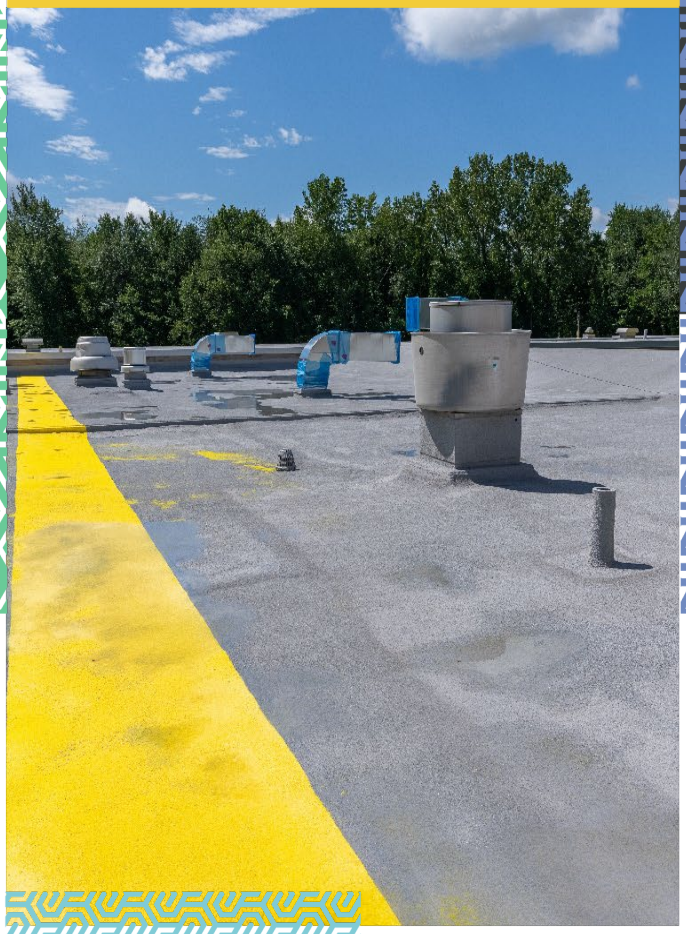
Risk control

Managing Roofs in Higher Education



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Managing Roofs in Higher Education

Introduction

This guidance document explores the health and safety requirements for managing work activities on building roofs, taking a close look at the most significant areas of risk, and the possible arrangements and controls that maybe needed.

The buildings and estates of Higher Education campuses can be complex, and the risks posed vary to staff, contactors, and others that access and work on them. It is essential these risks are appropriately managed; staff are supported in undertaking work on roofs and access is controlled.

There may be many different reasons that people access roof areas at institutions, such as:

- Undertaking repairs, maintenance, or installation of building services
- Attending to experiments that maybe located on roof areas
- Accessing granted for other activities (e.g. Art classes to draw skylines)
- Unauthorised access.

Whatever the reasons for being on roofs, the risks will need to be managed by the institution.

The Law

The UK has regulations governing working on roofs prioritising safety and risk management. The main pieces of legislation associated with roof work are:

- The Health and Safety at Work etc. Act 1974[1] which mandates that all roof work must be organised and planned to ensure safety.
- The Work at Height Regulations 2005[2] apply specifically to work at height, including roof work.
- The Management of Health and Safety at Work Regulations 1999[3] emphasises the need for proper planning and risk assessment for roof work and activities.
- The Construction (Design and Management) Regulations 2015[4] apply to construction work and activities including those undertaken on roofs.

Falls from height remains responsible for the highest number of fatal incidents. With 40 work related deaths attributed to working at height in 2022/23[5].

Higher Education Campuses

Higher Education Institutes vary in size and complexity, with roofs presenting significant risks to those that access them. Some examples of risk faced (but not limited to) are:

- Sloping roofs
- Fume extract (Laboratories and Workshops)
- Open edges (where no edge protection is present)
- Slippery roof surfaces
- Fragile materials (roof lights etc)

The demand for accessing roof areas remains high as regular maintenance is required. Roof spaces will require periodic cleaning of guttering and gullies to ensure rainwater disperses correctly without causing damage to the building and/or its contents. Roof areas can be utilised for rooftop plant such as air handling units, with these requiring regular maintenance to ensure they're operating efficiently. In recent years, roof spaces have been utilised for the installation of photovoltaic (PV) solar cells to assist in the generation of energy that institutions can take advantage of. However, these PV solar cells required regular maintenance and cleaning.

Roof spaces on campuses present unique environments that research and academic members of staff may wish to use. Running long term experiments may be setup in these areas as access is restricted. However, these are likely to require a level on monitoring which could result in staff accessing the roof.

Students may wish to take advantage of these spaces as they offer different vantage points not normally available. Such activities may include the sketching of the skyline or studying perspective from heights for Art Classes.

Unfortunately, roof spaces can often be access by unauthorised persons. Trespassing is something institutions should consider for their roof areas and prevent this so far as reasonably practicably. Another phenomenon is free running, with institutions estates containing innovative design buildings, this may attract free runners which should be treated as trespassers.

Managing Risk from Roof Work

Taking a strategic view of roof spaces and areas could be advantageous for institutions, setting requirements for new and existing roof access and edge protection will provide a consistent method of controlling these risks at source. It is essential to integrate strategies into future capital works programmes to take advantage of lower future maintenance costs as additional scaffold will not be required.

Institutions should ensure that architects and designers consider their strategic aims for safe roofs and utilise the hierarchy of risk control when creating designs for new and existing buildings. This may result in the installation of fixed handrails instead of fixed running lines that require more maintenance and training of staff. Designing in such safety features at this stage should not affect the aesthetic appearance of future buildings. Considering suitable edge protection at this stage of construction is cost effective and will ensure the safety of those using or maintaining these areas. Utilising a suitable risk assessment process will enable architects and designers to create the safest possible roof area. The results of this process can then be passed to the institution in Health and Safety File which is required by The Construction (Design and Management) Regulations 2015.

Risk assessments should be undertaken for all new and existing roof areas, this will identify important information that can be utilised by maintenance staff and contractors allowing for more efficient management of the risks associated with roof areas. To assist with the production of these risk assessments a Health and Safety File should be consulted to ensure that any design risks (e.g. fragile surfaces) are known to the assessor and incorporated as necessary.

Risks that could be included in the assessment (but not limited to):

- Access arrangements
- Damage
- Edge protection present
- Risks from rooftop plant and pipework
- Slippery surfaces
- Fume extracts
- Radio frequency transmitters (telecoms)
- Lone working
- Experiments located in roof areas
- Risk for unauthorised access

Providing this essential information to those parties that require access to roof areas will enable better planning of work or other activities considering all the risks present. It will enable the most suitable safe access arrangements to be identified such as Access Stair Towers.

Undertaking roof area risk assessments will identify safety issues, for example damage to roof surfaces or access doors that need repair. This will allow for risk-based prioritisation of repairs ensuring that serious issues are resolved quickly.

This process will also allow for the development of suitable arrangements to support safe access accounting for the preventions of unauthorised access, many institutions require all access to roof areas to be permitted which provides a robust mechanism of control.

Institutions will often have rooftop fume extraction stacks from laboratories or workshops. Undertaking site modelling for these extraction systems should be considered to ensure that any fumes or contaminants fallout patterns can be identified. To enable access to roof spaces institutions should consider robust arrangements that ensure anyone accessing these areas are not exposed to substances that are extracted. It may be necessary for the isolation of all extraction systems in a building to allow safe access to roof areas. This could have significant impact on the activities of institutions and should be planned.

There will always be the requirement of emergency access to roof spaces, consideration should be given for the development of suitable arrangements to facilitate these types of situations always ensuring the safety of those involved.

Roof Access Permits

The risks associated with roof work and access are well known and must be controlled. Roof Access Permits help to provide a control mechanism for safe access to roof areas. Roof Access Permits should reflect requirements of a Permit-to-Work system (please see our guidance document on Permits-to-Work). Institutions should ensure that clear procedures are in place for raising Roof Access Permits.

Only authorised staff should be able to raise Roof Access Permits, they must consider the proposed work along with the relevant Health and Safety documentation such as (but not limited to) Risk Assessments and Method Statements ensuring they are suitable and sufficient to allow access. There may also be requirements for additional permits-to-work, for example a Hot Work Permit will be required if hot work is going to be undertaken.

Roof Access Permits should stipulate the agreed control measures that must be in place before access is granted. It is recommended that a suitable level of monitoring is established on a case-by-case basis to ensure that measures are consistently implemented.

Information from roof risk assessments can be utilised to identify requirements for access, consideration could be given to utilising this to reflect the risks faced.

Access Control

Roof Access Permits can provide 'soft' control mechanism, consideration should be given to physically restricting access to roof spaces. Roof spaces can contain sensitive equipment like building plantrooms so should be protected in a similar way. Access control can be achieved through specific door locks on separate key suites or digital locks accessed via access cards ('hard' controls). Taking this approach will ensure that only authorised persons should access the roof areas. Undertaking the risk assessment process will identify where such control is required.

Consideration should be given to remotely located buildings, ensuring that suitable arrangements are in place is essential.

Planning for Roof Work/Access

Before allowing roof work to proceed institutions must ensure that (but not limited to):

- Suitable arrangements are in place (Risk Assessments, Method Statements for the work)
- Control measures are in place and that the risks are controlled
- Areas below are segregated/protected from debris
- Building users consulted, especially if fume extracts are present
- All parties involved are competent to undertake the work required

Ensuring that suitable arrangements are in place before issuing a Roof Access Permit to allow access are essential. Establishing monitoring activities to ensure that controls are in place throughout the works/activity should be considered along with a review process once completed.

Assessing arrangements can take a significant amount of time to ensure the suitability, this time should be factored into any management processes.

Roof areas may contain redundant equipment, debris or even substance storage it is recommended that roof areas are kept free of anything that isn't required. Redundant equipment and debris can be blown from these areas in high winds posing a significant risk of injury to those at ground level. If substances are stored on roof areas, an assessment of risk should be carried out to ensure that suitable control measures are in place.

Roof areas can be used by wildlife, commonly have amounts of bird droppings (guano). If left untreated, pigeon guano can cause damage to buildings and, when left for long periods, pigeon guano can become highly corrosive and may even become harmful to health[6]. Relevant action must be taken to allow access to roof areas where this risk is present.

The Health and Safety Executive published detailed guidance on managing roof work, HSG33[7] those responsible for managing roof work should consult this guidance.

It is not unusual for Academic Staff and Students wanting to access roof areas, this may be to gain access to equipment or experiments running on roof areas or for students to get a different vantage point for Art Classes. If these activities are permitted there needs to be suitable arrangements in place, which may include training and supervision as identified in their risk assessment.

Institution should establish 'ownership' or custodians of the roof areas to ensure access is adequately controlled and non-authorised access is kept to a minimum. Typically, this responsibility will fall to Estates Departments, having a single point of contact enables a consistent procedure for all that require access. These arrangements could be included in the relevant institutions policies.

When not to access

Roof areas are exposed to the elements all year round, current weather conditions should be considered to ensure the safety of those accessing the roof space. Strong winds and ice are examples when access to roof spaces might be prohibited, and permit may not be issued.

Conclusion

Roof areas can pose a significant risk to those who access them. Therefore, it is essential for institutions to properly manage and control these risks. Ensuring clear and robust mechanisms are in place to manage access to roof areas is critical, institutions may consider Roof Access Procedures alongside physical access control.

Ensuring roof risks are considered at early stages of construction of new or refurbished buildings will enable institutions to take advantage of the long-term cost benefits of taking a strategic view on control measures.

Managing roof areas benefits institutions by better risk controls and the identification of issues which allow for risk-based approach to repairs and maintenance.

Establishing clear ownership for roof areas will result in better and consistent management for all that require access.

Further information

For access to further RMP Resources you may find helpful in reducing your institution's cost of risk, please access the RMP Resources or RMP Articles pages on our website. To join the debate follow us on our LinkedIn page.

References

1. Health and Safety at Work Etc. Act 1974 - https://www.legislation.gov.uk/ukpga/1974/37/contents
2. Work at Height Regulations 2005 - https://www.legislation.gov.uk/uksi/2005/735/contents
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5. Health and Safety Executive Website, Work-related fatal injuries in Great Britain - https://www.hse.gov.uk/statistics/fatals.htm
6. Health and Safety Executive Website, Construction micro-organisms: Psittacosis and other diseases from work involving bird droppings - https://www.hse.gov.uk/construction/healthrisks/hazardous-substances/harmful-micro-organisms/other-diseases.htm
7. Health and Safety Executive Website, Health and Safety in roof work guidance - https://www.hse.gov.uk/pubns/books/hsg33.htm

Get in touch

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