for the Fire Service by telephoning 4444 on a University internal telephone and reporting:
    ▪ the exact location of the fire
    ▪ whether there are any casualties
    ▪ whether there are any special hazards

Only if it is safe to do so should the fire be tackled with an appropriate fire extinguisher. Human safety comes first.

Note:
The Departmental Emergency Alarm System is tested in Mappin Building every Friday at approximately 09:00hrs and in Kroto every Wednesday at approximately 11:00hrs, when the alarm will sound for a maximum of 30 seconds. Should the alarm sound for longer it must be treated as signifying a real emergency.

Anyone failing to evacuate the building when the fire alarm sounds (other than for pre-warned tests lasting no longer than 30 seconds) may be subject to disciplinary action.

4.5 Incident Reporting
All incidents, including accidents, near misses or dangerous occurrences taking place within the Department, or incidents to staff/students whilst undertaking University activities elsewhere, must be reported as soon as possible after they occur via the University’s online portal Accident Incident and near miss Reporting (AIR) on your MUSE account. In accordance with the Reporting of Injuries, Diseases and Dangerous Occurrence Regulations
(RIDDOR), some incidents may also require reporting to the enforcement authority (the Health & Safety Executive) – this shall be undertaken by the University Head of Health Safety. Accordingly, the Head of Department shall:

- following an incident, ensure a review of relevant risk assessments and safe working procedures is undertaken, and the implementation of any additional control measures to prevent reoccurrence.

The Department Safety Officer shall:

- following an incident, secure the area and acquire any evidence to support the investigation (i.e. notes, photographs, etc.), and any eye witness testimony;
- Any absence due to a work-related incident should be reported directly to the University Health and Safety Department
- conduct local accident investigations and report findings to the Head of Department and the University Health & Safety Department.

The prevention of accidents in the University is everyone’s responsibility, and each member of staff should ensure that they are familiar with any special emergency instructions relevant to the area(s) in which they work.

Details with regard to responsibilities and arrangements for accident reporting are to be found within the University’s dedicated policy.

### 4.6 Lone Working & Out of Hours Working Policy

The nature of the work undertaken by the Department may result in the lone working of staff, or staff working outside normal University hours, the scope of which includes (but is not limited to) those working remotely in a building or outside, working from home, travelling to meetings, conferences, or making home visits. In accordance with the Management of Health & Safety at Work Regulations the University has a duty of care to ensure the safety of staff working on this basis.

**Note:**

*Only those persons who have successfully completed “Fire training” in the past 12 months fire-safety AND an online “Out of Hours Hazard out-of-hours and Risk Awareness Training course” general-health-safety in the past 3 years will be authorised to enter the building outside normal working hours.*

The Departmental Safety Officer maintains a list of all Departmental staff and students who have been granted permission to “work out-of-hours”. This list is held in the Porters’ Lodge at the main entrance. For Kroto, a copy is held in the gate house. Anyone whose Fire Training or Out-of-Hours Awareness Training has lapsed will be removed from this list until renewed by on-line training.

- “Out-of-Hours” is designated as 18:00 – 07:30 hrs Monday to Friday, and any time at weekends.
- All “out-of-hours authorised” staff and students entering or remaining in the building after 18.00 hrs must sign in/out, and swipe their Ucards at the Porters’ Lodge.
- Only non–risk activities i.e. computing or making non-risk observations are allowed in laboratories between 16.30 hrs and 08.30 hrs Monday to Friday, and at anytime during a weekend. **WHENEVER experimental or practical work is undertaken a suitable Risk Assessment must have been carried out and all appropriate safety measures put in place, including the provision of First Aid facilities.** It is anticipated that maximum use will be made of normal technician working hours (08.30 hrs–16.30 hrs) so that activities in the laboratories after 16.30 hrs will be minimal.
• Technicians should remind/inform students from 16:00hrs that, where possible, equipment will be switched off (or alternatively made safe if it is not possible to switch off) in laboratories at 16:30hrs and that only non-risk activities may be undertaken after this time.

• Technicians should ensure that all laboratories are left safe and secure at 16:30hrs. Students performing non-risk activities after this time must lock and secure laboratories when leaving.

For details on procedures for obtaining and updating OOH qualifications please visit out-of-hours.

4.6.1 Work in Remote Laboratories and Areas

In addition to the above, the following procedures apply for those students working in areas/laboratories remote from the main Department i.e. Sediment Transport Lab, Geotechnics Teaching Laboratory:-

• A signing in/out sheet will be located at the entrance to each area and must be used at all times.

• The signing in/out sheet will be inspected by the Technician responsible for the area prior to leaving in the evening and safety of occupants checked.

• Laboratory classes should be planned to finish by 17.00 hrs. Where a class runs over, there must be a member of staff present until the last student leaves the laboratory. This member of staff then has the responsibility for ensuring that all equipment is switched off or left in a safe running condition and that all doors are locked.

4.7 Good Laboratory Practice (GLP)

GLP should be observed in laboratories at all times as a minimum standard.

• No eating or drinking in any laboratory.

• Wear a lab coat (or equivalent) and appropriate safety wear (see COSHH information).

• Wear area appropriate personal protective equipment.

• Samples, reagents, bottles and containers should be CLEARLY labelled with:
  o Chemical name, concentration and solvent.
  o Contact name.
  o Preparation date.
  o Estimated dispose by date.
  o Hazard Information.

• Store chemicals appropriately.

• All Winchesters containing chemicals (e.g. acids, solvents etc) must be transported in a Winchester carrier.

• Check fume cupboard is working before use.

• Acids should always be added to water (never the reverse) when mixing.

• Clean up all spillages immediately (see your COSHH information).

• Keep the laboratory clean, tidy and safe for others (e.g. cleaners) to enter.

• All waste must be disposed of according to the waste assessment.
• Acids and alkalis should be neutralised (to pH 6-8) before being flushed down drains with copious amounts of water (see COSHH/waste assessment).
• Waste solvents (e.g. alcohol etc) must be disposed of in particular drums (see COSHH/waste assessment).
• Wash hands (and gloves) after use and before eating.
• If in any doubt at all, ASK. Consult your academic supervisor and/or appropriate member of technical staff before proceeding.

4.8 Display Screen Equipment Assessments
The Display Screen Equipment (DSE) Regulations, 1992, apply to a display screen ‘user’ that is members of staff who:
• normally uses DSE for continuous or near-continuous spells of an hour or more at a time;
and
• uses DSE in this way more or less daily;
and
• have to transfer information quickly to or from the DSE; and also need to apply high levels of attention and concentration; or is highly dependent on DSE or has little choice about using it; or needs special training or skills to use the DSE.

Where this criterion applies employers are required to assess VDU equipment and workstations to reduce any health risks; to plan VDU work so that there are breaks of activity; and to provide information and training for users. In addition, users are entitled to eyesight tests and to special spectacles should they prove necessary. Specific procedures relating to the safe use of DSE are:
• Within one month of joining the Department all new staff will be made aware of the DSE policy in this document and, if necessary, will undertake the online training programme at: display-screen-equipment
• Staff experiencing a problem using DSE equipment must inform the DSE Assessor or DSO and/or line manager as soon as possible to enable action to be taken.
• After completion of the online DSE training package, users requiring free eyesight tests must contact their DSE Assessor, DSO or line manager, who will notify the University Health and Safety Department so that an approval for a free eyesight test may be issued.

All Department Staff / DSE Users shall:
• comply with any recommendations made by the DSE Assessor;
• be encouraged to report any health problems (either pre-existing or diagnosed) related to their use of DSE to their line manager and DSE Assessor;
• inform the DSE Assessor of any change of circumstance relating to your DSE assessment.

As a general rule, good workstation ergonomics should look something like this:
Further information with regard to arrangements and responsibilities for Display Screen Equipment are to be found within the University's comprehensive DSE Policy at: DSE Policy & Procedures

4.9 Electrical Equipment and Portable Appliance Testing (PAT)

The Electricity at Work Regulations, 1989 set out essential safety principles for working with electricity. The principal requirement is that all systems and equipment be constructed and maintained, so far as is reasonably practical, to prevent danger. Regular inspection and testing of systems and equipment is an essential provision of the Regulations. The scope of portable appliance inspection and testing includes both new and old equipment that is owned by the University, constructed within the Department, brought in from home by staff, and hired or borrowed externally. A visual check may suffice in some instances, but a more formal inspection and test may be required to check the plug, fuse, cable/flex, continuity to earth and insulation resistance

- **ANY** item of electrical equipment, Departmental or personal brought into the Department must be PAT tested OR visually inspected prior to PAT testing.
- All electrical equipment in the Department is tested annually by the University PAT Testing Service and records updated on the University Asset Data Base.
- Any item requiring visual inspection should be taken to the Electronics workshop, D101, or presented to a member of the technical staff who has been trained in Visual Inspection. The item will be given a visual inspection sticker and returned to the owner.

Current Visual Inspection Assessors are:

- Dr Paul Bentley
- Alan Grundy
- Mohammed Khan
- David Callaghan
- Mark Foster.

- Any electrical item being scrapped must be removed from the Asset Data Base [Shared Equipment Db](SharedEquipment_Db) and disposed of through the University Waste Electrical and Electronic Equipment (WEEE) system at the following the link. [WEEEform](WEEEform)
All Department Staff shall:

- undertake periodic visual checks of their electrical equipment, and immediately report any of the following to the DSO or Visual Inspection Assessors

![Cracked/broken, scorched or melted wall socket, extension block or plug. Exposed coloured insulation from the base of the plug, bent or wobbly pins, tears/splits in cable flex exposing coloured insulation or copper wire, integrity of on/off switch on the appliance or point of entry of the power cord into the appliance.](image)

- not overload extension blocks by exceeding the maximum load (13 amps) through use of additional cubes, daisy chaining (connecting one extension block to another) or plugging in high amperage items (i.e. electric heaters)

![5 + 5 + 3 = 13](image)

- not attempt to use any electrical item that has been stickered 'Faulty', or attempt to repair an item themselves;
- not use the item where the next test date has elapsed – details of colour codes used by the University for PAT testing can be found at: [PAT Label Colours & Years](link)
- not use items of personal electrical equipment that have not been subject to the University’s inspection and testing regime.

Comprehensive arrangements with regard to inspection and testing of electrical equipment are to be found in the University's policy: [Electrical Testing Policy](link)

4.10 General Risk Assessment

In accordance with the *Management of Health & Safety at Work Regulations*, the University has a duty to ensure that all significant and foreseeable hazards in the workplace have been risk assessed, and reduced so far as is reasonably practicable (except where the duty is absolute).

By definition, a hazard is anything that has the potential to cause harm - the risk is the likelihood of it happening.

No experimental or practical work is allowed unless a suitable Risk Assessment has been carried out and all appropriate safety measures have been put in place, including the provision of First Aid facilities. [RACIE](link)

The Management of Health and Safety at Work Regulations, 1992 require employers to assess the risk to the health and safety of their employees (and anyone else who may be affected by their activities) and make arrangements for putting into practice any necessary preventative and protective measures.
Risk assessments of work activities within the Department will be carried out by the person directing the work or in control of the area. Where the risk assessment is performed by another individual it will be reviewed and signed off as approved by the responsible person, and records will be accessible by all those affected by the work. Before carrying out a risk assessment you should first complete the online training course “General Risk Assessment Techniques” found at the following link: Health & Safety Training

You are legally required to assess the risks in your workplace so that you can put in place a plan to control the risks.

4.10.1 What is risk assessment?

A risk assessment is simply a careful examination of what, in your work, could cause harm to people, so that you can weigh up whether you have taken enough precautions or should do more to prevent harm. Staff, students, contractors and visitors to the University have a right to be protected from harm caused by a failure to take reasonable control measures.

Hazard: the potential to cause harm
RISK: the likelihood of the hazard to cause harm in the actual circumstances in which it exists

For example: “the flow of electricity through portable electrical equipment is a hazard but of low risk when correctly insulated, but, becomes a high risk when bare wires are exposed. Similarly, cyanide in a sealed bottle in a locked fireproof cupboard is a hazard but a low risk, and does not constitute a high risk until it is on the bench without a lid. In both examples the hazard remains the same, but the assessment of risk changes, dependent on the circumstances in which the hazard exists”.

4.10.2 Carrying out a Risk Assessment

Five Steps to Risk Assessment:

Step 1: Give a brief description of the work/equipment/research/ to be undertaken.

This should be a brief summary of the activity to be undertaken.

Step 2: Decide who might be harmed and identify where and when the activity will take place.

For each hazard you need to be clear about who might be harmed; it will help you identify the best way of managing the risk. That doesn’t mean listing everyone by name, but rather identifying groups of people (e.g. staff, postgraduates, students). Remember that if the activity is to be done out of hours you must have completed your on-line out of hours course.

Remember:

- some workers have particular requirements, e.g. new and young workers, expectant mothers and people with disabilities.
- cleaners, visitors, contractors, maintenance workers etc, who may not be in the workplace all the time;
- members of the public, if they could be hurt by your activities;
- if you share your workplace, you will need to think about how your work affects others present
Step 3: Identify the hazards

From the drop down boxes identify the possible hazards associated with the activity. Identify hazards by asking ‘How?’ or ‘What if?’ questions about the work conducted in your area.

Step 4: Evaluate the risks and decide on control measures

This is a two stage process:

Firstly:

In detail describe what could go wrong, what injuries could occur. In each case, identify how people might be harmed, i.e. what type of injury or ill health might occur. For example, ‘technicians may suffer back injury from repeated lifting of boxes’.

Having spotted the hazards, you then have to decide what to do about them. **The law requires you to do everything ‘reasonably practicable’ to protect people from harm.**

First, look at what you’re already doing; think about what controls you have in place and how the work is organised. Then compare this with good practice and see if there’s more you should be doing to bring yourself up to standard. In asking yourself this, consider:

- Can I get rid of the hazard(s) altogether?
- If not, how can I control the risks so that harm is unlikely?

When controlling risks, apply the principles below, if possible in the following order:

- try a less risky option (e.g. switch to using a less hazardous chemical);
- prevent access to the hazard (e.g. by guarding);
- organise work to reduce exposure to the hazard (e.g. put barriers between pedestrians and traffic);
- issue personal protective equipment (e.g. clothing, footwear, goggles etc); and
- provide welfare facilities (e.g. first aid and washing facilities for removal of contamination).

RACIE uses a Risk Matrix to assign a final Risk level for the hazard identified:

<table>
<thead>
<tr>
<th>Chance</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Unlikely</td>
<td>1</td>
</tr>
<tr>
<td>Unlikely</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chance</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Unlikely</td>
<td>Good control measures are in place. Controls do not rely on a person using them (e.g. engineering controls). Controls are very unlikely to break down. People are very rarely in this area or very rarely engage in this activity.</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Reasonable control measures are in place but they do rely on a person using them (some room for human error). Controls unlikely to breakdown. People are not often in this area / do not often engage</td>
</tr>
<tr>
<td>Likelihood</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>In this activity / this situation is unlikely</td>
<td>Inadequate controls are in place, or likely to breakdown if not maintained. Controls rely on personal compliance. People are sometimes in this area or sometimes engage in this activity / this situation sometimes arises</td>
</tr>
<tr>
<td>Likely</td>
<td>Poor or no controls in place. Heavy reliance on personal compliance (lots of room for human error). People are often in this area / engage in this activity on a regular basis / this situation often arises.</td>
</tr>
<tr>
<td>Certain</td>
<td>It will happen no matter what you precautions you put in place</td>
</tr>
</tbody>
</table>

**Severity**

- **Score**
- **Insignificant**
  - No injuries would result
  - Score: 1
- **Minor**
  - Superficial injuries - cuts, bruises, mild skin irritation, mild aches and pains requiring first aid only. Minor property damage.
  - Score: 2
- **Moderate**
  - More serious injuries or ill-health, requiring time off work or study or a hospital visit, e.g. burns, sprains, strains and short-term musculoskeletal disorders, cuts requiring stitches, back injuries, fractures to fingers or toes. Or serious property damage. (Resulting in less than three days off work)
  - Score: 3
- **Major**
  - Broken limbs, amputations, long-term health problems resulting from work, or acute illness requiring medical treatment, loss of consciousness, serious electric shock, loss of sight. Major property damage. (Resulting in more than three days off work)
  - Score: 4
- **Catastrophic/Fatal**
  - Injury or ill-health which leads to death either at the time or soon after the incident, or eventually, as in the case of certain occupational diseases, such as asbestos-related cancers.
  - Score: 5

**REMEMBER THESE LEVELS ARE ASSIGNED AFTER PRECAUTIONS HAVE BEEN PUT IN PLACE**

**Step 5: Complete**

Once you press the complete button your form will be first emailed to your supervisor who will then check and either approve or reject the form with reasons. This will keep happening until your supervisor is happy with the form.

When approved:

The form will then be emailed to your Departmental Safety Committee, they will check the form and either approve or reject with reasons. If the form is rejected it will once again have to be approved first by the supervisor.
Review your risk assessment and update if necessary

Few workplaces stay the same. Sooner or later, you will bring in new equipment, substances and procedures that could lead to new hazards. It makes sense therefore, to review what you are doing on an ongoing basis.

Look at your risk assessment and think about whether there have been any changes? Are there improvements you still need to make? Have your workers spotted a problem? Have you learnt anything from accidents or near misses? Make sure your risk assessment stays up to date.

4.11 Control Of Substances Hazardous to Health (COSHH) Assessments

In accordance with the Control of Substances Hazardous to Health Regulations, The University has a duty of care to protect the safety and health of any person who uses, or could potentially be exposed to hazardous substances.

Within the Department of Civil and Structural Engineering, this may include such activities as laboratory work, research, learning and teaching, cleaning and maintenance – the nature of the hazards are currently classified by the following symbols:

- Explosive
- Flammable
- Oxidising
- Corrosive
- Acute Toxicity
- Hazardous to the Environment
- Health Hazard, or Hazardous to the Ozone Layer
- Serious Health Hazard
- Gas Under Pressure

Staff and Students working in technical/laboratory areas using older hazardous substances might encounter previous versions of hazard classification thus:

- Oxidising
- Corrosive
- Highly flammable
- Extremely flammable
- Very toxic
- Dangerous to the environment
- Toxic
- Irritant
- Harmful
- Explosive

Hazardous substances within scope may include (but is not limited to) liquids, solids, gases, fumes, dusts/powders/other airborne particles, mists and vapours. In certain cases, other specific pieces of legislation may apply (i.e. radiation, lead, etc.), the arrangements for which are covered separately within this Policy.

Exposure to hazardous substances can result in harm through contact with skin/eyes, inhalation, and ingestion or via dermal puncture.

Further information with regard to arrangements and responsibilities for hazardous substances are to be found within the University's full COSHH Policy at: Sheffield University CoSHH policy & Procedures
The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) impose a duty to control substances that can cause fire and explosion in the workplace. Although DSEAR is a separate piece of legislation to COSHH, the responsibilities and arrangements shall remain the same as that for COSHH, with additional input from Estates & Facilities Management (i.e. classification of hazardous zones), and the University Fire Safety Officer (i.e. emergency contingency plans).

The University has prepared specific hazard guidance for DSEAR thus:

Flammable liquids - DSEAR safe handling of flammable liquids
Stocks of flammable liquids must be located in purpose designed external stores. Where flammable liquids are stored within buildings quantities must be limited to the lowest practicable level. The maximum permitted total volume in any laboratory is **50 litres**. Laboratories must not be used for the bulk storage of flammable reagents. Suitable, purpose designed storage cabinets must be used when flammable materials are stored within laboratories/buildings. Details of high hazard materials within buildings must be provided on the door of the room where they are situated and in the Emergency Information Box.

Flammable Gases - DSEAR Safe Handling of flammable gases
Safe Operating Procedures - SOP for storage transport and use of flammable solvents

### 4.11.1 Deciding if a COSHH Assessment is necessary

An assessment is required only if the substances involved in the procedure are substances hazardous to health. The COSHH Regulations apply to substances which are classified as very toxic, toxic, harmful, corrosive or irritant, or which have been assigned an Occupational Exposure Limit (OEL).

**Note:** There is a general Occupational Exposure Limit of 10mg/m³ (8 hour Time Weighted Average [TWA]) for total inhalable dust and of 5mg/m³ (8 hour TWA) for respirable dust. Thus, any substance which is in the form of a fine powder or dust should be considered a substance hazardous to health, and the risk assessed.

### 4.11.2 Completing the Form:

Go to the following web address

[https://engcoshh.group.shef.ac.uk/](https://engcoshh.group.shef.ac.uk/)

This should take you to the following login page:

![Login page](image)

Type in your usual university Username and Password then login.
If you cannot login please go to the Departmental web page http://www.sheffield.ac.uk/civil/current and fill out the CoSHH request form and press submit. The form goes to the Departmental Safety Officer who will enter your details onto the CoSHH system.

Type in your usual university Username and Password then login.

You must click the "I accept the responsibility to ensure that the information I give here is both complete and correct to the best of my understanding" to gain access to the CoSHH site.

This will take you to the CoSHH home page.

From here you can:

- Update your personal information. Phone and room number only, if you need any other changes please contact Andrew Fairburn a.fairburn@shef.ac.uk
- Contact the administrator. Use this to report any bugs in the system or ask for advice.
- Search for chemicals. If you require any information on any chemical already in the database.
• Search CoSHH assessments.

You can search by assessment number, chemical or CAS number or if you know who was the author of a CoSHH form by user surname.
It is then possible to select an existing CoSHH form from the list of forms displayed.

Click on [Use this assessment] and the form will be available to be edited and duplicated.
You must review all sections of the form before it can be submitted.

• New CoSHH assessment. Use this for entering a new CoSHH form onto the system.
• Logout

The admin pages are not available.

[New CoSHH Assessment]
Each section must be filled in before the form is eligible for submission.

1. New COSHH assessment
   a. Add the title of the procedure.
   b. Select the type of procedure that best describes your process from one of the following: synthesis, analysis or processing.
   c. If your process is commercially sensitive check "conceal chemical names from other database users" box. This will hide the chemicals used from other COSHH programme users.
   d. Summary of procedure. Please put as much information about your method into this box as possible. Note any special precautions to be taken.
   e. Press [Save]

2. Substances
   a. Type in the chemical name or CAS number (Chemical Abstract Service registration number) press [search] button. Your chemical or a list of chemicals should be listed in the search results. If your query did not return any results you can add your chemical to the data base. Please fill in the data as accurately as possible using chemical data sheets or material data sheet information.
   b. Enter the reaction quantity. This is the amount of substance you use each time you run your procedure. For example if in your experiment you are using 1ml of a 10% Sodium Chloride solution (10grams per 100ml) then you would enter 0.1grams.
   c. If you have to order the chemical please enter the amount of chemical that you will order.
   d. Add the chemical to your assessment.
   e. If there is another chemical repeat the process until all chemicals have been added.
   f. Click [No more chemicals to add]

3. Operational hazards
   a. Select from the list and or check the other box and add any other procedures not included in the list in the box provided.
   b. Click [save selected hazards for this assessment]
4. Risk mitigation
   a. Select the most appropriate type of fume hood for your procedure.
   b. Click [save the selected engineering control].
5. Review PPE (personal protective equipment)
   a. Select from the list and or check the other box and add any other protective clothing required not included in the list in the box provided.
   b. Click [save the selected protective clothing]
6. Please select the most appropriate type of fire extinguisher.
   a. Select from the list the most appropriate fire extinguisher.
   b. Click [save the selected fire extinguisher]
7. Select most appropriate spillage procedures.
   a. Select from the list.
   b. Click [save the selected spillage procedures for this assessment]
8. Select appropriate waste category.
   a. Select from the list and or check the other (user defined) waste disposal route box and add any other procedures not included in the list in the box provided.
   b. Click [Save selected waste disposal methods for this assessment]
9. Select the first aid treatments required in case of an accident
   a. Select from the list all the relevant first aid options.
   b. Click [Save the selected first aid options]
10. Select a supervisor or proxy to authorise this form.
11. Click [click here] to submit the form or [Reset] if it all goes horribly wrong.

You can logout at any time your unfinished form will be saved until submitted or reset.

If the [click here] to submit your form button is not visible you have not completed one of the sections.
If you need any assistance in completing a COSHH assessment, or need any help or advice in interpreting Safety Data, please contact any of members of Staff listed below.

Andrew Fairburn  a.fairburn@sheffield.ac.uk  25770
Paul Osborne  p.l.osborne@sheffield.ac.uk  25723
Paul Blackbourn  p.blackbourn@sheffield.ac.uk  25062 / 35066
Mark Foster  m.a.foster@sheffield.ac.uk  25067 / 35710
Kieran Nash  k.nash@sheffield.ac.uk  35066
Don Jenkins  d.jenkins@sheffield.ac.uk  35066
David Callaghan  d.r.callaghan@sheffield.ac.uk  35710 / 35070
Dr Paul Bentley  Paul.Bentley@sheffield.ac.uk  25708
4.12 Personal Protective Equipment (PPE)

4.12.1 Provision:

The provision of PPE is subject to the Personal Protective Equipment at Work Regulations, and the following arrangements shall apply thus:

- PPE is not a ‘one-size-fits-all’ solution – as such, an appropriate assessment should be undertaken to determine suitability for both the wearer and the task for which it is needed;
- due consideration shall be given for compatibility where more than one item is required to be worn simultaneously, and where any additional hazards are created through use of PPE (i.e. reduced vision, handling capabilities, etc.);
- only those items of PPE with the ‘CE’ mark should be selected for purchase and use;
- all PPE shall be issued free of charge;
- members of staff should not use or provide their own PPE in the event that it does not provide adequate protection;
- the provision of information, instruction and training in the safe use of PPE, its limitations, and methods for its removal and cleaning;
- the provision of appropriate storage facilities for PPE when not in use;
- Managers/Supervisors/Lecturers/Technicians must enforce the use of PPE at all times for those individuals required to wear it;
- without exception, all members of staff must use PPE at all times when required to do so, in accordance with any instruction and training provided – no work is to be undertaken where PPE has been lost, forgotten, or is defective;
- members of staff shall take good care of their PPE, only use it for the purpose for which it is intended, and not adapt or tamper with it;
- members of staff shall report any loss or defect with their PPE to their supervisor/line manager in order for a replacement to be authorised.

4.12.2 Undergraduate Students

The Department has a limited supply of:

- Safety Wellingtons in various sizes with mid sole protection
- Hi-Visibility Vests
- Safety Helmets
- Gloves, goggles and safety glasses

These are intended for site visits etc where PPE is required.

Please contact Kieran Nash, ext 35066, to check availability and book requirements.

4.12.3 Postgraduate Students and Research Staff

It is the responsibility of Academic Supervisors and Principal Investigators to:

- Provide suitable PPE to comply with good work practice or as deemed by an appropriate risk assessment. (Essential PPE should be provided without charge to the user.)
- Provide training in the correct use and care, unless the application is obvious.
4.12.4 Support Staff

A Departmental Safety Budget provides for essential PPE for all support staff including where necessary:

- Laboratory coats
- Overalls
- Eye protection, including prescription lenses
- Safety footwear
- Provision of cartridge masks

4.12.5 Use Of PPE

- Where indicated PPE must be worn on entry to restricted areas e.g. Eye Protection in the Departmental Mechanical workshop.
- If PPE is issued to an individual for a specific task it must be used.
- PPE must be maintained in good order.
- PPE must be removed before entering the Departmental Staff Room and Researchers’ Reading Rooms.

4.13 Respiratory Protective Equipment (RPE)

This policy document provides a distilled summary of the HSE laws and regulations surrounding RPE and lays out the procedures that the Department of Civil & Structural Engineering has implemented to meet its legal obligations and to protect the welfare of its students, visitors and staff.

Workplace Exposure Limits Guidance - WEL’s EH40


4.13.1 Summary of Health and Safety Executive Laws:

- Respiratory Protective Equipment (RPE) and Personal Protective Equipment is always a last resort - not creating the hazard or extracting it at source are always the first mitigation steps.
- All people involved in the selection, use, storage and maintenance (if required) of RPE require training and must keep records of any maintenance completed.
- Users of tight-fitting facepieces, (reusable or disposable masks), must pass a 'Face Fit Test' for the particular RPE device they plan to use – Staff or students using two types need to be fit tested with both types.

4.13.2 Frequently asked questions:

- I want to do a quick job and make a bit of dust. Can I just put a mask on?
  
  No - There must be a Risk Assessment for the process. That Risk Assessment will either indicate that there is a short term exposure to a small volume of non-toxic hazard for which no mask is required or it will be used to determine the required level of protection and the correct mask / filter type to protect you.

- I’m writing a Risk / COSHH Assessment and I’m not sure how best to control a respiratory hazard. Who can I ask for some guidance?
You’re in luck, the department has people who can help: in the first instance contact our Departmental Safety Officer, Andrew Fairburn, and he will guide you to the best person to help with your specific problem.

- **I've done a Risk Assessment and have purchased a mask already. Can I get on with the job?**

  No, you’ll be breaking the law. All users of face masks (half and full masks) require a ‘Face Fit Test’ to be conducted and passed to make sure the mask seals onto your face. We might need to try two or three types of mask and ask you to shave to help you to pass the ‘Face Fit Test’

- **How does the Department help me to be safe and comply with the health and safety laws?**

  The Department, through its Departmental Safety Officer, and others who have been assigned responsibility, offer guidance on the laws, can organise training, conduct ‘Face Fit Tests’ and can steer you through the procedures that the department has set up to enable us to comply with those laws and maintain safety.

  Specifically, the DSO (and delegated others) are available for consultation and should be contacted in all instances where RPE is being considered. If for no other reason than to arrange a ‘Face Fit Test’ in good time it would make sense for you to initiate contact as soon as RPE is considered. Using RPE without having passed a ‘Face Fit Test’ is breaking the law and you might be endangering yourself.

- **When I contact the Departmental Safety Officer, what sort of questions will they ask me?**

  Questions will include:-
  - Have you conducted a COSHH and/or Risk Assessment and does it indicate RPE?
  - Have you considered a different process or other control measures before RPE?
  - Does the Safety Data Sheet provide advice on the required Assigned Protection Factor?

- **Is there a Flow Chart I can follow to help select the correct mask?**

  Yes - it can be found on page 12 of this HSE document and is shown below;

  HSG53  Respiratory protective equipment at work

4.13.3 CSE Policy: How we handle RPE enquiries

  All enquiries about RPE should be addressed to the DSO in the first instance.
  (The DSO may then delegate the enquiry to somebody with the appropriate skills.)

  - At this stage the DSO will ask a few questions (has a Risk Assessment been done etc) and select a course of action based on the facts presented. Once the initial
evaluation has been conducted by the DSO, the task of completing the course of action may be passed back to the enquirer or may be delegated to another responsible person. It is likely that the DSO will advise the enquirer of the best course of action and of the best (appropriately skilled) person to offer the advice and help they need to comply with the regulations.

4.14 First Aid Provision

In accordance with the Health & Safety (First Aid) at Work Regulations, the University has a duty of care to ensure the provision of first aid arrangements in the event of employees being injured or falling ill at work. The extent of the arrangements shall be commensurate to the hazards that prevail within the Department.

Departmental First Aiders are:
- Dr Paul Bentley 25708 Mappin St Room D101
- Dr Gabriella Kakonyi 25734 Kroto Room G17
- Alan Grundy 25072 Mappin St Room D101
- Elisabeth Bowman 25747 Mappin St Room C109d
- Robin Markwell 27574 Mappin St Room C113a

Department First Aiders shall:
- respond promptly to calls for assistance;
- carry out their duties according to the training received;
- put their own safety first when dealing with a situation;
- not attempt anything beyond their own personal capacity or training;
- summon emergency assistance if required;
- prepare a post-incident first aid report via Comprehensive details with regard to responsibilities and arrangements for first aid are to be found within the University’s dedicated policy at: First Aid Policy & Procedures

4.15 Food and Drink

It is forbidden to eat or drink in laboratory areas. A Departmental Staff and Researchers Room (D119) is available for this purpose. In Kroto locations where food and drink can be prepared and consumed are kitchenette G09 and any of the breakout areas. Please note that drinking water is available from specific water taps in this room and toilet areas labelled “Drinking Water”.

4.16 Lasers

Anyone needing to use a laser should first contact the Laser Safety Officer (Paul Bentley) or the Departmental Safety Officer (Andrew Fairburn). You will need to undertake:-
- Lasers - Module 1: Standards and Classification
- Lasers - Module 2: Biological effects and laser safety eyewear
- Lasers - Module 3: Control of Laser Hazards
- Laser Safety - Take the Test

The modules can be completed online or in person at a lecture. The test has to be done and passed online. The online training can be found at LASER Training.

If you are an undergraduate you will not be able to register as a laser user, you can however use lasers on a project if the following conditions are met:
1. Complete laser safety training [LASER Safety for UG students](#).
2. Can demonstrate to the laser safety officer [Paul Bentley](mailto:paul.bentley@shef.ac.uk) that you understand the hazards and actions to minimise the risks involved with laser usage.
3. Are supervised at all times by a registered laser user.
4. Your project supervisor is a registered laser user.
5. Have completed a risk assessment and safe operating procedure for the laser equipment and experiment.

Undergraduates do not have access to the Health & Safety training pages, however, the link above takes you to some videos and presentations that must be watched, and the University's Laser Safety Local Rules & Laser Safety Policy must be read and understood.

Once these have been watched and read make an appointment to see Paul Bentley (paul.bentley@shef.ac.uk) and he will assess your competence.

4.17 Laundry

Laboratory coats and smocks going for laundry should be placed in the wash bin in the technicians' locker room. Wearers should, where possible, ensure that laboratory coats and smocks are not contaminated with potentially hazardous substances, if they are contact the Senior Technician in the area for advice. Clean coats can be collected from the technicians' locker room.

4.18 Oxygen Depletion and Gas Alarms

Procedure in the event of an alarm during "out of hours":

- Do not enter the room whilst the alarm is flashing.
- All staff within the room must evacuate immediately.
- Allow time for the ventilation system to remove the hazard from the room.
  - Only if there is clear evidence to show that the sensor is malfunctioning (by using alternative gas sensing equipment available from Andrew Fairburn) should the room be re-entered whilst the alarm is still flashing.

4.19 Equipment left running overnight and at weekends

- Permission to leave equipment running overnight must be obtained from the Senior Technician responsible for the area.
- Based on the completion of an appropriate risk assessment any apparatus left running overnight must include fail-safe measures if required.
- An appropriate card indicating that the equipment is to be left running should be clearly visible on or beside the equipment concerned.
- It should bear the names of person(s) and telephone numbers to be contacted in an emergency.

4.20 Manual Handling

Manual Handling Operations Regulations, 1992 apply to manual handling operations which may cause injury at work such as lifting and lowering of loads, pushing, pulling, carrying or otherwise moving loads whether by hand or other bodily force. There are three principal duties; hazardous manual operations should be avoided where reasonably practicable; operations which cannot be avoided must be subject to an ergonomic assessment as to how they should be undertaken; and the risk of injury should be reduced as far as is reasonably
practicable, for example by the use of mechanical handling aids and training in proper handling techniques. Manual handling takes many forms, but as a general rule, for low risk activities, good lifting and carrying technique looks something like this:

All staff in the Department should receive appropriate manual handling training. Basic training in safe manual handling techniques is supplied by the Health and Safety Department via online training and refresher training will take place every three years. Records will be accessible by the DSO via the Health and Safety Training system. Manual Handling On-line Training is available via the Health and Safety Training system (under General Health & Safety Training) which can be found at Manual Handling 'In person' training and assessment for staff and students who regularly perform manual handling operation involving loads over 10kg or where a risk has been identified will be provided by the Department.

Current Manual Handling Assessors are:

- Andrew Fairburn  
  a.fairburn@sheffield.ac.uk  
  25770
- Glenn Brawn  
  g.brawn@sheffield.ac.uk  
  25723
- Mark Foster  
  m.a.foster@sheffield.ac.uk  
  25067/35710
- Roy Mellor  
  r.mellor@sheffield.ac.uk  
  25951

The dates for Manual Handling Assessor/Trainer training can be found on the Health and Safety Training system which can be found at Health & Safety Training and by clicking the Courses tab, and Search for a training course.

4.21 Work Equipment

In accordance with The Provision and Use of Work Equipment Regulations (PUWER), the University has a duty of care to ensure the safety of persons using work equipment, the scope of which includes manual hand tools, those with a power source (i.e. electric, hydraulic, pneumatic, petrol/gas, etc.), and also workplace vehicles.

Use of work equipment has a number of inherent risks to the operator from moving parts, hot, sharp or live parts, which may result in injury or fatality through contact, entanglement, impact, crushing, traps, ejection, burns/scalds or electric shock. Additional regulations may apply with regard to lifting equipment (Lifting Operations and Lifting Equipment Regulations – LOLER), pressure systems (Pressure Systems Safety Regulations - PSSR), etc. Provisions with regard to noise and vibration, testing of portable electric equipment, and use of access work equipment (e.g. ladders) are detailed in sections 4.9, 4.21 and 4.22 respectively.

Specifically within the context of the Regulation stated above:

The Head of Department shall:
ensure the provision of safe work equipment that is suitable for the purpose for which it is intended, and for the environment in which it is to be used (including outdoor work);

consult with the University Health & Safety Department with regard to arrangements for specialist work equipment that is subject to LOLER or PSSR;

ensure suitable and sufficient risk assessments are completed for all work equipment, resulting in a documented safe working procedure for its safe use;

ensure work equipment is regularly inspected, tested and maintained (in-line with manufacturer's recommendations and/or any relevant Regulation) which must only be undertaken by a competent person;

ensure that all work equipment is fitted with the required safety mechanisms (e.g. emergency stops) and guards;

ensure that guards are fit for purpose, properly located, are of solid build and sufficient strength to provide protection, be maintained in good condition, not be easily bypassed/disabled/removed whilst the machinery/equipment is in operation;

ensure the provision of all information (i.e. manufacturer's operating manuals, signage, etc.), instruction and training to users of work equipment;

ensure the provision of appropriate PPE for when using the work equipment;

extend the arrangements in this policy to work equipment that is hired or borrowed externally from a third party;

ensure compliance with legislation when disposing of work equipment by means of sale or donation to a third party (other than a dealer or for scrap).

The Department Safety Officer shall:

provide input to the Head of Department on the suitability and selection of work equipment, which should not require modification in order for it to be operated safely or to be compliant with relevant standards/Regulations;

check risk assessments have been completed, control measures implemented, and safe working procedures prepared;

communicate all relevant information to staff concerning use of work equipment, and make it readily available at the point of use;

monitor the inspection, testing and maintenance regime to ensure it is undertaken in a timely manner, and ensure the upkeep of records and logs;

observe work equipment to ensure guards are used and in good order;

check staff have received the necessary training for operating work equipment, and the upkeep of training records to that effect.

Managers/Supervisors/Lecturers/Technicians shall:

ensure no staff/students are permitted to operate work equipment without the necessary information (manufacturer's operating manuals, risk assessments, safe working procedures), instruction, supervision or training;

not remove or bypass guards or any other safety mechanism/device provided, unless for the purpose of replacement or maintenance;

enforce all control measures (including the use of PPE) at all times;

only undertake inspection, testing, maintenance or repair where they have the competency and authority to do;

All Department Staff shall:

only operate work equipment where they have authority to do so;

only operate work equipment in accordance with the information, instruction and training provided;

without exception, PPE at all times where required to do so;

never remove or bypass guards or any other mechanism or device provided for safety reasons;
• make themselves familiar with emergency stop methods;
• report any issues concerning work equipment to their supervisor/line manager.

4.22 Noise and Vibration

In accordance with the Control of Noise at Work Regulations and the Control of Vibration at Work Regulations, the University has a duty of care to ensure the health of individuals who may be exposed to excessive noise or vibration. Exposure to excessive noise may result in noise induced hearing loss (NIHL), temporary or permanent acoustic trauma caused by sudden/loud noises, tinnitus, and in extreme cases total deafness. Exposure to vibration (typically through handheld power tools, vibrating surfaces, and vehicles) may result in damage to nerves and blood vessels, circulatory disorders, problems with joints or other musculoskeletal conditions.

The Head of Department shall:
• consult with the University’s Health & Safety Department on matters pertaining to noise or vibration exposure;
• ensure the undertaking of suitable and sufficient risk assessments by a competent person where decibel levels are at, or above, the thresholds laid down by the relevant Regulation;
• ensure the undertaking of suitable and sufficient risk assessments by a competent person where exposure to vibration is at, or above, the thresholds laid down by the relevant Regulation;
• ensure all control measures identified by risk assessment for exposure to noise or vibration are implemented, including the provision of PPE;
• ensure that the safety of individuals is not compromised where noise levels override other audible warning signals through their use of PPE.

The Department Safety Officer shall:
• ensure the dissemination of relevant information to all Department staff who are exposed to noise and/or vibration;
• determine Hearing Protection Zones and demarcation through use of appropriate signage;
• monitor control measures identified by risk assessment to ensure they are implemented and adhered to;
• liaise with the University Occupational Health Advisor (or approved external service provider) on issues arising out of exposure to noise or vibration.

Managers/Supervisors/Lecturers/Technicians shall:
• enforce all control measures (including the use of PPE) identified by risk assessments for staff/students under their control;

All Department staff shall:
• read all information provided in relation to the hazards posed by noise and vibration;
• adhere to control measures (including the use of PPE) at all times when required to do so, and report any defects with regard to their PPE;
• be encouraged to inform their supervisor/line manager of any pre-existing or subsequently diagnosed health conditions that may be affected by exposure to noise or vibration through their work;
• present themselves for health surveillance when required to do so.
4.23 Waste and Recycling

The Department of Civil & Structural Engineering produces a variety of waste products ranging from (but not limited to) higher risk waste such as chemical, or biological to lower risk waste arising out of redundant electrical equipment, exhausted batteries, packaging and confidential waste.

Although health and safety duties exist for waste to be disposed of in a safe manner, waste and recycling is primarily environmental legislation which is enforced by the Environment Agency and local authority Environmental Health Department (as opposed to the Health & Safety Executive)

Waste must be disposed of in a correct manner. There are several waste streams and you must put your waste into the correct stream. All laboratory workers must undertake the University's waste disposal training program, which can be found at [www.waste.shef.ac.uk](http://www.waste.shef.ac.uk).

4.23.1 General Waste

- Black sack – cleaner removed waste, all non biological or non contaminated waste; for example paper, paper towels, non hazardous chemical containers.

  **General rule of thumb**: if the item looks as though it has come from a laboratory it should not go in the general waste bins.

4.23.2 Offensive Waste

- Yellow/black stripe sack – Offensive Waste’ is defined as ‘waste that may not possess any hazardous properties and require specialist treatment or disposal, but which may cause offence to those coming into contact with it due to the presence of recognisable healthcare and laboratory waste items or bodily fluids’

  Typical examples of laboratory consumable items that should be disposed of in the 'offensive waste' bags include the following items, **providing they do not contain any hazardous materials**:

  - pipettes and pipette tips
  - centrifuge tubes
  - fraction collection tubes
  - disposable flasks
  - Petri dishes
  - micro-titre plates
  - weigh boats
uncontaminated gloves and gloves contaminated with residual chemicals
empty hazardous plastic chemical containers
First aid dressings and hygiene / sanitary waste can normally be disposed of as 'offensive waste' (unless it is known to be contaminated with an infectious agent)

**Offensive waste bags (‘tiger bags’) must not be overfilled.** Overfilled bags can cause spillage of contents or be difficult to lift. Replace when they are either three quarters full or reach approximately 5 Kg.

*Note:* laboratory consumables contaminated with residual chemicals (e.g. micro-tubes) can be disposed of in the 'offensive waste' bags provided the concentration of residual hazardous chemicals in the total volume of the waste item (e.g. flask) is **below** the following relevant threshold levels:

- the concentration of a **harmful** substance must be <25% for it to be classed as non-hazardous
- the concentration of an **irritant** substance must be <20% (H319, H335, H315) or <10% (H318) for it to be classed as non-hazardous
- the concentration of a **corrosive** substance must be <5% (R34) or <1% (R35) for it to be classed as non-hazardous
- the concentration of a **toxic** substance must be <3% for it to be classed as non-hazardous
- the concentration of a **very toxic** substance must be <0.1% for it to be classed as non-hazardous

The 'Offensive Waste' disposal route (**yellow bags with black stripe**) should be used for the disposal of laboratory consumables which do not contain hazardous waste materials.

'Offensive Waste' is NOT collected by cleaners. Each laboratory group is responsible for taking waste to Biology Stores for disposal. Full bags must be secured with tape or a 'bag tie' to prevent spillage of contents.

**Gloves** are often uncontaminated after use because they are typically used to protect work from the person rather than the other way round. However, it is best practice that all uncontaminated gloves and those contaminated with residual chemical are disposed of as 'non-hazardous laboratory consumable' waste (otherwise known as 'offensive waste' / 'tiger bag' waste yellow bags with black stripe)
4.23.3 Sharps

Yellow/orange bin – any sharps other than those contaminated with medicines

4.23.4 GM waste

- Autoclave bag – microbial waste and GM waste for inactivation
- Yellow bag – inactivated GM waste
- Yellow bin – active GM waste (when inactivation is not possible)
- Chemical waste should be disposed of in accordance with the waste assessment carried out with the COSHH assessment.

4.23.5 Solvents

As a consequence of the implications of the Control of Pollution Act, 1974, certain arrangements concerning the collection of used solvents have to be formalised. It is not permitted to pour solvents down drains. Solvents may be mixed in correctly labelled Winchesters in accordance with the categorisation set out below. This categorisation is common throughout the University.

- **Category X**
  
  All halogenated solvents or mixtures containing halogenated solvents.

- **Category Y**
  
  All non halogenated solvents which are non-acidified

- **Category Z**
  
  Oils (no PCB containing material)

Comprehensive information regarding waste and recycling are to be found in the University's documented Waste Management System: [https://hs.shef.ac.uk](https://hs.shef.ac.uk) in the recycling and waste management section.

4.24 Field trips and off-campus activities

University responsibilities and arrangements with regard to health and safety on fieldwork and other off-campus activities are very comprehensive. What follows are summary responsibilities only, and all staff involved should read the full policy which can be found at: [Policy on Fieldwork & off campus activities](https://hs.shef.ac.uk)

Trip Organisers/Leaders/Supervisors shall:

- ensure the University possesses the necessary insurance cover for the event, and that the host organisation/venue also possesses the necessary insurance cover;
- ensure all students complete the Confidential Personal Details Form to determine any relevant health conditions or disabilities that may impact upon themselves, others, or the event in general;
- complete risk assessments for all activities, and where applicable, request copies of risk assessments from the host organisation/venue;
• communicate all relevant health and safety information, risk assessments and safe working procedures to all parties concerned;
• ensure the provision of instruction and training before and during the event;
• ensure supervision and adequate student ratios are maintained at all times;
• implement control measures upon arrival and/or prior to commencement of activities;
• familiarise themselves with all domestic arrangements and emergency procedures at the host organisation/venue;
• provide a comprehensive schedule detailing route, timetable of activities, emergency contact information, etc.;
• arrange for provision of mobile phones (or other means of communication) taking into account network availability and signal black spots;
• where practical, make reasonable adjustments for students with disabilities, provided that their safety, or that of any other person is not compromised as a result;
• report all health and safety related incidents via the University portal;
• exclude any student who poses a risk to themselves or any other person;

The Health and Safety Department run in person “Fieldwork Supervisor” training courses. These can be booked at the following Health & Safety then click on courses and then search.

4.25 Hazard Reporting
It is the duty of everyone employed by the University who observes a potential hazard to try to reduce the danger of that hazard and to make others aware of it. When a hazard is identified within any area of the University including the areas under the control of Department by a member of staff contact Health and Safety General Enquiries 0114 222 7466, safety@sheffield.ac.uk as soon as possible or contact University Security Control on 0114 222444.

4.26 Asbestos
Only authorised staff from within EFM or contractors appointed by EFM are authorised to break into the fabric of the building. This is for everyone’s protection.

If you believe you have discovered, damaged or disturbed asbestos:
• STOP what you are doing
• Restrict Access to the area
• Do not attempt to clean up the area.
• Contact the following IMMEDIATELY, noting location and nature of the emergency:
  o During normal working hours: Helpdesk 0114 222 9000
  o Out of Hours: Security Control 0114 222 4444
  o Emergency Asbestos Hotline any time 0114 222 9011
• Await further instructions

Should there be a need to break into the fabric of the building for valid operational reasons e.g. the installation of new equipment, running specialised gas lines, communication cables, room changes etc. it is essential that Estates and Facilities Management (EFM) are contacted prior to work commencing. Arrangements are in place to assist in getting work done without the accidental release of asbestos fibres or compromising the fire partitions or fire alarm and detection systems. These arrangements do require that any interventions or breaking into the fabric of the
building are properly managed and coordinated. It is therefore essential that should you require any work which necessitates breaking into the building fabric, that first the asbestos register is properly consulted and fire partitions are 'made good' at the end of the work.

The presence of asbestos is not a problem provided that it is either encapsulated or managed appropriately.

Should you be in any doubt please contact the EFM Asbestos Management team, email asbestossteam@sheffield.ac.uk

4.27 Control of Contractors

In accordance with Section 3 of the Health & Safety at Work etc. Act 1974, the University has a duty of care towards people not employed by the institution. This includes (but is not limited to) Contractors and their Sub-contractors, either of whom may form part of an organisation or be self-employed. Similarly, any such organisation or person also has duties under Section 3 towards University staff, students and visitors when working in the Department's premises. Aspects of the Management of Health & Safety at Work Regulations shall also apply.

Specifically within the context of the Act and Regulation stated above,

The Head of Department shall:
- manage Contractors (and their Sub-contractors) effectively;
- prior to the commencement of work, ensure the Contractor possesses the necessary insurance cover, and has submitted copies of risk assessments and safe working procedures which have been satisfactorily assessed by a competent person;
- ensure all Contractors (and their Sub-contractors) are informed of any known hazards (for example, the presence of asbestos) and that they are provided with copies of all relevant University policies, procedures and documentation.

The Department Safety Officer shall:
- communicate to Department Staff about the presence of Contractors on-site and any associated hazards;
- monitor Contractors (and their Sub-contractors) whilst on-site to ensure compliance with University policy and procedures;
- report any accidents or incidents involving Contractors to the Head of Department and the Health & Safety Department;
- Obtain relevant risk and method statements;

Comprehensive information regarding contractors is to be found in the University's Control of Contractors Policy: Control of contractors Policy

4.28 Occupational Health Screening and Surveillance

A number of potential occupational health issues exist across the whole Faculty of Science, many of which are highlighted in this Department policy. Where there is a risk to health of a member of staff (or student), The University has a duty of care towards that person to prevent or reduce the risk of the condition worsening.

New members of staff may be required to complete a pre-employment health declaration in order for any relevant pre-existing conditions to be identified that may be affected by your work. Upon commencement, you may be subject to further periodic health surveillance to
ensure your condition is not being affected and/or your occupational exposure levels are not being exceeded. Health surveillance and testing might be a combination of being undertaken internally by the University and/or externally by a recognised and approved service provider. All due diligence shall be exercised with regard to confidentiality, the *Data Protection Act*, and the *Equality Act*.

In Summary:

- the Head of Department shall abide by all professional advise provided in relation to occupational health;
- the Department Safety Officer shall provide support on any prevailing occupational health issues;
- Managers/Supervisors/Lecturers/Technicians shall implement and enforce all control measures advised by occupational health professionals;
- Department Staff shall adhere to all control measures (including the use of PPE), and report any relevant pre-existing or diagnosed health condition (including pregnancy) to their line manager.
Appendix 1

Department Health & Safety Management Structure