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SPECIALIST ACCESS ENGINEERING & MAINTENANCE ASSOCIATION

Guidance Note for the Appropriate Selection of Permanent Access Equipment.

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1. Introduction

This document has been prepared to offer guidance to Duty Holders in their selection of the most appropriate permanent access system for working at height. In most cases this will involve the installation of a BMU system but may also include an Industrial Roped Access System where part of the building or structure is difficult or impossible to access with a BMU.

The aim of this document is to offer both legal and practical advice to help Duty Holders decide how to achieve the most suitable primary means of access for both new and existing buildings and structures.

This document only considers permanent access equipment (BMU, Ladder and Gantry systems) and permanent rope access anchorages. It acknowledges that other forms of temporary access may form part of the overall cleaning and maintenance strategy e.g. mobile elevating work platforms, water fed poles, etc. but they are not considered in this document.

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2. Terms and Definitions

Duty Holder: includes anyone who has to any extent control over premises. This will include but not necessarily be limited to Architects, Structural Engineers, Access Consultants, Principal Contractors, Developers, Building Owners, Facility Managers, Building Managers, and all other persons or corporations including Employers that have control over the initial design of an access system or the onward management and safe operation of such a system.

Permanent Access Equipment: All types of BMU'S, travelling and fixed ladder and Gantry Systems together with their tracks, monorails, cradles, davits and suspension gear.

Permanent Rope Access Anchorages: Monorails, davits, or individual anchor points used to support rope access equipment.

Rope Access Equipment: Fibre ropes, karabiners, chairs or other rope access equipment ordinarily removed from the undertaking and not forming part of the permanent access equipment installation.

Rope Access: Technique using ropes to suspend or support a person used as a means of work positioning or for getting to and from the place of work.

So far as is reasonably practicable: Level of risk balanced against the cost, time and effort that is put into averting the risk.

BMU: Building Maintenance Unit usually consisting of a roof mounted machine and suspended cradle but can also encompass travelling and fixed ladder and gantry systems with or without associated suspended cradles hanging beneath them.

WAHR: The Working at Height Regulations, 2005.

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3. Planning and Exchange of Information

3.1 Planning

The CDM Regulations 2015 require building designers to provide a safe means of access to a building façade for activities such as inspection, cleaning and maintenance. In accordance with the Working at Height Regulations 2005 there is a hierarchy of risk to consider. By this stage it would have been established that work at height would be necessary and therefore the risk hierarchy under WAHR must be implemented. In this respect the use of 'Collective fall protection' is considered to be above the use of Industrial Roped Access in the WAHR hierarchy. BMU operatives are afforded collective fall protection whereas Roped Access Operatives are afforded only personal (singular) protection.

3.2 Exchange of Information

3.2.1 Considerations to determine strategy for BMU's

- Correct interpretation of Regulations.
- What is reasonably practicable?
- Loads imposed on roof structure by permanent access equipment
- Loads imposed on parapet by access equipment
- Wind loads acting on permanent access equipment
- Loads acting on façade cladding (Restraint system and cradle buffering)
- Loads acting on the façade cladding (Rope Access)
- Cladding and glazing replacement
- Area of façade to be accessed
- Frequency of cleaning/inspection
- Warranties on curtain walling
- Façade projections/undercuts/ balconies and stepped elevations
- Areas of façade over water
- Areas of facade over railways/roads.
- Areas of façade over public areas
- Restrictions on working hours.
- The possible need for task lighting.
- Exposure of building to external physical elements e.g. wind effects, marine environment, high and low temperatures
- Exposure of building to local elements e.g. radio masts, CCTV cameras, light fixings, signs etc.
- Safe access to and egress from the equipment.
- Availability of competent operatives to use the access system
- Training of operatives to cope with difficult rigging, setting up, rope access techniques etc.
- Time to carry out specified maintenance tasks - cleaning speeds, method of return to top
- Constraint on equipment size, storage, and space and for operation and maintenance.
- Associated consequences of equipment selection –e.g. hand railing strength, parapet strength when equipment transmits loads to it.
- Lightning strikes to persons
- Emergency rescue

- Emergency procedures

3.2.2 Considerations to determine strategy for Industrial Roped access (Where BMUs are not reasonably practicable)

- Correct interpretation of Regulations.
- What is reasonably practicable?
- Loads imposed on roof structure by rope access equipment
- Loads imposed on parapet by rope access equipment
- Loads acting on the façade cladding.
- Cladding and glazing replacement
- Area of façade to be accessed
- Frequency of cleaning/inspection
- Warranties on curtain walling
- Façade projections/undercuts
- Areas of façade over water
- Areas of facade over railways/roads.
- Areas of façade over public areas
- Restrictions on working hours.
- The possible need for task lighting.
- Safe access to and egress from the equipment.
- Availability of competent operatives to use the access system
- Training of operatives to cope with difficult rigging, setting up, rope access techniques etc.
- Time to carry out specified maintenance tasks - cleaning speeds, method of return to top.
- Emergency rescue
- Emergency procedures

3.2.3 Information required from the Architect/Designer

- Façade cleaning/maintenance strategy
- Are there any planning constraints?
- Details of structure.
- Are there any building constraints?
- Provision of architectural and structural drawings for rooves and facades.
- Wind study report.
- Crane duties for installation.

3.2.4 Information required from the Equipment Designer/ Supplier

- Proposed loadings back to the building structure
- Proposed loadings onto the parapet/façade
- Design interfaces
- Cost for installation
- Cost for ongoing maintenance and testing.

4. Determining a Strategy

4.1 Design Questions

Once having gathered the information exchanged the access system design should be carefully considered. Below is a list of questions the designer should ask when considering the most appropriate strategy for access at height:

- Does strategy comply with WAHR and if not why not?
- Are there any specific hazards that will influence the choice of access systems?
- Are there any special building features likely to affect the type of access system?
- What is the proposed cleaning cycle?
- What are the requirements for glass and cladding panel replacement? Consider the added value that the chosen system could deliver in this respect.
- Is the construction of the building frame suitable to accept the proposed loadings?
- Is the construction of the façade suitable for loads imposed by BMU or Rope Access Operatives?
- Is there a way of minimising the cost of cleaning the façade?
- Does the proposed access system have the ability to access and clean a wide range of the building envelope without the need to de-rig?
- What is the life cycle cost of the system proposed?
- What is the impact of physical contact with the building surfaces and associated wear and tear?
- How simple and practical is the proposed system to operate?
- What are the ramifications for both routine and emergency rescue for both personnel and equipment?

4.2 Strategy

The consequent strategy, apart from complying with Legislation and British and European Standards should be considered in the light of what is reasonably practicable. For example, a large building that requires frequent and ongoing maintenance will require some form of BMU with collective means of fall protection.

Whilst most BMU's are capable of being designed to access almost any building or structure some parts may be inaccessible or cost prohibitive to access from a BMU system. In these circumstances Industrial Roped Access Equipment may be considered to augment the overall access design.

As you can see there is a similar onerous review of the information required to provide Industrial Roped Access.

The table in section 7 provides information on the legislation and guidance to be considered when designing an access system.

5. Existing BMU systems

Where an existing building has a BMU access system the rules governing the management of that system need to be observed.

A building needs maintaining throughout its life and in the case where a BMU access system is old and beyond its design life the system should be upgraded or replaced in accordance with the Legislation and Guidance given in this document. (Refer also to BS 8560-2012.)

In few circumstances, where replacement is considered to be reasonably impracticable, a Duty Holder may consider the use of Rope Access as a method for onward maintenance access. In this case the Rope Access Anchorages should still comply with the BS6037, 2003 and all current Codes of Practice.

Where it is proposed to use components of an existing access system to act as rope access anchorages it should be born in mind that the equipment was not originally designed for this purpose. The decision must not be taken lightly and will involve a change of use and should be considered only after a review in accordance with SAEMA Publication SDN 14007.

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6. SAEMA's Position

SAEMA recognises the need to use Industrial Rope Access techniques where it is not reasonably practicable to provide a BMU. For example where certain sections of the building are inaccessible and would prove cost prohibitive to access with a BMU system. However, in this instance it is imperative the anchorages for the Industrial Rope access are correctly designed, installed, inspected and tested and not seen as an area of responsibility that can be passed on to the individual Roped access technician.

The decision to use Rope Access on an existing building where an ageing BMU system exists, will not generally be approved under the reasonably practicable principle. The Building Manager Duty Holder should be aware that this cost does not fall on his shoulders but on the building Owner, Landlord or Tenants etc. and that quantum is not taken into account provided it is commensurate with their ability to pay. An established method of access should not be changed to a lower level of protection under WAHR simply because Rope Access is available and potentially cheaper. The question of selection choice must be decided by reference to the law and risk assessment and the system chosen must be justifiable and appropriate in accordance with these principles.

For this reason, Facility Managers should take care to accurately assess the cost of maintaining and inspecting BMU systems when they take over the management of a building to ensure they provide adequate resource for the duration of their tenure. The planning of this resource should be made in collaboration with a SAEMA member company who will be able to guide the Duty Holder on continuing lifecycle costs given the age and condition of the equipment at their site.

Poor, inappropriate and non-compliant choices may result in additional costs, inability to maintain the building adequately and potential legal liability for the consequences of such action.

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7. Regulations, Standards and Guidance Notes Applicable to Permanent Access Equipment Selection.

Importantly All Access systems should comply with the following regulations, Standards and Guidance documents in the Table below:-

Applicable to								
BMU	BMU with restraint system	Monorail & Cradle	Rope Access Monorails	Rope Access Davits	Rope Access Anchors	Deviation rail / points	Regulations / Standards / Guidance applicable to façade access systems	Notes
✓	✓	✓	✓	✓	✓	✓	HSAWA	
✓	✓	✓	✓	✓	✓	✓	Machinery Directive	
✓	✓	✓	✓	✓	✓	✓	PUWER	
✓	✓	✓	✓	✓	✓	✓	LOLER	
✓	✓	✓	✓	✓	✓	✓	WAHR	
✓	✓	✓	✓	✓	✓	✓	CDM	
✓	✓	✓	✓	✓	✓	✓	MHSAW	
✓	✓	✓	✓	✓	✓	✓	BS8560 Code of practice for the design of buildings incorporating safe work at height	
✓	✓	✓	X	X	X	X	EN1808 Safety requirements for suspended access equipment — Design calculations, stability criteria, construction — Examinations and tests	
✓	✓	✓	X	X	X	X	BS6037 Code of practice for the planning, design, installation and use of permanently installed access equipment - Part1 Suspended Acces Equipment	
✓	✓	✓	X	X	✓	✓	BS 7883:2005. Code of practice for the design, selection, installation, use and maintenance of anchor devices conforming to BS EN 795	
X	X	X	✓	✓	✓	✓	BS 7985:2013. Code of practice for the use of rope access methods for industrial purposes. Recommendations and guidance supplementary to BS ISO 22846	
X	X	X	✓	✓	✓	✓	IRATA ICOP Part 3 Annex F 2013 - Safety considerations when installing or placing anchor devices for use in rope access	
✓	✓	✓	✓	✓	✓	✓	BS 8437:2005+A1:2012. Code of practice for selection, use and maintenance of personal fall protection systems and equipment for use in the workplace	
✓	✓	✓	✓	✓	✓	✓	BS8610 Permanently Installed Anchorages not to BS EN 795 (not finalised published)	
✓	✓	✓	✓	✓	✓	✓	BS EN 795:2012. Personal fall protection equipment. Anchor devices	BMUs - generally in relation to maintenance of the BMU itself
✓	✓	✓	✓	✓	✓	✓	CEN/TS 16415 Personal Fall Protection Equipment - Anchor Devices - Recommendations for anchor devices for use by more than one person simultaneously	