

Safety Code of Practice 35

1st Edition, June 2006

WORK AT HEIGHT



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1 SUMMARY

This Safety Guide applies to ALL work at ANY height where there is a risk of a fall liable to cause personal injury (Note: the previous 'over 2m height' definition of work at height has been removed).

In the University setting, work at height includes simple tasks such as the retrieval of items from high-level shelving, putting posters up, putting Christmas decorations up, etc. as well as the more obvious risk sectors of construction and maintenance work.

All work at height must be:

- Avoided if it is reasonably practicable to do the work in some other way;
- Risk assessed;
- Properly planned, organised and supervised as appropriate;
- Carried out in a safe manner, so far as is reasonably practicable;
- Undertaken by competent people, who have had appropriate training;
- Undertaken using appropriate equipment, which is inspected and maintained as required;
- Undertaken in a way that minimises the risk of, and consequences of, persons falling or of falling objects.

The majority of this Guide applies to routine 'office' type work, student projects and day-to-day maintenance tasks using e.g. short ladders and stepladders or working in loading bays, on staging etc. Safety Note 38 gives practical guidance for users on the use and inspection of ladders and stepladders.

More detailed requirements apply to higher risk activities that will normally only be undertaken by Facilities Management Directorate staff and their engineering and maintenance contractors. The guidance includes detailed requirements that apply to existing places of work (e.g. roof work) and means of access for work at height, including the use of: collective fall prevention (e.g. guardrails and working platforms); collective fall arrest (e.g. nets, airbags etc); personal fall protection (e.g. work restraints, fall arrest and rope access) and ladders.

Guidance:

The key message is to avoid work at height where you can; use the right work equipment or other measures to prevent falls where you cannot avoid working at height; and where you cannot eliminate the risk of a fall, use safety equipment that will minimise the distance and consequences of a fall should one occur. All staff must know how to use the equipment provided, and how to work safely.

2 SCOPE

This Guide sets out what managers and staff have to do to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury. This Guide reflects the requirements of the Work at Height Regulations 2005.

This Guide applies to ALL work at ANY height where there is a risk of a fall liable to cause personal injury (Note: the previous over 2m height ruling has been removed). There are duties on the University as an employer and on any person that controls the work of others to the extent of their control (for example project managers or building managers who may contract others to work at height).

Typical examples of work at height undertaken within the University of Reading include, but are not limited to:

- Putting up posters on walls and display boards above eye level
- Accessing high shelves for storage
- Changing light bulbs
- Accessing or working on wall mounted equipment, such as monitoring systems and air conditioning units
- Accessing or working on flat roofs
- Accessing large waste skips
- Working in loading bays
- Putting up Christmas decorations
- Using access platforms / ladders within theatres to build scenery
- Art projects
- Building maintenance work
- Grounds work, tree pruning

Guidance:

Falls from height are the most common cause of fatal injury and the second most common cause of major injury to employees in the UK, accounting for around 15% of all such injuries. Even a short fall of less than 2 metres can result in a major injury. In the Education Sector over the last six years there have been five deaths and over three thousand injuries due to falling from height. Most major injuries are caused by 'low' falls i.e. below two metres, and involve stairs. But other activities are also involved, such as falls from desks/chairs while putting up displays; falls from stools while closing windows, and falls from ladders while carrying out repairs and maintenance work. **It is essential that Schools/Department recognise that this is a significant risk and take some simple steps to manage these types of activities.**

3 RESPONSIBILITIES

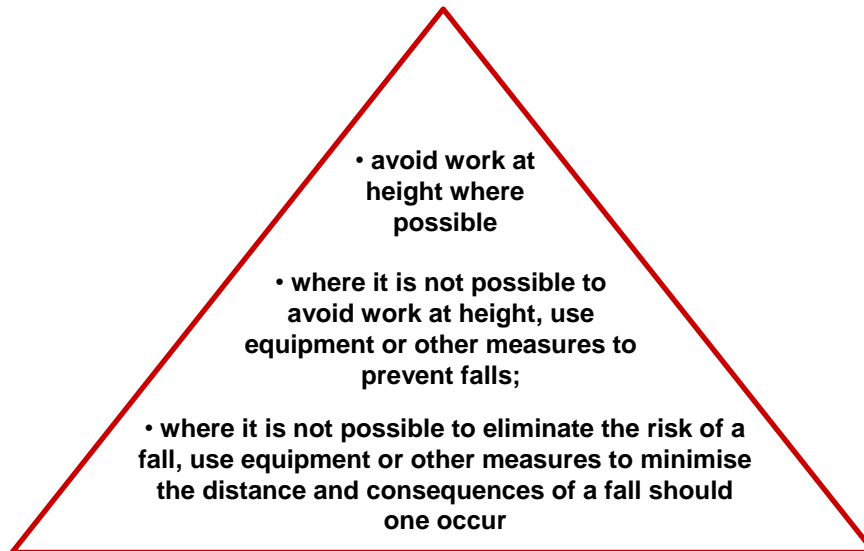
Managers, staff and others (e.g. temporary workers, contractors) have a duty to ensure that work of height is conducted safely, so far as is reasonably practicable.

3.1 Duties on managers

Heads of Schools/Directorates and other managers must ensure that:

- All work at height is properly planned and organised;
- Those involved in work at height are trained and competent;
- The risks from work at height are identified and assessed;
- Appropriate work equipment is selected and used;
- Equipment for work at height is properly inspected and maintained;
- The risks from fragile surfaces are properly controlled;
- All work at height takes account of weather conditions that could endanger health and safety;
- The risks from falling objects are controlled.

Managers must ensure that everything that is reasonably practicable is done to prevent anyone falling. The following hierarchy **must be followed** for managing work at height:



3.2 Duties on all staff

Staff must:

- Report any activity or defect that is likely to endanger yourself or another person;
- Ensure that you receive appropriate training for working at height;
- Use equipment for working at height in accordance with your training;
- Comply with any instructions or procedures for working at height.

3.3 Duties on project managers, engineers and others who supervise contractors

The duties set out above apply to contractors and their workers who are engaged on University construction and maintenance contracts. There is a duty to ensure the competency of contractors selected to undertake work at height, and there is a shared responsibility to assess the risks of work that could affect University staff, students or any others. The risk assessment and associated safe working rules and procedures must be agreed with the contractor. In so far as University staff control such work, there is a duty to apply the requirements of this Guide.

4 PLANNING AND ORGANISING

If there is no alternative to working at height, the work must be properly planned, supervised, and carried out in as safe a way as is reasonably practicable.

4.1 Weather

For outdoors work, the plan must take account of adverse weather conditions. Work must be postponed if weather conditions are likely to endanger the health and safety of those working at height.

Guidance:

Adverse weather conditions include:

Snow, frost and ice on ladders and scaffolding (risk of slips and falls)

High wind (do not use ladders if the wind force is force 6 or above – defined as strong breeze when the branches of large trees are in motion)

Possibility of lightning strike.

4.2 Emergency plan

The plan must include what to do in an emergency and for rescue. Reliance on the emergency services (e.g. fire brigade) is not an adequate emergency plan.

5 TRAINING AND COMPETENCY

Managers must ensure that all those involved in the work are competent. If the risk of a fall has not been entirely eliminated, staff must be trained in how to avoid falling, and how to avoid or minimise injury if they do fall. They must be able to understand the potential hazards of the work and of the equipment being used; be able to recognise defects or omissions in the work or equipment; recognise the health and safety implications; and specify remedial action to make conditions safe.

6 THE LOCATION OF THE WORK

The place of work must be safe and must normally have features to prevent a fall.

The Work at Height Regulations include a number of schedules giving detailed requirements for existing places of work and means of access for work at height; for collective fall prevention (e.g. guardrails and working platforms); for collective fall arrest (e.g. nets, airbags etc.); for personal fall protection (e.g. work restraints, fall arrest and rope access) and for ladders.

Appendix 1 sets out detailed requirements for the place of work and access and egress.

6.1 Work in offices, laboratories and support services

Academic and support staff, including technicians, administrative support, library staff, catering services and maintenance staff, often have to work at raised levels. The appropriate equipment must be provided and used to enable work to be undertaken safely. Staff must know what equipment is available and how to use it safely.

Guidance:

Eliminate the need to use tables and chairs to work at height by providing small portable stepladders and 'elephants foot' type steps (see Safety Note 38). Ensure these are available locally so that staff are not tempted just to use what is to hand.

Train staff on the safe use of working at height equipment, including simple pre-use checks.

Ensure that risk assessments take account of the risk of low falls (risks such as storage at high levels in stationery cupboards can often be overlooked).

6.2 Loading bays and mezzanine floors

The edges of loading bays must be clearly marked. Where there is a danger of people falling, loading bays need to be fenced, for example by secure guardrails (designed so that goods can be passed safely over or under them). If guard rails are not practical, alternative safeguards may be needed such as temporary or hinged guarding that can be removed or moved during loading/unloading and then replaced. If the risk of a fall is low it may be acceptable not to provide guarding at the loading/unloading point i.e. where delivery vans pull up and unload onto the working platform. Other edges of the loading bay which provide a walkway for pedestrians and where a fall could result in injury should be guarded.

Guidance:

Robust removable or folding guard rails provide more protection than removable chains.

Mezzanine floors must have adequate guarding to prevent a fall and to prevent any materials or objects falling onto the floor below. The floor must be strong enough for the purpose for which the area is being used.

6.3 Waste skips

Where equipment is needed to gain access to waste skips, a fixed platform, staging or stepladder with a working platform and guard rails must be provided. A ladder must not be used.

6.4 Roof work

Unauthorised personnel are not permitted to access roofs. Roof access is controlled by Facilities Management Directorate. **Where access is required to a roof, a risk assessment must be prepared, taking account of:**

- Access and egress (routes on and off for personnel and equipment)
- The duration of the work
- The pitch and condition of the roof
- Any fragile surfaces such as roof lights, unprotected openings, or fragile roofing material
- Provision of suitable edge protection or alternative methods of protection
- Exposure to hazardous materials e.g. emissions from local exhaust ventilation
- Prevention of falling materials
- Tripping hazards presented by service pipework etc.
- Weather conditions (high winds, frost, lightning)
- Proximity to other hazards e.g. electromagnetic radiation from radio masts
- Emergency procedures

On designated roofs (those which have telecommunications equipment sited on them), a Permit-to-Work system operates and must be followed.

6.5 Other work at height

Other, more specialist work at height may be undertaken on University farms, by Grounds and maintenance staff and others. This may include e.g. tree work, work on silage clamps, gutter cleaning and maintenance. All such work is considered potentially high risk. There must be a safe system of work and working procedures for these types of activities.

7 EQUIPMENT FOR WORK AT HEIGHT

7.1 Selection of equipment

If the risk of a fall remains, equipment to prevent a fall must be provided, so far as reasonably practicable. Such equipment must be suitable and give collective protection for the whole workforce e.g. guard rails, priority over personal protection measures e.g. safety harnesses. Consideration should be given to the working conditions; the distance to be negotiated for access and egress; the distance and consequences of a potential fall; the duration and frequency of use; the need for evacuation in the event of an emergency; and any additional risks posed by the use, installation or evacuation of such equipment.

Guidance:

The regulations allow for various different types of work equipment to be used. However, the choice should be determined by the risk assessment. The equipment chosen needs to be suitable in relation to:

How frequent the work or access is e.g. where frequent access is needed a fixed stairway is more suitable than a ladder.

The duration and nature of the work e.g. for long duration, or heavy duty work, scaffolding will be more appropriate than a ladder. Where the work is heavy duty but short duration a cherry picker is likely to be the appropriate choice.

The location of the work including how much available floor space and headspace there is, and the nature of the floor surface etc.

As well as selecting the correct type of equipment the actual equipment chosen has to be suitable i.e. it has to be capable of providing access at the required height without the need to overreach or stand on the guardrails of a cherry picker or the top rung of a stepladder etc. The equipment must also be in a safe condition.

7.2 Ladders and stepladders

Ladders and stepladders are regarded primarily as a means of access. They should only be used as workplaces for light work of short duration and then only if the use of more suitable equipment is not justified because of low risk and when the residual risk is adequately controlled. It is generally safer to use other equipment such as tower scaffolds, podium steps or temporary stairs.

Ladders, including stepladders, should only be used where:

- the work can be reached without stretching;
- the surface on which the ladder rests is stable and firm;
- the ladder can be secured to prevent slipping;
- the ladder can be positioned in such a way that the rungs or steps are horizontal;
- a good handhold is available (unless, in the case of a step ladder and when carrying a load, the maintenance of a handhold is not practicable);
- if used for access, the ladder is long enough to protrude sufficiently above the landing place to provide a handhold for the user.

Ladders and stepladders for use at work must normally be Class 1 'Industrial' or conform to standard EN131 (see references for details of the standards that apply). Class 3 ladders are intended for domestic use only and are not recommended for use at work.

Inspection of ladders and stepladders

Ladders must be in good condition. Schools/Departments are responsible for implementing a programme of regularly examining ladders under their control and records of these examinations must be kept. There must also be a visual inspection by the user before each use to ensure that the ladder is in good condition and that it can be used safely in the work location.

Safety Note 38 gives practical guidance for users on the use and inspection of ladders and stepladders.

7.3 Temporary staging, scaffolding and tower scaffolds

The following requirements apply to all use of temporary staging, scaffolding and tower scaffolds:

- Formal instruction and training must be provided for all those who erect such equipment.
- Persons who erect such equipment must be competent.
- The equipment must be formally inspected by a competent person at intervals while in use – see Appendix 2.
- The user or other competent person e.g. supervisor, checks the place of work (scaffold, platform, staging etc) on every occasion before the equipment is used.

Guidance:

The 'before use' check is to ensure that the equipment remains in a safe condition, and has not been affected by e.g. adverse weather or malicious tampering. The check should focus on the surface, parapet, guarding or any other fall protection measures. For equipment that remains in place and has not been moved or subject to deterioration, it will be sufficient to carry out a daily user check.

Further information on the requirements for the design, installation and formal inspection of all types of working platforms is given in Appendices 2 to 4.

8 FALLING OBJECTS AND DANGER AREAS

The person in charge of the work must ensure that:

- The fall of material or objects from height is prevented;
- Where it is not reasonably practical to prevent falling material or objects, steps are taken to prevent such materials hitting a person below.
- Danger areas, where there is a risk of people being struck by falling objects (including a person falling from height), are demarcated and entry by unauthorised persons is prohibited.

Guidance:

Steps to prevent falling material or objects may include:

toe-boards round scaffolding or staging;

netting around scaffolding;

covering of any skylights where work is being carried out on roofs (and where dropped objects could break the skylight and fall on persons below).

Steps to prevent falling material hitting persons below may include:

use of chutes to tip material into a waste skip below;

fenced off areas around work areas to prevent unauthorised access (with appropriate signage).

9 FURTHER INFORMATION

Further information and guidance is available from the following sources:

- The Work at Height Regulations 2005
- University of Reading Safety Note 38 on the use of ladders and stepladders
- HSE The Work at Height Regulations – A brief guide INDG401 04/05
- HSE Falls from Height web site <http://www.hse.gov.uk/falls/index.htm>
- HSE leaflet HeightSafe, available for download at <http://www.hse.gov.uk/pubns/heightsafeleaflet.pdf>
- BS 1129: 1990 British standard specification for portable timber ladders, steps, trestles and lightweight stagings. British Standards Institution
- BS 2037: 1994 Specification for portable aluminium ladders, steps, trestles and lightweight stagings. British Standards Institution
- BS EN 131-1 Ladders. Part 1: Specification for terms, types, functional sizes (1993) British Standards Institution.
- BS EN 131-2 Ladders. Part 2: Specification for requirements, testing, marking (1993) British Standards Institution.

Appendix 1: Requirements for the place of work, access and egress

Schedule 1 of the Work at Height Regulations sets out detailed requirements for the place of work and access and egress.

These must:

- Be stable and of sufficient strength and rigidity;
- Be located on a suitable stable and strong surface;
- Be sufficiently large enough to allow the safe passage of persons and safe use of plant or materials, and to provide a safe working area;
- Have means to prevent a fall e.g. guard rails of at least 950mm (910 for existing structures);
- Not have any gaps through which a person, object or materials could fall;
- Be constructed, used and maintained in a condition to prevent slipping or tripping, or crushing of persons between it and any adjacent structure;
- Be prevented from inadvertent movement or slippage.

Appendix 2: Inspection of work equipment

Equipment for work at height (guard rails, toe-boards, barriers, working platforms, scaffolding, collective and personal fall protection and arrest equipment, rope access and positioning systems, work restraint systems and ladders) must be inspected:

- Before use, if the safety of the equipment depends on how it is installed or assembled;
- Where the work equipment is exposed to conditions that might cause deterioration, resulting in dangerous situations. Such inspections should be at intervals deemed by the employer to be suitable, and each time exceptional circumstances occur that might jeopardise the safety of the work equipment.

Guidance:

This continues and expands previous requirements to inspect scaffold after adverse weather conditions such as high winds and snow.

Additional requirements for working platforms used in CONSTRUCTION WORK

Any working platforms that are used for construction work and from which a person could fall 2 metres or more should not be used unless it has been inspected within the previous 7 days.

An inspection may be a visual check or it may be a more rigorous examination. It must be conducted by a competent person.

Equipment for work at height (except equipment covered by the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)) must have evidence of the last inspection if the equipment is hired in or obtained from another organisation, or if it leaves the University of Reading.

Inspections must be recorded and reports kept until the next inspection.

The inspection report must be completed within the working day or shift and must contain:

- The name and address of the person for whom the report was carried out;
- The location of the work equipment inspected;
- A description of the work equipment;
- The date and time of inspection;
- Details of anything that could cause a health and safety risk, and the action taken in response;
- Details of any further action considered necessary;
- The name and position of the person making the report.

The inspection report must be submitted within 24 hours to the person on whose behalf the inspection was carried out.

The inspection report must be retained on site until the construction work is completed, and thereafter retained by the employer for a period of 3 months.

Appendix 3: Requirements for guard rails, toe boards, barriers and other collective means of protection

Schedule 2 of the Work at Height Regulations sets out general requirements for means of protection.

- Means of protection must be suitable in terms of size, strength and rigidity for the purpose for which they are being used;
- Be placed and secured to ensure that they do not become accidentally displaced;
- Be placed to prevent any fall of people, materials or objects;
- Any means of support or attachment must be sufficiently strong and suitable for the purpose;
- There must be no lateral opening in the means of protection (guarding) except where an opening is necessary for a ladder or stairway;
- If removed for access or work purposes, means of protection must be replaced as soon as practicable;
- If means of protection are removed to enable work to be undertaken, there must be other effective compensatory safety measures in place.

Schedule 2 also sets out detailed requirements that apply to CONSTRUCTION WORK

- The top guard rail must be at least 950mm high (or for existing guard rails 910mm high);
- Toe boards must be fitted and suitable to prevent the fall of persons, materials or objects;

Any intermediate guard rail must be positioned so that any gap between it and other means of protection does not exceed 470mm.

Appendix 4: Requirements for all working platforms

Schedule 3 Part 1 of the Work at Height Regulations sets out requirements for all working platforms (including scaffolding, Mobile Elevated Working Platforms - MEWPS, cradles, trestles, gangway, gantry, stairway etc).

Stability

Such platforms and any supporting structures where appropriate must:

- Be located on a stable and suitably strong surface;
- Be of suitable strength and rigidity for the purpose
- Be prevented from slipping by secure attachment to another structure (e.g. by an anti-slip device);
- Be capable of being erected and dismantled safely, without any risk of components becoming accidentally displaced and endangering any person;
- Remain stable while being altered or modified;
- In the case of wheeled structures e.g. tower scaffolds, prevented from moving inadvertently during work at height;

Safety in use

Working platforms must:

- Be sufficiently large to permit the safe passage of persons and safe use of plant and equipment;
- Provide a safe working area for the type of work being undertaken;
- Have a suitable surface with no gaps through which persons, materials or objects could fall, or otherwise give rise to any other injury;
- Be erected, maintained and used in such a condition to prevent the risk of slipping or tripping, or of persons being caught between the platform and any adjacent structure.
- Not be overloaded.

Appendix 5: Additional requirements for scaffolding

Schedule 3 Part 2 of the Work at Height Regulations sets out additional requirements for scaffolding, including the need for:

- Strength and stability calculations, except where the scaffold is assembled in conformity with a generally recognised standard configuration;
- A plan for the assembly, use and dismantling of the scaffold (depending on the complexity), drawn up by a competent person;
- The plan and any instructions to be available to those persons assembling, using, altering or dismantling the scaffold;
- The scaffold to be suitable (in terms of size, layout, and strength) for the work to be undertaken.
- Scaffold that is not available for use to be clearly marked with warning signs, and for there to be physical measures to prevent access.
- Only trained persons to undertake scaffold assembly, dismantling or alteration, and for them to be supervised by a competent person.

Appendix 6: 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