

Safety Code of Practice 01

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Summary of

HEALTH AND SAFETY STANDARDS

For Heads of Schools and Directorates



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1 SUMMARY

"Good health and safety standards depend on good management".

Heads of Schools/Directorates:

- Have executive responsibility for the health and safety of anyone legally entitled to be on premises under their control, or affected by their activities;
- Are responsible to the University for ensuring that foreseeable risks are assessed and controlled to prevent injury, ill-health or damage;
- Are responsible for the implementation of university policies and procedures within their School/Directorate.

This summary guide helps you navigate your way through University policies and Safety Codes of Practice (Safety Guides) so that you can fulfil these responsibilities.

Health and safety is not a "bolt-on" extra. It is an essential management function and should be integrated with normal operations wherever possible e.g. approval of new projects or research, review of staff training needs. Nobody comes to work or study expecting to be injured. However a high standard of health and safety management takes hard work and a high standard of organisation and leadership.

Remember: You are not alone. Health and Safety Services are available to provide practical advice, support and training. The University Council, its subsidiary committees, the Vice-Chancellor and Senior Management Board all have responsibilities, not least the allocation of resources and a requirement to act on reports received from various sources. However day-to-day management is dependent on Heads of Schools and Directorates understanding what is required and setting standards and expectations within their School/ Directorate.

2 MANAGEMENT OF HEALTH AND SAFETY

See Safety Code of Practice 2: Management and Organisation

Successful management of health and safety depends on good organisation, planning, setting standards, monitoring to check that standards are being achieved, and review.

2.1 Policy

The University has a general health and safety policy which covers all its activities. Schools/Directorates are not required to have their own. However you must provide staff and students with written information about your local arrangements, rules, standards etc. This normally takes the form of the Area Health and Safety Code. You may need one version for staff and another for students.

This is your opportunity to make your commitment to high standards known to staff and students, and in particular to new starters. Having a personal statement at the start of the code is good practice.

2.2 Organisation

Management

Key H&S roles need to be defined and staff need to be appointed to these roles. You need a good team who understand what is required, who have the authority to implement systems, and who are accountable. However this has to be balanced against the fact that some of them will be volunteers!

It is absolutely essential to obtain the support of academic and research staff, technical and administrative staff to incorporate safety into their day-to-day work. Members of School Boards, senior management teams, group leaders and Principal Investigators must understand what standards apply to their work activities, and ensure that those below them also understand and comply. They must be prepared to set their own standards, and identify where decisions they make in the course of their normal duties have safety implications.

Examples of standards are:

- lab rules e.g. lab coats and eye protection must be worn;
- all staff working with liquid nitrogen must attend a School/H&SS training course on safe working practices and be assessed as competent;
- workplace inspections must be carried out and findings recorded;
- all deficiencies must be acted upon within the timescales set out in the report;
- staff and students engaged in GM work must be referred for Occupational Health surveillance before work starts;
- all proposed new research activities that introduce new safety risks must be discussed with and approved by the Head of School.

Director of Safety/Area Health & Safety Co-ordinator

Most Heads of Schools appoint a Director of Safety or lead Area Health and Safety Co-ordinator to advise them, act on their behalf, and monitor compliance. They should have a letter of appointment that explains what the role encompasses. This may be part of their wider job role, especially in the science Schools, or it may be an extra task given to a member of staff, under the umbrella of their administrative duties.

They must:

- have the respect and confidence of other staff
- be competent (and hence will need training in H&S management and university procedures)
- be well organised.

You should check that arrangements are in place to appoint, and keep up-to-date the following appointments:

Building Manager

Building Managers have been appointed primarily to co-ordinate fire safety arrangements within buildings. In addition they act as first point of contact for FMD to communicate with building occupants about repairs, shutdowns, loss of services etc. In shared buildings, they should be appointed by the School/department which is the biggest occupier of the building.

In practice, they need to have access to keys to give access to FMD staff and contractors. They may need to operate a local Permit-to-Work system to enable authorised access to hazardous areas. They may need an "all building occupants" email list to enable communications with staff in the building, across all departments. Depending on local arrangements, the role may be combined

with that of technical services manager/building superintendent whose role is to look after building technical and laboratory services.

Fire Safety

- Evacuation Officers
- Fire Wardens
- Fire Extinguisher trained staff
- Evacuation lift and evacuation chair operators (as appropriate)

First Aid

- First Aiders (full 3 day course)
- Emergency First Aiders (one day course)

DSE Assessors

- Required to carry out assessment of workstations, and provide follow-up support to staff.

In some Schools some specialist appointments may be required e.g. Laser Safety Officer, Radiation Protection Supervisor.

All staff with a role in the health and safety management structure should be able to refer to written terms of reference (e.g. letter of appointment, job description, section of AH&S Code) that sets out their duties, responsibilities and scope, so that they are clear what is required of them.

2.3 Communications

All members of staff should be told who the key people are who have roles in health and safety management.

You should ensure that there are forums for discussing health and safety and for communicating and consulting with staff and students. This should be appropriate to the size of the School/Directorate and the type of work. It could be:

- A standing item for discussion and reporting at School Board/senior team meetings
- An Area (School/department/building) Health and Safety Committee
- A standing item at staff/student forums.

Other methods of communication include team meetings, School newsletters, email, 1-2-1s etc.

2.4 Planning health and safety

Good health and safety management doesn't just happen – it has to be planned, since this will help identify the necessary resources and help you to track progress.

All Schools/Directorates should have a H&S improvement plan. This should:

- include an assessment of where you are in terms of H&S
- identify gaps where improvements can be made
- set out a plan as to how you intend to achieve this, including who is responsible, timescale and other resources.

Plans should be updated annually and will be asked for by the University H&S Committee. Ideally, this should feed into the School/Directorate 3 year plan so that resources can be budgeted for.

2.5 Monitoring performance

As a Head of School/Directorate, no news is not necessarily good news. Don't wait for problems to be reported, they may not be until it's too late.

There must be effective systems for monitoring that the procedures and standards that you have put in place are working to keep people safe, and that staff and students are following them.

Active monitoring involves:

- departmental checks that systems are working and standards are being met (e.g. training has been provided; maintenance is carried out; people are following lab rules; portable appliances are in test etc.);
- departmental inspections to look for physical hazards and unsafe working practices;
- identifying possible problems and gaps in systems;
- encouraging near miss reporting.

It is recommended that you take part in some **workplace inspections**. It is a good opportunity to speak to people and check their understanding of what they are doing. Formal inspections should be carried out at least twice annually, of all areas, with action points recorded and followed up on a timescale commensurate with the risk and ease of solution.

Likewise staff in leadership/management positions must check compliance e.g. regular formal or informal tours of the workplace. If people are observed not following safe working practices, they must be challenged. If it is observed that systems have broken down e.g. routine maintenance, this must be followed up with the persons/departments responsible.

There must also be arrangements for other staff to report non-compliance or safety concerns, and these must be acted upon.

Reactive or passive monitoring involves:

- investigation of accidents – look for underlying causes, and make sure lessons learnt are shared throughout the School/Directorate where it is relevant to do so;
- receiving periodic reports of accidents/incidents so that you are aware of what is happening and can identify if trends are developing.

2.6 Audit

H&S audits are carried out by Health and Safety Services. If you are in a low risk School, the audit may only take place once every 5 years.

If you are in a higher risk science or engineering School, you should be audited every 3 years. You may also be subject to specialist topic audits e.g. gas, pressure systems, lasers, radiation.

Because H&SS can only carry out audits at 3 year intervals, at best, you should not wait for the next audit, but should carry out your own review to check that systems are satisfactory.

2.7 Reviewing the system

There should be an annual review/report to your School Board and to your Faculty Board or senior management team.

The review should identify if systems are working as designed and are achieving the desired objectives, or if improvements are needed. [A template for an annual review is available from Health and Safety Services]. This is an opportunity to take a step back, with your senior team and/or Director for Safety/AHSC, and note positive achievements; significant problems;

shortcomings in resources (staff, money, time, facilities). The review will feed into your improvement plan. It could also feed into your 3 year plan.

2.8 Making it happen

If your organisational arrangements and the key appointees within it are effective, H&S management should not take up a lot of management time. If not, a lot of time will be spent catching up, recovering from previous poor management decisions etc.

You need to:

- liaise regularly with key staff
- recognise when systems are not working effectively by asking questions, if necessary by asking for reports on specific topics etc.
- ensure you are fully and promptly informed of any problems or new issues which could have a significant effect on the School/Directorate
- participate in safety meetings
- integrate health and safety with other management activities e.g. assessing proposals for new courses or research; include H&S performance in SDRs etc.

You need to keep records, but bureaucratic systems should be avoided, and it is essential that health and safety is not seen as a paper chase. No amount of paper will provide protection for staff, students or you if the actual work is not undertaken safely.

2.9 Where do I go for advice?

All new Heads of School must attend the CSTD module on health and safety for new Heads of Schools. If you are unable to attend, you must arrange to meet the Head of Health and Safety Services for a personal briefing.

Health & Safety Services

Extension 8888

Email safety@reading.ac.uk

Ongoing support and advice is available from the Health and Safety Services team; each School and Directorate has been appointed a team member to liaise with. Health and Safety Services staff are:

Moira Simpson	Head of H&S Services	Tel. 8888 m.e.simpson@reading.ac.uk
Gretta Roberts	Biological & Scientific Safety Adviser	Tel. 8887 gretta.roberts@reading.ac.uk
Jon Crabb	Health & Safety Adviser	Tel. 7738 j.w.crabb@reading.ac.uk
Pete Lawther	Fire Safety Adviser	Tel. 8282 p.d.lawther@reading.ac.uk
Larry Woodley	Estates H&S Adviser	Tel. 7200 l.p.woodley@reading.ac.uk
Sean Callaghan	Asbestos Co-ordinator	Tel. 8275 s.j.callaghan@reading.ac.uk
Jude Brindley	Administrator	Tel 8888 j.brindley@reading.ac.uk

3 LEGAL REQUIREMENTS

Compliance with University policies and procedures (Safety Codes of Practice etc.) should ensure that you meet the legal requirements. This section gives a brief outline of the primary legislation and what it means for those in senior positions.

3.1 Criminal law

The University has duties under criminal law. The *Health and Safety at Work Act 1974* requires that, so far as reasonably practicable, the University ensures the health safety and welfare at work of all employees. The University is required to conduct its undertaking so as to ensure that people not in its employment (students, visitors, contractors etc.) are not exposed to risks to their health and safety.

Individuals can be prosecuted under the Act and can face a fine or imprisonment if they are found guilty of significant breaches of the Health and Safety at Work Act and subsidiary Regulations. However, it is more normal for failures to be attributed to the employer (the University) and for the organisation to be prosecuted, and if found guilty, fined.

The Corporate Manslaughter Act can be used to prosecute the organisation for manslaughter if a death is attributable to a gross breach of a duty of care that stems from the way the organisation's activities were managed or organised by senior management.

The HSWA is backed up by numerous Regulations. In particular the *Management of Health and Safety at Work Regulations* requires employers to:

- have a system for managing health and safety (policy, planning, organisation, audit, review)
- risk assess work where there are significant risks
- have emergency procedures for foreseeable accidents (not limited to fires)
- train staff
- take extra measures to safeguard young people (age 16-18)
- have systems for sharing information between employers where the activities of one may impact on the employees of another (e.g. contractors, shared premises).

3.2 Civil law

The University has a duty of care to safeguard those who may be affected by our activities. If this duty of care is breached, the injured party can sue and claim damages.

3.3 Consequences of failure

The consequences of failure can be:

- imprisonment (rare, but not unheard of, and now easier for the courts to apply to H&S offences)
- a large fine for the organisation or individuals (getting larger as courts realise the seriousness of some offences)
- injury/ill health
- loss of research
- increased insurance costs
- adverse publicity and reputational damage
- stress and worry for a period of years

- a huge amount of management time taken up

4 GENERAL WORKPLACES

See: Safety Code of Practice 2: Management and Organisation, Safety Code of Practice 4: Risk assessment, Health and Safety Services web site for the health and safety training programme

This section outlines the general requirements that apply to all workplaces. There are risks in all departments that account for at least 50% of the university's reported injuries. These risks need to be managed.

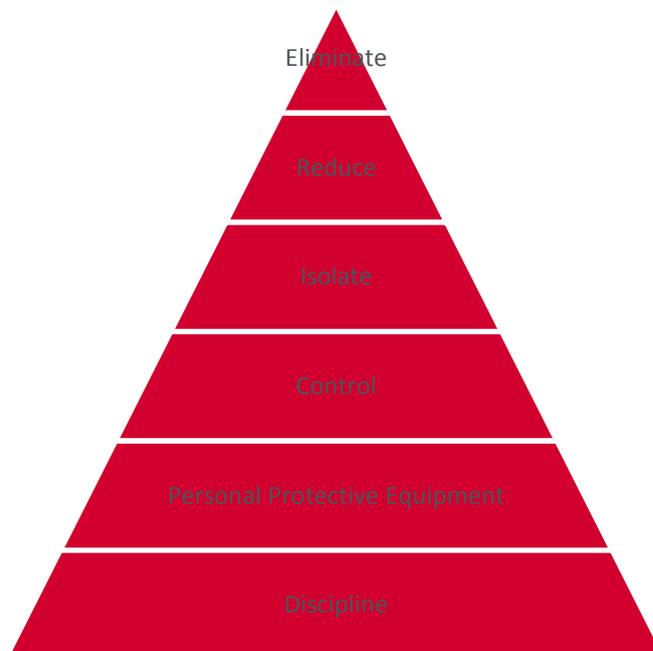
4.1 Risk assessment

All hazards which present a significant risk must be assessed to identify:

- what should be done to manage the risk so that injury or ill health does not occur, so far as reasonably practicable
- who is responsible for taking actions forward.

The risk assessment approach must be systematic in the way that hazards are identified, risks are assessed and 'controls' are implemented. Controls are the procedures/facilities/ways of working, checks, supervision etc. which should prevent injury or ill-health occurring.

The law states that the following hierarchy of risk control must be adopted:



Eliminate – remove the need for, do the work a different way

Reduce – combat risks at source by e.g. using less, substitute with an alternative substance or method, limit the number of people, adapt the work to the people etc.

Isolate – use barriers, fume cupboards, safety cabinets, enclosures

Control – instruct/train staff/students; authorise access; supervise

PPE – provide the correct PPE, but don't rely on it as the sole means of control

Discipline – be prepared to stop work, discipline individuals if they do not follow procedures

= ERICPD

Or Eric Prevents Death!

Risk assessments should be written down. Information about the risks must be communicated to all those who may be affected (staff, students, visitors, contractors), preferably in writing. The methods of communication must be appropriate to the target audience, so that staff/students understand what is expected of them. Information about 'standard' risks can be communicated via

local rules, Area Health and Safety Codes etc., but in some cases the information may need to be presented in a different way e.g. verbal briefing, demonstrations, pictures.

The level of detail should be proportionate to the risk. For low risk office environments, it is a straightforward process based on informed judgement and reference to guidance (University Codes of Practice, Safety Notes, and external sources such as the HSE web site).

Where the work is unique i.e. not covered by standard protocols or procedures, such as in research work, a specific risk assessment will be necessary. This must consider the options for doing the work, and identify a method that will reduce any risks to as low as reasonably practicable. The results must be shared with the research staff and students who will be doing the work. They must understand:

- how to work safely
- what could go wrong
- if it does, what the emergency procedures are

Ultimately, only a court can decide if risk assessments are 'suitable and sufficient' and if risks have been reduced to a level as low as reasonably practicable. If you are in doubt, Health and Safety services can advise, and depending on the task, national standards, codes of practice, industry guidance, and other institutions can be consulted on what it is normal to expect. You may have to defend your decision or working practices in a court of law. This will be very difficult to do if you have not found out what would be regarded as 'normal', or have not followed those standards.

4.2 Competency

All staff must be competent for their job role. This means that:

- Health and safety training requirements must be identified
- Staff and students must receive appropriate training and supervision where required
- Records are kept, to provide assurance that people have been trained, and to make it easier to recognise when refresher training is required.

As a minimum all staff must receive:

- An induction to the workplace, covering fire safety, emergency procedures, local rules, information about risks in the workplace
- Those who use computers must complete the DSEasy training and assessment module
- Task or job-related training, dependent on their job role and risk assessment e.g. safe use of certain types of machinery; manual handling; asbestos awareness

Laboratory work requires a high level of competency. All staff must attend the University Laboratory Safety course, run by H&SS. In addition they may require:

- task specific training on-the-job
- specialist formal training provided by H&SS e.g. working with cryogenic gases, cylinder handling, gas regulators, radiation safety, working with lasers.

Undergraduate students must have appropriate supervision.

The experience or lack of it, of **post graduate students** (in particular MSC students and 1st year PhD students) must be assessed before allowing them to work without direct supervision. It cannot be assumed that they fully understand the risks associated with their research/project work.

4.3 Access and egress

- Entrances, exits, stairways, corridors and circulation areas must be kept clear of obstructions at all times.
- Slips, trips and falls risks must be identified and eliminated.
- Some university buildings are unsuitable for young children, either because of work activities, or because of unsuitable building features. Access for children may need to be controlled or forbidden in some areas, such as stairs where the guarding leaves large gaps through which a child could fall, or in science research laboratories.
- Access to hazardous areas (e.g. laboratories, workshops, IT suites with gas suppression systems) must be restricted, and unoccupied rooms must be secured.

4.4 Work environment and welfare

Temperature

- The temperature in the workplace must be reasonable. The minimum in a normal office or laboratory environment is 16 °C. There is no maximum.
- Some allowance should be made for workplaces to come up to temperature after a switch off e.g. winter Monday mornings, or after a closure period. If the temperature remains below the legal minimum after that, remedial measures may include additional heating, working from home if practical, going to another building e.g. a computer lab if available.
- In summer, some flexibility is required in heat wave conditions. Make sure staff have access to cold water, open windows, provide desk fans, allow more breaks, leave early if conditions become very uncomfortable.

Lighting

- Must be satisfactory and appropriate for the task.
- Higher lux levels may be required for fine work, flickering lights and low light levels are not acceptable when working with moving machinery.

Space

- Room capacities must be adequate – a minimum of 11m³ per person is the standard.

Storage

- Materials must not be stored in such a way that they could fall or cause injury.

Disabled people

- Needs are assessed and provided for – see also emergencies.

Rest areas

- Suitable rest facilities should be provided, including facilities for pregnant women and nursing mothers.

Building maintenance

- Alterations to the fabric of the building, or any work that will disturb the fabric or services, **must** be authorised by FMD.

Equipment

- All equipment must be suitable for its intended use, maintained in a safe condition, carry a CE mark, and where necessary operation must be covered by safe systems of work, written instructions, delineated work areas and warning signs.

4.5 Lifting and carrying

All manual handling must be:

- Considered within a general risk assessment and avoided if it is reasonably practicable to do the work in some other way;
- Conducted in such a way that the risk of injury is reduced to as low as reasonably practicable;
- Carried out in a safe manner;
- Undertaken by people who have had appropriate training;
- Undertaken using appropriate equipment (lifting aids, trolleys etc.), which is inspected and maintained as required;
- Appropriate to the health and capabilities of the person carrying out the task. This includes young people, new / expectant mothers and persons with pre-existing health conditions that may be aggravated by inappropriate manual handling.

4.6 Use of computers and workstations (Display Screen Equipment)

Display Screen Equipment means computers and associated workstations and surrounding environment. Most staff will be classed as a DSE 'user' – the only exceptions are likely to be those who undertake manual work and don't work in an office. Note - some PhD students may also be regarded as DSE Users, although they are not 'at work' and do not qualify for eyesight tests or payment for glasses.

- Assessments must be made for all DSE 'users' and all workstations, of any risk to the DSE users' health. Assessments must be reviewed/repeated if circumstances change substantially.
- Recommendations arising from DSE assessments must be implemented.
- Users must receive instruction and training in the use and adjustment of the workstation to avoid musculoskeletal problems.
- Records must be maintained to demonstrate that assessments of each workstation have been carried out.
- All staff DSE users must be offered eyesight tests on request. Where appropriate corrective spectacles must be provided, specifically for DSE use. University practice is that the University makes a contribution of £55 towards the cost of a basic pair of glasses. This is funded by Schools, and must be budgeted for.
- Users must work in accordance with their training. They must bring any health-related problems associated with the use of DSE equipment, computers, VDUs and associated hardware and software to the attention of their management.

4.7 Portable appliances

- Portable electrical appliances must be safe to use.
- They must be inspected/tested in accordance with the University recommended frequencies – see SG11.
- Staff have sufficient knowledge to recognise when portable appliances or any other electrical equipment may be damaged or otherwise present a risk, and to take it out of use.

4.8 Electrical equipment

- Persons working with electrical equipment must be competent, or must be supervised by a qualified, competent person. Refresher training may be required to maintain competency.

- Safe systems of work may be required.
- Electrical systems (mains voltage) must be inspected and tested to verify that they are safe. NB Building supplies are the responsibility of FMD.
- Equipment must be CE marked.
- Live working is NOT allowed except in exceptional circumstances.

4.9 Events

- There must be a Safety Co-ordinator for each event.
- Events must be approved by the University in advance so that all relevant departments (Security, Campus services, Communications, FMD, H&SS etc.) can either provide support or check that the proposed event can be managed safely and will not clash with other events on campus.
- The approval process is co-ordinated by the office of the Deputy Director, FMD. The submission must be made 28 days in advance to allow time for assessment and your planning.
- Some events also require a Temporary Event Notice from the local Council (e.g. if the event involves the supply of alcohol, provision of various forms of entertainment etc.). H&SS will advise if this applies.
- If the event involves the supply of food (whether free or not), the food must be prepared hygienically by competent people (preferably they will have attended a H&SS food safety course).
- If outside caterers are used, the University preferred suppliers should be used, in accordance with Procurement policies. If they are not, the School inherits the responsibility for ensuring that the caterers:
 - have public liability insurance
 - are registered with the local authority
 - have trained, competent staff.

4.10 Lone working, personal safety and security

- People with medical conditions that may put them at risk if they fell ill while working alone should be encouraged to tell their supervisor/line manager about their condition (without breaching medical confidentiality). Where practicable, they should not undertake lone-working. If they wish to work outside normal working hours, adjustments must be made to enable them to do so safely e.g. a buddy system, phone-in reporting etc.
- Staff/students undertaking high risk activities (e.g. woodworking machinery, work in Category 3 containment level laboratories, chemical experiments) must not work alone. There should always be someone within calling distance who can assist in the event of an accident.

4.11 Driving and road safety

Staff who:

- drive university vehicles
- are required to drive as part of their normal duties
- drive students in connection with work/academic activities

are required to attend basic driver awareness training. Specialist training is required for other high risk driving activities or vehicles e.g. tractors, fork lift trucks. Schools/Directorates must check that these drivers have valid licences and must ask staff to sign a declaration that they are fit to drive.

Staff who drive their own vehicles for work must have business insurance. This must be drawn to their attention e.g. via the Area Health & Safety Code.

4.12 Buildings and maintenance

- No-one should interfere with the fabric of a building unless they have obtained prior authorisation from FMD. This applies to all work, from installation of fittings to construction work.
- FMD will check whether or not the proposed work will interfere with building services (power cables, IT services, water etc.) or disturb asbestos.

4.13 Work at height

- Ladders and stepladders are not banned – but staff need to know how to use them properly.
- Where materials need to be accessed at height, make sure footstools, stepladders etc. are provided.
- Where the work will go on for some time, or is beyond the reach of a standard ladder, consider other alternatives such as tower scaffolds. However those erecting this equipment need to be properly trained.

4.14 Incidents and accidents

- All incidents and accidents must be reported. The current system is to use Accident Books, supported by a University form for more serious events. An on-line reporting system is being developed.
- Near miss reporting should be encouraged.

Accidents records should be reviewed periodically to make sure that remedial action has been taken where required, and that any trends are identified.

5 EMERGENCIES

See: Safety Code of Practice 5: Fire Drills, Safety Code of Practice 6: Emergency Evacuation Procedures

5.1 Fire safety

- All staff and students must receive information about:
 - Fire prevention
 - Emergency evacuation procedures
- This can be achieved through Area H&S Codes and induction procedures, and watching the H&SS fire safety film on the University web site.
- The same basic principles apply to fire safety as for general health and safety management i.e. ERICPD – avoid the risk if practicable; evaluate & assess; adapt to technical progress; replace the dangerous with the less dangerous; give priority to measures that protect everyone, not just individuals; inform and train.
- Where staff or students fail to follow the procedures e.g. fail to evacuate, they must be warned that this is unacceptable. Disciplinary action may be required.

- Where staff, students or visitors have a disability that means they cannot evacuate without assistance, a Personal Emergency Evacuation Plan must be offered. In some cases, it may be possible to rely on generic arrangements for a building. However staff and students should be assisted to find out what these arrangements are. For staff, this may fall to the AHSC to co-ordinate. For students, the School Disability Officer should take the lead.
- Fire drills must be held at least twice per annum.
- Those involved in managing evacuations must be trained for their role.
- Flammable materials must be stored safely when not in use. This is particularly important in science laboratories which use solvents. It also applies to office environments where excessive amounts of paper can increase the fire loading and provide fuel for an electrical fire. These issues should be identified during workplace inspections.
- H&SS send out a fire safety checklist for Building Managers to complete twice per annum. This is to identify fire safety issues that need to be addressed, and provide assurance that facilities and systems are up to standard. These check lists must be completed and returned to H&SS, and remedial actions must be followed up.

5.2 Other emergencies

Emergencies are not limited to fire. Where there is a risk of serious and imminent danger, there must be emergency plans in place to deal with e.g.

- Spillages of hazardous chemicals, biological agents, radiochemicals
- Loss of hazardous materials
- Releases of toxic or cryogenic gases
- Falls from height

5.3 First aid

- Each School/Directorate should assess its own first aid needs.
- First aiders/Emergency first aiders will be required. The University provides training courses (through H&SS) but if first aiders can't attend the available courses, they may need to attend an external course, with costs being picked up by the School).
- Where there are special risks, first aiders may need additional training e.g. working with HF acid. They should be available to assist when such work is taking place.

5.4 Major incident plan

The University's Major Incident Plan is co-ordinated by the Business Continuity Manager. This requires Heads of Schools/Directorates:

- to be the first point of contact in an emergency involving their area, and to take the lead in co-ordinating the local response i.e. act as Bronze commander, in so far as your School/Directorate is concerned and liaise with Gold and Silver as required.
- to develop business continuity plans to enable the unit to continue to function after the initial emergency has been brought under control.

6 OCCUPATIONAL HEALTH

See: University of Reading Guide to Occupational Health - issued by H&SS, Safety Code of Practice 28: Assessment and control of substances hazardous to health (COSHH)

6.1 Occupational Health

Potential health hazards include:

- Musculoskeletal injuries
- Work related stress
- Noise-induced hearing loss
- Hand-arm vibration syndrome
- Skin or respiratory disorders resulting from exposure to chemical or biological agents
- Infection or disease from biological agents
- Infection or disease acquired during work-related travel and fieldwork

6.2 Management referrals

- Where staff have an injury or illness which they believe may be work-related, or where they have illness or incapacity which prevents them doing their full range of duties, advice from Occupational Health should be sought through the Line Management Referral Process.
- Occupational Health will advise on adjustments that must/should/could be made to the workplace or work activities. They will not share information that is deemed to be medical in confidence. The employee will also have the opportunity to see the Occupational Health report and recommendations.

6.3 Health surveillance and health clearance

Staff and students who are exposed to a range hazardous material as part of their work activities must be referred to Occupational Health for health surveillance. These include:

- Work with hazardous microorganisms or Genetically modified microorganisms
- Work with animals
- Work with isocyanates, glutaraldehyde, pesticides or nanomaterials
- Frequent use of respiratory or skin sensitizers
- Frequent use of oils, degreasers, epoxy resins or exposure to solder fumes, wood dusts or other powders or dusts.

Additional health surveillance may be required for those who regularly work with noisy equipment or hand-held equipment which could cause Hand Arm Vibration Syndrome.

Health clearance may be required where employees (including postgraduate researchers) are involved in the preparation of food or where they come into regular close contact with members of the public as part of their research activity.

Further information is available in the University of Reading Guide to Occupational Health and through H&S Services.

7 LABORATORIES AND WORKSHOPS

7.1 Housekeeping and hygiene standards

You should check that the following standards are being maintained. This can be achieved by regular inspections and proactive follow-up (see section on management):

- Laboratories and workshops kept clean and tidy.

- Mandatory personal protective equipment rules (e.g. laboratory coats or eye protection) are being followed and enforced.
- Spillages and breakages cleaned up immediately – staff and students should understand how to do so safely. This may require special spill kits, and training in their use.
- Materials stored appropriately, with segregation of incompatible materials.
- Flammable liquids stored overnight in a flammables cabinet, with a maximum of 50 litres per laboratory.
- Gas cylinders safely secured and where practical stored in external stores.
- **Prohibitions on smoking, eating, drinking, cosmetics, mouth-pipetting etc. in hazardous areas are strictly observed.**

7.2 Work equipment

All equipment must be fit for purpose, in good and safe condition, and maintained where failure would give rise to danger.

7.3 Control of Substances Hazardous to Health (COSHH)

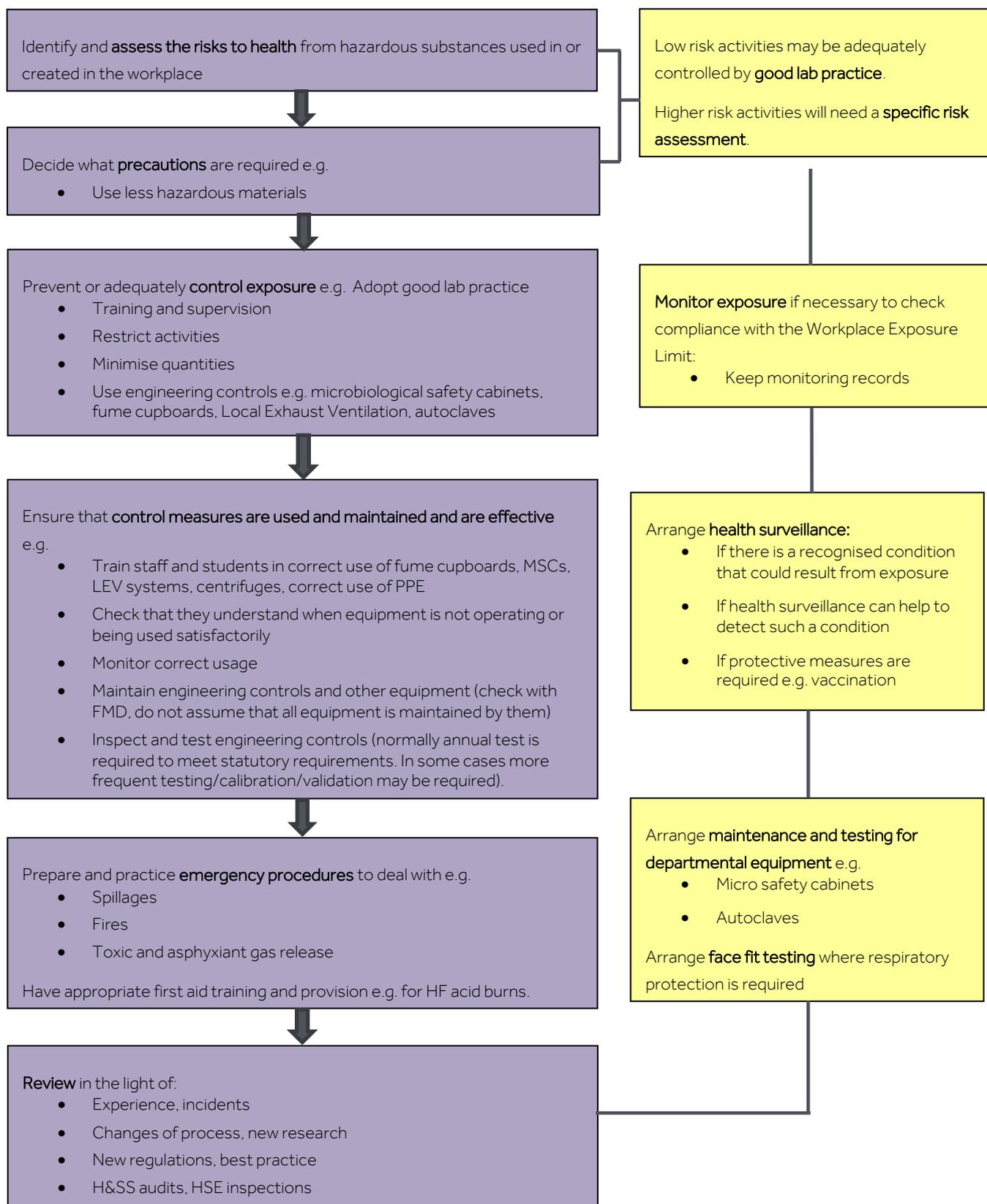
The COSHH Regulations deal with controlling substances hazardous to the health of staff, students and visitors, from substances such as:

- a single or compound of chemicals, including those identified as:
 - flammable, reactive or explosive
 - toxins and allergens
 - carcinogens, mutagens, teratogens
 - corrosive substances
 - Irritants (including e.g. solvents, paints, cleaning agents)
- micro-organisms and biological agents
- dusts
- gases, vapours etc.

These substances may be used in, or generated as a result of, any work activity (e.g. research, student projects, lab work, cleaning, maintenance, printing etc.). They may have the potential to cause harm if they are inhaled, ingested or come into contact with or are absorbed through the skin. The degree of damage can vary from minor injuries (e.g. a minor skin burn) to life-changing conditions (e.g. occupational asthma).

Some of them are subject to Work Exposure Limits (WELs) which must not be exceeded.

See flow chart below.



Protection depends on assessment of the risk and correct use of controls such as fume cupboards, microbiological safety cabinets. **Remember ERICPD!**

7.4 Work with biological materials

See Safety Code of Practice 14.

- All work with biological materials must be risk assessed before work starts.
- All work with hazardous microorganisms must be approved in advance by the Sub-Committee for Biological Safety (SCBS).
- Work is being carried out in the appropriate containment level laboratory for the type of work.
- Containment laboratories must be maintained in a condition that permits cleaning and effective disinfection. As a minimum lab benches must be impervious to water and resistant to acids, alkalis, solvents and disinfectants. Chairs must be cleanable (i.e. not fabric).
- Microbiological safety cabinets must be sited in the correct location and are serviced and tested in line with regulations.
- Staff and students must understand how to use protective equipment e.g. microbiological safety cabinets.
- Lab rules must be defined, made mandatory, and standards monitored. The minimum is no eating or drinking; wear lab coats (of the correct design); wear gloves and safety glasses if required by the project risk assessment.
- All workers (staff and students) on projects involving Hazard Group 2 or 3 Biological Agents, or whose work brings them into regular contact with allergenic materials and sensitisers must be referred for occupational health surveillance.
- Exposure to hazardous biological materials must be controlled to prevent infection or sensitisation.
- Control measures (administrative, supervision, engineering) must be reviewed regularly, tested and maintained.
- University waste disposal standards must be adhered to (e.g. for waste solvents; biological material; lab consumables, glassware etc.).
- The Project Supervisor must keep a record of all stocks of Hazard Group 2 and 3 micro-organisms.
- See also statutory requirements for LEV systems.

7.5 Work with GM materials

- Proposals to undertake GM work must be forwarded to H&SS, with a risk assessment and supporting information about the proposed work.
- Low risk work (Class 1) will be assessed by an independent reviewer and submitted to the Sub-Committee for Biological Safety (SCBS) for approval. Higher risk work (Class 2 or 3) will be reviewed by a group of technical experts before being submitted to the SCBS for approval.
- Higher risk work must be notified to (Class 2) or approved by (Class 3) the HSE by H&SS.
- Only low risk work is permitted for taught practical classes.
- All workers on GM projects must be registered with H&SS before work starts and must have attended a mandatory training course. Workers on Class 2 or 3 projects also require Occupational Health clearance.
- GM work must be limited to 'contained use'.
- All projects must be reviewed annually.

7.6 Work with radiation

Radioactive sources include open sources (radiochemicals); sealed sources (used for some teaching purposes and found in instrumentation such as the electron capturing devices on Gas

Chromatography equipment); x rays; and other equipment and instrumentation that have gaseous tritium light sources (e.g. instrument dials, gauges etc.).

Work with radioactive sources is strictly regulated by the HSE (for worker protection) and the Environment Agency (to minimise potential harm to the environment through improper use, loss, disposal etc.).

University procedures MUST be followed:

- All work with sources of ionising radiation MUST be approved in advance by the Radiation Safety Sub-Committee. This includes techniques; workers; and facilities.
- All acquisitions, purchases, transfers, and disposals of sources (excepting pre-agreed disposals of open sources) MUST be approved in advance by H&SS.
- 'Best Available Technique' principles must be complied with - do not use radioactive sources if there is an alternative method which avoids such use, and in all cases minimise exposure to as low as reasonably practicable.
- Staff/students working with ionising radiation must be registered with H&SS and must be trained to a level commensurate with the work being performed and the degree of hazard involved and to satisfy legal requirements (e.g. RPS refresher training).
- Each School which has sources of ionising radiation must appoint a Radiation Protection Supervisor to be the competent person responsible for training users, monitoring standards and checking compliance with Local Rules.
- Local Rules and standard operating procedures must be prepared to cover all facilities and procedures using ionising radiation. Local Rules must also encompass emergency procedures and source security.
- Accurate records must be kept of all radioactive sources, whether open or sealed. Open source accounting records must be kept by users, and summary data reported to H&SS monthly. Open and sealed sources must be clearly marked with unique source numbers.
- All permit applications that are required must be made by H&SS to the Environment Agency.
- Radiation doses to workers must be monitored as deemed appropriate by the School Radiation Protection Supervisor. Abnormal exposures must be investigated.
- Schools must make financial provision for the sole or shared costs of:
 - The appointment of a Radiation Protection Adviser
 - Calibration of radiation monitors
 - Statutory training for RPSs
 - Cost of regulator visits (HSE, Environment Agency)
 - Disposal of sources
 - Training

7.7 Lasers

- All work with lasers must be approved in advance by the Radiation Safety Sub-Committee, unless the laser is contained and safe by engineering means i.e. staff or students cannot access it, and all set-up or servicing is undertaken by the equipment supplier.
- Schools using lasers must appoint a School Laser Supervisor (SLS) to advise on requirements, train users and monitor that safe systems of work are effective.
- There must be standard operating procedures (SOPs) for work with high powered lasers.
- Facilities must be suitable e.g. interlocks, matt surfaces and blinds to prevent stray reflections.
- Staff/students must be trained in the SOP and must be authorised if deemed to be competent.

7.8 Personal Protective Equipment (PPE)

PPE includes lab coats, safety glasses, visors, ear defenders etc. They are all designed for specific purposes and risks:

- Make sure that the correct equipment is specified e.g. safety glasses are not adequate in all circumstances to protect against splashes, ear defenders need to be matched to the frequency and intensity of the potential noise source.
- Remember PPE is the defence of last resort- it provides limited protection, and then only if it is worn.
- PPE must be kept clean; storage needs to be provided.
- PPE must fit the individual. If PPE is poorly maintained, uncomfortable, dirty, it will not be worn.
- Wearing of PPE must be enforced; this is one of the most visible ways to identify poor/good safety culture and it sets the tone for maintaining high standards in other areas.

7.9 Noise and vibration

- Exposure to excessive loud noise can cause permanent loss of hearing.
- In the university environment, noise sources include: workshop machinery; farm animals and equipment; music and other entertainment.
- Noisy workplaces must be risk assessed to establish if the noise is loud enough or exposure is frequent enough to cause hearing damage. There are exposure action levels (in dbA, averaged over a working week, starting at 80dbA) at which preventative measures must be applied.
- Start by assessing manufacturers' literature for noise ratings, and identify how often, for how long, equipment is used. Also identify if several pieces of machinery are used at the same time, thus increasing the noise exposure for workers.
- Identify if staff are using vibrating machinery – it may be hand-held or it may be ridden e.g. tractors. There are action limits which should not be exceeded. Consult manufacturers' literature as a starting point.
- Refer any employees who may be exposed to excessive noise or vibration to Occupational Health for health surveillance.
- Consult H&SS or Occupational Health for specialist advice on noise and vibration.

7.10 Supervision of undergraduate and post graduate students

Undergraduates

- Working in laboratories unsupervised is not permitted.
- A competent person who understands the risks in the area must be available to intervene if safe working practices are not followed, or in an unexpected event happens, such a fire, spillage of hazardous material, or equipment malfunction.

Postgraduates

- The level of supervision for post graduates depends on the competence of the individual, and the degree of risk associated with the research/procedures. Supervision should be considered during the risk assessment.
- It is particularly important that assumptions are not made about competence, especially for inexperienced MSc and 1st year PhD students. Where necessary, they should be supervised, or should practice techniques under supervision or with less hazardous materials before being assessed as competent.

7.11 Safe systems of work and high risk work

See above under supervision.

- Each School should define what it means by 'high risk'. It may be e.g. woodworking machinery, working with cryogenics, high power lasers, Category 3 biological agents, or a new experimental procedure in a chemistry lab.
- Where good lab practice is not sufficient to provide safety, safe systems of work/standard operating procedures must be developed. These should be written down, and staff/students trained in them.
- Lone working during high risk work is not permitted.
- Laboratories should be categorised red; orange; amber. This is to signify whether FMD staff (cleaners, security, maintenance) can enter a laboratory without supervision, a Permit-to-Work or special training, or if entry is banned even in emergencies.

7.12 Other statutory requirements

7.12.1 Local Exhaust Ventilation (LEV)

LEV (fume cupboards, extract systems, microbiological safety cabinets) are essential in some workplaces to prevent or minimise exposure to airborne hazardous materials (solvent fumes, biological agents, wood dust, animal allergens etc).

- They must have a 'thorough examination and test' annually. Responsibility for fixed systems such as fume cupboards lies with FMD. Portable systems such as microbiological safety cabinets are the responsibility of the School.
- All such equipment must carry a pass/fail inspection and test label. They must have a 'user manual' and a system logbook.
- LEV systems are only effective when the user knows how to use them properly e.g. correct sash height, interior not cluttered or used for storage, category of safety cabinet matched to the biohazard.
- Schools must define who is responsible for training staff and students, and must monitor that safe operating procedures are being followed.

7.12.2 Pressure systems

Pressure systems include autoclaves and other steam systems; air compressors and associated pipework; industrial and mains gas systems; boilers etc.

- All apart from very small systems require statutory inspection and test. The frequency and nature of the inspection/test depends on the type of system and what could go wrong with it.
- Larger systems need to have a written scheme of examination which will set out inspection/test requirements. Make sure you ask system designers to provide this as part of the project.
- The School should have records of systems under its control, with nominated persons who understand the statutory requirements responsible for their operation and maintenance. Users should be authorised.

7.12.3 Gas safety

Gas systems overlap with pressure systems, but also include industrial gases in cylinders and associated regulators.

- Industry guidance from the British Compressed Gases Association should be complied with.
- Gas regulators need to either be serviced and tested, or replaced, at designated intervals, depending on the gas each is designed to be used for. You should plan for regular replacement or servicing costs.
- Each regulator must be inspected annually, and a record kept. The inspection should include a functional test to ensure the correct operation of internal components.
- All gas cylinders are hazardous, either because of their toxic or asphyxiant properties, or because of the cylinder pressure. In a fire situation, they can kill. Therefore all cylinders should be stored in a locked external gas store, where practical. This is particularly important for acetylene, which becomes highly unstable when heated. Only use acetylene where it is the only option.

7.12.4 Cryogenic gases

In large quantities, cryogenic liquids/gases can kill. **The use of oxygen deficiency monitors is a last resort; the primary goal is to remove the risk of an oxygen deficient atmosphere by good planning and design.**

- Check that 'worst case' calculations are carried out to ensure that an asphyxiant atmosphere cannot result from a leak or spill. If the room isn't big enough, or the ventilation is inadequate, either find a more suitable laboratory, improve the ventilation, or minimise the quantities in use.
- Define emergency procedures (e.g. how to deal with spillages, leaks, first aid treatment etc) and carry out emergency drills. **DO NOT** rely on a rescue squad with breathing apparatus arriving to effect a rescue; the University does not have the personnel or equipment to achieve this, and the Fire and Rescue Service will be too late.

7.12.5 Woodworking and engineering machine tools

Woodworking and engineering machine tools operate at high speed with rotating or cutting tools.

- It is **MANDATORY** that operators attend a formal training course. Only authorised users are allowed to use such machines.
- Machinery must meet designated minimum standards relating to guarding, emergency brakes and stop controls, and use of protection devices. If an old machine is moved, legally it is deemed to have been brought into new use, and must be brought up to modern standards.
- Machinery must be maintained in a safe condition, although there is no statutory timescale for this. Guards and protection devices must be routinely checked and the checks recorded.

7.12.6 Signage

- High risk areas (laboratories, workshop, laser rooms) must have appropriate signage (pictorial, supplemented by text if necessary).
- There is a university standard for signage on laboratory doors, to ensure consistency and avoid a proliferation of signs – contact H&SS for information.
- Any equipment that is left running overnight and which must not be switched off should have a sign to say so.
- Any laboratories with equipment which could fail and cause a problem e.g. flood, should have a sign on the door with a contact name and telephone number so that university Security, FMD or the emergency services can obtain more information about potential risks – or alert the Principal Investigator about the problem before it deteriorates further.

Any equipment that may need to be made safe during out-of-hours, and can be done so safely by untrained personnel e.g. Security, must have written instructions in the immediate vicinity e.g. "In an emergency, switch off the plug". This would only be appropriate in area where emergency access is permitted (see above on classification of laboratories).

8 TRAVEL AND FIELDWORK

See: *Safety Code of Practice 38: Overseas Travel, Safety Code of Practice 32: Fieldwork, FCO web site*

8.1 Risk assessment and approval

Low risk travel e.g. to developed destinations, does not need a specific risk assessment. Sensible travel precautions should be adopted – see UK Foreign and Commonwealth Office (FCO) web site, and the generic risk assessment contained in Safety Guide 38.

Medium and higher risk travel requires a specific risk assessment. Medium risks include e.g. civil or political unrest; disease and infection; individual fitness to fly/travel for someone with a medical condition; extreme weather; poor transport safety record.

All travel requires prior approval, as per table below.

Low	Medium	High
<p>Line Manager, consistent with normal financial approval systems</p> <p>Note: If the trip is being financed by an external organisation/grant award body and the grant holder has authority to approve expenditure, authorisation from the Head of Department and/or Line Manager must still be obtained.</p>	<p>Head of School</p> <p>Head of Directorate</p> <p>Deputy Head of Directorate</p>	<p>Where an FCO travel advisory notice is in force – Vice Chancellor; Deputy Vice Chancellor; Pro-Vice-Chancellor (in that order, depending on availability)</p> <p>For other high risks:</p> <p>Dean of Faculty</p> <p>Head of Directorate</p>

8.2 Traveller information

Each School must have a system for knowing where its travellers are, and how to contact them in an emergency. The University will be unable to assist staff/students in an emergency if there are no travel details and the person is out of regular contact.

Each traveller must know how to contact the University and its travel insurers, Zurich, if they need assistance.

Travellers must understand the laws of the country that they are visiting (e.g. driving; drugs; alcohol; import/export of equipment or materials; visa requirements etc). Where required, they must obtain the relevant consents before travel e.g. work permit, licences for importing/exporting equipment or samples.

8.3 Fieldwork

Fieldwork is work carried out by staff or students of the University for the purposes of teaching, research, or study that involves either practical work, or organised group activity, off campus, in the UK or overseas.

- New proposals for fieldwork must be approved by the Head of School. New destinations or activities must be fully risk assessed, and if necessary a preliminary visit made to check on local conditions/arrangements.
- Repeats of previous successful trips do not necessarily need Head of School approval unless there have been significant changes.
- Fieldwork Leaders must be competent to plan, organise, manage and lead fieldwork, including dealing with unexpected events, emergencies or problems with students.
- 3rd party providers e.g. accommodation, transport should be vetted for safety standards unless using a university preferred supplier. If using 3rd party providers, make sure that it is clear who is responsible for what.
- Fieldwork must be planned, and details (travel plans, names of participants, contact details etc) must be available within the School for access in an emergency (same as for international travel). Plans must cover:
 - Levels of supervision
 - Contingencies and emergency situations
 - Participant's medical conditions (if any) or disabilities
 - Communications within the party and with the University
 - Insurance
 - Travel arrangements
- Fieldwork Leaders have authority to stop the activity (which may include leaving a location) if they judge that the situation is unsafe.

Especially for undergraduate field trips, codes of behaviour/conduct must be developed so that poor behaviour is discouraged and the Fieldwork Supervisor has authority to take action if required. University disciplinary procedures should be applied if necessary.

9 PLACEMENTS

9.1 Placements

- All placement providers must be assessed to ensure they provide safe working conditions, as well as the right educational experience for students.
- Placement providers generally must have:
 - A health and safety policy
 - Someone nominated to be responsible for the placement
 - Adequate supervision and training where appropriate
 - Emergency procedures (in a low risk workplace this may be limited to fire precautions)
 - Accident reporting procedures
 - Employer's liability insurance
- Low risk workplaces do not need a pre-placement visit by the university organiser or tutor, provided basic checks of the above requirements are carried out.

- High risk workplaces will require a pre-placement visit to check arrangements, supervision, working conditions etc.
- Placement organisers must check that participant's tasks do not involve any prohibited by law. Particular care must be taken to check requirements where young 1st year students may be under the age of 18.
- There should be a written document or contract between the University and the placement provider which sets out what each party is responsible for.
- Students must be briefed on the expectations and standards that will apply. It must be clear who is responsible for doing so – the University or the placement provider or both.
- There must be a means for the student to raise concerns with the University.

There must be a means for the University to keep in touch with the student at appropriate intervals.

10 INTERFACE ISSUES

10.1 Services provided by FMD

- FMD are responsible for the maintenance of the University campuses and buildings. FMD is not responsible for department-owned equipment. Any doubt about ownership and responsibilities should be discussed and clarified with FMD.
- FMD personnel should report to Building Managers before starting work in a building, to ensure that the proposed work will not disrupt work or research. Advance notice should be given if services need to be turned off – unless it is an emergency.

10.2 Contractors

- Where Schools engage contractors to undertake work on their behalf, they should follow Procurement rules, including using preferred contractors. This provides some assurance that the competency of the contractors has been vetted.
- Where Schools/Directorates engage other contractors, they must be competent for the work. References, insurance cover etc may need to be checked.
- All health and safety aspects of tenders/contracts should be identified, quantified, costed, and discussed with interested parties.
- There must be arrangements to share information about risks in the workplace – either introduced by the contractor, or inherent in the workplace e.g. no-go areas, presence of asbestos, PTW systems etc.
- Safe working methods must be agreed.
 - How the job will be done
 - Equipment etc to be used
 - Health and safety precautions
 - Emergency procedures (fire etc)
 - Checks on asbestos register if appropriate
 - Facilities/work area made safe for contractors to work in
 - Arrangements to protect staff and students
 - Permitted areas/activities

Appendix 1: Version control

VERSION	KEEPER	REVIEWED	APPROVED BY	APPROVAL DATE
X.X	H&S	Every four years	XXXXX	XX/XX/XX
X.X	H&S	Annually	XXXXX	XX/XX/XX