Edinburgh Napier UNIVERSITY

Health & Safety

Working at Height

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[1] *or earlier if change in legislation or on risk assessment*

Amendment Control

Version	Date	Amendments
1.0	Jan 2023	

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Policy Summary

The policy of Edinburgh Napier University is to provide and maintain safe and healthy working conditions, equipment and systems of work for all staff, students and others, and to provide such resources, information, training and supervision as needed for this purpose.

The University will provide resource and maintain appropriate management systems; systems of work and equipment to ensure that Working at Height risks are controlled. Suitable information, instruction, training and supervision will be provided to all those involved with Working at Height.

The University will adopt the principles of control as set out in the Work at Height Regulations. Other publications, including those detailed in Section 10, will also be used to source best practice guidance where appropriate.

The management of Working at Height risk will be a continual commitment by the University and will involve regular monitoring and progress meetings, a risk assessment programme, monitoring, inspection and record keeping.

This policy is formally accepted by the University.

The University will do all that is reasonably practicable to comply with its requirements, and will make the necessary resource available.

Step by step guide to Working at Height

Can the work at height be avoided? → Yes → Carry out work safely from ground level or a safe platform

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No

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Who will carry out the task?

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- ENU employee (staff/student)
- Contractor

- *Competent personnel*
- *Training in working at height activities and equipment*
- *Trained in inspections*

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Ensure a **risk assessment** is completed and a **safe system of work** implemented

- *Plan the work (people, environment, task, work equipment)*
- *Plan to deal with emergencies and rescue*
- *Selection of work equipment for the task*
- *Inspection of work equipment (before, during and after use)*
- *Inspection of the place of work*
- *Safe use of equipment*
- *Monitoring work activities*
- *Supervision of the work activities*

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Ensure the Hierarchy of Control measures are implemented through:

- **Avoidance**
- **Prevent** a fall from happening by using "collective protection" before "personal protection" measures
- **Mitigating/minimising** the distance and/or consequences of a fall by using "collective protection" before "personal protection" measures
- **Mitigate** through training/instruction and supervision

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Review and monitor the effectiveness of the control measures by:

- Site inspections
- Work equipment inspection records
- Reviewing safe system of work in operation
- Training and competency records of individuals

Policy Contents

1. Executive summary

Incidents involving employees working at height have consistently been responsible for the largest number of fatalities in the workplace. The Work at Height Regulations were introduced to protect employees and others against risks to their health while working at height.

This policy outlines the steps to be taken by Edinburgh Napier University to ensure that all staff, students and contractors do not work at height where it can be avoided and where it cannot suitable and sufficient controls are introduced following the appropriate hierarchy. To achieve this, the corner stone of this policy requires a suitable and sufficient risk assessment to be completed for all tasks which require working at height.

Since it is Edinburgh Napier University's policy to comply fully with such duties, Heads of School and Directors of Service must ensure that the requirements of the Regulations are discharged, and that the policy on working at heights is incorporated into its local safety statements. Individual staff who organise, arrange or lead such work must acquaint themselves with, and act upon, the requirements of the local safety statement in force in their department. The effectiveness of these arrangements will be monitored periodically by the Health and Safety Office. The information contained within this policy can also be used as guidance for checking that sub-contractors carrying out such activities are compliant.

2. Introduction

The Work at Height Regulations place specific requirements to control any work at height. This Policy is a short summary of the regulations and should be read in conjunction with the regulations and the guidance produced by the Health and Safety Executive. Advice can also be sought from the University's Health and Safety Office.

3. Definitions

'Work at height' – work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury including a place at or below ground level and fragile surfaces. Examples include: working from a ladder; working on a flat roof; working on large items of plant; and working on or near fragile materials.

'Working platform' – means any platform used as a place of work or as means of access to, or egress from, a place of work and includes any scaffold, cradle, mobile platform, trestle, gangway, run, gantry, stairway and crawling ladder.

'Work equipment' – any machinery, appliance, apparatus, tool or installation for use at work.

'Personal fall protection system' – a fall prevention, work restraint, work positioning, fall arrest or rescue system other than those which are collective safeguards e.g. harnesses etc.

'Place of work' – refers to such a place where the work activity takes place in an Edinburgh Napier University or related premises, or is recognised as the place of work by the university.

'Fragile material' – a material which would be liable to fail if any reasonable foreseeable loading were applied to it (including the weight of anything being carried or supported) likely to pass across or work on it was imposed.

4. Roles and responsibilities

4.1. Line Managers

It is the responsibility of all Line Managers to ensure that working at height is carried out in a safe manner, so far as is reasonably practicable. This includes following the hierarchy of control measures and justifying any work at height in the risk assessment for that task. Line managers shall ensure the following:

- Always avoid working at height unless it is essential.
- That safe systems of work are implemented and documented.
- All staff required to work at height have been adequately trained, (including refresher training at suitable intervals, when necessary).
- All work at height has been adequately risk assessed and suitable and sufficient control measures put in place.
- Control measures are reviewed on a periodic basis or when an incident or significant change dictates, to evaluate their ongoing suitability and effectiveness.
- Work at height is monitored to ensure that risk assessments are still valid, that the safe systems of work are adequate and to identify additional training needs.
- If there are any changes, these are updated and briefed to the staff/students.

4.2. Employees (staff and students)

The duties of employees mirror those in the Health and Safety at Work etc, Act and the Management of Health and Safety at Work Regulations.

Every member of staff/students shall:

- Co-operate with their employer to enable them to carry out their duties.
- Take positive steps to understand the hazards in the workplace and comply with the safety rules and procedures.
- Ensure that their line manager is aware of any medical conditions that may affect working at height.
- Use the equipment provided, in accordance with the instructions and training they have been given.
- Not tamper with or modify any equipment unless instructed and competent and qualified to do so, and any changes documented.
- Report issues that they consider may lead to a dangerous occurrence.
- Not act in a reckless and/or careless way.

- If a member of staff/student can show that the work they are being asked to do is not safe, so far as is reasonably practicable, then they should inform their Line Manager. Advice on these matters can be sought from the University Health and Safety Team.

5. Control methodology

5.1. Hierarchy of controls

A flowchart (see **Appendix 1**) details the hierarchy of controls to be followed and the key messages on the Work at Height Regulations (see **Appendix 2**).

The regulations introduce a hierarchy of control measures starting with **avoidance**. Alternatives to working at height **must** be considered before the decision is made to work at height.

If the work at height cannot be avoided then necessary controls, e.g. work equipment or other measures, must be put in place to prevent a fall, either by using an existing place of work which complies with Schedule 1 (Reg 6 (4) (a) (i)) or use work equipment or other measures (Reg 6 (4)).

Where it is not possible to eliminate the risk of a fall then action must be taken to mitigate the distance and consequences of a fall. These can include safety netting, air bags or some other 'soft landing' system (Reg 6 (5) (a) (i) and (ii)).

Where the work equipment does none of the above, then additional training and instruction or other suitable measures must be implemented (Reg 6 (5) (b)).

5.2. Competence and monitoring

Any person who is to undertake work at height or plans work at height for others, must be competent to do so. Competence is defined as a combination of appropriate practical and theoretical knowledge, training and experience to enable the person to carry out the work in a safe manner, to be able to fully understand the potential risks relating to the work and detect any defects in the safe system of work.

All staff must receive training on the dangers of working at height, how to use equipment, the conditions in which the equipment is to be used, along with any inspection regimes they are required to carry out. The level of this training shall be such that for higher risk work, such as roof work, the level of training given shall be more in-depth. The level of training required for each task shall be determined as part of the risk assessment process and records of all training must be maintained. Suitable update training should be provided as determined by the risk assessment.

Supervision should be such that inexperienced staff are closely monitored by a competent person until they are themselves deemed to be competent. Line Managers should monitor their staff at regular intervals to ensure that they are working in the correct manner and keep a record of this monitoring. The Line Manager shall address any shortfall in a person's competence immediately.

5.3. Risk assessment and planning the work

Every task that involves work at height or where a person could fall through a fragile material, must be risk assessed, the assessment should also cover the likelihood of materials or objects falling from the work platform/area which could cause injury. Also, take into consideration weather when storing materials and roof loading where applicable.

Risk assessments may be generic for activities regularly undertaken, for example, where the working practice remains unchanged, e.g. stocking shelves, using ladders. However, for any work that falls outside the generic risk assessment, a specific assessment must be made. This would normally be the case where either the location of that type of work and/or the work methods change. It is important that the risk assessment be formally recorded. Should an accident occur, the risk assessment will be scrutinised by the investigating H&S team to ensure that it was suitable and sufficient and the working practices will be examined.

5.4. Dealing with emergencies and rescue

During the planning process the procedures to deal with emergencies and execute a rescue where a person has fallen from access equipment must be taken into account. These procedures must be documented and the line manager shall ensure that all staff understand the procedures and that they are given training on the same. Practice drills shall be conducted at regular intervals and these should be documented in a safe system of work and standard operating procedure, with relevant equipment to aid in the rescue on site during the works, where applicable.

5.5. Selection of work equipment

When deciding on the type of most suitable equipment to be used when working at height, priority has to be given to **'collective protection measures'** rather than 'personal protective measures'. Collective measures are those which protect all staff from the fall from height such as mobile elevated work platforms, scaffolding with the correct guard rails etc. or roof edge protection, whereas personal protective equipment only protects one individual, such as the harness and anchor point of a fall arrest system.

The selection of work equipment for that task must form part of the risk assessment and taking into account the following:-

- Working conditions in which the equipment will be used.
- How the equipment is to be used, including the tasks to be performed from the equipment.
- The risk to the safety of all those at the place where the equipment is to be used.
- In terms of the access and egress to the equipment - the distance to be negotiated.
- The distance and consequences of the fall.
- Duration and frequency of use.
- The need for easy and timely evacuation and rescue in an emergency.
- Any additional risk posed by the equipment by the use, installation or removal of the work equipment.

Note: - Floor surfaces and type of feet on the access equipment being used can be a major risk factor to be considered. Any surfaces upon which any supporting structure rests shall be stable, of sufficient strength and suitable composition to safely support the supporting structure, the working platform and any loading intended to be placed on the working platform.

Certain equipment such as guardrails, fall arrest systems, ladders and other working platforms must also comply with the schedules (1-6) attached to the Work at Height Regulations (See **Appendix 3**).

5.6. Inspection of work equipment

Procedures need to be documented on the inspection of equipment. Guard rails, toeboards, barriers or other similar structures, scaffolding, fall arrest system, rope access or ladders/stepladders must be inspected prior to each use by a competent person. In addition to this, formal checks will have to be made on certain types of equipment. These inspections will be determined by legislation and via the risk assessment process.

For example ladders and stepladders should be inspected before use, with a formal recorded inspection on an annual basis. All ladders and stepladders are logged with a number on them and details recorded in a register for inspection purposes.

Scaffolding should also display a completion/inspection tag, if situated for an extended period of time should be inspected by a competent person, after inclement weather and on a weekly basis. Any modifications or alterations recorded. The findings of these inspections must be recorded.

Fall arrest equipment must be checked prior to use and subject to a formal recorded inspection every six months.

Eyebolts must be tested every twelve months by a competent person. Note: University eyebolts are tested by Property & Facilities - no other contractor, school or service are allowed to use these unless authorised by Property & Facilities. Installation of eyebolts on university property is by Property & Facilities.

Advice on inspection regimes can be sought from the manufacturer and the University Health and Safety Team.

5.7. Inspection of the place of work

The regulations require that the surface conditions and other permanent features where work at height will be taking place are checked before work starts in order to identify obvious defects. For example, this would include the checking of ground conditions on which a tower scaffold or portable ladder was to be placed. This requires to be carried out by the competent person and would not have to be recorded, unless a serious defect was identified.

5.8. Control of contractors

Any work specified by anyone working on behalf of Edinburgh Napier University shall include details of the hazards involved with the work and this will be passed to the contractor to enable the contractor to conduct a suitable and sufficient risk assessment.

Contracts should specify that the work to be undertaken will comply with all relevant legislation and codes of practice etc., in particular the Work at Height Regulations. The contractor should provide details of how the work will be undertaken at the ordering/tender stage. All contractors must be monitored against the standards set in the regulations and guidance in order that any defects in their working practices are identified and dealt with.

6. Safe use of access equipment

Falls from height represent the largest cause of accidental deaths in the UK. Many of these deaths are from falls less than 2 metres and in work areas that are not normally associated with this type of accident.

The definition of working at height is 'work at any place where a person could fall a distance liable to cause personal injury'. Clearly this definition now takes in far more work activities than those traditionally thought of, such as those in the construction industry and includes falling through fragile materials.

Most accidents involving falls can be prevented if the correct equipment for the task is selected and then properly used.

This guidance outlines the steps to be taken in assessing a job which involves working at height, the appropriate equipment and its safe use.

6.1. Types of work at height

All work activities must be risk assessed and working at height is no exception. In some circumstances the consequences of a fall from height are so severe that special measures need to be employed. However, any work at height must be controlled to ensure that the likelihood of a person falling is kept to a minimum. The type of work activities can be far ranging. It is expected that all the following must be adequately controlled and in some cases, access equipment will be required to ensure that work can carry on at height without the chance of falling off the equipment. This is not an exhaustive list.

- Roof work
- Tree work
- Getting in and out of high vehicles
- Loading and unloading of vehicles
- Building maintenance work and working on large items of plant (e.g. boilers, air handling units)
- Changing light bulbs
- Filling shelves
- Putting up displays

- High level filing
- Cleaning windows
- High level cleaning
- Work from mobile elevated work platforms
- Putting up decorations

6.2. Avoidance (Reg 6(2))

Before any work is undertaken careful consideration must be given as to whether or not the work at height has to be done at all. Every line manager must be able to justify any decision to work at height. This should not be seen as an excuse to ban working at height or working from a ladder or stepladder.

If there is no other reasonably practicable way of carrying out the work, then this must be recorded in the risk assessment.

6.3. Risk assessment

As a minimum, the following issues must be addressed in the risk assessment.

a) **The task to be carried out** – this would include the extent of the task, its complexity, its duration and frequency and if the task is regarded as light work. The tools and materials which will be required and whether or not the work involves lone working and those activities which must be carried out by two people.

b) **The environment and conditions of the work area** – this would include its location, access and egress to and from the site, weather and ground conditions, including whether or not the work is being undertaken on a fragile surface and the risks relating to other activities taking place in the work area. How far could someone fall, onto what type of surface and the likely consequences of the fall all need to be determined, whether it is in a confined space or permits to work are required.

c) **The people involved** – the numbers involved in the work, the degree of their exposure to the risk, the competence of the people carrying out and planning the work and the level of supervision required. If the work is being undertaken by a young person (under 18 years of age) or by someone on work experience, then an extra duty of care must be given, which may involve extra procedures, training or equipment to be put in place. Will the work affect anyone else, such as pedestrians or other people in the work area?

d) **The work equipment and/or other structure to be used** – the suitability of existing structure for work at height, including the presence of fragile materials. The selection of work equipment to be used, any risk involved from pre or post use of the equipment, for example, the erecting and dismantling of scaffolding.

6.4. Planning the work

Any work at height must be properly planned. No work shall go ahead until a suitable and sufficient risk assessment has been carried out.

Whenever work is being carried out which does require work at height, it is essential that consideration is given to the task and its location.

When in the vicinity of overhead obstructions care to be taken to identify, manage, communicate and ensure that access equipment being used does not cause injury if it comes into contact with this obstruction e.g. power/electrical cables, water or sewage pipes, etc.

Where possible, electrical supplies to equipment being worked on at height are isolated prior to work commencing. This removes the possible risk of electrocution if the equipment is faulty or is electrically unsafe. Note: after carrying out any refurb work above ceilings, all electrical installations must be checked to ensure that there are no exposed wires left that could be 'live'.

Where access equipment is required, where possible, work should not be carried out where three points of contact with the access equipment cannot be maintained, unless the equipment itself will prevent a fall, e.g. work platforms with guard rails/barriers etc.

The general rule is that if you require the use of both hands to carry out the task then a ladder, stepladder or kick stool is not suitable, however this must be determined by the risk assessment and any additional control measure put in place as necessary.

Work at height shall only take place when the weather conditions are not likely to jeopardise the health and safety of the people involved in the work. A danger zone needs to be established to identify where materials or objects could fall on someone passing by. Additional precautions may be required to prevent injury such as barriers to stop unauthorised access to the area.

6.5. Using access equipment

The first choice when working at height must be to use any existing structure which allows safe access and provides a safe working place. If it is not possible to work safely from an existing structure, an appropriate safe working platform must be used.

6.6. Other systems

If the work platform still presents a risk of a person falling from it, other systems should be adopted as well. For example, a fall arrest system (harness) must be risk assessed/used with mobile elevated work platforms. Other systems may be appropriate such as air bags to reduce the risk of injury, roped access and safety netting.

6.7. Selecting the appropriate working platform

When deciding what type of working platform to use, it is important that you consider the following:

- The space available on the ground – each type of platform requires a minimum amount of space, so that it can be erected properly.
- The type of work to be carried out. Will heavy loads need to be placed on the platform? Will the task require the use of both hands?
- How long will the work last?

- What risks will there be during the erection of the working platform?
- How difficult will the working platform be to maintain?
- How many people will it require to do the job / how many people will need to use the equipment?
- Can the equipment be stabilised?

There are several types of safe working platform. Included below is an outline of each, together with the correct procedures to be adopted when using the equipment.

6.8. Kick stools

Because the work platform is small, it is easy to slip or over balance. Careful consideration must be made to providing a more suitable piece of equipment, such as a pair of small stepladders with a larger platform and a handrail.

6.9. Ladders and stepladders

Every year there are accidents involving ladders in the UK, some of these are fatal. The majority of these accidents are caused by misused or damaged ladders. This document sets out the procedure to be adopted for completing the Universities ladder inspection.

Although ladders are versatile and easy to put up, they may not always be the correct piece of equipment for the job. Ladders are best used as a means of getting to a workplace rather than the working platform.

Ladders and stepladders must only be used in the workplace if:

- The work is lightweight work and of short duration.
- Where possible, the work only requires one hand to be used or additional safe guards are put in place, for example, using ladder belts (e.g. still maintaining three points of contact).
- The work can be reached without stretching.
- The ladders can be secured to prevent slipping.
- A good handhold is available.

Ladder standards

If a ladder is to be used, you must always ensure that it conforms to the correct British Standard.

Note: Even though a piece of equipment conforms to the correct standard, this does not mean that it is safe to use in a given situation. Safe systems of work including the correct use of equipment must be determined by the risk assessment.

Kitemark	Standard	Maximum Static Vertical Load/Duty Rating	Details
BS 2037 Class 1	Industrial	Max Static Vertical Load - 175kg (27.5 stone). Duty Rating - 130kg (20.5 stone)	These are the strongest types of ladder that you can buy. Industrial ladders are designed to be used on building sites for long periods of time and to withstand almost constant use.
EN131 (Formally known as BS2037 Class 2)	Trade	Max Static Vertical Load - 150kg (23.5 stone). Duty Rating - 115kg (18 stone)	EN131 is the new UK trade standard replacing the old Class 2 standard. This is the most common ladder standard in the UK for trade and domestic use.
BS 2037 Class 3	Domestic	Max Static Vertical Load - 125kg (19.5 stone). Duty Rating - 95kg (15 stone)	This is the lightest standard in the UK and is designed for occasional use around the house. These ladders are not designed to be used by tradesmen or on building sites, in fact using them will contravene Health & Safety regulations.

Note:

- Ladders/steps complying to BS 1129 (class 3) or BS 2037 (class 3) are for domestic use only and are not permitted for work activities carried out by Edinburgh Napier University staff.
- Edinburgh Napier University has proactively removed all wooden ladders/stepladders from use within its estates.

Every time a ladder is used, it should be visually checked first for the following:

- Aluminium ladders for mechanical damage.
- Loose, broken, worn or missing rungs or treads.
- Loose or missing screws, nuts and bolts to fittings such as hinges or hooks.
- Non slip feet/measures fitted and level.

The safe use of a ladder depends on its positioning. This is especially important when the weight of a person is near the top. Reference should be made to Schedule 6 of the Work at Height Regulations for the specific requirements, however, in general the following should be followed:

- Ensure that the ladder is placed the right way round. The narrowest section of the ladder should be facing the user.
- The base of a ladder should rest on a firm, level, non-slippery surface. Do not stand ladders on moveable objects such as bricks to increase the height.
- A portable ladder shall be prevented from slipping by providing an anti-slip (or equivalent) device or by securing the upper or lower stiles to a secure point.
- Where possible the ladders should be secured at the top. If this is not possible then it can be secured at the base. The ladder should be footed by another employee as a last resort, and only if the ladder is less than 5m in length.
- The angle of rest should be approximately 75 degrees. The foot of the ladder should be one unit from the vertical face for every four units in height.
- The top of the ladder should be brought into contact with a firm surface. Gutters or window sashes for example are not safe resting points.

- When used for access, the ladder should rise at least one metre (3'6") above the step off point, unless there is a separate handhold.

When positioning stepladders the following setting up instructions should be observed:

- Stepladders should not be used to provide a work platform over 2m in height, unless additional safe guards have been provided such as outriggers and in some situations using stepladders that have 'built in' guard rails.
- Stepladders are fixed with chains or ropes to prevent overspreading. These should be extended to their fullest before using.
- Place the stepladders on an even surface so that all four feet are evenly supported.
- Where it is possible ensure that the stepladders are at right angles to the work area.
- The top step should not be used unless the supports extend higher.

All ladders and stepladders must be subject to a formal system of inspection every twelve months and the recording of that inspection is required.

See also Ladders and Stepladders Policy.

6.10. General access scaffolds

- Any general access scaffold must be designed, erected and dismantled by a competent person.
- If the erection of scaffolding may put anyone at risk, including members of the public walking in the area, additional measures must be taken, such as providing barriers or a protected walkway.
- Any scaffold must always be erected on firm, level ground. The ground must be capable of supporting the weight of the scaffold and the load to be placed upon it.
- The scaffold must always be braced and tied into a permanent structure.
- Ensure that the scaffold is capable of supporting the loads to be placed on it.
- Always make sure that:-
    a) You inform the supplier before sheeting the scaffold.
    b) Platforms are fully boarded and wide enough to work from.
    c) There is a safe ladder or other means of access onto the working platform.
    d) The platform is fitted with toeboards and a double hand rail.
    e) The scaffold is suitable for the job, and has been checked by a competent person at the required frequency.
- **Materials or objects must not be thrown from the working platform.** Suitable chutes and containers must be provided if this is required.
- Access to access scaffolds must be restricted when not in use, e.g. remove ladders and/or fence areas off.

6.11. Tower scaffolds

Any person erecting tower scaffold must be competent to do so. This will require the person to hold a PASMA certificate or equivalent. First ensure that the equipment is in good condition. Every tower scaffold must be tagged with details of the last inspection. If you have any concerns you should report them immediately to your Line Manager.

When using a tower scaffold:

- Always follow the manufacturer's instructions for erecting, use and dismantling.
- The tower must be vertical and the legs should rest properly on firm level ground.
- Ensure that all wheels and outriggers are locked.
- Always make sure that there is a safe way to get to and from the working platform i.e. internal ladders. **Do not climb up the outside of the tower.**
- Ensure that guard rails and toeboards are fitted to all platforms which are intended to be worked from (including for storage of materials).
- Tie the tower to the structure it is serving, or provide additional support if the tower:
    - Is going to be sheeted.
    - Is going to be exposed to strong winds.
    - Is going to be used for grit blasting or water jetting.
    - Is going to have heavy materials lifted up the outside of the tower.
- **Do not:**
    - Work from a footed ladder positioned on the working platform.
    - Overload the working platform.
    - Move the tower by applying force at platform level.
- No tower scaffold should be used unless it has been subject to a formal inspection:
    - Before it is put into use.
    - At 7 day intervals until it is dismantled.
    - After extreme weather conditions that could have affected its strength or stability.
    - After any substantial additions or other alterations.

Standards for mobile scaffold towers

The standard for scaffold towers in the UK is BS EN1004. This standard applies to trade and industrial strength towers. Both BS EN1004 and WAHR require mobile scaffold towers to have:

- Stabilisers or outriggers fitted where necessary to guard against overturning.
- Ladder access to the platform (either vertical ladders or inclined), accessed internally.
- Trapdoor platforms for safe access from the ladder to the platform.
- Toeboards fitted around the working platform

When moving a mobile tower always check for power lines, overhead obstructions or holes in the ground. No persons or materials must remain on the tower scaffold whilst it is being moved.

6.12. Mobile access equipment

Where it is not possible to work from the existing structure and the use of scaffolding is not appropriate, Mobile Elevating Working Platforms (MEWPs) can be used.

MEWPS must only be used by those people who are trained , and certificated to operate them. In addition, a suitable fall arrest harness must also be worn when using MEWPs.

Before any work using a MEWP starts, always ensure that:

- A handover certificate has been provided by the supplier.
- There is a current examination report for the equipment.

- The area around the MEWP is barricaded off. This will prevent anyone from being struck by the platform or falling materials.
- The MEWP has been provided with toeboards and barriers.
- It has been positioned on firm level ground.
- Its tyres are properly inflated.
- Any outriggers are fully extended and chocked.

Do not:

- Operate a MEWP close to overhead cables.
- Move the equipment with the platform raised or with a person on the platform, unless the manufacturers have stated it can be used in this way.

If large items of equipment or materials need to be transported onto the safe working platform, these should be winched up and down. Trying to manhandle these items could lead to falls or manual handling injuries.

7. Inspection of ladders

7.1. Ladder/stepladder standards

The first check that should be undertaken, either in a visual inspection or the annual inspection, is to ensure that the ladders or stepladders comply with the relevant British Standard.

Aluminium ladders/steps	**Type of use**
BS 2037 (class 1)	Heavy duty
BS EN 131	General/Occasional

Do not use ladders/steps complying to BS 1129 (class 3) or BS 2037 (class 3). These are for domestic use only and are not permitted for work activities by Edinburgh Napier University employees.

If the ladders or stepladders do not comply with the British Standard or it cannot be determined what standard they conform to, they should be replaced.

7.2. Visual inspection

Every time a ladder is to be used it should be visually checked first for the following:

- Aluminium ladders for mechanical damage.
- Loose, broken, worn or missing rungs or treads.
- Loose or missing screws, nuts and bolts to fittings such as hinges or hooks.
- Feet for splitting.

If you find any of the above faults with your ladder or stepladder you should stop using it immediately and report the situation to your supervisor or line manager.

7.3. Ladder inspections (6 monthly and annually)

Ladders will be checked before every use and formally inspected every 6 months if used once a week or more, or annually if used less than once a week.

A number of staff should be trained to carry out ladder inspections. For further information on this training or details of those who are competent to complete the inspection, contact the. Property & Facilities helpdesk on ext. 5000. Departments will carry out their own training and inspections for their ladders.

Each new or existing ladder should be logged on the ladder inventory (**Appendix 5**) and given an identity number from which a record will be kept.

The inspection should be carried out on each ladder and stepladder owned and used by the School/Service. This is to include information on the type of ladder and the date it was purchased, date of inspection, findings of the inspection, record of any remedial repairs, along with the signature of the person inspecting.

The inspection should check:

- For wear, decay, cracks, splits.
- For loose or missing rungs.
- For broken, cracked or split stiles.
- For warped, bent or twisted stiles.
- For damaged, missing or worn non-slip feet.
- For ladders that are painted – may hide defects.
- That ropes and chains are in good condition and fixed securely.
- That ropes and chains are the correct length.
- For splinters and sharp edges on stiles and treads.
- Aluminium ladders for excessive wear, distortion, oxidation or corrosion.

Further information on the checks to be undertaken are contained within the '**Ladder Inspection Checklist' (see Appendix 4)**, attached to this document.

7.4. Defective ladders

Defective ladders should be taken out of use immediately and appropriately labelled until repaired. Corrective measures include:

- Defective or missing components replaced.
- Working parts lubricated.
- Cords, chains and ropes to be replaced if necessary.
- Missing or defective pads, caps or sleeves if defective to be replaced.
- Any painted ladders to be disposed of.

Any ladders, which cannot be repaired, should be destroyed.

7.5. Transporting and storage of ladders

Much of the damage caused to ladders and stepladders is due to incorrect transporting and storage methods.

When ladders are handled, ensure that they are not dropped. Exercise caution when carrying ladders, e.g. when approaching blind corners.

If the ladder is too long or too heavy for one person to manage safely, two people should carry it. Support the ladder as close to the ends as possible to reduce the risk of damage to persons or equipment.

When storing ladders or stepladders it is important to observe the following:

- Ladders should be supported horizontally, above the ground on an adequate number of supports.
- Do not hang a ladder from its rungs or from one stile, or place flat on the ground.
- Ensure that all ladders are stored undercover.
- Do not store aluminium ladders near wet lime or cement as these can cause corrosion.
- Pulleys on extension ladders and the hinges of folding stepladders should be kept lubricated.

8. Roof access

Any roof area can be particularly hazardous in that they may house mobile phone antennas; fumes from extraction system; fragile roof areas; plant room areas; cables; and weather conditions etc. In addition where it is possible to sustain a fall, suitable roof edge protection should be provided.

To ensure the University fulfils its duty of care and under health and safety legislation, the following points need to be considered and implemented:

a) Access to all University roof areas will only be permitted by a completed and authorised Permit to Access Roof Area form.
b) The School/Service must, prior to any access to roof areas or working at heights, carry out a full risk assessment of the work to be carried out and ensure suitable and sufficient control measures, systems of work, emergency procedures, etc. are in place before any permission to access is given. Any staff/students must be aware of the identified hazards and must follow safe systems of work.
c) Any requirement for access to a roof area must be notified to security in advance.
d) Roof access will only be through keys held by designated personnel, i.e. Security and by the Permit-to-Access system (sign in, sign out) to ensure that the whereabouts of the person(s) is known in the event of an emergency evacuation or accident.
e) All roof access doors/hatches will have locks fitted and appropriate signage. Door alarms may be fitted and will require security to deactivate before entry.
f) Always secure the door once on roof, do not allow any unauthorised persons on the roof.
g) Bad weather increases the risk presented by working at height in the open, therefore no access to the roof spaces should occur where the weather may compromise safety, i.e. during high winds, snow or icy conditions unless risk assessed.

h) Ensure that where any roof areas are accessed, that they are load bearing and suitable to walk on. Identification of fragile roof areas or fragile roof lights must be provided and protected by suitable signage and a physical barrier, i.e. guardrails. (Further information can be obtained from Property & Facilities – ext. 5000).

i) Suitable edge protection or suitable control measures should be provided where there are exposed edges and where it is possible to sustain a fall.

j) Suitable and sufficient means of access to and from the roof spaces should be provided where required, and where there is ladder access they should be suitably secured and maintained in a safe condition.

k) Specific procedures for contractors working on the roof should be agreed before work commences, including a Permit-to-Work/Access.

l) Areas on the ground at risk from activities being undertaken at roof level should be cordoned off with no public access allowed.

m) Where roof work is required in the vicinity of mobile phone antennae, then measures should be taken to ensure:
   - That there are appropriate hazard information and warning signs and the appropriate area around each antennae is marked off as a restricted area as necessary.
   - Safe working practices are carried out when working on or in close proximity to the installation and transmitters are turned off in cases when it is so required.

9. Monitoring compliance

The Health and Safety Office will periodically monitor this procedure and will from time to time require certain information from Heads of School and Directors of Service. This will include (inter alia): copies of statements of local safety statements; risk assessments relating to working at height; systems of work (including permits to work); equipment inspection records.

10. Further guidance

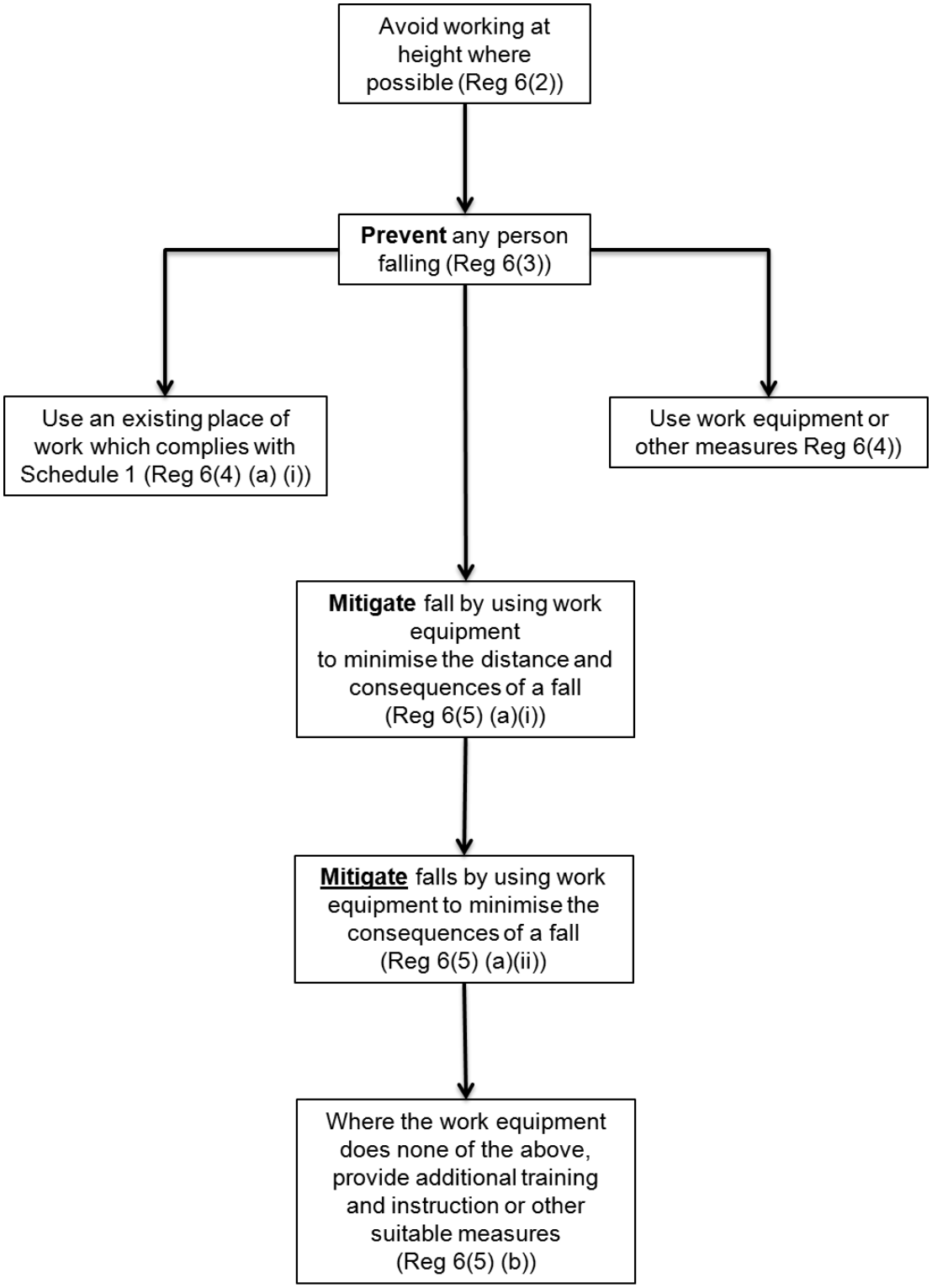
Safe use of ladders and stepladders (HSE)
Working at Height – a brief guide (HSE) INDG 401 (rev 2)
Health and Safety in Roof Work (HSE) HSG 33
Health and Safety in Construction (HSE) HSG 150
Tower Scaffolds (HSE)

British Standard BS2037:1994 (British) aluminum ladders, steps, trestles and lightweight staging
Work at Height Regulations 2005

HSE Books
Health and Safety Executive (HSE) website

Appendix 1: Working at Height – Hierarchy of Control Measures

An overview of the Regulation 6 hierarchy of control measures



In all cases collective protection measures have priority over personal protection measures.

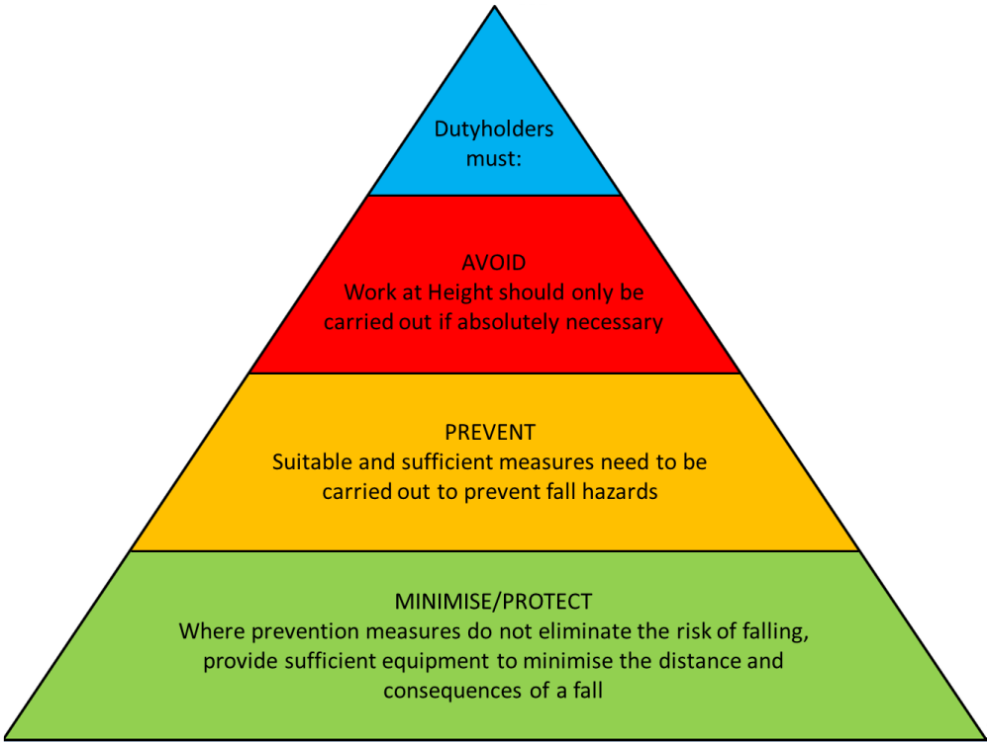
The Hierarchy of Control Measures with practical examples

	Hierarchy	Examples
1.	**Avoid**	• Design out the need to work at height.
2.	**Prevent** by using an existing place of work	• A flat roof with permanent edge protection. • A tanker roof with fixed edge protection.
	Prevent by using work equipment ***Collective***	• Access equipment fitted with guardrails: MEWPs, scissor lifts, mast climbers, cradles, tower scaffolds, independent scaffolds.
	Prevent by using work equipment ***Personal***	• PPE used in a way so it is impossible to get to a fall position, e.g. work restraint.
3.	**Mitigate** by using work equipment to minimise distances and consequences ***Collective***	• Nets and soft landing systems, such as air bags positioned close under work surface (these should only be used where other preventative safeguards are not appropriate). • Nets positioned at a lower level. • Soft landing system.
	Mitigate by using work equipment to minimise distances and consequences ***Personal***	• A personal fall-arrest system with the anchorage point sited above the head (fall factor zero). • Rope access. • A work positioning system. • A personal fall arrest system with anchorage level at sternum/dorsal attachment point (fall factor 1). • A personal fall arrest system with an anchorage point sited at the feet (fall factor 2). • Personal Fall Protection Systems – should only be used if other types of equipment are not appropriate. • A personal injury system (life jacket whilst working next to unguarded water).
	Mitigate through ***training and instruction or other means***	• Ladders (short duration, low risk activities) • Hop ups • Stilts • Training, Tool Box Talks, Method Statements, briefings

Appendix 2: Summary of key messages on the Work at Height Regulations

Do a risk assessment, plan and organise your work properly
All work at height should be properly planned, organised and appropriately supervised. Your risk assessment and the action you take should be proportionate to the harm that could occur if no action was taken. It should include a careful examination of what harm could be caused from working at height with a view to taking the necessary steps to reduce the likelihood of this harm occurring. Those working at height should be competent to do so or if being trained they should be supervised by a competent person.

Follow the hierarchy: avoid – prevent – minimise
Where reasonably practicable you should avoid work at height but where this is not the case take steps to first prevent the risk of a fall and where the risk of a fall still remains take steps to minimise the distance and consequences using suitable work equipment at each stage as appropriate. Where there is a remaining risk of a fall you should take appropriate measures to prevent injury.



Choose the right equipment – select collective protection before personal
When selecting work equipment to prevent a fall or to minimise its distance and consequences you should always consider collective measures which will protect the greatest numbers in a passive manner (e.g. guardrails and working platforms for prevention and nets etc for fall arrest) over personal measures which generally only protect the direct user of the equipment and would require them to wear or actively use the system to benefit from it. That is, where it is reasonably practicable to use guardrails and working platforms those should always be selected before other forms of equipment.

Summary of steps to take before working at height

- Check there is a safe method of getting to and from the work area. Decide what particular equipment will be suitable for the job and the conditions on site.
- Make sure work platforms and any edges from which people are likely to fall have guardrails, toeboards or other barriers.
- Make sure that the equipment needed is delivered to site in good time and that the site has been prepared for it.
- Check that the equipment is in good condition.
- Make sure that whoever puts the equipment together is trained and knows what they are doing.
- Make sure that those who use the equipment are supervised so that they use it properly. The more specialised the equipment (e.g. MEWPs, boatswain's chairs and rope access equipment), the greater the degree of training and supervision required to ensure safety.
- Check any equipment provided by another company to make sure it is safe before using it on site.
- Find out who to tell if any defects need to be remedied or modifications need to be made and keep them informed.

Remember

- Only when other methods are not reasonably practicable or when work platforms cannot comply with all requirements for safe work should a way of arresting falls (such as nets or air bags) that provides collective protection to all those who are working be used.
- If no other means of providing a safe place of work at height is available, then an appropriately anchored harness (personal fall arrest) should be worn. However, whenever fall-arrest harnesses are used, a rescue method must be available should the user fall and be left suspended in their harness.
- Nets or harnesses may also be needed to protect those working to put guard rails, or
- When selecting a safe system of work at heights, all the risks have to be considered before one method is selected. If nets are selected, is there adequate clearance under the nets to prevent injury to those who may fall into the net? If harnesses are used, is there sufficient clearance from the ground to allow the shock-absorbing lanyard or inertia reel to fully extend?
- Before installing or using any system of work to enable safe work at height to be carried out, check that there is adequate clearance for equipment. For example, overhead power lines can be a risk when erecting scaffolds or using MEWPs; there can be a risk of crushing against nearby structures when mobile access platforms are manoeuvred and that the ground is strong enough to support the MEWP.
- Ladders should always be secured if possible and be primarily used for access and only be used at workplaces to do light work of short duration, and then only if it is safe to do so. It is generally safer to use a tower scaffold or MEWP, even for short-term work. Heavy work activity carrying heavy loads should never be carried out from a ladder. When using a ladder ensure that the person on the ladder always has three points of contact, i.e. two legs and a hand.

Appendix 3: Schedules 1-6 of the Work at Height Regulations

a) Places of Work and Access or Egress at Height (Schedule 1 of Work at Height Regulations)

All places of work and accesses and egresses will be maintained in a safe condition such that they are stable and of sufficient strength and rigidity for the work intended or to be carried out. Where this cannot be guaranteed access must be restricted to personnel making the place safe. Measures will be taken to ensure the safety of these personnel.

All places of work will be constructed, used and maintained in a safe condition to prevent the risk of slipping or tripping or persons being caught between it and an adjacent structure. Where the place of work such as a cherry picker, MEWP, etc has moving parts, there shall be appropriate devices to prevent them from moving inadvertently during work at height to prevent crushing, contact with plant, equipment, persons, overturning, etc.

All places of work will be organised so that they are suitable in size and layout to permit the safe passage of persons, the safe use of any plant or materials required to be used and to provide a safe working area for those personnel working there.

b) Guardrails, Toeboards, Barriers and Similar Means of Protection (Schedule 2 of Work at Height Regulations)

Precautions will be taken to minimise the risk of personnel falling. The precautions will normally consist of guardrails, toeboards, barriers and similar means of protection for preventing a fall, either through a surface or a gap by a person, material or object.

The main guardrail or similar barrier will be at least 950mm above the edge which it protects. Gaps between components of edge protection (guardrails, toeboards or similar barriers will not exceed 470mm).

Whilst there is no minimum height specified for toeboards or similar barriers, they will be at least 150mm high and may be higher to prevent the fall of any person or any material or object from any place of work.

The gap between any components of the above edge protection will not be greater than 470mm. This will necessitate providing intermediate guardrails, brickguards, netting or similar.

Where necessary for purposes of work adequate and suitable working platforms fitted with guardrails, toeboards, barriers or similar, as described above, will be provided.

Working platforms will be of sufficient size to allow safe working, access and egress and movement of materials. They will not be less than 600mm wide.

c) Supporting Structures and Working Platforms (Schedule 3 of Working at Height Regulations)

Any surfaces upon which any supporting structure rests shall be stable, of sufficient strength and of suitable composition safely to support the supporting structure, the working platform and any loading intended to be placed on the working platform.

Any supporting structure shall:

- Be suitable and of sufficient strength and rigidity for the purpose for which it is being used.
- In the case of a wheeled structure, the supporting structure shall be prevented by appropriate devices from moving inadvertently during work at height.
- In other cases, it shall be prevented from slipping by securing an attachment to the bearing surface or to another structure, or by providing an effective anti-slip device or by other means of equivalent effectiveness.
- The structure shall be stable while being erected, used and dismantled.
- When altered or modified, be so altered or modified as to ensure it remains safe.

The working platform shall:

- Be suitable and of sufficient strength and rigidity for the purpose or purposes for which it is intended to be used or is being used.
- Be so erected and used as to ensure that its components do not become accidentally displaced so as to endanger any person.
- When altered or modified remains stable.
- Be dismantled in such a way as to prevent accidental displacement.

Each working platform will:

- Be of sufficient size to permit the safe passage of persons, the safe use of any plant or materials or movement of such items.
- Each working platform will be constructed to ensure that there is no gap through which a person or any material or object could fall and injure a person.

All working platforms will be erected and used, and maintained in such condition, as to prevent:

- The risk of slipping or tripping.
- Any person being caught between the working platform and any adjacent structure.

Similarly each working platform and any supporting structure shall not be overloaded so as to give rise to a risk of collapse or to any deformation which could affect its safe use.

d) Safeguards and Arresting Falls (Schedule 4 of Working at Height Regulations)

A safeguard shall be used only if:

- A risk assessment has demonstrated that the work activity can be performed safely.
- The use of other, safety work equipment is not reasonably practicable.
- Training specific to the safeguard and the use of the equipment shall be given to the users.

Prior to the use of such equipment a method statement will be prepared and verified. All the components of the equipment will be inspected and tested in accordance with legislation appertaining to their use. All personnel using the equipment will be suitably trained.

A safeguard shall be suitable and of sufficient strength to arrest safely the fall of any person who is liable to fall.

A safeguard with an anchor shall be attached to all the required anchors, shall be suitable and of sufficient strength and stability for the purpose of safely supporting the foreseeable loading in arresting any fall and during any subsequent rescue. In the case of an airbag, landing mat or similar safeguard it shall be stable and where in the case of a safeguard which distorts in arresting a fall, afford suitable clearance.

In addition, steps shall be taken to ensure, so far as is reasonably practicable, that in the event of a fall by any person the safeguard does not itself cause injury to that person.

e) Safe Use of Nets

Where safety nets are used, they should be:

- Manufactured to BS EN1263-1:2002 and erected in accordance with BS EN 1263-2 and the guidance given in BS8411:2007.
- In order for safety nets to be effective, the area of the nets must be >35m^2, with a min. side length (width) of greater than 5m, e.g. for example, for a 2m maximum fall height, allowing 100kg per worker including tools, this would set a maximum of two workers over any individual net. If these workers are required to work above a safety net, a specific risk assessment must be done to assess the risk of more than two workers falling into the net simultaneously. If the risk is deemed to be zero, then three workers would be able to work above the safety net.
- When fixing nets to a structure the max. support spacing must not exceed 2.5m.

f) Net Register

The net register should include the following details:

- Life history of the net.
- Purchase date.
- UV testing and any inspections (nets are usually made from polypropylene or nylon and as such they are susceptible to degradation from UV light exposure (sunlight)) as a result all nets must be tested within the last 12 months.
- Typical use of the net.
- Disposal considerations.
- Damage to the net.
- Any repairs carried out on the net (only competent persons are to complete any repairs to nets). There are no limits on the number of permanent repairs allowed, other than repairs must not overlap one another. Up to two temporary repairs may be carried out by riggers on site.
- Handover certificates for any installations (completed by a qualified safety net rigger).
- Weekly inspections are carried out every 7 days or after adverse weather (by a competent person).

g) Net Inspections

- Pre-use checks by the user.
- Any webbing, rope, textiles, etc – 6 monthly.
- Anchors/anchor systems – 12 months.
- Nets must be inspected on both sides.
- All nets must be tagged.

h) Training and Competence of Installers

Only holders of the relevant competence cards (FASET trained) should be permitted to install safety nets. Training involves reaching NVQ Level 2 in Safety Net Rigging. There are 3 types of CSCS cards to be encountered and should be asked for:

- **Trainee**: The holder has been FASET trained and is working towards their NVQ and Skilled status. The holder may rig safety nets under the supervision of a qualified safety-net rigger, but cannot hand the net over to the client once installation is complete.
- **Experienced Worker**: The holder is an experienced safety net rigger, has been FASET-trained and GSA-1 assessed, and is working towards their NVQ and Skilled status. The holder may rig safety nets unsupervised and hand over to the client once installation is complete. They can also carry out post-handover inspections of safety nets.
- **Skilled Worker**: The holder is a fully-qualified safety net rigger, who has been FASET-trained and has obtained their NVQ in safety net installation. (They may also have converted their FASET card into a CSCS card bearing the endorsement "Safety Net Rigger — FASET Assessed Route"). The holder may rig safety nets unsupervised and hand over to the client once installation is complete. They can also supervise trainees and carry out post-handover inspections of safety nets.

i) Personal Fall Protection Systems (Schedule 5 of Work at Height Regulations)

Fall protection systems shall be used only if a risk assessment has demonstrated that the work can be done safely and the use of other, safer work equipment is not reasonably practicable.

Training specific to the operations envisaged and the use of the equipment shall be given to all users.

Fall protection systems shall be suitable and of sufficient strength for the purposes for which it is being used and any foreseeable loading. It should also fit the user and be correctly fitted and adjusted to minimise injury to the user should a slip or fall occur.

Fall protection systems with an anchor shall be securely attached to at least one anchor, of suitable and sufficient strength and stability for the purpose of supporting any foreseeable loading imposed.

In addition, steps shall be taken to prevent any person falling or slipping from a personal fall protection system.

- **Work Positioning Systems**: A work positioning system shall be used only if either the system includes a suitable backup system for preventing or arresting a fall and where the system

includes a line as a backup system, the user is connected to it. Measures must be taken to ensure that the work positioning equipment system does not fail in its use.

- **Rope Access and Positioning Techniques**: A rope access or positioning technique shall only be used if the system comprises of at least two separately anchored lines, of which one ("the working") must be equipped with safe means of ascent and descent and has a self-locking system to prevent the user falling should he lose control of his movements.

Similarly the safety line must be equipped with a mobile fall protection system which is connected to and travels with the users of the system.

The risk assessment should take into account the duration of the job and the ergonomic constraints in order that provisions for a seat with appropriate accessories can be provided where necessary.

Where the system comprises of a single rope, a risk assessment will have demonstrated that the use of second line would entail higher risk to persons, and appropriate measures have been taken to ensure safety of those using this system.

- **Fall Arrest System**: Fall arrest systems shall incorporate a suitable means of absorbing energy and limiting the forces applied to the user's body. At no point should a fall arrest system be used in a manner which involves the risk of a line being cut or which otherwise inhibits its performance or renders its use unsafe.
- **Work Restraint Systems**: If used correctly, a work restraint system shall prevent the user from getting into a position in which a fall can occur. This is also dependent upon the work restraint being used correctly.

j) Ladders (Schedule 6 of Work at Height Regulations)

Ladders may be used as a place of work or access and egress where suitable with regard to the nature and duration of the work and following an assessment of risk. Generally, ladders will only be used as places of work where:

- They can be safely placed and secured.
- The person carrying out work can hold the ladder with one hand.
- The work is light and of short duration.
- No excessive leaning sideways is required.

Appendix 4: Ladder Inspection Checklist

Word version of form available here

Edinburgh Napier UNIVERSITY

Ladders should be checked briefly before every use and formally inspected every 6 months (if used once a week or more) or 12 months (if used less than once a week) using this checklist.

Date of Inspection:	School/Service Ladder ID No. :	Inspected by:

Location at time of inspection:	

Item to be checked	Condition Pass / Fail	Action Required	Who by	When by
GENERAL				
Suitable for work use				
Loose steps or rungs (consider loose if they can be moved by hand). Remove from use: repair or discard				
Loose, damaged or corroded nails, screws, bolts or other metal parts. Remove from use: repair or discard				
Warped, bent or twisted stiles. Discard: do not attempt repair				
Cracked, split or broken stiles, braces, steps or rungs. Discard: do not attempt repair				
Slivers/splinters on stiles, rungs or steps. Remove from use: repair or discard				
Damaged, missing or worn non-slip feet. Remove from use: repair or discard				
Ladder painted (may hide defects). Remove from use: remove paint or discard				
STEPLADDERS				
Wobbly or unstable. Remove from use: repair or discard				
Loose or bent hinge spreaders. Remove from use: repair or discard				
Broken stop on hinge spreaders. Discard: do not attempt repair				
Loose hinges. Remove from use: repair or discard				
EXTENSION LADDERS				
Loose, broken or missing extension locks. Discard: do not attempt repair				
Defective locks that do not seat properly when ladder is extended. Remove from use: repair or discard				
Deterioration of rope. Remove from use: repair or discard				

IMPORTANT: Ladders should not be re-used until proper repairs have been carried out – remove ladder to a safe place and attach warning notice to prevent use.

NOTE: Discarded ladders should be cut up or broken beyond repair, to prevent re-use.

Appendix 5: Ladder Register

Word version of form available here

Ladder Register

Location	Item	Description	Ref no.	Inspection Date	Checked by	General Condition	Observations	Maintenance