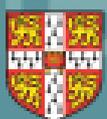


May 2014

Risk Assessment Handbook

Occupational Health & Safety Service
HSD044M (rev 3)



UNIVERSITY OF
CAMBRIDGE

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Risk assessment policy statement

The University of Cambridge is committed to achieving and maintaining the highest standards of health and safety for all employees, students and others who may be affected by the University's activities. This will be accomplished by:

- The identification of hazards
- The identification of people who may be exposed to the hazards
- The evaluation of the significant risks to which employees, students and others are exposed
- The recognition of the likelihood of foreseeable accidents, injuries, ill-health or near misses occurring
- The selection of realistic and practical precautions and control measures

This process is called risk assessment.

Risk assessment must be carried out as part of the health and safety management process and should include looking at the equipment we use, the buildings we occupy and the systems of work we employ.

The risk assessment is a living document and must be reviewed and revised as indicated in the guidance. It must be relevant and appropriate for the activity.

Ideally risk assessments should be carried out by people who are trained and competent in the process, but it is essential that people who are carrying out the work participate in the process, following the principle that, "those who create risks must manage them".

Risk is an inevitable part of everyday life. It cannot be eliminated altogether but nor should it be entertained glibly. The risks need to be managed responsibly for the purposes of identifying the measures that need to be taken to comply with the requirements of the relevant statutory provisions. Where several regulations specify risk assessment, it is not necessary to conduct a separate risk assessment to satisfy each of the relevant Regulations, provided that all the requirements of each are met. However, moral, financial and legal duties require us to eliminate, minimise or control these risks in our work, and the completion of a risk assessment is the first step in this process.

Date.....

Signed.....

Section A Risk assessment guidance

Introduction

The concept of risk assessment requires the University of Cambridge to take all reasonably practicable precautions to safeguard staff, students, researchers and anyone else who may be affected by our operations. This includes members of the public, volunteers, contractors, visiting academics, student and work experience placements. The risk assessment should be based on a balanced judgment of the extent and realisation of the risks against the time, trouble and cost of the steps required to remove, reduce or otherwise control it. If the costs are grossly disproportionate then the University is entitled to deduce that the steps proposed are not reasonably practicable – this judgment should be documented to show what information the decision was based on and the reason why the decisions were made.

Taking risks is a part of modern life, and health and safety and the need to complete risk assessments should not be used as an excuse to avoid that.

The Law

The Management of Health and Safety at Work Regulations require the University to make a 'suitable and sufficient' assessment of:

1. the risks to health and safety to which employees are exposed whilst they are at work; this includes working abroad, working away from University premises and in the field.
2. the risks to the health and safety of students, contractors, members of the public (including children), visiting researchers, casual staff, who may be affected by the University's activities.

The regulations also require the significant findings of the assessment to be recorded, and the assessment to be reviewed regularly.

The duties of these regulations overlap with other regulations because of their wide-ranging general nature. For example, the Control of Substances Hazardous to Health regulations (COSHH) require the University to assess the risks from exposure from all substances hazardous to health. An assessment made for the purposes of COSHH need not be repeated for the purpose of the Management Regulations, (see the University's hazardous substances policy and chemical hazard risk assessment) but other risks still need to be considered. This approach also applies to work with Ionising Radiations, where the Ionising Radiations Regulations 1999 contain very specific prior risk assessment requirements.

When should the risk assessment be done?

“Supervisors should take all reasonably practicable steps to make sure people will not be hurt or made ill by their project. When the project is underway, a supervisor will need to check that their team members are following any necessary safe working procedures and that all the other control measures are working properly. It is not enough just to tell people about working safely, it is essential to check they are actually doing it.”

Managing Health and Safety Aspects of Risk in Further and Higher Education - HSE

Risk assessment **must always be done at the planning stage, before the proposed work** is carried out. This can be a rough or preliminary risk assessment at first looking at the significant risks that are likely to be encountered such as working at height, what utilities are required (gas, water, electricity). If there are generic assessments in place, these will need to be adapted for the particular work proposed if what is being planned differs significantly.

The principles of risk assessment

The purpose of the assessment is not a form filling exercise but is to identify what the University needs to do in order to comply with the requirements of statutory Regulations and to satisfy the University’s insurers. This is based on two guiding principles:

1. reasonably practicable – a balanced judgment about measures required to control the risks against the time, trouble and cost of their implementation. If the cost is grossly disproportionate then the steps may not be reasonably practicable.
2. reasonably foreseeable – a predictive assessment both of normal and potentially foreseeable abnormal working conditions which could result in accident or loss.

The HSE have defined 5 steps to risk assessment* :

- look for the hazards
- decide who might be harmed and how
- evaluate the risks arising from the hazards and decide whether existing precautions are adequate or whether more should be done
- record your findings
- review assessments every year as a minimum and when work and people change or there has been an accident or incident

The risk assessment must involve identifying the hazards associated with the work of the University and evaluating the extent of the risks involved, taking into account the existing precautions and their effectiveness.

* Reference: www.hse.gov.uk/pubng163.pdf

It is important to distinguish between hazard and risk. These are defined in the Management of Health and Safety at Work Regulations – Approved Code of Practice.

1. **A hazard** is something with the potential to cause harm. These can include chemicals, electricity, working at height, lifting equipment and workshop machines.
2. **A risk** is the likelihood of the potential harm from the hazard being realised. The extent of the risk depends on:
 - the likelihood of harm occurring
 - the potential severity of that harm e.g. serious accident, adverse health event
 - the number of people who may be affected
 - the type of people who may be affected e.g. the employees carrying out the work, other employees, cleaners, security patrollers, students, visitors, children etc.

Example: A bottle of bleach is a chemical hazard. Locked away in a cleaner's cupboard it is a low risk. Used by a cleaner wearing appropriate gloves and eye protection it is a managed medium risk. Decanted into a lemonade bottle and left out on a sink during a visit of under 10 year old school children, it is a high, uncontrolled risk.

Evaluating the risk

The initial assessment of the risk or likelihood of harm associated to a hazard (e.g. a serious accident or incident occurring) being realised is different from the hazard evaluation. There are far more potential variables:

- who is doing the task?
- what relevant training and supervision do they have?
- how many people are doing the work?
- how many times?
- for how long?
- what about non routine operations?
- what existing controls are in place?
- do the controls work?
- are controls adhered to?
- if the controls fail, do they fail to safety or danger?
- any evidence of accidents or incidents or near misses?
- what are the results of health surveillance?

Any rating of likelihood requires the making of a subjective judgment based on who, what and how often. This can be difficult but should be based on a judgment of 'reasonable foreseeability'. What is required is sensible and responsible health and safety. Do not get bogged down in things which are most unlikely to happen.

The recommended rating scale is:

- **High** likely to occur imminently
- **Medium** likely to occur in time, hazardous activity occurs occasionally
- **Low** may occur in time, the hazard exists infrequently, and there is a low expectation of occurrence

At what level should the process and tasks be assessed?

There is no easy answer; if a process or task is too big or complex it will almost certainly be too complex to assess effectively. The main task should be broken down into effective sub-tasks until the level of description makes sense for the assessment. Keep it simple!

Controlling the risk

There is a well thought out sequence of steps for controlling exposure – known as the hierarchy of risk control.

1. If possible avoid the risk identified altogether, such as by doing the work in a different way. (This is not a practical or pragmatic approach for much of the University's work, however for certain specialised hazards – radiological or biological for instance, substitution by a less hazardous materials or method is something that must always be considered.)
2. The risks identified should then be reduced or controlled. This can be achieved in numerous ways:
 - limit the number of people exposed
 - introduce engineering controls, e.g. use a fume cupboard when using strong concentrated acids
 - separate the process from personnel, e.g. locating noisy machinery in an enclosure
 - introduce a permit to work, e.g. carrying out maintenance duties in a known asbestos containing area
 - adapting the work to the individual, e.g. upgrading of computer workstation and chairs
 - take advantage of technological progress, e.g. use voice recognition software
 - administration procedures, e.g. controlled or restricted access, safety signs and written procedures
 - people e.g. various tasks of a cleaner, a work experience placement
 - consider places e.g. access arrangements to a roof and locking off procedures of plant to work there
 - consider machinery or equipment e.g. a group of items in a workshop
 - consider experiments or events e.g. undergraduate or research projects, Science Festival

3. Part of reducing risk is the provision of information, instruction and safety training and, where necessary, supervision of people new to the work, students and other visitors.
4. The provision of personal protective equipment (PPE). This is often referred to as the 'last resort' but PPE is an important part of the control measures for many of the daily activities of the University:
 - wearing eye protection when operating machinery in workshops
 - wearing work gloves and safety footwear when handling gas cylinders
5. The outcome of the risk assessment may also prescribe **health surveillance**

Any effective strategy for managing and controlling risks will usually involve a series of control measures, e.g. working on masts – code of practice, safety harness, helmets, permits to climb – to ensure that the risks identified are minimised as far as reasonably practicable.

Recording the process and communicating the findings

The law requires that the assessment has to be recorded. The findings of the risk assessment must be acted upon and notified to all the people affected by it, with any changes to the procedure or the control measures implemented, monitored and reviewed. Examples of assessment forms and some completed sample forms are in section B of the guidance.

The effective management of health and safety in the University is a key and important management responsibility at all levels.

Risk assessments need to be reviewed

The risk assessment and control measures must be reviewed and if necessary revised where there is significant change, when circumstances change such as following the introduction of new equipment or if there has been an accident, incident or near miss. This should also include when new personnel join or when the results of health surveillance are known. Effective managers will also be looking into the future to reflect expected changes or problems. Even if there is believed to have been none of these changes, ideally a review should be conducted annually. If no revisions are required say so.

When carrying out assessments include any notes, diagrams or other references that help to show how the risk evaluation was achieved, and include any relevant operating procedures, method statements etc.

As the University faces increased scrutiny from the regulatory agencies, Health and Safety Executive (HSE), Environment Agency (EA) etc, we have to ensure that we have a robust health and safety risk management process in place – the first question asked will be 'have we done a risk assessment'.

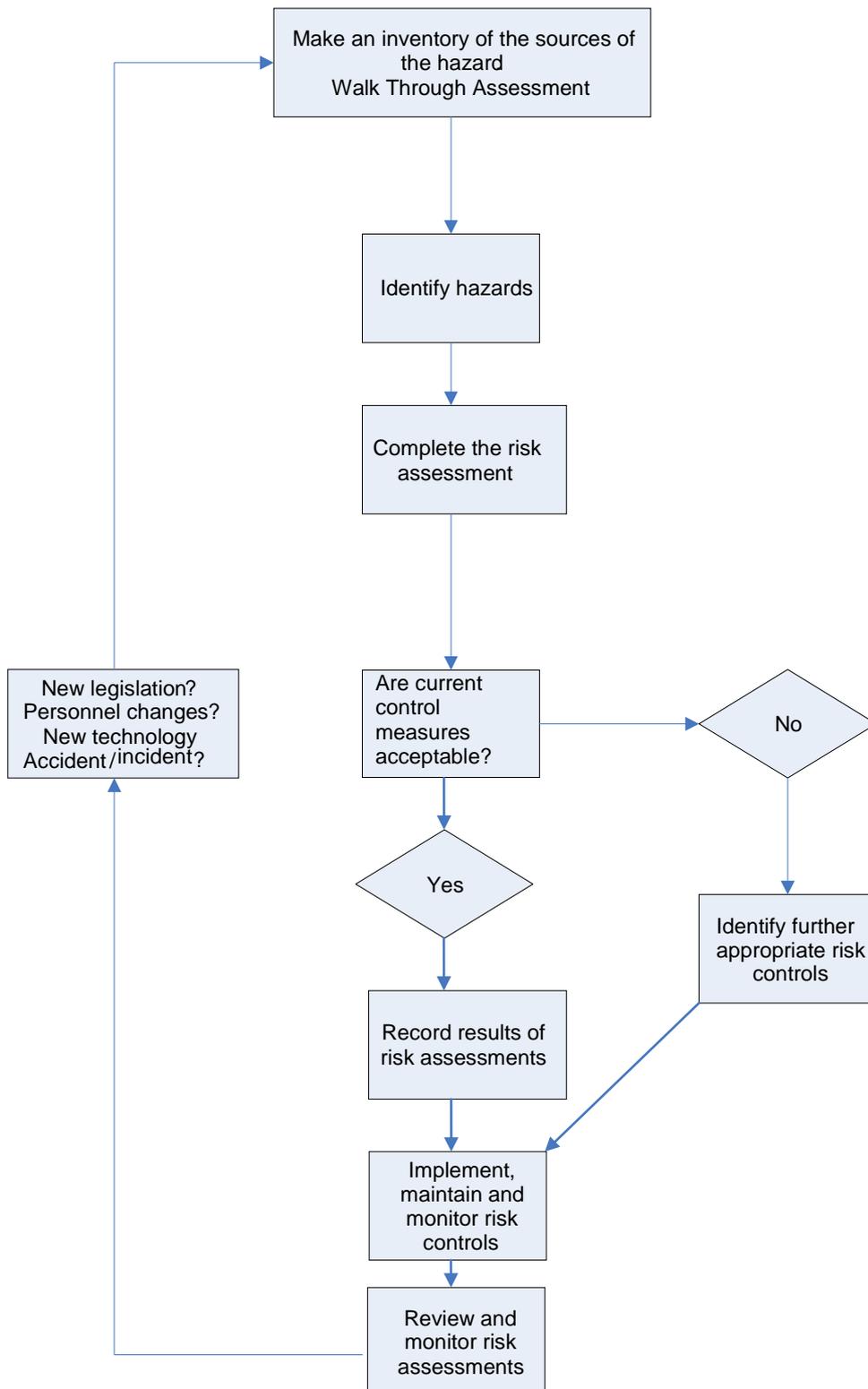
The following list gives an idea of possible problem areas. It is not a comprehensive list but gives an idea of possible problem areas and illustrates the extensive nature of the hazards which may need to be taken into account:

- confined spaces*
- experimental rigs
- fire and explosions*
- use of lifting equipment*
- noise*
- vibration*
- pressure systems*
- work equipment*
- hazardous substances*
- temperature extremes
- personal safety
- electricity*
- working at height*
- ionising radiation**
- manual handling*
- non-ionising radiation**
- slips, trips and falls
- working with animals
- field trips
- lighting
- genetically modified organisms**

*specific legislation

**Risk assessment guidance and suggested assessment formats have been in place for these specific hazards for a number of years. These documents are currently published on the Safety Office website and in the printed SO manuals relating to the management of ionising radiations and lasers.

Summary of the Risk Assessment Process



Section B Aids to risk assessment

Example of a health and safety risk management action plan

Department.....

Location.....

	Action	Date to be completed
1	Completion of work activity listings for work areas.	
2	Completion of walk-through of key and support activities.	
3	Completion of detailed risk assessments of high risks identified. Begin implementation of control measures.	
4	Completion of detailed risk assessments of medium risks identified. Begin implementation of control measures.	
5	Draw up a schedule describing how the control measures implemented for all the significant risks (high and medium risks) will be monitored for effectiveness.	
6	The low risks are reviewed to identify which of them carry a significant risk of litigation, e.g. slips, trips and falls (on the level) and implement a control strategy designed to minimise such risks.	
7	A review of all walk-through assessments to ensure that all significant risks have been identified.	
8	Schedule to be written detailing how local management intend to monitor the effectiveness of the risk control measures.	

Signed.....

Date.....

Role.....

**Example of a “walk through” assessment form
for office based or arts departments**

Page.....of.....

Date.....

Initial “walk through” survey to identify potential problems and prioritise for full risk assessment.

Project/section.....

Location.....

Operation/process.....

Names of assessors.....

Task identification and hazard information	H	L	R	Priority	Likelihood information
Key: H – Hazard rating L – Likelihood R – Risk rating					

Use of risk assessment forms

There is no right or wrong way of recording your evidence from the risk assessment process. There are many types of risk assessment forms in use across the University of Cambridge and some of the best risk assessments seen by the Health and Safety Office have started with a blank sheet of paper (*see example, page 49*).

Section C has an example of 2 blank risk assessment forms and some completed examples. If necessary, when completing a risk assessment form, attach diagrams and any notes made. Make it as comprehensive as possible and do not get too worried about the form used.

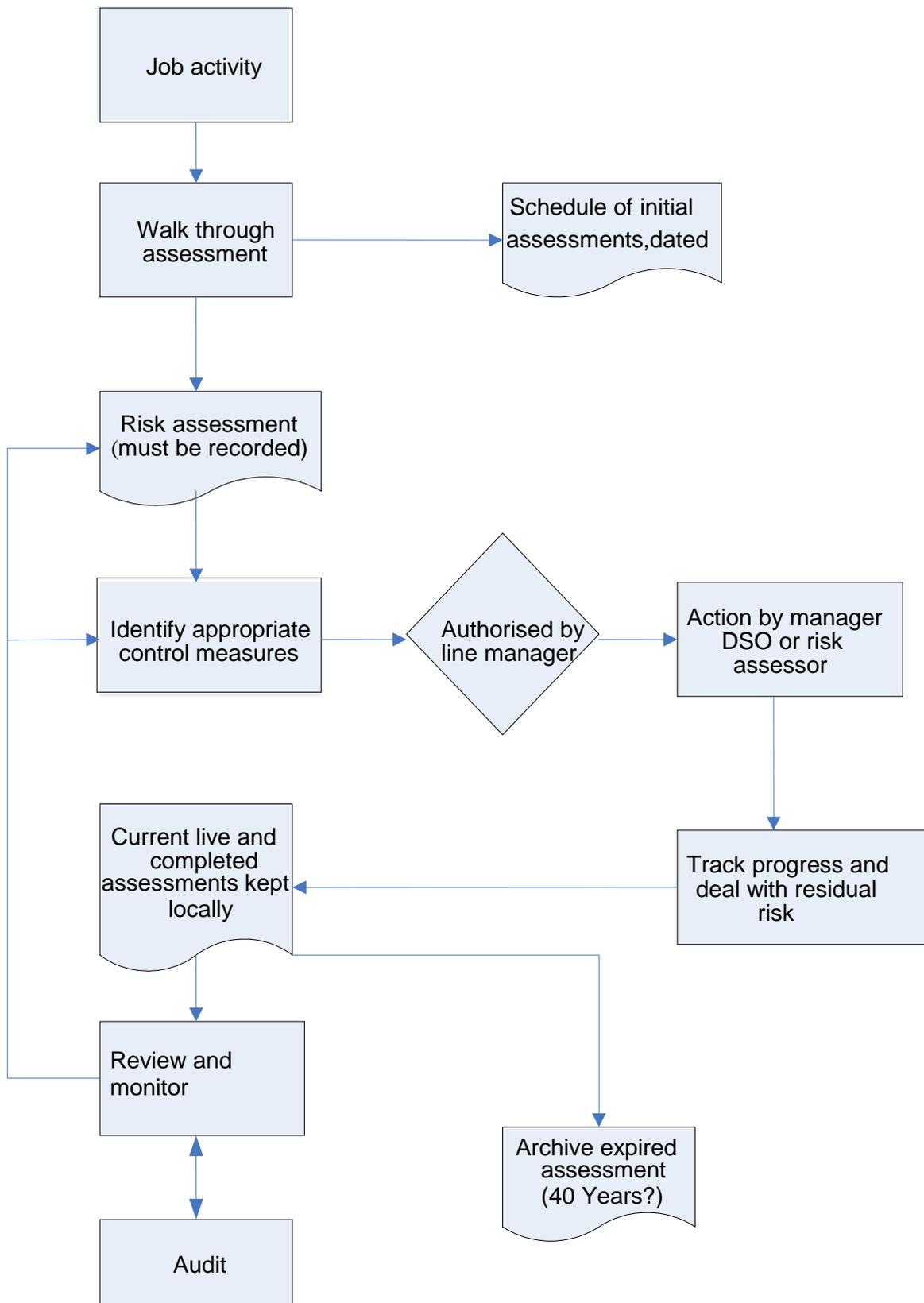
Legislation

Health and safety legislation requiring risk assessment as part of the management process:

- Management of Health and Safety at Work Regulations
- Manual Handling Operations Regulations
- Health and Safety (Display Screen Equipment) Regulations
- Personal Protective Equipment Regulations
- Provision and Use of Work Equipment Regulations
- Noise at Work Regulations
- Control of Substances Hazardous to Health Regulations
- Control of Asbestos at Work Regulations
- Confined Space Regulations
- The Ionising Radiations Regulations
- Genetically Modified (Contained Use) Regulations

This list is not exhaustive and does not cover regulations dealing with highly specialised risks such as major hazards.

Audit trail considerations



References

- 1 Management of Health and Safety at Work (Management of Health and Safety at Work Regulations 1999). Approved Code of Practice and Guidance. L21 ISBN 0-7176-2488-9
- 2 HSE Website – Risk Management
www.hse.gov.uk/risk/
- 3 Occupational Health and Safety Management Systems – Guide BS8800:2004
- 4 IOSH Website – risk management tool kit
www.iosh.co.uk
- 5 Safety Office website
www.admin.cam.ac.uk/offices/safety
- 6 Safety Office publication
HSD125M Risk assessment, COSHH, Safe Systems of Work and Safety Data sheets. What's the Difference?

Section C General Risk Assessment Forms

General Risk Assessment Form

RA1

University of Cambridge, general risk assessment form

Describe the activity, experiment or area under assessment.

List the significant hazard(s). ¹	Describe what could go wrong – that is, say who might be hurt and how. ²	Is the risk high, medium or low? ³	Please list the existing and/or intended control measures which will reduce the likelihood of all this happening. ⁴	Suggest here any further actions which may be beneficial. Say who will carry them out and by when.

Important! It is essential to check regularly that control measures specified in this risk assessment document are actually being used in practice. Any specialist emergency or first aid procedures should be specified here.	
If any Standard Operating Procedure (SOP) is required, please specify it here or attach it to this form. Any specialist training required should also be specified here	
Is special monitoring (e.g. hearing test, eye test, health surveillance) required? If so, please enter details and also contact the University Occupational Health Service.	What personal protective equipment (PPE) is required (e.g. overalls, gloves, respiratory protection, eye protection)? You must ensure that any PPE specified is suitable for the purpose.

Please complete this section to confirm that this constitutes a suitable and sufficient assessment of risk.

Name of assessor:	Signature:	Date:	Name of supervisor:	Signature:	Date:
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This assessment should be reviewed regularly (usually every 12 months), or earlier if there is a material change to the process, the equipment, location or relevant safety technologies. It should also be reviewed when new people are involved, or after an accident or incident has taken place.

Reviewed by (name)	Signature	Date	Indicate changes here ⁵

¹ A list of hazards is provided below to help you, but this may not be exhaustive. If any of these hazards can be eliminated altogether, or can be reduced at source by making an inherent change then we must consider doing so. Hazards in **bold** will also need an additional, more technical assessment on a specialist form - please ask your Departmental Safety Officer or the University Safety Office for further advice.

High or low temperatures	High pressures	Chemical hazards	Biological hazards	Genetically Modified Organisms	
Ionising radiations	Lasers	Sharp objects	Dusts	Work at heights	Animal houses
Magnetic fields	Machinery hazards	Electricity	Manual Handling	Noise	Vibration
Falling objects	Collapsing structures	Flooding	Slips, trips and falls	Asphyxiant gases	Flammable gases

² Please explain how an accident, incident or health condition could arise. We must consider all events which are *reasonably foreseeable*.

³ Please see the health and safety risk assessment handbook for further guidance on levels of risk.

⁴ When deciding on suitable control measures, you should ensure that you are complying with all relevant University policy and guidance documents, and that you have considered the hierarchy of control measures. In order to comply with legislation, we must also take all steps which are 'reasonably practicable' to reduce risk. This means that we should take all steps which are (in terms of time, cost and trouble) reasonable in relation to the reduction of risk achieved.

⁵ If changes are extensive, you will need to complete a whole new form, or attach a written amendment. If there are no changes say so.

RISK ASSESSMENT FORM

Risk assessment	Date: Reference no:
<p>Activity details</p> <p>What will the activity involve?</p> <p>With whom?</p> <p>When?</p>	
Identify the potential hazards	Is the risk: High, Medium or Low?
What control measures are in place?	
If any of the hazards are High risk, what have you done to take this into account and mitigate the risk?	
<p>Do any other risk assessments relate to this activity? Yes/No</p> <p>If 'Yes', refer to them here and attach a copy.</p>	

Before signing the form, have you specified:

	Yes	No
When the activity will take place?		
Who is involved?		
What will the activity involve?		
What is the purpose of the activity?		
Are there any special risks?		
Have you cross referenced to other risk assessments?		
Insurance checked?		
Travelling arrangements in place?		
Health issues checked?		
Equipment requirements checked?		
Where the information is kept/available?		

Emergency contact numbers

Name and position of person completing the form

Signature

Name, position and signature of supervisor

Countersignature of Departmental Safety Officers, who will received the form and keep a copy

Please see document HSD044M Examples of completed risk assessment forms.

Those who create risks must manage them



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