

## MOVING FORWARD WITH SAFETY

Roofing technologies continue to develop alongside new trends in the market – such as the current growth in use of renewable energy technology systems, such as photovoltaic panels (PVs) making it important for us to understand specific requirements for access and maintenance. With falls from height still accounting for 14 per cent of major injuries sustained in 2011/12 (cf The Health and Safety Executive Statistics 2011/12) it is often too apparent that safe work at height is not always considered from the outset.

The Construction (Design and Management) Regulations CDM 2007 cover all construction work including maintenance of buildings, placing direct responsibility on building owners, as well as designers. This requirement links to the 2005 Work at Height Regulations (WAHR) which applies to all work at height where there is any risk of a fall liable to cause injury. It places duties on employers, the self-employed and any person who controls the work of others, such as facilities managers or building owners.



*WAHR takes a hierarchical approach to avoiding incidents*

WAHR takes a hierarchical approach (see diagram on page 1); if work at height cannot be avoided, measures should be employed to prevent falls. Then, if the risk of falling cannot be eliminated, measures to minimise the distance and consequence of any fall should be employed. Taking on board this hierarchy, the first priority is to consider 'collective' measures such as guardrails, particularly where more frequent access is needed by a variety of workers with limited high-level operational experience or training. Different types are available including some that aim to meet architectural design requirements offering straight, curved or inclined uprights, as well as a folding upright version which can be concealed from below when not in use.

Such guardrail systems are also used to contain designated access ways for more frequent use, for example to services, antennae, photovoltaic zones or wind turbines. For this type of application, proprietary anti-slip roof walkways offer a firm footing and protect the roof finish.



*Cable system and walkway. Image courtesy of Latchways*

While a collective approach is preferred for safety reasons; there may be architectural, technical, cost and other reasons why collective solutions are not suitable for perimeter protection. Here, cable-based fall restraint or fall arrest systems – consisting of cables secured to the structure by fixed anchor points – offer the least invasive solution.

The anchor points, or posts, are often top-fixed to the roof (rather than fixed back to the building structure) and contain an energy-absorbing coil that limits any load transfer to the roof – therefore avoiding any roof damage in the event of a fall. Additionally as they are top-fixed, the roof's integrity is protected and the issue of cold-bridging is avoided.

It is essential that cable safety systems are specifically designed for, and tested in conjunction with, each particular roofing system, and endorsed by the roofing system manufacturer. An appropriate Personal Protective Equipment (PPE) body harness can then be attached by a prescribed length lanyard via an attachment device to the cable at the access point onto the roof.

This enables hands-free movement around the roof area as needed without disengaging the lanyard. It is crucial that consideration is also given to how many people are to be connected to a safety system at one time. There are systems available which accommodate up to three workers at once. In addition to this a prescribed level of user training, quick and simple procedures for rescue (such as a personal rescue device) and detailed signage are all essential.



*Collective fall protection of guardrail and walkway with accompanying cable system providing access to restricted areas. Image courtesy of Latchways plc*

Following the WAHR guidelines for managing and selecting the correct equipment for work at height is essential. When selecting fall protection it is best practise to ask some additional questions such as:

Has the system been proven to work on the intended roof build up and is there test data available to support this? Does the system comply with required testing standards? Will the system design accommodate unknown user competency and foreseeable misuse? Will the roof guarantee be affected by the fall protection being installed? How many people can the system provide fall protection for?

As with specifying any safety item, corners should not be cut nor should the process be a tick box exercise. Just like the roof itself, safe access needs to be designed-in, as part of the building, from the start.

*This article was written on behalf of MCRMA by James Sainsbury, Latchways plc. This article first appeared in RCI Magazine January 2013*

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