Key Health, Safety and Wellbeing Standards

July 2022 | V6 |
MG-H&S-SD-1027

Contents

1. Introduction

1.1 Purpose

This document (The Key Health, Safety and Wellbeing Standards) sets out Mace's minimum requirements which must be adopted by any member of the Mace supply chain, as specified in their contract requirements.

1.2 Scope

This document applies to Mace construction activities.

This document is not to repeat industry best practice or legislative requirements. The scope includes Mace standards and best practice above legislative requirement.

1.3 Minimum requirements

Minimum requirements are set out in three stages as detailed below:

- **Pre Mobilisation** – Key activities that the supply chain must implement prior to preparation for working on our project.
- **Activity Planning** – Key activities that must be implemented prior to conducting any physical activity.
- **Project Delivery** – Minimum requirements to control risks associated with specific physical activities e.g. fire management, demolition, excavation and work at height.

For full details, refer to the following Mace standards/documents.

- Drug and Alcohol Policy
- Fire Standard (MG-H&S-SD-2350)
- Logistics Standard (MG-H&S-SD-3023)
- Working at Height Standard (MG-HS-SD-2800)
- PPE Standard (MG-H&S-SD-2576)
- Incident Reporting and Investigation Procedure (MG-H&S-PR-2051)
- Permits and Authorisation to Proceed Procedure (MG-H&S-PR-2677)
- Risk Management Procedure (GP-HSW-SD-0007)
- Management of Lifting Operations Standard (GP-HSW-SD-0002)
- Excavations and Breaking Ground Procedure (MG-H&S-PR-2325)
- Temporary Works Procedure (MP-ENG-PR-101)
- Confined Spaces Procedure (MG-H&S-PR-2150)
- Managing Demolition Procedure (MG-H&S-PR-2200)
- Contractor Plant and Equipment Procedure (MG-H&S-PR-2625)
- Noise Management Procedure (MG-H&S-PR-2500)
- Vibration Management Procedure (MG-H&S-PR-2506)
- Working with Asbestos (MG-H&S-PR-2075)
- Electrical Safety Rules and Procedures (MP-MEP-PR-001)
- Mace COSHH Procedures (MG-H&S-PR-2175)
- Mace Industrial Relations Standard (MG-H&S-SD-0102)
- Project Specific Plans e.g.

  - Project Traffic Management and Logistics Plan

  - Asbestos Management Plans

  - Lead Management Plans

  - Legionella Management Plans

  - Project Fire Safety Plans

  - Project Working at Height Plans

  - Project Riser Strategy

  - Project Lifting Management Plans

  - Project Electrical Management Safety Plan

Section 2

Pre Mobilisation

2. Pre mobilisation

This section details activities that must be undertaken prior to commencing physical work on site. Many of these activities are processes which must also be maintained during the mobilisation phase.

2.1 YellowJacket licence

Suppliers and contractors are required to:

- Obtain a YellowJacket Licence.
- Use YellowJacket to record incidents, observations, actions, inspections, audits and other monitoring activities.
- Close out any actions or observations in a timely manner.

2.2 Subcontracting

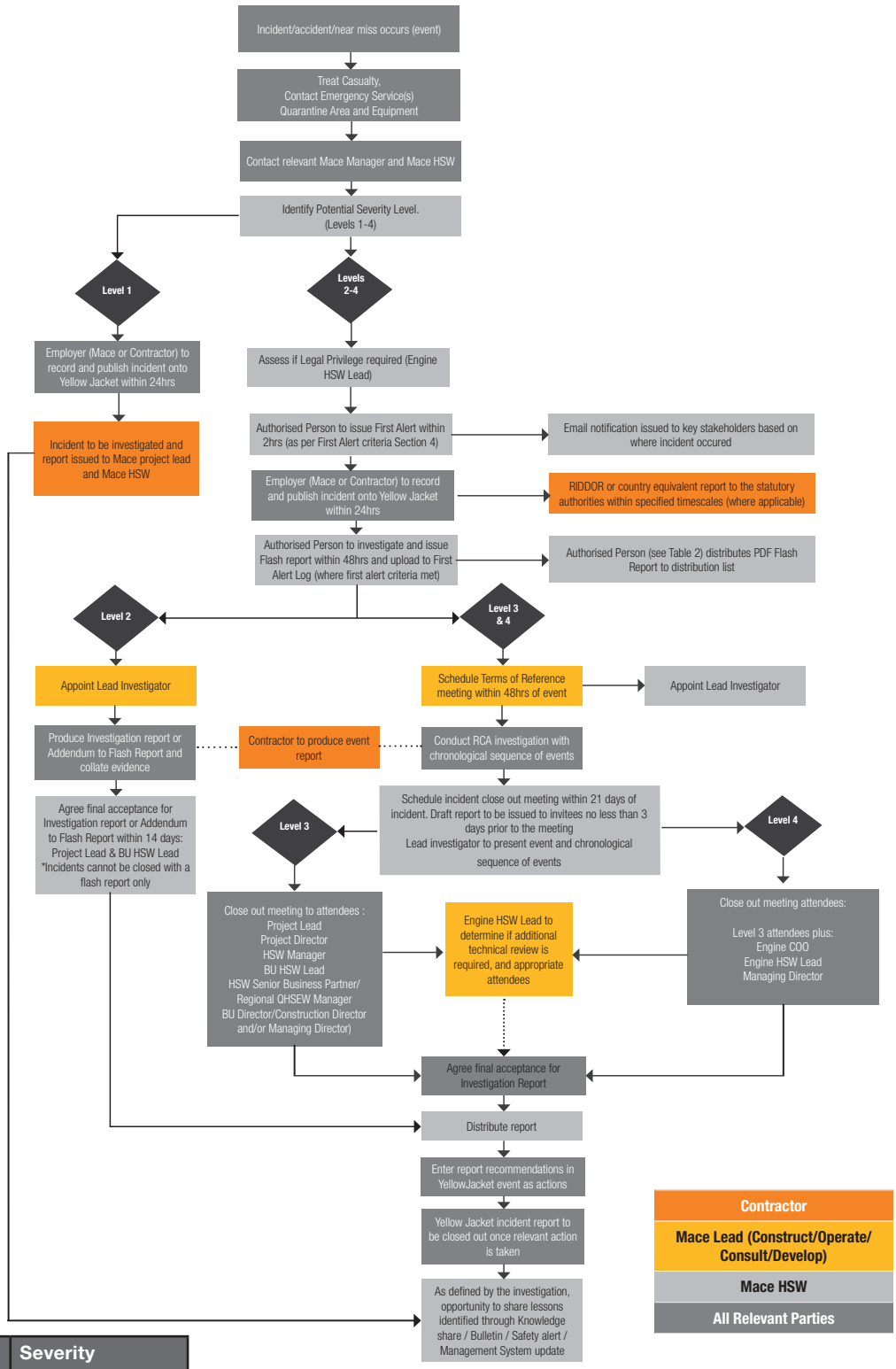
- Any subcontracting of works must be with prior written permission from Mace.
- Where a contractor or supplier subcontracts works, they must be satisfied that the entity they are contracting to has the required resources, skills, knowledge and experience to undertake the works in a safe manner and that all Mace Health, Safety and Wellbeing Standards form part of the subcontract arrangements as listed in Appendix F in the Subcontractor Annex.

2.3 Incident reporting

Contractors must comply with the requirements of the Mace Incident Reporting and Investigation Procedure (MG-H&S-SD-3023). Specific requirements are detailed below:

- All site incidents, including near misses, however minor must be reported to Mace management within two hours and recorded on YellowJacket following agreement with Mace in line with the Mace Incident Reporting and Investigation process (Figure 1). An incident investigation must be completed by all contractors involved in the incident.
- Injured personnel must report to their nominated first aider and where necessary, report to the site first aid facility for treatment.
- Investigations reports for RIDDOR category incidents must be accompanied with a copy of any statutory accident report forms e.g. HSE statutory accident report form F2508 (UK), within reasonable timescales.
- Where deemed necessary the contractor shall be called upon to review incidents with the Mace project team.
- Contractors will make members of their staff and workforce available to interview by Mace following any incident. Where appropriate the contractor will provide a translator who will be expected to confirm in writing they have accurately translated any questions, answers and the witnesses statement.

2. Pre mobilisation



Incident Level	Severity
Level 1	Negligible
Level 2	Marginal
Level 3	Critical
Level 4	Catastrophic

Figure 1: Incident Reporting and Investigation Process

2. Pre mobilisation

2.4 Competency

- For UK construction projects the Build UK training standard must be met. This applies to contractors' directors, managers, supervisors, and operatives.
- For UK construction projects, plant and equipment operators must also comply with the Build UK training standard.
- Competency requirements for construction projects outside the UK will be set out in pretender information and at pre-mobilisation meetings.
- Contractors must provide competent persons for key safety related roles, e.g. vehicle marshals, confined space coordinators, temporary works coordinators, Lifting Appointed Person, Slinger/Signallers etc.
- Contractors must retain copies of competency cards on site and be able to demonstrate the training provided for those undertaking specific roles.
- All contractors must conduct a training needs analysis on their workforce (including self-employed persons under their control) and provide task specific training e.g. abrasive wheel, before commencing a task.
- Refresher training must also be scheduled and provided.
- Where operatives hold qualifications from other jurisdictions which are not recognised by CSCS they should contact UK NARIC, who can determine whether it is comparable to the CSCS card being applied for, and provide written evidence of compatibility.

2.5 Access to competent HSW advice

- All organisations must have access to professional HSW advice, either in house or from a consultant, from individual(s) that are members of a recognised HSW institute/organisation e.g. IOSH or OSHA.
- The number of visits to projects required and the expected output from the visits will be discussed at the pre-mobilisation meetings.

2.6 Supervisors/Black Hats

- Contractors must provide a suitable number of qualified and competent supervisors to oversee and supervise the safe delivery of works.
- Unless more stringent levels are specified during the tender period or pre-mobilisation meeting, contractors should provide a non-working supervisor for every eight operatives.

Mace also require all supervisors to meet the requirements set out in the Mace Black Hat Guiding Principles (Fig 2).

- The requirements for Black Hats is set out below in sections 2.6.1 to 2.6.3 (See also Fig 3: Black Hat Implementation Process). Requirements will also be communicated to supply chain partners as part of the bidding process and at pre-mobilisation meetings.

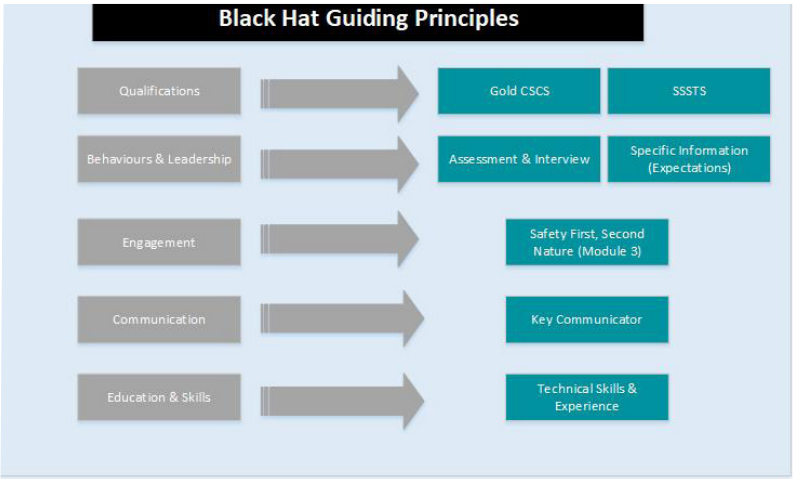


Figure 2: Black Hat Guiding Principles

2. Pre mobilisation

2.6.1 Supervisor CV

Contractors must submit CVs for their supervisors to Mace prior to commencement on site within the timescale agreed by the project. The CV should contain the following:

- Contractor and Supervisor full name
- How long they have been a Supervisor
- Supervisor Gold CSCS** (or accepted scheme) card - full details including number (can be a photocopy at this stage but will be the actual card on commencement)

****Note:** For electrical supervisors, this will be the ECS Black Electrical Site Manager card.

- Qualification (course name/ date attended) - minimum requirements:

  - CITB SSSTS (or country equivalent)

  - any behavioural training (including Mace 'Safety First. Second Nature' module 3 if applicable)

  - details of other health, safety, and environmental courses

  - details of any technical training relating to planning, mental health.

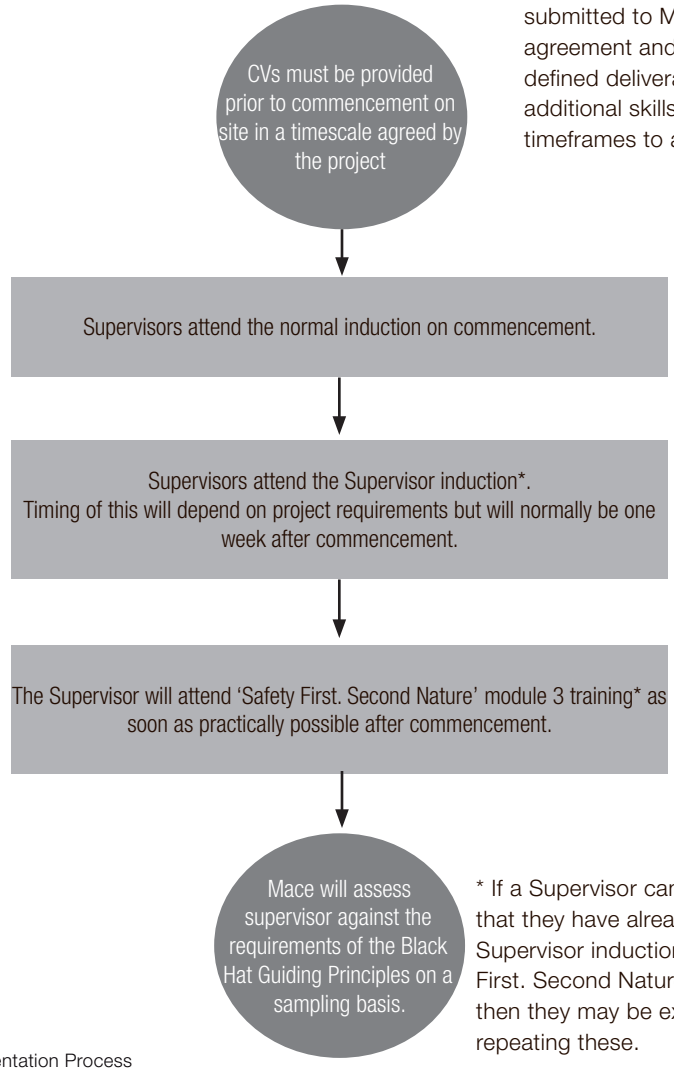
- A brief summary of the role taken by the Supervisor on named similar projects. Include reference to health, safety, environmental, quality, organisational and planning aspects.

2.6.2 Mace Specific Supervisor Training

Contractors supervisors are required to attend the Mace Supervisor Induction and the Safety First Second Nature Module 3 training, in addition to the normal site induction.

2.6.3 Interview and Assessment

- Mace may carry out interviews and assessments on individual supervisors on a sampling basis, against the requirements of the Black Hat Guiding Principles.
- If a Supervisor is unable to demonstrate that the requirements of the Black Hat Guiding Principles through the Interview and Assessment Stages, then the Mace Manager may recommend that a Development Plan is put in place by the Contractor to meet these requirements. The development plan should be submitted to Mace for review/ agreement and must include defined deliverables i.e. training, additional skills, and defined timeframes to achieve.



* If a Supervisor can demonstrate that they have already undertaken the Supervisor induction and the 'Safety First. Second Nature' module 3 training then they may be exempted from repeating these.

Figure 3: Black hat Implementation Process

Section 3

Activity Planning

3.1 Activity planning

This section details the key activities that must be implemented prior to conducting any physical activity.

3.1.1 Mace project safety induction training

All site personnel are required to attend and meet the requirements of the Mace project induction prior to commencing on-site.

The scheduled days and times of inductions are set by each Mace project.

Inductions required by contractors outside the specified schedule will require prior arrangement with Mace. Any additional costs of these non-scheduled inductions will be specified by the project prior to commencement.

Supervisors must undertake black hat/ supervisors induction. The timing of this will depend on project requirements but will normally be one week after commencement.

If a Supervisor can demonstrate that they have already undertaken the Supervisor induction and the 'Safety First. Second Nature' module 3 training then they may be exempted from repeating these.

3.1.2 Behavioural Based Safety

Mace operate a behavioural safety program called 'Safety First. Second Nature' which contractors are required to participate in. It is designed to develop the attitudes and behaviours of our employees and supply chain by embedding health, safety and wellbeing standards in everything we do. Specific requirements will be set out at the pre-mobilisation meetings.

Table 1 below details the requirements for our 'Safety First. Second Nature' training.

3.1.3 Contractor project safety briefing

The contractor must arrange attendance of their workforce at the following:

- Project Induction.
- Contractor induction.
- Supervisor induction.
- Risk assessment and method statement briefings.
- Behavioural based safety training.
- Daily or nightly activity briefings (DABs/NABs).
- Safe start briefings.
- HSW stand downs.

3.1.4 Non-English speaking personnel

Mace welcome non-English speaking personnel onto our projects and contractors are reminded that:

- Our projects are 'English speaking' in respect to project communications.
- They are responsible for translating and delivering communications and instructions to all non-English speaking personnel.
- This will require the contractor to provide adequate levels of competent supervision that can translate communications and instructions into and from the relevant language(s) of the contractor's workforce.
- The number of translators required will be agreed at the pre-mobilisation meeting.
- The standards of safety competence and training required within the contractor's workforce are constant for all personnel regardless of native origin and/or language spoken (see section 2.4.
- The contractor is fully responsible for all additional resources and associated costs required to effect satisfactory levels of competence and communication within their workforce.

'Safety First. Second Nature' Module	Requirements	Duration
SFSN 1 Introduction to SFSN	• All Mace Staff only	45 mins
SFSN 2 - Leadership	• Mace OD grade & above • Supply chain Directors	3 hours
SFSN 3 - Managers and Supervisors	• Mace Assistant Manager to Associate Director • Supply chain managers and supervisors	3 hours
SFSN 4 - Operatives	• All construction project personnel	45 mins

Table 1: 'Safety First. Second Nature.' training requirements

3.2 Risk management

3.2.1 Risk assessments and method statements (RAMS)

Contractors must submit RAMS within the agreed timescales, set out at pre-start meetings, to Mace for review prior to works being permitted to commence on site.

RAMS must be submitted under cover of a Contractors Document Submittal Form.

All HSW RAMS are to be listed on a master schedule which should identify

- Method statement title.
- Revision number.
- scope of works which it covers, the approval status.
- Date of when the work is due to be carried out.

RAMS must have achieved an 'Acceptable (A)' status and signed off by two Mace managers before associated works can commence. The contractor must be in receipt of the signed off submittal form before any works can commence.

Where document management systems are used, contractors must keep a record of accepted RAMS electronically through the document management system and a hard copy kept in the site file with associated briefing sheets attached.

RAMS need to be reviewed monthly or as required if there are changes to the work plan, working environment or key personnel changes.

Where Mace have identified that contractor works are not adequately covered by an approved RAMS, all or specific parts of those works will be immediately suspended by any Mace manager until satisfactory action is taken by the contractor to rectify the situation. The cost attributed to any associated down time will be borne by the contractor.

3.2.2 Permits to work

Mace operates a number of permit to work systems to control high risk activities.

Contractors must comply with the requirements of the Mace Permits and Authorisation to Proceed Procedure (MG-H&S- PR-2677).

During the contractor pre-mobilisation meeting the project specific application of the Mace Permit and Authorisation to Proceed Procedure will be explained and agreed with contractors.

Depending on the scope of work, other activities may exist which require an authorisation to proceed form. These are determined at a project level on risk basis and may include working with lead or asbestos, isolation or disconnection of building fire/life safety systems, use of specialist equipment or techniques such as cradles and abseiling.

3.2.3 Protection of the public

Contractors must include adequate precautions for the protection of the public and others throughout the duration of the works. Arrangements in respect of the protection of the public shall be clearly defined within the RAMS.

It is the contractor's responsibility to:

- Identify hazards to the public associated with the contractor's operations.
- Provide the necessary precautions for the control of the contractor's operations.

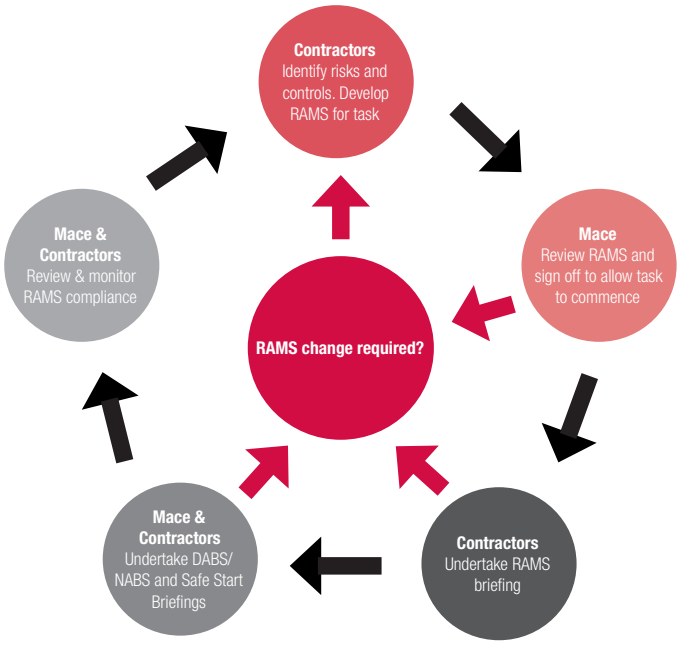


Figure 4: Risk Management Process

3.2 Risk management

3.2.4 Young persons

Persons under the age of 16 are not permitted to work on a Mace project. For persons over 16 but under 18, a young person's risk assessment must be provided which should include details of the visit, or works to be undertaken and specific details of supervision.

A Young Person cannot commence work without the Young Person Risk Assessment being signed off by the Parent/Guardian.

In some instances, sign off may also be required by the educational institute i.e. school/college.

Site visits involving under 18s i.e. school trips, must be supported by a project specific risk assessment and agreed with all stakeholders (including Mace). As part of these visits, no work is allowed to be conducted by the visitors.

Figure 5: Emergency Arrangements

3.2.5 Occupational Health, Occupational Hygiene and Wellbeing

Contractors must have processes that identify and manage the risks to the health and wellbeing of their employees, and others who may be affected by all work related activities.

Contractors must have appropriate, competent occupational health provision in place for the protection of their workers and fulfilment of their statutory requirements in relation to health.

This may include regular health monitoring, appropriate health surveillance (where the need has been identified) and fitness for work assessments. The occupational health provision must be SEQOHS registered (unless carried out by an in-house nurse, where appropriate qualifications must be demonstrable).

The contractor must also:

- Demonstrate that appropriate training, awareness and support is in place for the mental wellbeing of employees.
- Contractors are encouraged to adopt the Building Mental Health Charter.
- Implement a programme of activities and support to protect and improve the wellbeing of employees (such as health awareness talks, fitness challenges, healthy eating, smoking cessation). This may involve engagement with Mace wellbeing activities, in addition to contractor or client specific activities.
- Demonstrate that appropriate return-to-work support is in place for employees returning to work following injury or illness.
- Educate, protect and enforce appropriate controls for identified health risks on site and where possible seek to minimise or eliminate harmful by-products of construction to protect health.

Contractors must be able to demonstrate they are exercising their duty of care to protect employees through managing health risks and creating opportunities for wellbeing.

Contractors must identify Safety Critical roles and complete Safety Critical Medicals prior to commencing works. This must be confirmed on the RAMS.

3.2.6 Emergency procedures

Mace are responsible for developing an emergency plan for the site. This will be communicated to all contractors either through the Project Delivery Plan or a separate Emergency Response Plan.

Contractors must provide adequate resources to implement this plan including fire wardens and fire marshals.

Mace will communicate the main requirements of the emergency plan in the site induction to all operatives.

Contractors are responsible for identifying any emergency situation and suitable response as part of their RAMS process. High risk activities such as working at height, use of MEWPs, tower cranes and confined space works require a task specific emergency or rescue plan.

Contractors are responsible for training their operatives on the requirements of emergency procedures relevant to their roles.

3.3 Contractor communication and consultation

3.3.1 Meeting Schedule

Suppliers and contractors are required to be represented by appropriate employees at the following meetings:

Name of Meeting	Frequency	Agenda for HSW	Attendees
Contractor pre mobilisation	Following package award and prior to the commencement of works.	To review and close out all key HSW issues prior to commencement on site.	Mace management Contractor management
Employee consultation meetings - "You said - We did"	Monthly	For operatives to raise and discuss any health and safety issues. • "You Said – We Did" board. • Minutes/notes/actions issued where required.	Mace management Workforce representatives
Project safety committee meeting (project SLT)	Monthly	To discuss general and raised HSW issues and agree relevant actions. • Formal meeting. • Minutes issued.	Mace management Contractor management Contractor H&S
Directors safety leadership team meeting (directors SLT)	Monthly	To discuss general and raised HSW issues and agree relevant actions as may be necessary. • Formal meeting. • Minutes issued. • Leadership tour of the project.	Mace construction director Mace project management Mace HSW management Contractor Directors
Weekly coordination	Weekly	To discuss current and planned site progress • Formal meeting. • Minutes issued. • HSW is 1st agenda item.	Mace Management Contractor management
Monthly 8 Week Look Ahead	Every four weeks	To discuss • Future works. • Key milestones. • Blockers and constraints. • Coordination	Mace management Contractor management
Contractor black-hat/supervisor meeting	Weekly/Monthly - as determined by Mace	To discuss general and raised HSW issues and agree relevant actions as may be necessary • Formal meeting. • Minutes issued.	Mace management Contractor supervision (Black Hats)
Fire coordination	As required	• Review current fire safety management issues and highlight requirements.	All site based contractors

Table 2: Mace Contractor Meeting Schedule

3.3 Contractor communication and consultation

Name of Meeting	Frequency	Agenda for HSW	Attendees
Crane coordination	Weekly	Schedule planned crane lifting operations. Review performance standards of previous week's crane lifting operations	Mace Management Contractor supervision
Daily progress (where required)	Daily	To discuss current progress. • Informal/no minutes. • HSW is an agenda item.	Mace Management Contractor Management
Daily activity briefings (DABs)/ nightly activity briefings (NABs)	Daily	To discuss the coordinated work for the day ahead set out by the weekly plan. • Review the previous shift • Confirm the activities for the next shift. • Identify key hazards and controls to communicate for the workforce in the safe start briefings. • Note: Day and night shifts that are working consecutively will have a handover process from the respective shifts. • Record of DABs/NABs to be kept by Mace. • Contractors must attend all DABs/NABs and cannot start work on site if they have not attended. See figure 6 for the process to be followed. Monday morning: DABs to take place before starting any works.	Mace Management Contractor Management
Safe start briefings	Daily	• Communicate key hazards and controls identified in the DABs/NABs • Confirm correct competent resources present. • Confirm the workforce have the right tools, equipment and materials. • Confirm that the Mace 4 steps to safety is used by the workforce before work commences (Golden Hour). • Records of Safe Starts to be kept by Contractor. See figure 6 for the process to be followed.	Contractor Management/ Supervision All contractor operatives
Tool box talks	Weekly	Topic to be determined by Contractor Manager/ Supervisor. Supplemented by Mace during the course of the project. Minimum 1 occupational health and 1 environmental per month.	Contractor Management All Contractor Operatives

Table 2: Mace Contractor Meeting Schedule.

3.3 Contractor communication and consultation

Name of Meeting	Frequency	Agenda for HSW	Attendees
Site wide stand downs	Monthly	Project manager communicates to the workforce key HSW messages. Presentation of safety awards.	Mace Management Contractor Management All Contractor Operatives
Site wide return to work briefings/stand downs	As determined by Mace	Project manager communicates to the workforce key HSW messages.	Mace Management Contractor Management All Contractor Operatives
Alerts/knowledge shares	As determined by Mace	Communication of learnings from incidents and good practices which can be shared across Mace, the contractor and the industry.	Distribution to relevant parties

Table 2: Mace Contractor Meeting Schedule.

3.3 Contractor communication and consultation

Figure 6 below shows the process flow for DABs/NABs and Safe Start briefing. Timings for DABs/NABs are indicative, and may depend on client-led pre-works communications, e.g. nightly maintenance schedules.

Any changes made to the end of shift NABs meeting for the next night's work (night shift only) by the Day Shift must be formally communicated in good time to the Mace Night Shift Managers and the suppliers to allow for these changes to be planned and communicated to the operatives.

Day Shift team must confirm all relevant permits are prepared for the Mace Night Manager with the Night Notes.

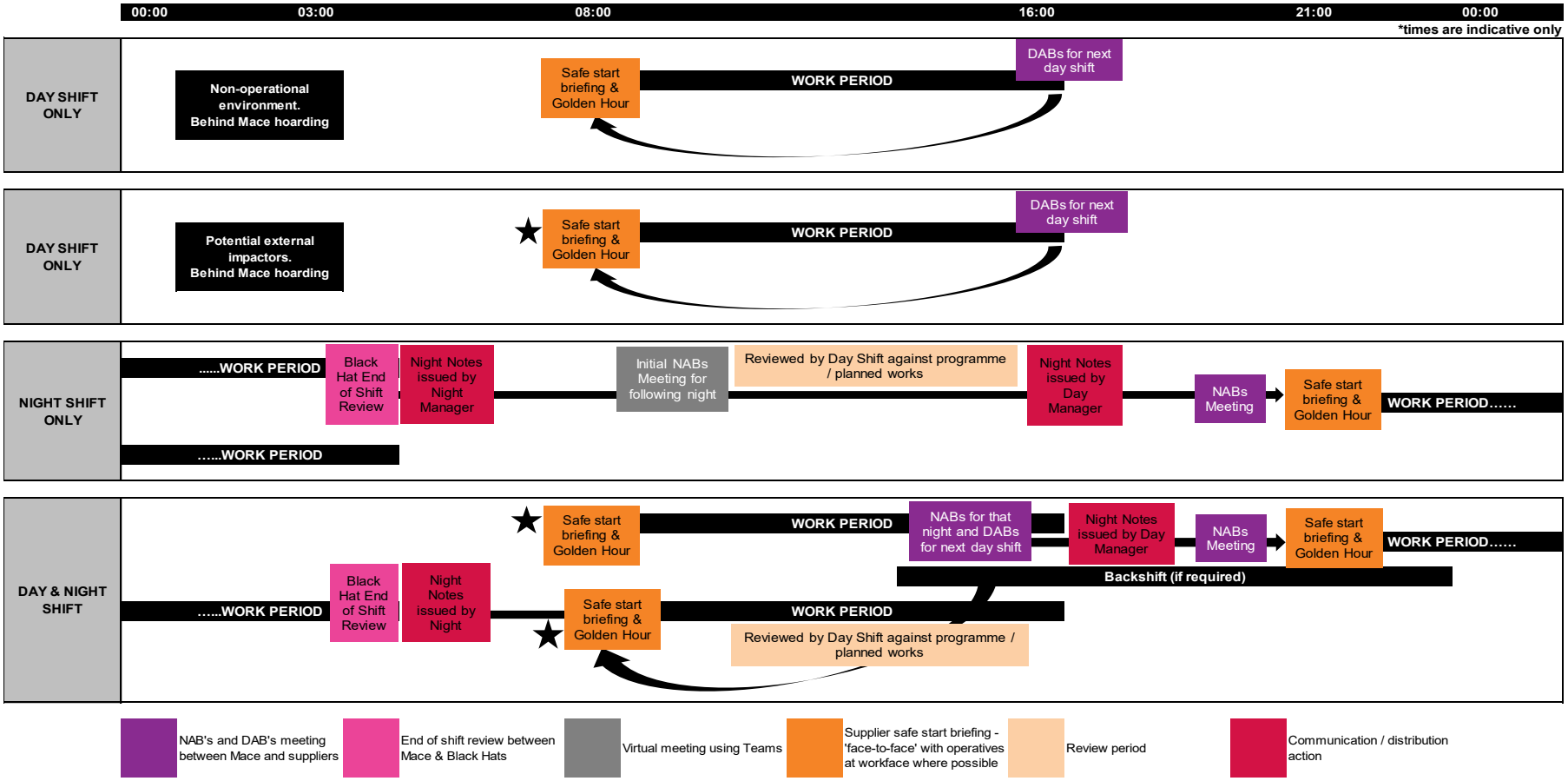


Figure 6: DABs/NABs Process Flow

3.3 Contractor communication and consultation

DABs/NABs Meeting

- Chaired by Mace Construction management and attendance by all relevant Black Hats and Mace Construction Management.
- Formal notes/actions/works planned will be issued by Mace to supply chain in time for safe start briefs.
- Agenda followed and meeting notes retained, including attendance register.

Safe start Briefings (including Golden Hour)

- Chaired by Black Hats for each supplier.
- Relevant information from DABs/NABs meeting (see above) to be discussed/briefed.
- MUST be carried out before any works start on site.
- Safe start briefing forms must be signed by all operatives after briefing.
- Records of completed Safe start briefing forms to be returned to Mace or uploaded to relevant system before next NABs/DABs. Note: a template can be requested from Mace)

Black Hat End of Shift Review

- Review of the works completed on shift compared to planned works.
- Include any constraints on the works planned for the next shift (anything that prevents planned works).
- Information fed formally back to Mace Construction Management and Supplier management.

Weekend Working

- DABs for weekend works to be held at earliest Friday afternoon.
- Separate DABs can be held for weekend-only works.
- Safe start briefings must be held for all weekend works before the start of each shift.
- Attendance, management and recording of DABs/safe start briefings must be retained as per notes above.

3.4 Performance measurement

3.4 Performance measurement

Mace measure and analyse contractor performance against the five elements of Safety First. Second Nature (figure 7).

Suppliers and contractors are required to supply performance information to Mace on a monthly basis. This must be provided by 1st of each month, for the previous month to include the following as a minimum:

- Number of operatives.
- Hours worked.
- Inspections completed by site management and directors.
- Audits completed.
- Training carried out.
- Daily safe start briefing and toolbox talk records.
- Confirmation of health and safety meeting attendance.
- Statutory inspection records.

In addition to the information provided above, Mace will also measure against:

- Working environment & standards.
- Health and safety returns.
- On site engagement.
- Contractor activity performance.

The key elements which are measured are noted in Table 3

If a contractor is not meeting the performance requirements, this will trigger a health, safety and wellbeing improvement plan between Mace and contractors for the project for contractors to focus and target improvement areas.

Figure 7: Mace Safety First; Second Nature

3.5 Disciplinary Procedure

It is the duty of all persons employed on site to take all reasonable care not to endanger themselves or others. Any employee who refuses to comply with the safety rules and statutory requirements under health and safety legislation could be required to leave the site and may be subject to disciplinary action. Additional guidance can be found in the Mace Industrial Relations Standard.

Element	
Site Health, Safety and Wellbeing Inspections	Minimum monthly requirements for YellowJacket site Health, Safety and Wellbeing inspections from: 1 x Director/Leadership tours. 2 x Health, Safety & Wellbeing inspections. 4 x Site Manager/Supervisor inspections.
YellowJacket Observation and Trend Analysis Reviews	Review of trends using YellowJacket data. Minimum 1x observation per person
Close out of YellowJacket Actions on time	Number of actions due in period closed on time. Target of 85%
Health, Safety and Wellbeing Audits	Audits undertaken to review procedural and contractor compliance to appropriate standards and legislation.
Accident/Incident Trend Analysis	Accidents and incidents are analysed to identify if any specific trends are evident (e.g. by contractor, by work activity, by work area, by injury).

Table 3: HSW Performance Measurement

Section 4

Project Delivery

4. Project delivery

This section details the minimum requirements to control risks associated with specific physical activities, e.g. fire management, demolition, excavation and work at height. Contractors should refer to the relevant Mace Standards/Procedures where applicable.

4.1 Logistics

Contractors must comply with the requirements of the Mace Logistics Standard (MG-H&S-SD-3023). Specific requirements are detailed below:

Figure 8: Security Office

4.1.1 Site welfare

Mace is committed to providing a high standard of welfare facilities and site accommodation across all projects and premises.

Contractors using facilities are required to be respectful and leave them in a safe and clean condition after use.

Any person/s found to be mistreating any facilities may be subject to appropriate disciplinary action.

Contractors must contact Mace management immediately if there are any concerns regarding any of the site welfare or accommodation facilities.

Where the contract includes the requirements for contractors to provide their own welfare, they must be in line with the requirements of the Mace Logistics Standard.

4.1.2 First aid provisions

Contractors are required to provide a number of first aiders and maintained first aid boxes appropriate to their manpower and nature of work. As a benchmark for construction sites, at least one first aider is required for every 50 personnel employed.

These names must be provided to Mace management and updated as required.

First aiders must be in possession of a valid First Aid at Work Certificate.

Appointed Persons must be in possession of a valid Emergency First Aid or Appointed Persons Certificate.

4.1.3 Security and access control

Access to Mace projects or premises is controlled, e.g. gate control systems, turnstiles and/or security personnel.

Contractors are expected to register (where possible) their operatives in advance of attending the site.

Contractors must adhere to specific project access requirements.

Visitors to the project must report to security or the site reception and be escorted at all times. A visitors induction will be provided, including an overview of current site risks, rules and emergency procedures.

4. Project delivery

4.1.4 Traffic management

Contractors must comply with the information contained within the Project Traffic Management and Logistics Plan.

Contractor vehicles attending any UK projects must be compliant with FORS Silver Standard or working to achieve it. As a minimum all vehicles need to be FORS Bronze Standard.

Any contractors that are required to provide traffic/pedestrian marshals, must be suitably trained as defined in Table 4 below:

4.1.5 Housekeeping

Contractors are responsible for maintaining high levels of cleanliness and housekeeping within their work areas, and as identified by Mace management. This includes:

- Work areas must free from the risk of slips, trips and falls.
- All rubbish and debris must be cleared from the work site regularly to designated areas/bins.
- Combustible material must be kept to a minimum by planning works on the basis of a "just in time" delivery process.
- Contractors may be subjected to a "suspension of works notice" if an adequate response to a rubbish removal instruction is not observed. The suspension will remain in effect until the instruction is complied with in full and the loss of production will be at the expense of the Contractor.

Role	Activity	Scope	Training requirements	Recognised training providers
Traffic Marshal (Vehicle & pedestrian)	Receiving and despatching vehicles to and from site, outside the site boundary.	Manage the interface of • vehicles arriving to and leaving from site • members of the public with these vehicles	RoSPA accredited 1-day training course * *Where signage, cones or lights are erected by the Traffic Marshal to direct traffic and pedestrians, they should be NRSWA (unit 2) trained.	RoSPA CLOCS
Plant & Vehicle Marshal (Banksman)	Direction and management of all plant and vehicle movements within the site boundary.	Control the movement of plant and vehicles within the site boundary.*	CPCS A73 CPCS A74 (piling rig movement)	CPCS

***Note:** Consideration should be given for any direction and management of vehicle movement outside of the site boundary.

Table 4: Training requirements for vehicle signallers / Plant & Vehicle marshals and pedestrian marshals

4. Project delivery

4.1.6 Material and equipment storage and movement

During construction the structure will be subject to a variety of temporary loads which can occur from M&E plant movements, construction equipment and material distribution and storage:

- It is the responsibility of the contractor applying the load (e.g. plant movement contractor or equipment provider) to review and confirm that it does not overload the structure or the local highway.
- In cases where the structure will be overloaded and the load cannot be reduced, temporary works are to be designed and installed in accordance with the Mace Temporary Works procedure before the loading takes place.
- The loading assessment check should commence with a review of the Permanent Work Engineering loading document and the project plant replacement study.
- All material and equipment being brought on to Mace projects/ facilities must be planned and coordinated. Mace projects operate a 'just-in-time' policy to avoid the bulk storage of materials, reduce the fire risk and to ensure the safe movement of people and plant around site.
- Mace management or Logistics Managers must be consulted prior to any materials, equipment or plant being brought on to site to ensure they are delivered to the agreed designated areas.

Any materials brought on to site must comply with the following:

- All fittings to be stored in cabinets/ stillages and purpose made racks.
- The unsecured vertical storage of materials is prohibited. All materials must be stored flat or in suitable stillages, cages with Safe Working Loads (SWL) marked and materials secured to prevent falling materials.
- Wooden pallets and cardboard is to be kept to a minimum.
- Combined portable cutting and storage solutions to be used.
- All storage boxes/tool chests/ racks/stillages to be mobile (on wheels) with brakes and hydraulic stays/soft closers on lids.
- Pre-use inspections must be carried out on any mobile storage racks and stillages.
- The SWL must be identified on any racks and stillages being used.
- Use designated storage areas that are barriered off with Heras panels (double clipped) and owner notice displayed.
- Protective covering materials and sheeting used for dust protection must comply with LPS1207 or equivalent standard.
- Prefabricated solutions to be used to eliminate the storage of materials on site.
- No open ends permitted on pipework/ductwork. All ductwork ends must be sealed at a factory (e.g. pipe), or covered individually when on site (e.g. duct work).
- PPE is not to be stored in site boxes.
- Food and drink must not to be stored in tool storage boxes.
- Designated storage areas to be clearly defined and have barriers.

Figure 9: Clear walkway

4. Project delivery

4.1.7 Access and egress

4.1.7.1 General access and egress

Mace will provide general access and egress routes on site.

Contractors have a significant role to play to maintain access and egress routes in a safe condition for use. This includes:

- No access route shall be moved or altered without prior consultation and agreement with the Mace project management team.
- Complying with all walkway signage at all times (including not obstructing signage with materials).
- Providing Mace with timely information on working locations and working activities to assist in logistics planning.
- Not storing materials in designated general access and egress ways.
- Not working in designated general access and egress ways (without prior permission from Mace).

4.1.7.2 Access and egress within designated working area

Contractors are responsible for implementing and maintaining access and egress within their designated work areas. This includes:

- Establishing and maintaining barriers around their work area, with clear signage indicating the Contractor working on the area.
- Clearly marked access paths, clear of stored materials and trip hazards.
- Adhering to barriers in place by other contractors and not removing or walking through areas that are barriered off.

4.2 Asbestos management

Contractors involved in asbestos works must implement the processes defined in the Mace Working with Asbestos Guidance and Procedure (MG-H&S-PR-2075 & MG-H&S-PR-2076). Specific requirements are detailed below

- Any contractors involved in asbestos removal/surveying works, etc. must hold the appropriate licenses and all operatives must be suitably trained, qualified & competent.
- Anyone working on or influencing work on refurbishment/demolition projects or where there is a foreseeable risk of encountering asbestos must have received UKATA, IATP or a recognised asbestos awareness training undertaken within the previous 12 months.
- Removal of ACMs must be supported by appropriate SSoW/POW, asbestos management plan and completion/submission of any necessary regulatory notifications.

4.3 Lead (Pb) management

Contractors/operatives must manage their activities in line with any site specific lead management plan. As part of this:

- Operatives must be familiar with the plan.
- A communication mechanism is in place between operatives, other contractors and Mace.
- Coordinate with workforce to conduct work with Lead in accordance with an agreed Lead Management Plan and RAMS.
- Provide appropriate control measures, e.g. RPE, which is correctly used and that all other control procedures are correctly implemented in accordance with the RAMS.
- Collate occupational monitoring and test results. Review outcomes with a process for communicating and/or escalating as required.
- Collate waste notes to confirm correct disposal of lead.
- Incorporate results of all occupational testing into the RAMS. Review and update RAMS based on outcomes.
- Competency records to be provided to Mace and also retained by the contractor.
- Provide adequate supervision of the works.
- Contractors must liaise with Mace manager/supervisor.

4. Project delivery

4.4 Demolition

Contractors involved in demolition works must implement the processes defined in the Mace Managing Demolition Procedure (MG-H&S-PR-2200). Specific requirements are detailed below:

- Demolition contractors must be a current member of the National Federation of Demolition Contractors (NFDC) or other internationally recognised demolition body.
- Prior to any demolition work being undertaken the contractor must refer to all available survey information and drawings confirm the current condition of the building. Additional non-intrusive or intrusive investigations may also be required to provide sufficient information to allow a suitable demolition methodology to be determined.
- Demolition contractors must provide a fully detailed Demolition Plan to Mace management for acceptance prior to being permitted to commence works on site.
- Contractors must appoint a full time demolition supervisor, with minimum competency of (CCDO) Gold Card Demolition Supervisor (or equivalent outside the UK), during demolition works.
- Specific competencies are required for Demolition and Plant operatives. Examples provided in Table 4 below.

4.5 Excavation works

Contractors involved in excavations/breaking ground works must implement the processes defined in the Mace Excavations and Breaking Ground Procedure (MG-H&S-PR-2325). Specific requirements are detailed below:

- Contractors must be able to demonstrate compliance with Build UK standards (CPCS/CSCS or equivalent & minimum additional training as identified within the Mace Excavations and Breaking Ground procedure.
- Each Contractor undertaking a task which involves excavations and breaking ground, must appoint a suitably qualified and competent non-working excavation supervisor to plan and have overall control of the excavation work activity.
- Prior to starting any works, work area must be visited and inspected to
  1. confirm the location,
  2. review hazards and associated risks,
  3. mark services
  4. confirm maintenance regime
- All excavations are subject to a temporary works design.
- A permit to dig/break ground or authorisation to proceed must always be in place prior to commencing works.
- Excavations must be properly managed using a safe system of work (SSoW) which requires the submission of a detailed Risk Assessment and Method Statement (RAMS) by Contractor for review and accepted by Mace.
- Inspections must be conducted as required, by competent person(s) and recorded.
- Exclusion zones must be established using Heras fencing installed as per the manufacturer's instruction or interlinked crowd control barriers and must be at least 2m away from the excavations. Netlon should not be used around excavations.
- Vacuum excavation must be used where possible.

Figure 10: Demolition Works

Demolition Operatives	Certificate of Competence of Demolition Operatives (CCDO) in UK or country equivalent,
Plant Operatives	CPCS Blue Competence Card – Demolition Plant for operatives (Category D90) in UK or country equivalent.

Table 4: Types of Operatives

4. Project delivery

4.6 Underground services

Contractors must consult the Mace project excavations/services coordinator, before breaking ground, to determine the presence and system of work relating to underground services such as electricity, telecommunication, gas, water, etc.

4.6.1 Planning & enabling:

- Always obtain existing utility drawings and information by contacting the utility owner/ provider, including as built records
- Carry out utility surveys in accordance with PAS 128 (min B1P) & HSG 47.
- Produce/review combined utility drawings to highlight key hazards.
- Update service drawings.
- Contact and notify the service/ utility provider that the planned works will commence and take advise prior to commencing.

4.6.2 Construction:

- Obtain a Permit to dig/break ground once the area has been surveyed. (Permits are valid for a maximum of 7 days and reviewed/ signed off on a daily basis).
- Excavators should not be used within 500mm of services and trial hole must be completed by either using air/water lances or safe hand digging techniques.
- Where services are encased in concrete works must stop to consider the best approach Written confirmation of isolation of services must be obtained prior to exposing the services manually.
- Trial holes must extend the entire length of the services at 2m centres.
- Excavation works will commence using air picks and a vacuum excavator where possible.
- Where it is not possible to use a vacuum excavator, the alternate means of excavation must be authorised by the Mace Project lead
- Consider trenchless techniques, & remotely operated plant. If no other option, excavators can be used.
- Known services locations and the SSoW must also be reviewed by the Mace Project Appointed EE/ MEP Manager.

4.7 Lifting operations

Contractors involved in lifitng operations must implement the processes defined in the Mace Management of Lifting Operations Standard (GP-HSW-SD-0002). Specific requirements are detailed below:

Recommended crane personnel requirements are detailed in Table 5.

All lifting operations are to be planned and carried out by competent, trained personnel.

All lifting operations must be covered by an approved lift plan.

Supervisors must have completed a relevant course before putting anyone to work in a MEWP i.e. in the UK the IPAF 'MEWPs For Managers' course.

Contractors must implement processes to maintain all lifting equipment as fit for purpose. This should include the following:

- Correct capacity (SWL) to carry out the required manoeuvre.
- Compliance with local statutory or other requirements.
- Inspection program, e.g. Thorough Examination (TE) schedule in the UK.

Figure 11: Lifting Operations

4. Project delivery

# of cranes	# of contractors	Personnel Requirement	
		Mace	**Each Contractor**
One	**One**	• 2x Project Mace lifting managers (including 1 deputy) with the Management of Lifting Operations (Cranes) 3 day Course. • 1x Senior Appointed Person (CPCS A61) resident on site controlling all lifting activities. This can be bought individually or as part of the crane package. All other AP's are subservient to this AP.	• 1x Appointed Person (CPCS A61) on or off site – will prepare all lifting plans for submission. • 1x Crane Supervisor (CPCS A62) required on site and can double up as a slinger/signaller (CPCS A40) but if lifting over distances or from lower to higher levels then minimum 2 slinger/signallers required. **Note:** It is possible under certain circumstances to have someone doing all 3 roles but not concurrently.
One	**Multiple contractors**	• 2x Project Mace lifting managers (including 1 deputy) with the Management of Lifting Operations (cranes) 3 day course. • 1x Senior Appointed Person (CPCS A61) resident on site controlling all lifting activities. This can be bought individually or as part of the crane package. All other AP's are subservient to this AP. • 1x Crane coordinator where other items such as concrete placing booms and mobile cranes will interfere with the safe operation of the tower crane	• 1x Appointed Person (CPCS A61) on or off site – will prepare all lifting plans for submission. • 1x Crane Supervisor (CPCS A62) required on site and can double up as a slinger/ signaller (CPCS A40) but if lifting over distances or from lower to higher levels then minimum 2 slinger/signallers required.
Two cranes	**One contractor**	• 2x Project Mace lifting managers (including 1 deputy) with the Management of Lifting Operations (Cranes) 3 day course. • 1x Senior Appointed Person (CPCS A61) resident on site controlling all lifting activities. This can be bought individually or as part of the crane package. All other AP's are subservient to this AP. • 1x Crane coordinator where other items such as concrete placing booms and mobile cranes will interfere with the safe operation of the tower crane.	• 1x Appointed Person (CPCS A61) on or off site – will prepare all lifting plans for submission. • 2x Crane Supervisor (CPCS A62) required on site and can double up as a slinger/ signaller (CPCS A40) but if lifting over distances or from lower to higher levels then minimum 2 slinger/ signallers are required.
Two cranes	**Multiple contractors**	• 2 x Project Mace lifting managers (including 1 Deputy) with the Management of Lifting Operations (Cranes) 3 day Course. • 1 x Senior Appointed Person (CPCS A61) resident on site controlling all lifting activities. This can be bought individually or as part of the crane package. All other AP's are subservient to this AP. • 1x Crane coordinator where other items such as concrete placing booms and mobile cranes will interfere with the safe operation of the tower crane	• 1x Appointed Person (CPCS A61) on or off site – will prepare all lifting plans for submission. • 2x Crane Supervisor (CPCS A62) required on site and can double up as a slinger/ signaller (CPCS A40) but if lifting over distances or from lower to higher levels then minimum 2 slinger/ signallers are required.
Three or more cranes	**Multiple contractors**	• 2 x Project Mace lifting managers (including 1 deputy) with the Management of Lifting Operations (Cranes) 3 day course. • 1 x Senior Appointed Person (CPCS A61) resident on site controlling all lifting activities. This can be bought individually or as part of the crane package. All other AP's are subservient to this AP. • 1x Crane supervisor to work alongside Senior AP to assist.	• 1x Appointed Person (CPCS A61) on or off site – will prepare all lifting plans for submission. • 2x Crane Supervisor (CPCS A62) for each crane required on site and can double up as a slinger/ signaller (CPCS A40) but if lifting over distances or from lower to higher levels then minimum 2 slinger/ signallers are required.

Table 5: Crane and Personnel Requirements

4. Project delivery

4.8 Working at height

Contractors involved in working at height must plan their work and implement controls in line with the requirements of the Mace Working at Height Standard (MG-H&S-SD-2800). Specific requirements are detailed below:

Contractors must identify their controls for working at height in RAMS and communicate these to Mace management, where they will be included as part of the project Working at Height Plan. These will include:

- Edge Protection
- Hole Protection
- Access Equipment
- PPE Selection for Working at Height
- Tool tethering requirements
- Exclusion zones

Contractors must arrange for all persons involved in the task to be briefed on the RAMS as part of the daily safe start briefings (See table 2 in section 3.3). Records of briefings must be retained by the contractor.

4.9 Riser safety

Contractors must select appropriate riser management controls to prevent falls from height when working in risers. These need to be agreed by Mace management.

Contractors working in and around risers must adhere to the project Riser Strategy and in line with requirements of the Working at Height Standard.

The Project Riser Strategy document will be produced and issued to the Contractor.

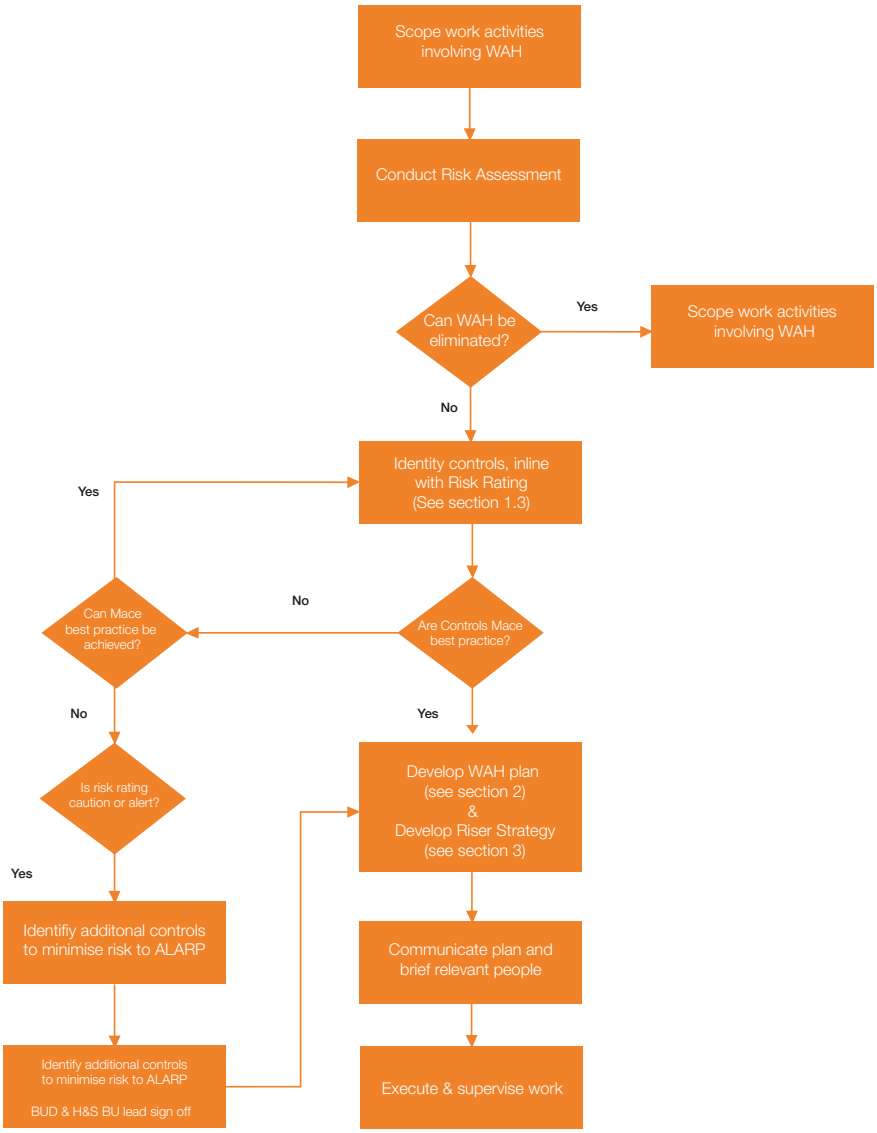


Figure 12: Working at Height Control Planning Process

4. Project delivery

4.10 Scaffolding

- Scaffolding contractors must be a member of National Access and Scaffolding Confederation (NASC).
- Scaffold design drawings or Technical Guidance 20 (TG20) compliance sheet must be on site and in the possession of the scaffolding supervisor prior to the commencing of work. All design drawings and compliance sheets must be available at the time of handover, when any inspections are undertaken and upon request.
- Where TG20 compliant scaffolds are proposed, TG20 compliance certificates must be provided and be signed by the designer.
- All scaffolds, irrespective of complexity, are items of temporary works and must be designed in accordance with the appropriate standards and the Mace Temporary Works Procedure.
- Working at height regulations require that strength and stability calculations are carried out for all scaffold structures unless they conform to a recognised standard configuration. The NASC have developed a range of standard configurations which have been designed by structural calculations and are contained within TG20. The intention is that they are to be used with no further calculation requirement. Mace will accept the use of these standard configurations as category 1 temporary works provided the following conditions are met:

  - All scaffolding should be erected, dismantled and altered in accordance with either NASC guidance document SG4 for tube and fitting scaffolds or the manufacturers' erection guidance for system scaffolds.

  - All scaffold design details will be provided to Mace. Any person who erects or dismantles a scaffold must be trained and currently certificated to the Construction Industry Scaffolder's Record Scheme (CISRS).

  - Foundations under all scaffold and the capacity of any supporting structure or building to carry tie loads are not the responsibility of the scaffold designer.

  - All loads imposed on the permanent works by the scaffold, including tie forces, are to be confirmed by the scaffold designer. All ties are to be designed by the scaffold designer.

  - Any contractor applying scaffolding loading to the permanent works is responsible for demonstrating the capacity of the permanent works to support the imposed loads in accordance with the Mace Temporary Works Procedure.

4. Project delivery

4.11 Management of temporary works

Contractors must meet the requirements of the Mace Temporary Works Procedures (MP-ENG-PR-101). This outlines the following requirements for a consistent approach to temporary works across all Mace construction projects:

- Temporary works are to be designed, constructed, maintained, used and dismantled safely.
- Compliance with the code of practice for temporary works procedures and the permissible stress design of falsework BS5975.
- Temporary works are integrated wherever possible with the design of the permanent works.
- Temporary loads from equipment installation are adequately assessed.

Contractors involved in Temporary Works must appoint a Temporary Works Co-ordinator that is capable and competent of matching the complexity of the works being undertaken. A CV and competency assessment of the Contractor's Temporary Works Coordinator must be submitted on appointment to the Mace Project Team at the pre-mobilisation meeting and accepted by Mace Temporary Works Coordinator.

Contractors must implement requirements of the Temporary Works procedure including the following:

- All temporary works are identified and classified with details of dates, designers and checking organisations.
- All temporary works are designed and checked by competent people.
- All construction materials, components and the physical construction of the temporary works are inspected and approved to confirm their compliance with the design.
- All changes are referred to and approved by both the Temporary Works Designer and the Checking Engineer.
- Risk assessments are undertaken for the Temporary Works life-cycle; their design, construction, use, modification, maintenance and subsequent removal.
- The systems and procedures are effectively and correctly being implemented through defined audits and reviews with improvements undertaken where identified.

It is expected that the contractor co-operates with the above and provides all necessary documentation to allow this process to be completed in a timely and efficient manner.

The current British standard relating to Temporary Works BS5975 defines temporary works as: - "Parts of the works that allow or enable construction of, protect, support or provide access to, the permanent works and which might or might not remain in place at the completion of the works."

To add further clarification Mace have refined the above definition into the following two definitions:

1. **Any works that are required for the construction of the permanent works which will normally be removed from the site on completion.**
2. **Permanent works in an incomplete state and permanent works which are used to provide temporary support are also classified as Temporary Works**

Figure 13: Temporary works (hoarding, crane and edge protection)

4. Project delivery

4.12 Mobile plant and equipment

Contractors must meet the requirements of the Mace Contractor Plant & Equipment Procedure (MG-H&S-PR-2625). Specific requirements are detailed below:

Contractors are responsible for the safe use and maintenance of all plant and equipment provided on site for use by their workforce. This should be in line with PUWER (Provision and use of Work Equipment Regulations). This includes:

- Segregation of people (operatives and members of the public) from mobile vehicles and equipment, e.g. exclusion zones, designated walkways.
- Trained and competent operators.
- All ride-on plant must be fitted with rollover protection structures (ROPS) and restraint systems (seat/lap belt).
- Regular maintenance conducted as per manufacturer's requirements, and recorded, with any defects addressed.
- Pre-use inspection of the plant conducted by the trained operator at the start of the shift, and recorded.
- Selection and use of the correct plant considering load capacities and the ground conditions being used on.
- Physical exclusion zones are required around excavators to prevent unauthorised access. These must be monitored and maintained.

4.13 Tools and equipment

Contractors are responsible for providing and maintaining suitable tools and equipment which are fit for purpose. This includes the following:

- All portable electrical tools and equipment must operate from a 110 volt supply.
- Specialist operations which require operating voltages in excess of 110 volts (230v or 400v) must be supported by a risk assessment and require authorisation from Mace management in advance. All such equipment must be protected by a residual current device, and armoured cable where necessary, and must be installed and checked by an approved electrician before commencing work.
- All electrical leads must be kept as a short as practicable and shall be routed in a safe manner, to avoid tripping hazards in particular.
- Suitable training must be given in the safe use of power tools.
- The site temporary installation needs to be inspected and tested at three monthly intervals in accordance with the IET Wiring Regulations (current Edition and an Electrical Installation Condition Report (EICR) issued to the Mace Temporary Building Services Package Manager (TBSPM).
- Tools and equipment must be inspected before each use and receive formal planned maintenance in line with the manufacturer's instructions.
- All electrical portable appliances and equipment must be inspected and tested in accordance with the IET Code of Practice for the In Service Inspection and Testing of Electrical Equipment (Current Edition).
- Inspection records must be available on request.
- Power tools which generate dust, must have a dust extraction system in place.
- Fixed bladed and semi-fixed bladed knives are not permitted across the Mace Group. The use of bladed knives will only be authorised by a Mace Project Director or Mace Lead, after all other means have been evaluated and no alternative deemed suitable.

4.13.1 Use of nail guns and shot-fired fixings

Contractors that require the use of shot-fired equipment must have trained and competent operatives to conduct the task.

Registers for equipment and shot-fired cartridges must be in place.

The use of shot-fired equipment when working at height must be properly risk assessed and controlled with appropriate use of access equipment (See section 4.12 for Working at Height).

Nail guns and shot-fired fixings must be stored in lockable containers with controlled access.

4. Project delivery

4.14 Fire safety management

Contractors must comply with the requirements of the Mace Fire Standard (MG-H&S-SD-2350) at all times.

The fire safety strategy for any Mace project shall be detailed within the project Fire Safety Plan which must be adhered to at all times. All contractors shall be issued with a copy of the current Fire Safety Plan and shall receive updates when produced.

The project fire safety hazards and risks shall be detailed in the project fire risk assessment and any significant issues shall be highlighted and a copy issued to all contractors.

Works must be managed so that any fire safety control and mitigation measures are maintained at all times in line with the project Fire Safety Plan and fire risk assessment.

Mace will communicate any specific fire safety management requirements, including the evacuation procedure, during the site induction, stand downs and briefings.

Contractors must provide a sufficient number of suitably trained fire marshals to cover all anticipated hot works processes. Fire marshals must have attended a recognised third party Fire Marshal training course which includes practical use and handling of fire extinguishers.

Figure 14: Hot works

Contractors must provide a sufficient number of persons to undertake the 'Fire Watch' role where hot works operations take place. Fire Watchers must have attended a third party recognised Fire Marshal training course which must include the practical use and handling of fire extinguishers.

Contractors must provide adequate number of appropriate fire extinguishers as per the Mace Fire Standard, e.g. when conducting hot works, refuelling, etc.

Contractors must be aware of, and be organising and planning works in line with, the recommendations contained in applicable fire safety guidance, e.g. in the UK HSE 168 (Fire safety in construction) and the Joint Code of Practise (JCoP) for Fire Prevention on Construction Sites.

4. Project delivery

4.15 LPG, highly flammable liquids (HFL) and compressed gases

Contractors that require the use of LPG, HFL and compressed gas on site must meet the following requirements:

- Cylinders must be stored outside in a safe and secure compound, at an agreed location, not less than six metres from any building and stored in an upright position. Regulators must be removed when stored.
- In the case of timber frame construction, cylinders must be stored at least twenty metres away from the building facade.
- Any compound must be divided to separate full and empty cylinders and contents be clearly marked and include warning notices displayed.
- Flammable gases must be separated from other compressed gases by a minimum of three metres in distance.
- Cylinders in use on site must be secured in an upright position.
- When in use, cylinders must be fitted with the correct regulator, hoses, crimped connections. Where used with burning/welding gear, gauges and flashback arrestors must also be used.
- Sufficient numbers of appropriate fire extinguishers must be provided at locations where LPGs, HFL and compressed gasses are used and stored.
- A programme of planned inspection of all equipment must be initiated and equipment must only be installed and used by competent persons.
- Contractors limits on fuel storage on site are detailed in Table 7 below. Should these quantities need to be exceeded then the higher volumes need to be assessed as part of the fire risk assessment.

Fuel	Max Quantity
Petrol	5 Litres
Diesel	40 Litres
LPG	300 kilograms
Maximum total quantity allowable in any flammable liquids storage container (cabinet or box) is 50 litres including the petrol or diesel.	

T**able 7**: Maximum quantities for fuel permitted per contractor

4.16 Confined space working

Confined space activities must be planned and managed in line with the Mace Confined Spaces Procedure (MG-H&S-PR-2150).

Contractors that must conduct work in a confined space (e.g. a chamber, tank, vat, silo, pit, trench, sewer, flue, well or similar space) must have a confined space entry permit.

Confined space work must be risk assessed, planned and supported by a RAMs, including a rescue plan. Mace management must authorise the works.

All personnel involved in the planning and execution of confined space work must be competent to fulfil their designated roles.

4. Project delivery

4.17 Personal protective equipment (PPE)

Contractors must meet the requirements of the Mace PPE Standard (MG-H&S-SD-2576). Minimim standards are detailed below and in Table 8.

- Contractors are also required to have operative's names clearly visible on their safety helmets.
- No stickers, other than those in figure 16 below are permitted on safety helmets, i.e. induction stickers.
- Site personnel must keep their torsos covered at all times. Arms must also be covered when required by risk assessment.
- Additional PPE requirements may be identified based on task or project specific risk assessment.

* The exemption from wearing head protection for turban-wearing Sikhs working on construction sites now applies to the PPE Regulations. There is no such exemption for other religious groups or for Sikhs who choose not to wear a turban.

** Where BS EN standards are not achievable in a region, the project needs to compare local standard and risk assess if they are suitable for use.

***Where footwear that deviates from the standard required, e.g. wellington boots for concrete works, then this should be supported in the PPE Risk Assessment and agreed with Mace HSW manager.

	Helmet Stickers	Role
	Green First Aider Sticker	First Aider
	Red Fire Marshal Sticker	Fire Marshal

Figure 15: Helmet sticker

Table 8: Mace five point PPE minimum standard

	Minimum Standard
1. Safety Helmet	Safety helmet* - with, where applicable through risk assessment, suitable chin strap/hard hat tether. BS EN 397** See figure 15 and 16 for Build UK Standard.
2. Protective Eyewear	Protective eyewear - incorporating prescription lenses where necessary. BS EN 166 **: Optical Class 1; mechanical strength F; resistance to fogging N; resistance to surface damage K. Overglasses can be worn. BS EN 166F
3. Protective Gloves	Glove type - to be selected based on work activities BS EN 388 **
4. Safety Footwear	Safety footwear** - incorporating toe and midsole protection with ankle support BS EN ISO 20345:2011: SB-P,S1P,S3,S5
5. High Visibility Jacket or Vest	High visibility jacket or vest - Class 2 minimum. Class 3 when required by a project specific risk assessment EN ISO 20471:2013

	**Black**	Supervisor
	**Orange**	Slinger/Signaller
	**White**	Site Manager Competent Operative Vehicle Marshall (Distinguished by the wearing of a different coloured high visibility vest)
	**Blue**	All those coming to site who do not fall into any of the above categories

Figure 17: Safety Helmet Colour Scheme in line with Build UK

4. Project delivery

4.18 Electrical systems

Where any electrical works form part of their delivery, all contractors are required to comply with the Mace Electrical Safety Rules and Procedures (MP-ENG-PR-101)

Contractors that are to be in operational control of any part of an electrical installation must issue their own specific Electrical Safety Plan for incorporation into the Mace Project Specific Electrical Safety Plan.

Contractors that are to be in operational control of any part of an electrical installation shall be issued with a Transfer of Operational Control (TOC) letter and associated schematic and plan drawings that clearly defines the extent of the system(s) that they are in control of.

This TOC letter is formally issued by the project's electrical team on successful completion of a Pre-Energisation Audit. Please note that this letter will be withdrawn and the contractor's installation isolated, if the contractor scores below 50% on a Post-Energisation Audit or that there is a serious failing in the contractor's management of the electrical works on Mace projects. The letter will not be re-issued until the contractor has satisfactorily implemented improvement measures to a pre-agreed Improvement Plan and successfully completed a Pre-Energisation audit.

Electrical contractors shall be required to issue all training certification and appointment letters for Senior Authorised Persons (SAPs), Appointed Persons (APs), Competent Persons (CPs), etc. who will work or operate electrical equipment and manage the contractor's electrical procedures, including Permit to Work, Lock out tag out (LOTO), Sanction for Test etc.

Electrical RAMS must be reviewed by Mace management identified on the Authority Matrix held by Mace and as defined in the Project Electrical Safety Plan.

Electrical testing must only be carried out by trained competent persons and in strict accordance with Guidance note 3 of the latest edition of BS7671, IET Wiring Regulations. Evidence of competencies to be given to the Mace Project Appointed Electrical Engineer. Testers must be able to demonstrate relevant skills, knowledge and experience for example City and Guilds Inspection and Testing 2391 (UK Qualification).

All test equipment must be calibrated, with calibration certificates provided to Mace MEP Manager prior to testing. Records shall also be kept on periodic monthly, bi monthly accuracy checks of this test equipment.

All test and inspection results must be recorded and an updated copy of test results held on site for inspection by Mace management.

The contractor shall keep an up to date schematic showing the current state of the main distribution, including but not, limited to, dead tested, live tested, energised, isolated etc. This is to be kept in a lockable frame in accordance with section 6.5.6 of the Mace Electrical Safety Rules and Procedures.

Following a successful Pre-Energisation and initial Post-Energisation audit, each contractor shall be subject to three monthly Post-Energisation audits until the end of the project. They are also subject to random audits by the Mace Chief Electrical Engineer's Office.

All electrical works are to be carried out in accordance with Regulation 14 of the Electricity at Work Regulations 1989. For any proposed live works, these will only be considered if all practicable measures to isolate the system to work on have been exhausted. The contractor proposing live works must submit their justification for live working, along with task specific RAMS and an arc flash assessment to the Mace Chief Electrical Engineer's Office for consideration. No live works are to commence until written acceptance is issued by the Mace Chief Electrical Engineer's office.

Examples of what is deemed live working can be found in section 6.8 of the Mace Electrical Safety Rules and Procedures.

4. Project delivery

4.18.1 Electrical installations and temporary electrics

All electrical installations must fully comply with current BS7671 IET Wiring Regulations, as amended. Site electrical installations shall also comply with BS7375 and the Mace Temporary Building Services Process document.

Contractors must ensure that all temporary electrical systems are installed, tested and commissioned in strict accordance with Part 6 and corresponding Guidance Note 3 of BS7671, IET Wiring Regulations, as amended, and that all compliant Inspection and Test certificates are issued in a timely manner to the Mace Electrical Team.

The contractor shall also carry out three monthly Electrical Installation Condition Reports (EICRs), the extent of the sample testing shall be agreed with the Project Appointed Electrical Engineer during the tender process, however, there shall be the 100% testing of the Reduced Low Voltage (RLV) installation and RCDs on site. Limitations to the testing shall not be accepted unless endorsed in writing by the Project Appointed Electrical Engineer.

Mace policy is no live working. Contractor's operatives must not work on or near to live electrical circuits so far as is reasonably practicable. All electrical works to be carried out in accordance with Regulation 14 of the Electricity at Work Regulations 1989.

For any proposed live works, these will only be considered if all practicable measures to isolate the system to work on have been exhausted. The contractor proposing live works must submit their justification for live working, along with task specific RAMS and an arc flash assessment to the Mace Chief Electrical Engineers Office for consideration. No live works are to commence until written acceptance is issued by the Mace Chief Electrical Engineer's office.

Examples of what is deemed live working can be found in section 6.8 of the Mace Electrical Safety Rules and Procedures.

Contractors are required to reduce the impact of trailing cables on Mace projects. Where possible battery operated tools must be used.

Cables are to be routed safely as not to create other hazards. Cable management tools are to be used.

4.18.2 Lighting

Mace will only provide general access lighting to site (including emergency lighting requirements).

Contractors are responsible for providing adequate standards of lighting for their operations (20-50 Lux).

The use of incandescent lamps on Mace projects for any form of lighting is not permitted. Examples of these include halogen, filament, high pressure sodium (SON) and Metal Halide. Edison screw and bayonet cap lamp holders are not permitted unless these have an enclosure to IP4X that requires the use of a tool to access the lamp holder.

LED lamp source is the preference for contractor's task lighting.

4.18.3 Generators

The use of any form of generator to provide a temporary electrical supply is not permitted unless there is written approval from Mace's Chief Electrical Engineer's Office, the Project Director and the Sustainability Manager.

Where a Contractor is utilising a generator to supply a piece of fixed equipment or installation, they shall be issued with a Transfer of Operational Control (TOC) letter prior to energisation and be subject to the Mace Electrical Safety Rules and Procedures.

It is the contractor's responsibility to ensure that there is adequate and compliant electrical protection and that any additional earthing requirements are clearly detailed and recorded on the Generator Checklist, and that the TOC letter is in place before the generator is put into service.

4. Project delivery

4.19 Mechanical safety

Mechanical contractors must submit a RAMS to Mace which must be accepted prior to any type of mechanical testing taking place.

The mechanical contractor must appoint an Appointed Person to manage and control the works.

Mechanical contractor Inspection and Test Plans must be issued to Mace prior to the sign-off of RAMS. The RAMS must cover all processes for pressurising and de-pressurising systems and specific Test Packs must be in place prior to any works. Mechanical RAMS Review Checklists shall be used to review mechanical activity RAMS.

Calibrated test gauges must be used and certificates to be provided prior to any testing works.

A permit control system must be in operation and adhered to for any type of mechanical testing.

Contractor operatives involved with any mechanical testing must be able to demonstrate their competency prior to any works taking place.

Mechanical contractor is responsible for maintaining mimic diagrams which are used to identify the works being undertaken and to clearly identify and communicate operatives and Mace management of any live pressurised areas.

Work should not commence on pipework, without confirming that they are non-pressurised. Adequate signage, barriers and exclusions zones are required.

Pipe work and systems must not be filled until an approved method of draining the system is agreed and hose connected to a drain.

4.20 Hazardous substances management/ (COSHH)

Works must be planned and managed in line with the Mace COSHH Procedures (MG-H&S-PR-2175)

Contractors must have processes in place to manage hazardous substances brought onto site. These include:

- Completing a hazardous substance/COSHH assessment by a competent person. Provision of a Material Safety Data Sheet (MSDS) on its own, is not sufficient.
- Maintain a hazardous substance/ COSHH register which is reviewed weekly. A copy must be provided to site security for emergencies, i.e. grab pack/link to emergency response plans.
- Designated suitable and secure storage with correct signage and adequate bunding.
- Provision of adequate number spill kits and operatives trained in emergency response.
- Stock management to minimise quantities on site.
- Inclusion of controls into RAMS, including requirements for correct labelling and storage.

4.21 Vibration

Works must be planned and managed in line with the Mace Vibration Management Procedure (MG-H&S-PR-2506). Specific requirements are detailed below:

Contractors need to identify where operatives are exposed to vibration. Where this is identified in the RAMs then adequate controls need to be implemented. This must include:

- Hand arm vibration syndrome (HAVS) or whole body vibration (WBV) risk assessment to understand exposure and controls.
- Use of alternative method which does not expose operatives to HAVs or WBV.
- Reduction of exposure time.
- Health monitoring of individuals exposed to vibration.
- Training and awareness to operatives on the risks and controls.
- Operatives to report any signs and symptoms of HAVS.
- Provision of suitable PPE, supported by a PPE assessments.
- Use of technology to record exposure and alert operatives when exposure time or levels have been reached.
- Contractors must implement a health surveillance programme if the Exposure Action Value is regularly exceeded and have a clear policy for the future management of affected employees.

4. Project delivery

4.22 Noise

Works must be planned and managed in line with the Mace Noise Management Procedure (MG-H&S-PR-2500). Specific requirements are detailed below:

Contractors need to identify where operatives are exposed to noise. Where this is identified in the RAMS then adequate controls need to be implemented. This must include:

- Conducting noise assessments to identify controls and training needed.
- Clearly defining exposure action levels in line with regulatory requirements.
- Use of alternative method which does not expose operatives to noise, e.g. eliminate or substitute the noisy activity where possible.
- Planning of the works to minimise exposure to operatives, including those working nearby.
- Use of noise barriers, blankets, curtains, cutting stations, or similar to reduce exposure of the noise
- Noise monitoring and sound level meter to monitor effectiveness of control measure.
- Health monitoring of individuals exposed to excessive noise (above 85dB(A)).
- Training and awareness to operatives on the risks and controls.
- Operatives to report any signs and symptoms of noise.
- Provision of suitable PPE, supported by a PPE assessment, e.g. ear defenders, ear plugs. Training must be provided on correct use.
- Adequate signage to inform operatives when entering a noise controlled zone or when entering a hearing protection zone.
- Consider the impact of noise levels when purchasing equipment.
- Procure quieter equipment.

4.23 Dust

Works must be planned and managed in line with the Mace COSHH Procedures (MG-H&S-PR-2175)

All activities which generate dust, e.g. excavation, cutting, woodwork, must implement controls to prevent or minimise. This must include:

- Use of extraction or water suppression at source.
- Dry sweeping is prohibited - suitable water packs must be provided.
- Use of handheld brooms only if other means not practical.
- Operatives using brooms must be wearing appropriate RPE.
- Use of RPE which operatives have been provided with face-fit testing and are trained on use. Minimum FFP3 return valve RPE must be worn for dust generating activities.
- Use of extraction or hoovers that have a medium or high HEPA filter.
- Respiratory health surveillance for operatives.
- Task specific PPE compatible with any RPE being worn.
- A hazardous substance/COSHH assessment is required for all dust generating activities.
- Comply with relevant Workplace Exposure Limit.

4. Project delivery

4.24 Manual handling

Contractors are required to risk assess all activities and minimise manual handling. This should include:

- Planning of works to eliminate manual handing at design stages.
- Conducting manual handling risk assessments for high risk activities using operatives TILE (Task Individual Load Environment) or similar methodology.
- Use of lifting aids wherever possible to eliminate or reduce the amount of manual handling as reasonably practicable, e.g. forklift, cranes, powered pallet trucks.
- RAMS needs to include details on the SWL of the equipment that is being handled.
- Use team lifting for longer lengths.
- Providing training with manual handling training to relevant operatives.
- Minimising distance between storage areas and workface.
- Use of task specific PPE, e.g. impact gloves, kevlar sleeves.
- Use of banksman should walk ahead to warn other operatives.

Figure 18: Manual Handling, Good Practice

4.25 Monitoring

Contractors are required to implement monitoring regime to assess the effectiveness of their controls. This may include but is not limited to the following:

- General site inspections.
- Specific task inspections eg. working at height, temporary works, manual handling.
- Fire coordinator checks.
- Occupational health monitoring eg. dust, noise, vibration.

All inspections and associated actions must be recorded. Actions need to be closed out in a timely manner (see section 2.1, Yellow Jacket for more information).

End of Document

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