- “Our supply chain is much more than a group of individual sub-contractors and suppliers: it is a key part of our business, core to our own performance and reputation as a company.
- We aim to build strong, long-term partnerships with these companies, based on shared values, to help us deliver excellence to our customers. Working in partnership means we ***can***, together, constantly improve quality, efficiency, and safety.”

Leo Quinn, Balfour Beatty, Group Chief Executive

Change Log

Version	Description	Clause
6.0	Avoiding Underground and Overhead Services – Updated section on steel pins and spikes, prohibiting their use.	18.17.1
	People, Vehicle and Plant Interfaces – Abnormal loads must have a load plan (Abnormal Loads also referenced in Abbreviations Section)	37.10.2
	Personal Protective Equipment – Updated requirements for upper body protection when using chainsaws.	38.9.1
	Plant – Updated concrete pumping section to include the need for a Concrete Pumping Plan.	39.10.1
	Updated Daily Activity Briefing	Appendix C
	Updated prohibited equipment and work practices table	Appendix K
5.0	Lifting Operations - updated to include the “Hands Off, Stand Clear” approach.	32.7.8 & 32.7.9, 32.10.6 & 32.10.7 and 32.17.1)

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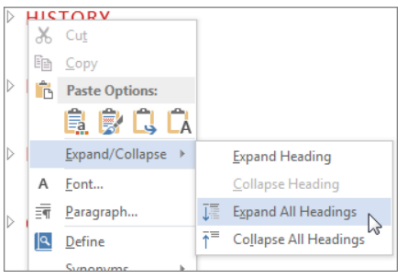
Related documents

- Supplier Sustainability Conditions (Internal site) (External site)
- Supplier Quality Conditions (Internal site) (External site)

Navigation

This document can be navigated quickly by using the hyperlinks contained within the contents pages or any sections highlighted. Each section is collapsible/expandable; you will see a small triangle ◢ when you move your cursor over the heading of the section. Clicking the small triangle collapses or expands the section. A right click gives you more options to expand or collapse all headings (as below).



1. PURPOSE

1.1. The Company is committed to delivering high standards of Health and Safety(H&S) to its customers on all its projects and recognises the contribution of its Suppliers in supporting and delivering this objective. This document is designed to promote a positive and responsible attitude towards H&S issues. It is not intended to be exhaustive but must be considered the minimum standard acceptable to The Company on projects, or areas under its control. The Company H&S policy are available on the Company's external website and form part of these conditions.

1.2. The Supplier must bring the relevant content of this document and Policies to the attention of all personnel employed or under their control on Company projects and offices to ensure they are actively complied with.

2. APPLICATION

2.1. The "Supplier Health & Safety Conditions" are mandatory on all Company projects. The Supplier must comply with these conditions when undertaking work on behalf of The Company. Failure to do so may result in the termination of the subcontract.

2.2. The contents of this document are in line with statutory duties. Where The Company has imposed conditions which may appear more stringent than those implied by statute, these conditions take precedent. This document must therefore be recognised as a condition of contract.

2.3. The Supplier must comply with The Company's "best practice" mission, safety stand downs, initiatives and procedures. This is inclusive of the Zero Harm Initiative. In this respect, The Supplier is deemed to have made allowance for all relevant time, cost and resources to achieve compliance.

2.4. The Supplier will comply with all Company Policies and relevant contractual obligations as detailed within the subcontract agreement.

2.5. The Supplier will comply with The Company's Plant and Equipment Specification Sheets (Plant Standards), which are available to download at: http://www.balfourbeatty.com/suppliers/important-documents-for-suppliers/

3. HEALTH AND SAFETY LEGISLATION

3.1. The Supplier has a statutory obligation to conduct their undertakings in compliance with relevant United Kingdom and the Republic of Ireland legislation. The Supplier must further ensure that all works are carried out in accordance with relevant Codes of Practice and Guidance issued by health and safety regulatory authorities.

3.2. This document cannot alter The Supplier's statutory obligations and it is not the purpose of this document to repeat legislative requirements.

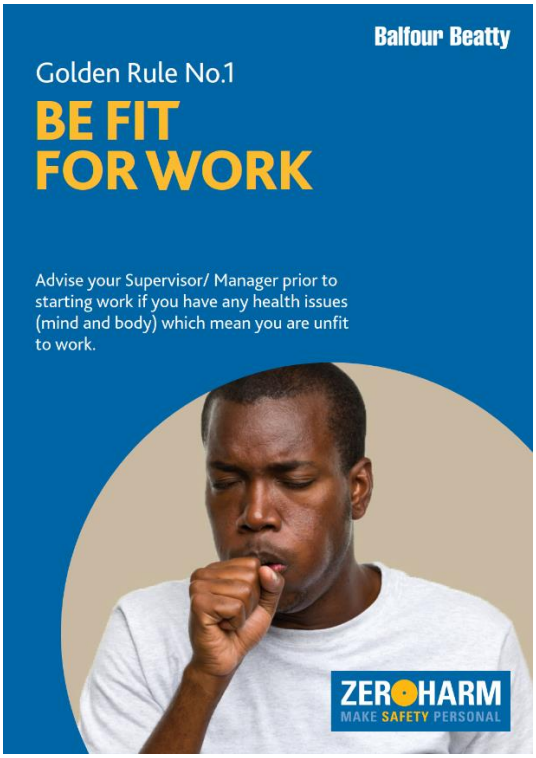
3.3. However, it must be noted that it is a condition of contract that those statutory obligations are fulfilled.

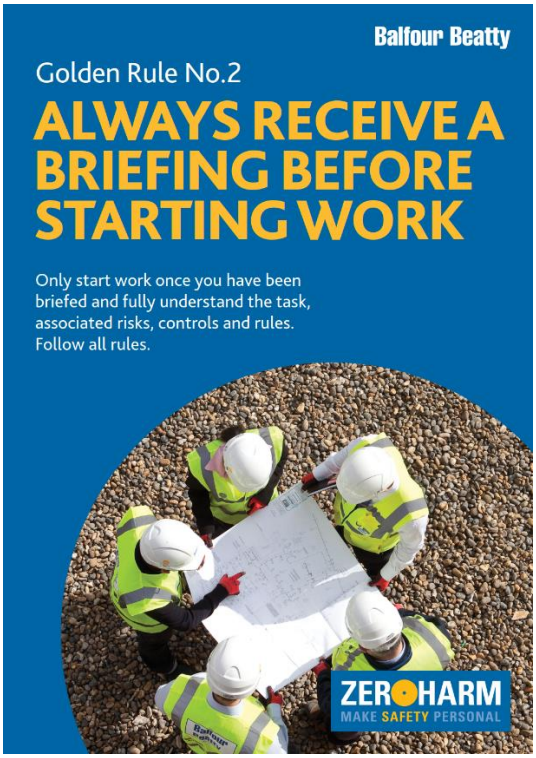
3.4. All statutory registers, notices and certificates applicable to The Supplier's site activity must be maintained and be readily available for inspection by The Company.

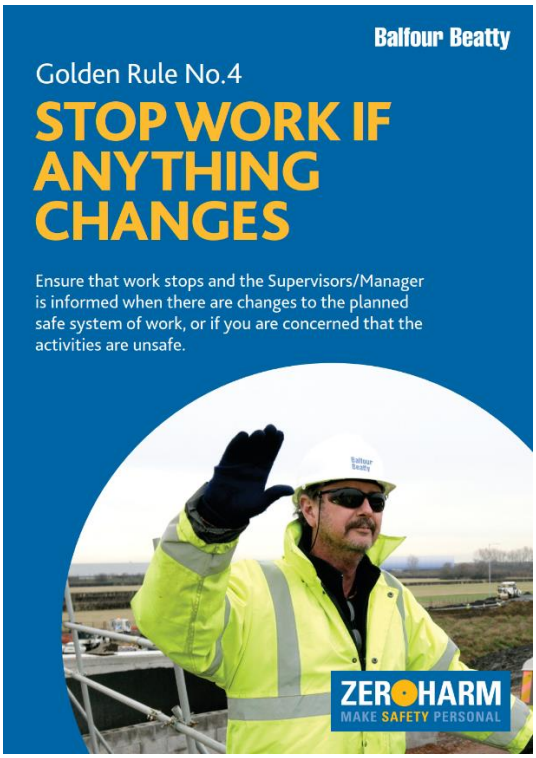
3.5. Any contact with the Health and Safety Executive or other enforcing authority regarding activities on The Company's sites must be reported to the Site Lead immediately.

4. GOLDEN RULES

4.1. Balfour Beatty referred to as "the Company" throughout this document, operates around the principles of four Golden Rules. These rules underpin all that we do as we strive to create a business that will deliver Zero Harm:





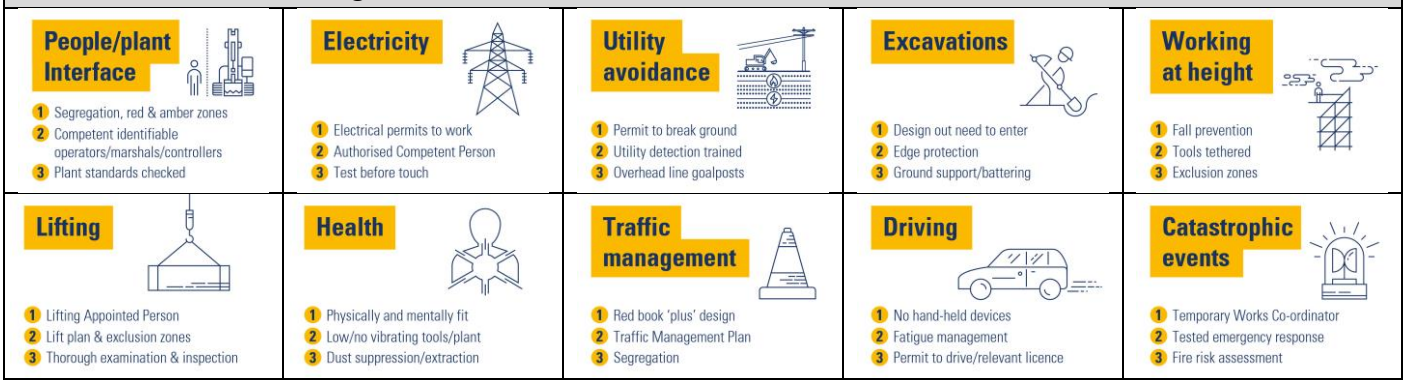


5. FATAL RISKS

5.1. Eliminating risk is a critical element of our determination never to compromise on safety. We have identified ten fatal risks that affect our day-to-day operations. If we can design out these risks before they even arise, we can make our sites safer places to be.

5.2. **What3Things** (W3T) is a simple summary of three key measures to be applied to each of our fatal risks, providing a quick and easy prompt for teams to use. Used alongside our Golden Rules, What3Things should address the most common issues surrounding these risks on our sites.

Fatal Risks - What3Things



6. PROHIBITIONS

6.1. To achieve Zero Harm, The Company prohibits the use of some equipment or methods of work on its projects. These are identified and highlighted within the following sections of this document.

7. PRE-START SUBCONTRACTORS MEETING

7.1. On contract award, and prior to commencing on site, The Supplier (including the site management team) will attend a pre-start meeting where H&S arrangements will be confirmed, recording details of construction processes, plant and equipment requirements, resources and levels of competence along with the Subcontractor's roles and responsibilities.

7.2. Minutes of this meeting will be recorded and forwarded to the sub contractor.

8. SUB-SUBCONTRACTING

8.1. Where a package of works includes for the provision of a 2nd tier Supplier, or the Supplier wishes to sub-let part of his work, written agreement prior to any contract award must be obtained from The Company.

8.2. The 2nd tier Supplier must be assessed to ensure they are competent and have adequate resources to complete the work. The assessment of any 2nd tier Supplier used for sub-let work must be at least to the standard of The Company HSE assessment. A copy of this assessment must be forwarded to The Company within an agreed time period for review and approval.

8.3. The Supplier is required to include and will be deemed to have included copies of The Company's "Supplier Health and Safety Conditions" in any subcontract that they may award and to make compliance with this document a condition of any such subcontract. Evidence of such must be provided to The Company when requested or as required by the Subcontract.

9. SENIOR MANAGEMENT ENGAGEMENT

9.1. Supplier management will be expected to either undertake Senior Managers Tours or accompany The Company's Senior Managers on their tours to demonstrate leadership and reinforce and recognise good performance and visibly support H&S initiatives.

9.2. Supplier management are also expected to attend H&S planning and coordination meetings and events.

10. HEALTH AND SAFETY ADVICE

10.1. The Supplier must have access to competent health and safety advice, either in-house, or from a consultant. The Supplier's nominated advisor must be a member of an appropriate professional body with evidence of their competency and contact details provided to the Site Lead prior to commencement on site.

10.2. The Supplier's advisor is required to thoroughly inspect the Supplier's works (fortnightly, dependant on risk) and leave a detailed report with The Company's Site Lead. This must identify any noteworthy efforts, non-compliances or areas of concern along with recommendations for remedial action. In addition, the advisor will support any briefings or toolbox talks that are necessary and this must be noted in their report.

10.3. The Supplier's management is responsible for immediately implementing the advisor's recommendations and formally confirming satisfactory close out to the Site Lead in writing within 14 days of close out.

11. CONSULTATION AND COMMUNICATION

11.1. Suppliers are required to comply with and make their employees aware of The Company H&S consultation arrangements which operate on all Company projects.

11.2. All Suppliers will receive details of project specific risks and other relevant Health and Safety information in the form of a current Project Management Plan (PMP) within their subcontract order. The PMP will contain the Construction Phase Plan etc. as appendices.

11.3. These will be regularly reviewed and updated and it along with appendices will be readily available to all interested internal and external parties.

11.4. Everyone will receive a project specific induction.

11.5. Zero Harm Induction must be completed before authorisation to work on the project is given.

11.6. Representatives for employee safety will be appointed and consulted with.

11.7. Health and safety will be discussed as the first item at ALL operational meetings.

11.8. Supervisors and managers from The Company and Supplier, assisted by their respective advisors will conduct H&S inspections, briefings, awareness sessions and tool box talks

11.9. Everyone must receive a Daily Activity Briefing at the start of each working shift.

11.10. Everyone will receive a task specific briefing on the planned safe system of work.

11.11. We have an open-door policy, and everyone is encouraged to discuss in confidence any H&S concerns with the management team.

11.12. Health and safety concerns may also be raised anonymously using The Company's observation cards or app.

11.13. Everyone is also able to discuss health and safety concerns by emailing HSE@balfourbeatty.com

11.14. It is the responsibility of the Supplier to ensure that any relevant Safety Communication is communicated to the personnel it is applicable to

12. MANAGEMENT AND SUPERVISION

12.1. All sub-contractors must have the relevant skills/knowledge/experience/training appropriate to the tasks and activities undertaken by them.

12.2. The Supervisor must ensure that only employees and sub-contractors with the relevant skills/knowledge/experience/training are allocated to a task or activity.

12.3. Any sub-contractors who does not have the sufficient skills/knowledge/experience to complete a task safely must be effectively supervised. For example, recently trained operatives.

12.4. CITB's SMSTS qualification or company accepted equivalent* is a mandatory training requirement for anyone who authorises/appraises a safe system of work on a Company project. This role may, with the prior agreement of the Site Lead, be fulfilled by The Company personnel.

12.5. SSSTS or company accepted equivalent* is the minimum accepted training requirement for anyone who 'puts people to work' and/or who supervises a safe system of work. This includes a working supervisor/ganger/charge-hand that is responsible for ensuring the safe system of work is maintained following commencement of the works. This is a mandatory requirement for our Supplier.

* The Company accepts a restricted number of qualifications as equivalent to the one shown. Please refer to Table 1 for more details.

Table 1

Company Accepted equivalents to SMSTS	Company Accepted equivalents to SSSTS
NEBOSH CONSTRUCTION CERTIFICATE **	IOSH SUPERVISING SAFELY**
IOSH MANAGING SAFELY**	FPS PILING SPECIALISTS' SUPERVISOR TRAINING
CISRS MANAGEMENT AND SUPERVISORY CARD	CCDO DEMOLITION SUPERVISOR COURSE AND ASSESSMENT
CCDO DEMOLITION MANAGERS COURSE AND ASSESSMENT	CONSTRUCTION SKILLS REGISTER (CSR) SITE SAFETY SUPERVSIORS COURSE

** Please see TRAINING AND COMPETENCE section for more information about training with no fixed expiry date.

12.6. The Company Site Lead will ensure that a review is undertaken to confirm that competent Supervisors are appointed and that every Supervisor understands and accepts the relevant duties and responsibilities of their role.

12.7. The Company Site Lead will act as or appoint a Supervisor Competency Reviewer to ensure that the Supervisor can demonstrate the expected skills, knowledge, experience and behaviours commensurate with their role.

12.8. The Supplier must identify within their Method Statement/WPP the full details of the names, number, competencies and experience levels of all designers, supervisors and managers.

12.9. The Supplier's intended management structure will be included within the subcontract documentation.

12.10. Details are required of certification and training achievement to recognised standards with particular reference to the ability to demonstrate competence to manage H&S issues within the scope of the package.

12.11. Where The Supplier is awarded a contract, it may be that for the sake of effective H&S management they will become responsible for the co-ordination of supervision and work within a portion of the project or required to co-ordinate a specific aspect of H&S on behalf of the project during their works. This must be detailed in the Terms and Conditions of the contract agreement.

12.12. Where required to do so this will be identified to The Supplier during the tender process and competent staff must be provided to discharge these responsibilities.

13. SETTING PEOPLE TO WORK SAFELY

13.1. Risk Assessment, Method Statement, Work Package Plans

13.1.1. Risk Assessments, Method Statements/WPP (RAMS) and briefings must be prepared by the Supplier in line with their own internal procedures and legal requirements and submitted to The Company for review before implementation and every 8 weeks. Any amendments to Risk Assessments, Method Statements/WPP (RAMS) and briefings must also be submitted to The Company for review before implementation.

13.1.2. Sufficient time must be provided and allowed within the programme/schedule of work for this to occur before the activity is planned to start. The amount of time should be agreed as part of a pre-start meeting with the Subcontractor, which should be a minimum of 2 weeks if possible. If the review determines that the safe system of work is not suitable or sufficient it must be revised and re-submitted.

13.1.3. Where the Supplier has no internal system for producing Risk Assessments, Method Statements / WPP (RAMS) they will either be required to work to existing Company safe systems of work or will be provided with the procedure and the templates for their use. This must be documented in the Construction Phase Plan. Where any of these templates are used all relevant members of the supply chain must be trained and competent in line with Table 2.

Table 2

Produce	Site Supervisors Safety Training Scheme (SSSTS) or Company accepted equivalent.	Attendance of the Balfour Beatty 'Setting People to Work' internal training course.
Review/Check	Site Managers Safety Training Scheme (SMSTS) or Company accepted equivalent.	Attendance of the Balfour Beatty 'Setting People to Work' internal training course.
Briefing & Supervision	Supervisor / Manager CSCS card, Site Supervisor Safety Training Scheme (SSSTS) or Company accepted equivalent.	Attendance of the Balfour Beatty 'Setting People to Work' internal training course.

13.1.4. Where the health and safety of any individual could be affected by our activities, a risk assessment must be undertaken to identify significant hazards and to consider the likelihood and severity of the hazards being realised while undertaking those activities. This must also include Workers(i) at locations not under the direct control of the organisation. Including but not limited to:

- Mobile workers
- Workers who travel to perform work related activities at another location
- Seconded workers
- Labour only contractors

13.1.5. Risks should be eliminated or reduced to the lowest reasonably practicable level. The list below sets out the hierarchy of control to be followed when planning to reduce risks:

- **Elimination**. Redesign the job or substitute a substance so that the hazard is removed or eliminated
- **Substitution**. Replace the material or process with a less hazardous one
- **Engineering controls.** For example, use work equipment or other measures to prevent falls where you cannot avoid working at height, install or use additional machinery to control risks from dust or fume or separate the hazard from operators by methods such as enclosing or guarding dangerous items of machinery/equipment. Give priority to measures which protect collectively over individual measures
- **Administrative Controls**. These are all about identifying and implementing the arrangements defining procedures, safe systems and methods of work and 'soft' controls you need required to work safely. For example: including skills, knowledge, experience and training; reducing the time workers are exposed to hazards (e.g. by job rotation); prohibiting use of mobile phones in hazardous areas; increasing safety signage.
- **Personal Protective Equipment** in addition to the minimum Company standard must only be provided after the need for such equipment has been identified via a risk assessment and all the above controls have been considered

13.1.6. Subcontractor Supervisors should brief their own employees and anyone working on their behalf. A copy of the briefing and attendance record must be provided to The Company.

13.1.7. When carrying out a risk assessment, consideration must be given to relevant aspects of the task which could present a hazard. This must include but not be limited to: Appendix B.

13.1.8. Relevant Lessons learned from previous significant incidents should be reviewed as part of the risk assessment process.

13.1.9. Where the risk assessment has identified medium residual risks The Companies Project Management must approve the risk assessments as evidence that they have reviewed to ensure that no viable alternative is available.

13.1.10. Risk assessments must be reviewed:

- If it is no longer valid
- If there has been a significant change
- When introducing new equipment, substances hazardous to health, procedures, or technology
- Following an accident, incident, or case of work-related ill health
- Changes in knowledge of, and information about, hazards

13.1.11. A minimum of once every 2 years for model or 'generic' risk assessments and 8 weeks for site specific risk assessments

13.1.12. Changes and additional controls recorded within a Point of Work Assessment must be briefed to all relevant parties before work commences.

13.1.13. Where the changes are significant (see definitions section) the Site Lead must be consulted before work commences. The RAMS and the briefing must be reviewed, revised if required and re-briefed.

13.2. Subcontractor Supervision

13.2.1. The Supplier must provide suitable and sufficient supervision for their works at all times.

13.2.2. All Supplier supervisors must receive a 'Supervisor Induction' as part of their induction process.

13.2.3. Specific supervisory responsibilities and competencies are required for lifting operations. Refer to Crane/Lift Supervisor details in LIFTING OPERATIONS & HSF-RM-0039d 'A Suppliers Guide to Lifting Procedures for Lorry Loaders'.

13.2.4. The Company's Project Lead will monitor subcontractor supervision is undertaken.

13.3. Competency Check

13.3.1. The supervisor setting to work must first ensure that employees and sub-contractors are competent to carry out the task by checking that the individuals have the relevant training and skills specified in the Method Statement/WPP.

13.3.2. The Supplier must ensure that any trained but inexperienced or 'new to project' operatives have direct supervision to ensure they have the competence and abilities to work in line with their training and The Company GOLDEN RULES

13.4. Briefings

13.4.1. Individuals must be briefed on the relevant task and significant findings of the risk assessments, including relevant H&S assessments (E.g., COSHH, First Aid Needs, Manual Handling) prior to commencement and this must be recorded on a Briefing Attendance Record.

13.4.2. The briefing(s) must contain information on the control measures for the significant hazards that are pertinent to the individuals carrying out the task. If there are significant changes to the task, the RAMS and briefings must be reviewed, revised if required and re-briefed. The briefing(s) must be short, concise and appropriate to the task.

13.4.3. The briefing(s) must contain details of:

- Duty Holders (e.g., Supervisor, Site Lead, First Aider, Confined Space Topman / Top-person, Emergency Services etc.)
- Permits required
- Resources required
- Emergency arrangements specific to the task
- Instructions on what to do if work conditions or work methods change unexpectedly

13.4.4. Provision must be made to ensure employees, subcontractors and agency workers can understand all the information necessary to carry out their duties in a safe manner.

13.4.5. Any control measures that are related to a "Balfour Beatty Fatal Risk" must be emphasised in the briefing.

13.4.6. Where a RAMS is reviewed and changed, the briefing shall be updated, and personnel re-briefed on the whole of the briefing sheet not just the update/amendment.

13.4.7. Following periods of absence of 1 week or more away from a UK Construction Services project, personnel must complete a Back to Work Focus Briefing and then be re-briefed on relevant RAMS/TBSs prior to commencing work.

13.5. **Daily Activity Briefing**

13.5.1. At the start of each shift a daily activity briefing must be delivered by the Supervisor to ensure that everyone involved in the work understands the activities that are taking place that day. A Daily Activity Briefing template is available (see Appendix C)

13.5.2. The Supervisor must ensure that anyone that misses the daily activity briefing must not be permitted to start work until they have received the briefing.

13.5.3. The content of daily activity briefings and attendance must be recorded.

14. REFUSING TO WORK ON THE GROUNDS OF HEALTH & SAFETY

14.1. The Company has a legal responsibility to empower its employees to challenge instructions that they feel place themselves, colleagues, visitors, or the public in danger. Where this is invoked in good faith, the Company will not take action against that employee, supply chain partner or subcontractor, and fully supports this commitment.

14.2. Should an employee or anyone working on behalf of The Company reasonably consider that:

- work instructions place themselves, other employees, visitors, members of the public or the environment in danger or
- the correct equipment is not available or fit for purpose to undertake the proposed task safely or
- the appropriate documentation such as Work Instructions, Work Package Plans (Method Statements) and / or risk assessments are not available for guidance or
- they have reason to believe that persons they are required to work with are not fit to work either through illness or other incapacity or
- they, or persons they are required to work with do not possess the necessary competence to undertake the work

14.2.1. then that employee or anyone working on behalf of The Company must refuse to carry out the proposed task on the grounds of safety and will not be subject to detriment (e.g., disciplinary action or suspension of pay) and dismissal as a result of their taking steps to protect themselves or others in certain health and safety situations.

14.3. If any of the above cases occur, the employee or anyone working on behalf of The Company must raise the matter either verbally or in writing with their immediate supervisor.

14.4. In the event that the employee does not feel comfortable reporting an issue for fear of recrimination by their immediate management or where an issue has not be resolved to the employee's satisfaction the Speak up policy may be invoked.

15. INCIDENT REPORTING AND INVESTIGATION

15.1. If a person is injured in an incident, the

15.2. FIRST AID section must be followed. If the injured person needs to attend hospital, suitable transportation must be provided, they should be escorted, supported in hospital and further arrangements made for their homeward journey. The escort must also confirm the injuries sustained.

15.3. The supply chain has a duty to report accidents/incidents to the Company representative and enforcing authority in exactly the same way as the Company.

15.4. Supply chain incidents must be investigated, reported and reviewed in an identical manner to those of Company employees. All level 4/5 Incidents will be investigated by the Company, regardless of supply chain procedures. Supply chain partners can assist the Investigation team, but the Company always leads. For Level 1-3 Incidents, supply chain partners must carry out their own investigation alongside a Company investigation and according to Company timescales. (See Appendix J)

15.5. All High Potential (HiPo) incidents must be notified to the HS&E Director and SBU Managing Director as soon as possible. HiPos are defined as any incident or near miss that had the realistic potential to result in level 4 or 5 consequences e.g. death, life shortening or irreversible disability, multiple major injuries, reportable/significant damage environmental incidents, and formal enforcement action including written warnings. Also included are the following incidents where the consequences may have been mitigated by control measures:

- Any electrical shock that has the potential to cause death or serious injury (immediately reportable to Head of Engineering).
- Uncontrolled release of stored energy within a system, machine, pipeline, cable or load (being lifted/released)

15.6. The following examples are provided to give guidance on how underground service incidents should be categorised:

Catastrophic	• HV cable struck by had tools or high pressure oil/gas struck by machine
Major	• HV electricity overhead or underground struck by machine • Medium pressure gas main struck by machine • Damage to any live underground service above 400V while using an excavator, other plant and equipment. • LV cable strike by handheld tools
Moderate	• Telecoms cable – industrial / multiple users affected • Gas service at low pressure
Minor	• LV electric cable struck by machine • Large incoming sewerage main • Water or sewerage serving domestic properties • Non-gas low pressure pipelines
Insignificant	• Telecoms cable – domestic service

15.7. A copy of supply chain's regulatory authority report forms must be received and attached to the relevant Investigation report.

15.8. Contractual requirements may require a joint investigation with the client or partner organisation. In these cases, an agreement must be made on the report format and timescales of the investigation

16. ALCOHOL, DRUGS AND SUBSTANCES

16.1. Individuals working on The Companies behalf who are not employees will be subject to the testing regime described in this policy and appendices. It is the responsibility of their employer to make them aware of this requirement. It is also the responsibility of the employer to ensure that their

employees are fit to work, to deal with any requests for rehabilitation and to follow their own disciplinary policy following a non-negative or positive indication for drugs and/or alcohol.

16.2. The Company strictly prohibits the following:

- Being in possession of un-prescribed controlled drugs or substances at work.
- Consumption of alcohol, un-prescribed controlled drugs, psychoactive substances or substance abuse at work.
- Trade in or supply of alcohol, controlled drugs, psychoactive substances or permitting their presence or use by others at work.
- Reporting for work while over the legally permitted blood or breath alcohol limit for driving (irrespective of whether the individual drives in the course of their work) or any lower limits that apply to our people as set out in Appendix I.
- Reporting for work having consumed un-prescribed controlled drugs, psychoactive substances or engaged in substance abuse, to the extent that such substances or their metabolites would be present in the body, and would be revealed as a positive result under a drug test.
- Reporting for work having taken prescribed or over the counter drugs which may have side-effects that affect an individual's ability to work safely, without informing their manager.
- Driving of Company vehicles, including those available for private use, at any time while under the influence of drugs or other substances, or while over the legally permitted blood or breath alcohol limit.

16.3. Our employees must report any actual or suspected breaches of this policy to their line manager as soon as possible. Alternatively, employees may raise their concerns with HR or their local HSES representative.

16.4. **Alcohol, drug and substance testing**

16.4.1. The Company may carry out drug, alcohol and substance testing in any of the following circumstances:

- Pre-placement for individuals who are required to undergo a test by the Company or a client.
- At the point of a medical examination when required by a client.
- If there are grounds to suspect that any of our people are unfit for work through drugs, alcohol, or substance abuse.
- Following a work-related incident, or after a near miss.
- Where a non-negative test result is received following an alternative testing method (e.g., finger print or mouth swab) as part of client/JV local procedures.
- Where a complaint relating to a group of workers, or a work location has been made and/or where there is evidence of drugs or alcohol consumption, or substance abuse found on a worksite.
- Random testing implemented by the Company or a Client
- As part of a drug, alcohol or substance abuse rehabilitation programme and post treatment monitoring and support.

16.4.2. Health and Safety is of critical importance to the Company and all our people are expected to comply with the same standards irrespective of their role. Drug and Alcohol Testing may be carried out on any of our people, irrespective of their role.

16.4.3. Drug and Alcohol testing will be carried out by a suitably trained, qualified, and competent person. This may be our contracted Drug and Alcohol testing providers or one of our people who is appropriately trained

16.4.4. Alcohol will be measured using a calibrated breath analyser that will record and print an evidential result. The breath analyser will be a Home Office approved device.

16.4.5. Drug and Alcohol Testing will always be carried out in a way that protects the dignity of the person being tested, and maintains confidentiality of the testing process and any declared medication

being taken, which may affect the results of the test. Testing will be undertaken using a strict and defensible Chain of Custody procedure.

16.4.6. In exceptional circumstances, where fingerprint testing or another alternative form of testing not set out in this policy has been agreed as part of a specific project or Joint Venture, or client requirement, and this test produces a non-negative result, a for-cause test in accordance with this policy should be carried out immediately after the non-negative result being received. A further sample should be taken in accordance with the provisions of this policy and sent to The Company approved laboratory for analysis. The test result obtained from The Company approved laboratory will be the determinative result with regards to The Company disciplinary policy.

16.4.7. If, having undergone testing, it is confirmed that any employee has tested positive for alcohol or 'non-negative' for a drug, or any of our employees declare that they have a drug and/or alcohol misuse issue, the Company reserves the right to suspend the employee from work on full pay to allow the matter to be investigated under the terms of the Balfour Beatty disciplinary policy. Suspension is a neutral action and is used in these circumstances to allow The Company to ensure employees are not under the influence of alcohol or drugs.

16.4.8. The Company encourages all employees who feel they may have an alcohol or drug misuse issue to seek support, rehabilitation and advice from their GP and specialist support agencies.

16.4.9. If an employee of another company or an agency worker tests positive for alcohol or non-negative for drugs, their employer or employment agency will be informed and provided with the test results by the local manager dealing with the tests.

16.4.10. Employees of other companies or agency workers must be prevented from working on our premises if they test positive for alcohol or 'non-negative' for a drug. In the event of a 'non-negative' result for a drug, employees of other companies or agency workers will only be allowed to return to our premises if the laboratory test confirms negative for drugs. It is the responsibility of their employer or employment agency to follow their own disciplinary process. The Company is not liable for costs incurred by subcontractors or employment agencies that result from their compliance with this policy.

16.4.11. A negative lab result will be confirmed to the employee by their line manager and any suspension from work in relation to the 'non-negative' screening will be lifted.

16.4.12. If the lab reports 'no-result' the line manager will arrange an immediate re-test without notice. In this case, it may be appropriate for the individual to remain or be suspended from work.

16.4.13. Any positive result for un-prescribed controlled drugs revealed by a drug test, or a positive result for alcohol that is above the limits defined in this policy, will be considered as a gross misconduct offence, and will be dealt with under The Company disciplinary policy and may lead to summary dismissal. This is regardless of whether the results would indicate the employee's ability to function safely at work had been affected or not.

16.4.14. The Company reserves the right to search any of our people and any property they bring on to our premises, their work spaces, lockers, filing cabinet, desk or company vehicle at any time if we have reasonable belief that this policy may have been infringed. Reasonable belief may derive from, but not be limited to: acting inappropriately, smelling of alcohol, accidents at work or a credible report of them being in breach of this policy from a colleague, client or member of the wider workforce or public. The Company reserves the right to take such action as it deems appropriate which could include but not be limited to the use of sniffer dogs.

16.4.15. If any of our people refuse to comply with the testing procedure (including refusal to undertake screening / leaving a site or office immediately prior to testing / attempting to avoid or tamper with the test in any way), such behaviour will be treated as gross misconduct and will entitle the Company to consider taking disciplinary action up to and including dismissal. Agency workers and employees of subcontractors who refuse to comply will be removed from site and not be allowed to return to The Company premises.

16.5. **Provision of Education and Training**

16.5.1. The Company will provide all our people with all necessary information regarding this policy and the risks associated with consumption of drugs, alcohol and misuse of substances in a work-related setting. This will include:

- Briefings for new employees as part of their on-boarding and induction process,
- Inclusion of matters related to drugs and alcohol in training courses,
- Inclusion of matters related to drugs and alcohol in focused campaigns,
- Access to a copy of this policy and guidance documents for employees.

16.5.2. Subcontractors and employment businesses/agencies are responsible for providing this information to their employees and contractors.

16.6. **Rehabilitation**

16.6.1. The Company accepts that dependence on alcohol, drugs or substances capable of abuse may be an addiction. Employees of the Company who declare that they are having difficulty and may have a dependency problem or whose problems are brought to the attention of management will be met with by their line manager

16.7. **Remote Working**

16.7.1. Random testing is in place for all employees, including those who work remotely at times. Testing will not be carried out in private residences; however, employees can be directed at any time to attend an office or site for testing to be carried out. If a manager has a suspicion that an employee working remotely is under the influence of alcohol or drugs, the manager should arrange for the employee to safely attend a office or site for a test to be carried out.

16.8. **Confidentiality**

16.8.1. Matters concerning alcohol or drug misuse will be kept strictly confidential. Results of drugs and alcohol testing will only be reported to relevant line manager(s), those carrying out investigations, Occupational Health, HR, and the employee being tested. Results of drug and alcohol testing for Sentinel Cardholders will be reported to Managers of the Sentinel Scheme.

17. ASBESTOS

17.1. On projects where the presence of asbestos is known, The Company will advise the Supplier as to where asbestos is present. The Supplier must have a suitable procedure in place to ensure its workforce is provided with this information at the appropriate time so that the asbestos is not disturbed.

17.2. Asbestos information will be communicated by the Procurement Team for inclusion within enquiries to The Supplier, to ensure they are aware of the risk. It is preferable on demolition projects for the licensed asbestos removal contractor (LARC) and the demolition contractor to be one and the same.

17.3. Where removal of any asbestos material or any work which may disturb asbestos material is required then the Company will appoint a Specialist Contractor- a licensed asbestos removal contractor (LARC), assessed by the Health and Safety Executive - to undertake these activities. No Supplier is permitted to undertake work with asbestos.

17.4. In the limited circumstances where the Supplier may need to appoint their own LARC to undertake work to remove or disturb asbestos material then they must seek and obtain expressed written approval of the Company before doing so.

17.5. On projects where the nature of the Supplier's work could give rise to uncharted asbestos finds (i.e. refurbishment work or excavating on brownfield sites), a protocol must be established in conjunction with The Company's management, to advise the Supplier's personnel of the possibility of encountering uncharted asbestos and the immediate action to be taken. This will include stopping

work, advising management (including the Company's management), sealing and signing the area and the arrangements for samples to be taken for analysis.

17.6. Everyone working on or managing /controlling work on refurbishment/demolition projects or where there is a foreseeable risk of encountering asbestos e.g., brownfield projects must have received UKATA or IATP asbestos awareness training undertaken within the previous 12 months. The use of on-line (e-learning) is ideally suited to meet the requirement of annual refresher training in the 2nd year when supported by face-to-face initial training and subsequent face to face training every other year.

17.7. **Licensed asbestos removal contractor**

17.7.1. For all work undertaken by the LARC, they must supply to the Company before work commences:

- a suitable and sufficient Plan of Work including risk assessments and method statements/work package plan (WPP). This will be appraised by The Company as per Appendix A, plus an additional asbestos specific appraisal.
- A copy of the any relevant notification made to the HSE; and
- A copy of the LARC's Employer's and Public Liability insurance to demonstrate that it covers the risk of working with asbestos.

17.7.2. Should there be changes which may impact on the suitability and ability of the LARC to undertake the planned work then they must inform the Company immediately.

17.7.3. If the Company is not provided the above documentation ahead of the planned start for the works with sufficient time to allow it to assess it then the Company reserves the right to delay or stop the work until such time as it has assessed the documentation.

17.7.4. For non-licensable work, the LARC must provide a statement of why the work meets the criteria for non-licensable rather than licensable work, and whether it is notifiable non licensable work with the documentation in 17.7.

17.8. **Supply Chain Competencies**

17.8.1. The following list of supply chain competencies must be applied without deviation.

17.8.2. **Asbestos surveying:**

- Companies must be working in accordance with ISO 17020 and be accredited to United Kingdom Accreditation Service (UKAS) or Irish National Accreditation Board (INAB).
- Surveys by accredited organisations must be completed in accordance with HSE guidance document HSG 264.

17.8.3. **Licensed Asbestos Removal Contractor:**

- Companies must be a current member of the Asbestos Removal Contractor Association (ARCA) or Asbestos Control Abatement Division (ACAD) and must be independent from the Asbestos surveying company.
- Any asbestos removal company must be licensed for work involving any type or form of asbestos on any *Company* site or premises.

17.8.4. **Asbestos Analysts (& Laboratories):**

- Analysts undertaking work to be able to issue a certificate of reoccupation must be appointed by *The Company*, not the asbestos removal company. Measurement of exposure to asbestos must be carried out by bodies working to ISO 17025 who must be accredited to United Kingdom Accreditation Service (UKAS).

17.8.5. **Asbestos Waste**

17.8.5.1. Asbestos must not be removed from site without prior agreement of The Company's site management.

17.8.5.2. Suspected asbestos waste must be disposed of as hazardous/special waste unless asbestos testing has been carried out to prove it is non-hazardous, this includes asbestos in soils.

17.8.5.3. Disposal of asbestos must be carried out by a registered waste carrier to a specified disposal facility and a consignment note issued

18. AVOIDING UNDERGROUND AND OVERHEAD SERVICES

18.1. Competences

18.1.1. Persons at risk from underground and/or overhead services must have the following competencies. Some SBU's have additional training requirements to those listed below. See Appendix D

18.1.2. **Site Lead**

- SMSTS or other company accepted equivalent
- Ability to interpret utility drawings in live locations
- Current certified technical ability to use underground utility location equipment
- Knowledge of the dangers and control measures associated with underground and overhead utilities
- Information and instruction on the requirements of this procedure and how to utilise it in an operational environment

18.1.3. **Works Supervisor**

- SSSTS or other company accepted equivalent
- Ability to interpret utility drawings in live locations
- Technical ability and practical experience to use underground utility location equipment provided
- Training in the dangers and control measures associated with underground and overhead utilities relevant to the works

18.1.4. **Operatives working near Utilities 'Construction Team'**

- Training in the dangers and control measures associated with underground and overhead utilities relevant to the works
- Information and instruction on this procedure and how to utilise it in an operational environment

18.2. Utility Detection Surveys

18.2.1. The Pre-Construction Lead must determine if any additional utility detection surveys must be undertaken and ensure the information obtained can be used to form part of the Pre-Construction Information. The types of detection survey available are detailed below:

- **Desktop Survey** (Meeting PAS128 Survey Category Type 'D' standard (QLD))
- **Visual Survey** (Meeting PAS128 Survey Category Type 'C' standard (QLC))
- **Asset Owner/Operator Detection Survey**
- **Ground Penetrating Radar (GPR) Survey** (Meeting PAS128 Survey Category Type 'B' standard (QLB))
- **Verification and Physical Identification Survey** (Meeting PAS128 Survey Category Type 'A' standard) (Incl. trial holes and site survey (QLA)) however, the minimum acceptable for the planning stage is a Desktop Survey.

18.2.2. Where Ground Penetrating Radar (GPR) is used, the supplier must be a member of EuroGPR (an association made up of users and manufacturers of GPR equipment, intent on raising standards within the GPR industry) and must hold an OFCOM GPR license.

18.2.3. The Utility Mapping Company must be an approved supplier and demonstrate underground utility surveying as part of their accredited scope (in accordance with PAS 128).

18.2.4. Based upon the complexity of the works, the Site Lead must determine if a detailed composite drawing (s)/schedules of all charted utilities are provided and made available to the Authorising Person and Works Supervisor. Composite drawings must include the following information where applicable:

18.3. The presence of known utilities including temporary supplies

- Known depths and heights of existing utilities
- Results of any previous Trial Holes
- Known position of emergency stop cocks/valves/isolation points
- Potential clashes with proposed design
- Last review date and who reviewed it

18.3.1. A desktop survey older than 90 days should be considered historical and must be refreshed before construction work commences, unless access to the area is strictly controlled such that there is no potential for additions/diversions or modifications carried out by others.

18.4. **Pre-Construction Handover**

18.4.1. Pre-Construction information must be formally handed over to the Site Lead as part of a pre-start meeting in accordance with the SETTING PEOPLE TO WORK SAFELY section.

18.4.2. Where the risk of working in close proximity with existing utilities cannot be eliminated, a risk assessment must be undertaken to identify suitable control measures. This must include:

- Selecting the most appropriate method of work
-
-
-
- Table 3 Hierarchy of working near underground utilities
- Table 4 Hierarchy of working near Overhead Utilities
- The requirement to establish an exclusion zone(s)

18.4.3. The Site Lead must ensure suitable and sufficient Risk Assessment, Method Statement/Work Package Plan and Briefing(s) are produced for the planned works in accordance with SETTING PEOPLE TO WORK SAFELY section.

18.4.4. There may be additional hazards created as part of working near utilities that are not covered by this procedure. Therefore, please refer to the sections shown below for the relevant hazard (Note: this list is not exhaustive): -

- EXCAVATIONS
- CONFINED SPACE
- WORK AT HEIGHT
- PEOPLE, VEHICLE AND PLANT INTERFACES
- Client Specific requirements

18.4.5. Liaison with and the On Site Presence of the Asset Owner (e.g. HV / High & Intermediate Pressure Gas / Oil Pipelines)

18.4.6. Where work is to be carried out in proximity to live high voltage cables, high or intermediate pressure gas or oil/fuel pipelines and it must be isolated for safe digging; the Asset Owner(s) must be contacted to request an isolation to work. Contact must be made as early as possible to allow them to isolate supplies. The Pre-Construction Lead must plan project schedules to allow sufficient time for this to happen.

18.4.7. If the utility cannot be isolated, an alternative safe way of doing the work will be required and must only be undertaken with consent of the Asset Owner. Risk Assessment must be undertaken by the

Pre-Construction Lead or Site Lead (dependant upon project status) and documented in the Construction phase plan to support this decision.

18.4.8. On site presence of the Asset Owner may be required during excavation works involving high risk utilities (as described above). The Site Lead must ensure that this is arranged in advance of the excavation works.

18.4.9. If any work is to be undertaken in the proximity to overhead power lines the Asset Owner must be contacted and relevant information relating to the voltage, height, safety clearances requested. Where the information is not received confirmation must be obtained from the Asset Owner that they will authorise the Authorising Person to establish the safety clearance using either a calibrated height meter or by mathematical calculation using survey instruments.

18.5. Equipment Selection

18.5.1. When planning operations in the proximity to utilities the Site Lead must first consider the suitability of the equipment for the task, especially any Exclusion Zones. For more information see:

- Minimum exclusion zones for underground utilities reference material
  - G&W, PT&D, LP and Rail – Appendix F
  - MP & RC – Appendix E
- Table 4 Exclusion zones for overhead lines

NOTE: The above minimum exclusion zones are mandatory with exceptions detailed in 18.10.12.

18.5.2. Minimum plant specifications (including Cable Avoidance Tools) and associated checklists are detailed in reference material in the PLANT section.

18.5.3. When selecting items of plant used under overhead utilities or obstructions preference must be given to those that cannot reach the utility/obstruction. Where this cannot be achieved, physical restraints and warning devices must be used. Selecting plant/equipment and associated checklists must be in accordance with the PLANT section.

18.6. Emergency Arrangements

18.6.1. All construction sites shall have suitable and sufficient arrangements for dealing with any foreseeable emergency in accordance with the EMERGENCY ARRANGEMENTS section. These arrangements shall take into account the size of the site, location, access, type of work undertaken, equipment or materials being used and foreseeable emergencies.

18.6.2. Foreseeable emergencies include:

- Escape of gases from a utility
- Escape of water from a utility
- Escape of fuel/oil from a utility
- Contact with a live electrical system
- Fire or explosion

18.6.3. Additional foreseeable emergencies may exist associated with an excavation, confined space or work at height. Please refer to the appropriate procedure for further information.

18.6.4. The Emergency Plan must address the following aspects as a minimum:

- Evacuation (e.g., getting everyone to a place of safety)
- Assess danger caused by the emergency
- Rescue (e.g., anyone trapped or in need of medical assistance)
- Emergency contacts and first aid arrangements
- Secure the site
- Environmental response

- Notify the relevant third parties (e.g., Asset Owner(s)
- Actions to take in an emergency situation involving electricity

18.7. **Identifying Utilities**

18.7.1. The Company Site Lead will ensure that where a composite drawing(s)/schedule are produced, it must be displayed on site in a prominent position or available to view. If a composite drawing is not required, then individual utility drawings must always be provided.

- Composite drawings must be in colour and to a minimum scale of 1:2500*
- Individual utility drawings must be in colour and to a minimum scale of 1:500 where available from the asset owner.

  * Highways projects require composite drawings to be a minimum scale of 1:500

18.7.2. The Authorising Person must undertake a visual survey of the site and surrounding area to supplement the utility drawings i.e. street furniture, overhead lines and survey information obtained in the Design/Planning stages.

18.7.3. The Authorising Person must ensure that prior to breaking ground a Cable Avoidance Tool and Signal Generator (CAT and Genny) survey is undertaken by a person with the technical ability to use underground utility location equipment. The survey must extend outside of the proposed excavation limits so that nearby services that could unexpectedly deviate into the works are identified and the locations confirmed. The CAT and Genny must both be within calibration dates and have a pre-use check completed before the survey.

18.7.4. Once utilities have been located, the ground surface above the utility and beyond the outer edges of the proposed excavation must be highlighted/marked up to identify the positions and route of the utilities as a minimum.

18.7.5. Where practicable tape or spray paint must be used in accordance with the below extract from Specification for Underground Utility Detection, Verification and Location – PAS 128-2014:

Item	Colour
Water	Blue
Gas	Yellow
Electric All Voltage	Red
Data/Telecom	White
Oil/Fuel Pipeline	Black
Sewerage	Black
Duct	Grey
Exclusion Zone	Orange
Other e.g. Heated District Network	White (potentially)

18.7.6. The Works Supervisor must ensure the marking is regularly inspected and maintained for the duration of the immediate works.

18.7.7. Where there is a potential for additions/diversions or modifications carried out by others to utilities within the boundary of the project, the Site Lead must ensure contact with Asset Owner(s) has been made at least every 90 days to request updated utility drawings.

18.8. **Confirmation of Isolation (if applicable)**

18.8.1. All isolated or redundant utilities must be treated as live, unless proven otherwise by a competent person appointed by the Asset Owner.

18.8.2. Written confirmation in response to the submission of Utility Isolation Request Letter of an Asset Owner's decision to isolate must be received prior to the commencement of works near to a utility.

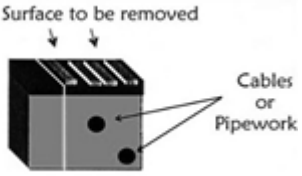
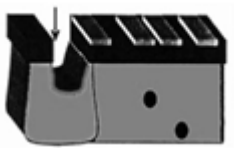
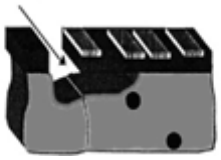
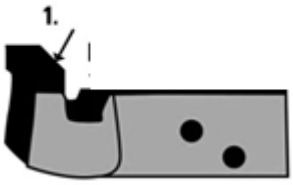
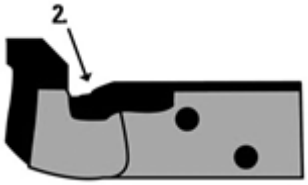
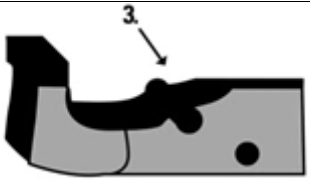
18.8.3. All Asset Owner's responses must be recorded and identified on the utility drawings and where possible on the apparatus at the location of the works.

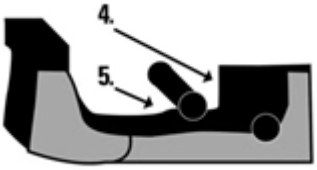
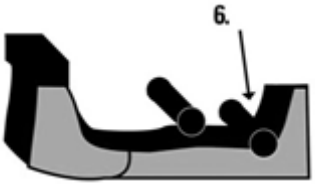
18.9. Trial Holes

18.9.1. Trial holes (using vacuum excavation as the default option, or suitable hand tools where this is not reasonably practicable), must be completed as necessary, to confirm the position of any detected services. Hand digging must only be undertaken using safe excavation practices in accordance with Digging Techniques for Utilities Below Hard Surfaces (Figure 1).

18.9.2. Trial holes must be completed under the control of an Authorisation to Work Near Existing Services (AWNES) (See AWNES Section) and must be carried out prior to undertaking any work.

Figure 1- Digging Techniques for Utilities Below Hard Surfaces

Ensure the utilities and corresponding exclusion zones (minimum 1000mm) are clearly marked out.	
Use hand held power tools to cut the surface outside of the exclusion zone. Break out the surface outside the exclusion zone and dig down sufficiently to break out the surface within the exclusion zone. Once it has been established that the utility isn't within the cutting depth of a rotary disc cutter blade, the remaining surface can be removed with a hand held power tool.	 
Once the surface has been removed, only use power tools outside the Exclusion zone. Re-use the Cat and Genny and re-mark the area now that the surface has been removed. Start excavation.	
Dig the excavation down the side of the first identified utility. Re-use the Cat and Genny continuously to check the position of utilities.	
Continue to dig to the side of the first utility until it is exposed.	

Carefully dig and clear around the exposed utility. Re-use the Cat as required to check for further utilities. Support and protect the exposed utility as necessary and continue to hand dig to locate the second utility.	
Continue to dig and carefully expose the second utility, and support as necessary.	

18.10. **Authorisation to Work Near to Existing Services (AWNES)**

18.10.1. Authorisation (known in some SBUs as a permit) must be given by an Authorising Person (AWNES) before any ground breaking activity or works in the proximity to an existing utility is undertaken.

18.10.2. ***With effect 1st January 2024**, the company have mandated the use a digital solution for Permits with some exemptions, the project will advise usages prior to work commencing.

18.10.3. The following variants are used by the relevant business. Note: Where an SBU specific variant (below) are used the UK AWNES is not required:

- Regional Construction
  - Permit to Break Ground Outside Exclusion Zone (Blue) (HSF-TF-0015a-RC), or
  - Permit to Break Ground within Exclusion Zone (Red) (HSF-TF-0015aa-RC)
- Major Projects
  - Permit to Break Ground Outside Exclusion Zone (Blue) (HSF-TF-0015a-MP), or
  - Permit to Break Ground within Exclusion Zone (Red) (HSF-TF-0015aa-MP)
  - Major Projects Authorisation to Work Near Overhead Services (HSF-SF-0015b-MP)
- Living Places
  - Authorisation to Work Near Existing Services (Planned Works) (HSF-TF-0015a-LP)
  - Authorisation to Work Near Existing Services (Reactive Emergency Works) (HSF-TF-0015aa-LP)
- Power T&D
  - Authorisation to Work Near Existing Services (AWNES) (HSF-TF-0015a-PTD)
- Rail
  - Authorisation to Work Near Existing Services (AWNES) (HSF-TF-0015a-RAIL)

18.10.4. The Authorisation will detail utilities identified by the surveys along with the exclusion zones within which the use of mechanical equipment is prohibited. For more information see:

- 'Minimum exclusion zones for underground utilities' reference material
  - G&W, PT&D, LP and Rail (Appendix F)
  - UKCS & MP (Appendix E)
- Table 4 Exclusion zones for overhead lines

NOTE: The above minimum exclusion zones are mandatory with exceptions detailed in 18.10.12

18.10.5. If there is any uncertainty in the exact location of utilities, then the Authorising Person may extend the exclusion zones required and detail this in the AWNES.

18.10.6. Authorisations must be issued and briefed at the location in which they apply by the Authorising Person (AWNES) and not in a site office or other location.

18.10.7. The Authorising Person must brief the works supervisor and all operatives involved in the work on the scope of the authorised work and the control measures The Supervisor and gang must confirm their understanding by signing the AWNES. If the gang is changed through the shift, subsequent briefings can be delivered by the Works Supervisor.

18.10.8. Where the Authorising Person does not deem the Works Supervisor competent to follow the requirements of the AWNES then they must withhold issuing the authorisation and refer the matter to the Site Lead.

18.10.9. Equally the Works Supervisor must deem the Construction Team competent to follow instructions as required by the AWNES or halt works immediately.

18.10.10. A Works Supervisor must be in attendance at the site all times when work is carried out under an Authorisation to Work Near Existing Services (AWNES).

18.10.11. On large multi excavation sites, the Authorising Person must ensure an AWNES Register is maintained of all live permits. This may be updated by an administration support function however the Authorising Person retains full responsibility for its maintenance.

18.10.12. Where the minimum exclusion zones (detailed in Appendix E and Appendix F) are not achievable, for example in city centres, or the depth of the utility apparatus is such that non-mechanical methods of excavation are deemed impractical, then the exclusion zones may be reduced* by the Authorising Person (AWNES) subject to a detailed highly supervised method of works which must be produced by the Site Lead.
* However, Asset Owners exclusion zones may not be reduced under any circumstances.

18.10.13. Authorisations must not be allowed to overrun past the specified date, and a new authorisation must be issued if an extension is required.

18.10.14. Where the activity or the scope changes beyond that described in the AWNES, the construction team must highlight this to the Works Supervisor and works must stop, the authorisation must be cancelled and a new authorisation must be issued.

18.10.15. The following must be readily available to the construction team prior to commencing and during the works in a readable format:

- Authorisation and Asset Owners permits (as appropriate)
- Utility drawings or composite drawing(s)

18.11. Personal Protective Equipment

18.11.1. In addition to Company mandatory PPE requirements all operatives working near to any utilities must wear:

- One/Two piece flame retardant coveralls, and
- Flame retardant hi-vis jacket or vest (if the coveralls are not hi-viz)

18.11.2. Any other member of the team at risk during inspection or supervising the work area must also wear flame retardant clothing.

18.12. Working near to underground utilities

18.12.1. When working near underground utilities, the Supplier must ensure:

- The hierarchy in
-
-
- Table 3 is followed for the avoidance of danger from utilities
- Activities are programmed to allow adequate time to follow the safe method of work
- Options for redesign to avoid utilities are discussed with the Pre-Construction Lead and recorded in the Construction Phase Plan
- Where the risk of working near utilities cannot be avoided, that the residual risk(s) are communicated to the Works Supervisor and the Construction Team

Table 3 Hierarchy of working near underground utilities

Level	Description	Risk Control Measures
Eliminate	Remove the risk of damaging utilities	• Plan works away from existing utilities • Carry out works above ground • Arrange for live utilities to be diverted
Minimise	Minimise the risk of damaging utilities or harm	• Arrange for live utilities to be isolated • Use safer methods of excavation such as vacuum excavation or air lances/picks • Use Trenchless techniques such as directional drilling or impact moling • Apply the relevant exclusion zone detailed within the AWNES • Mechanically excavate outside of the exclusion zone
Mitigation	Remaining risk must be mitigated through a robust safe method of work	• Apply the relevant exclusion zone detailed within the AWNES • Utilise an Excavator Banksman for Mechanical Excavation (also see PEOPLE, VEHICLE AND PLANT INTERFACES) • Hand dig to the side of a utility with insulated tools • Use the Cable Avoidance Tool and Signal Generator (CAT and Genny) to scan the excavation every 300mm • Use flame retardant PPE

18.13. **Directional Drilling/PE Pipe Coil Trailers**

18.13.1. All coiled PE pipe trailer operations involving pipe diameters of more than or equal to 125mm must remain on hold pending investigation.

18.13.2. Coiled pipe trailer operations involving pipe diameters of less than 125mm are subject to a temporary permit HSF-SF-0046c. This permit must be authorised and accepted by the Responsible BB Person, the competent person (either BB Manager or Subcontractor) and the PE Pipe Installation Team Leader. Also refer to PEOPLE, VEHICLE AND PLANT INTERFACES

18.14. **Exclusion Zones for Underground Utilities**

18.14.1. The minimum extent of exclusion zones varies according to the type of underground utility and the Asset Owner. The Asset Owner must be contacted to confirm safety clearances and any additional requirements. The reference material below provides guidance on the minimum distances around underground utilities which must not be encroached by any plant or equipment.

- G&W, PT&D, Living Places & Rail – Appendix F
- Major Projects & Regional Construction – Appendix E

18.15. **Breaking Ground**

18.15.1. All work requiring ground to be broken, must be authorised using the authorisation (AWNES) All operatives involved in breaking ground within exclusion zones, must use vacuum excavation or air picks (contactless methods) or if this is not reasonably practicable, then insulated hand tools must only be used.

18.15.2. For a road, pavement, or other hard surfaces, power tools such as a road saw and pneumatic drill must be used to break through the surface outside of the exclusion zone detailed on the Authorisation. Having done so, the utility should then be positively located by careful hand digging under the hard surface. Gradually remove the hard surface until the utility is exposed. If the utility is not exposed, then assume it is embedded within the surface.

18.15.3. Excavating must be undertaken in accordance with the Digging Techniques for Utilities Below Hard Surfaces (Figure 1).

18.15.4. As the excavation proceeds, drawings must be rechecked, and the ground re-scanned at a minimum of 300mm intervals using the Cable Avoidance Tool and Signal Generator (CAT and Genny) equipment by the Works Supervisor.

18.15.5. The location of utilities and associated equipment (such as junction box, branch or siphon valve) are likely to become more accurate as cover is removed.

18.15.6. When excavating around a known utility, work must progress with consideration given to the possible variations in the route, fittings and depth of the utility. Volume 1 – NJUG Guidelines on the positioning and colour coding of underground utilities' apparatus provides extra guidance.

18.15.7. The Works Supervisor must ensure the excavation team remain vigilant for indications of utilities that have not been mapped, surveyed or detected.

18.15.8. Physical markings used to identify the location of services must be maintained throughout the duration of the AWNES (Permit).

18.16. Utilities Encased in Concrete

18.16.1. Excavating close to utilities buried in or located beneath concrete is extremely hazardous.

18.16.2. Where planned works have resulted in an isolation or diversion of utilities not being granted by the asset owner or during reactive type works, unexpected concrete/hard ground is encountered and there is a likelihood of a utility encased or beneath – WORK MUST STOP and the following safety process sequence must be followed:

- The Site team must inform the Site Manager/Project Manager.
- The Site Manager/Project Manager must then contact the client to seek further advice from the asset owner.
- Work must not commence until a detailed safe system of work has been agreed with the Asset Owner, Client, BB H&S Lead and BB Project Lead.
- The safe system of work for high risk utilities (E.g. electricity cables or gas mains) must in the first instance consider isolation or diversion.

18.17. The Use of Steel Pins, Spikes or Long Pegs

18.17.1. The use of steel pins, spikes or long pegs which could damage utilities laid at shallow depth are prohibited. Alternatively use non-penetrating free-standing pins where suitable, otherwise use insulated GRP (Non-Conductive) Pins.

18.17.2. However, where they are used, they must be treated as any other breaking ground activity and the controls detailed within this procedure applied, including the AWNES. The use of survey pegs (400mm long) as well as Survey equipment or other equipment that does not penetrate ground beyond topsoil or surface layer (approx. 300mm) should be risk assessed utilising the utility plans and the control measures recorded on an AWNES by the Authorising Person.

18.18. Protecting and Supporting Existing Utilities

18.18.1. Fencing or barriers must be used to protect High Pressure gas mains or High Voltage cables which the company has installed or pass through the site. If these need to be removed to progress works, then suitable temporary protections and marking should be installed to protect the asset and prevent damage from operations.

18.18.2. An underground utility which has been exposed must be:

- appropriately supported
- protected from accidental damage
- not used as a means of access or egress in an excavation, and
- visually inspected periodically for signs of damage / deterioration or change

18.18.3. A Temporary Works Design must be obtained where damage to utilities is likely to occur due to incorrect support and its adequacy verified by the Asset Owner (Refer to TEMPORARY WORKS section).

18.19. Backfilling and Reinstatement

18.19.1. Backfilling must be effectively designed, planned and executed to ensure that utilities are not damaged during the backfilling process, or at a later date.

18.19.2. Where the backfill requirements are not clearly identified in the specification, the Asset Owner must be contacted to discuss and agree the backfill material and technique.

18.20. WORKING NEAR TO OVERHEAD UTILITIES

18.20.1. When working near overhead utilities, the Site Lead must ensure:

- The hierarchy (Table 4) is followed for the avoidance of danger from overhead utilities
- Activities are programmed to allow adequate time to follow the safe method of work
- Options for redesign to avoid utilities are discussed with the Pre-Construction Lead
- Where the risk of contact with overhead utilities cannot be avoided, that the residual risk(s) are communicated to the Working Supervisor

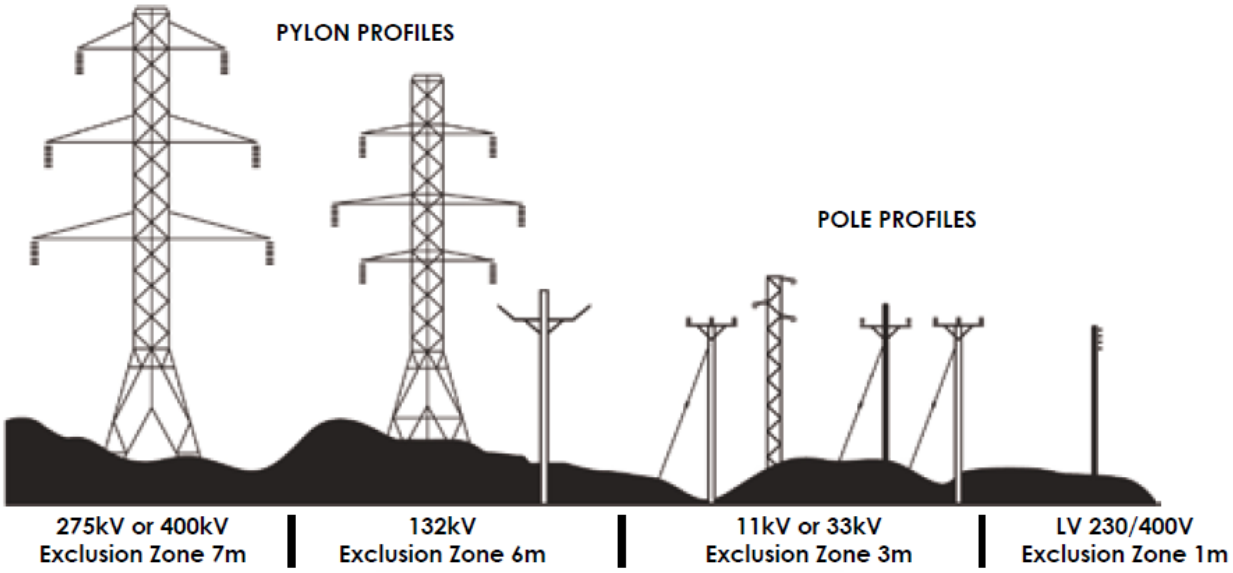
18.21. Exclusion Zones for Overhead Lines

18.21.1. The minimum extent of exclusion zones vary according to the voltage of the line and the Asset Owner. The table below (Table 4) provides guidance on the minimum distances around overhead lines which must not be encroached by any plant, equipment or person. The Asset Owner must be contacted to confirm these and any additional requirements.

18.21.2. The below table is an extract from Energy Networks Association ‘Guide to the Safe Use of Mechanical Plant in the vicinity of Electrical Overhead Lines’.

Table 4 Exclusion zones for overhead lines

Description	Exclusion Zone
Telecom Lines	1 metre
Low-Voltage Line	1 metre
25kV Network Rail Traction Supply	2.75 metres
11 kV and 33 kV Lines	3 metres
132 kV Line	6 metres
275 kV and 400 kV Lines	7 metres



18.21.3. Under no circumstances must any part of plant or equipment such as ladders, poles and hand tools be able to encroach within these zones. Allow for uncertainty in measuring the distances and for the possibility of unexpected movement of the equipment due, for example, ice or wind conditions.

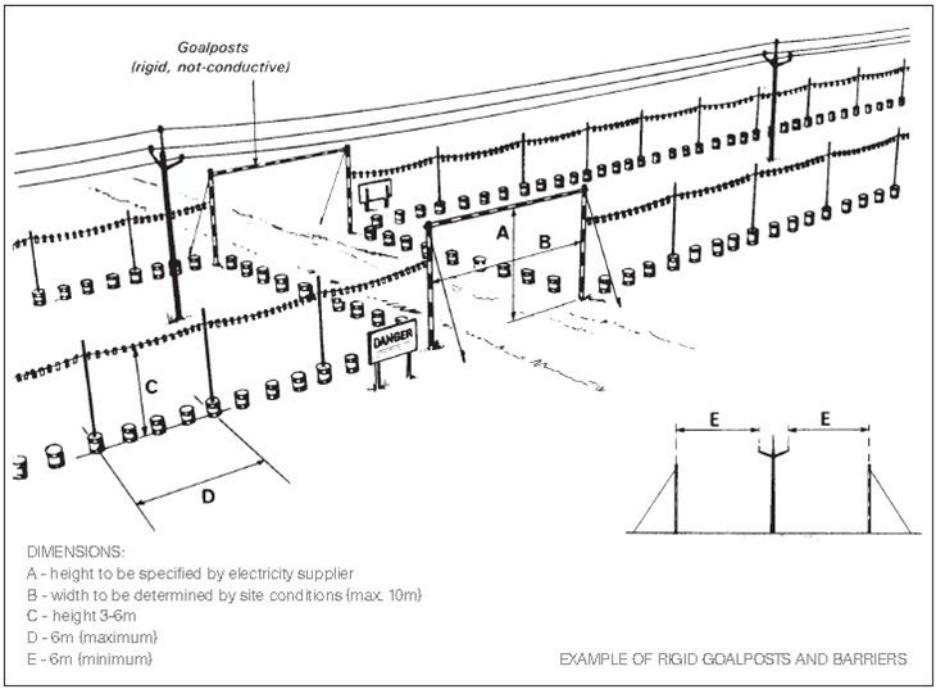
18.21.4. Where there will be no work or passage of plant underneath overhead lines, the risk of accidental contact can be reduced by erecting ground level barriers to keep people and plant away from the wires. Discharging or off-loading deliveries and the storage of plant and materials must be undertaken outside of the Exclusion Zone.

18.21.5. Barriers (coloured red and white for example) (can be run parallel to overhead utilities which would restrict access near to or under them. The exclusion zone should extend a minimum of 6m horizontally from the nearest wire on either side of the overhead line.

If it is necessary for any plant or equipment capable of breaching the exclusion zone to pass underneath the overhead line a passageway using rigid non-conductive goal posts (See Figure 2) through barriers must be installed. In this situation:

- Keep the number of passageways on site to a minimum
- The route of the passageway must be defined using non-conducting materials
- Be clearly visible, for example by highlighting with red and white stripes and illuminating at night
- Warning notices must be displayed at either side of the passageway, on or near goalposts and on approaches to the crossing giving the crossbar clearance height and instructing operators to lower jibs, booms, tipper bodies etc.

Figure 2- Example of Rigid Goalposts and Barriers (abstracted from GS6)



18.22. **Working Within the Exclusion Zone of Overhead Power Lines**

18.22.1. In the first instance arrange for the overhead line to be isolated and obtain a permit to work from the Asset Owner.

18.22.2. Where work within the exclusion zone is required, this must be risk assessed by the Site Lead. Control measures must be clearly defined that ensure there is no possibility of encroachment into the safe clearance distances.

18.22.3. For works that are planned to be undertaken within the exclusion zone of overhead line utilities that are outside Asset Owner's permit to work, the Authorising Person must detail the control measure in the AWNES to ensure the safety clearance is not breached.

18.22.4. The safety clearance and method of work must be agreed with the Asset Owner before work starts.

18.22.5. The height of the lowest conductor must be obtained from the Asset Owner and information on the relevant clearances required to comply with HSE Guidance Document GS6 (Avoiding Danger from Overhead Power Lines). Noting that the lowest conductor position can change due to temperature and electrical loading, therefore it is critical to obtain Asset Owner approval of any encroachment within the GS6 stipulated distances.

18.22.6. A request must be made to the Asset Owner to attend site to discuss the proposed work and provide line profile drawings.

18.22.7. The Asset Owner has the authority to authorise the Authorising Person to establish the safety clearance using either a calibrated height meter or by mathematical calculation using survey instruments.

18.22.8. The clearances should be referenced against those in Energy Networks Association, Technical Specification Document for Overhead Line Clearances (ENATS 43-8) and confirm with the Asset Owner that they are sufficient for the planned work.

18.22.9. When establishing minimum clearances required for an object underneath an OHL, refer to the highest minimum clearance identified in ENATS 43-8 table 6.2 (e.g. for a 400kV line maintain a clearance of 5.3m between the line and the maximum possible height of the object)

18.22.10. Once the safety clearance has been established a Safety Clearance Check Sheet must be completed.

18.22.11. All requests for information with the Asset Owners should be recorded and auditable.

18.22.12. The Works Supervisor is responsible to ensure that signage and barriers remain in place during the works, and they are maintained.

18.22.13. Delivery Drivers, particularly tipper trucks, are required to receive a briefing on the OHL risks, at arrival on site using the Driver Site Rules or the Flash Card (when working in Highway Lane Closures)

18.22.14. Additional information related to the operation of plant in the vicinity of overhead power lines is available via the Energy Networks Association (ENA) Electrical Safety Advice – Transport – Overhead Power Lines Safety Campaign.

18.23. Updating Inaccurate Asset Drawings

18.23.1. Where there is a potential for additions/diversions or modifications carried out by others to utilities within the boundary of the project, the Site Lead must ensure the Asset Owner(s) are contacted at least every 3 months to request updated utility drawings.

18.23.2. On completion of positive identification of the location of utilities the Works Supervisor must verify the information gained against the information provided. Major inaccuracies (e.g. the utility being found well away from its recorded position on the utility drawings) should be recorded on the As-built records and the Asset Owner provided with this information as soon as practical by requesting they attend and take updated measurements.

18.24. Discovery of Damaged Utilities or Utilities in a Poor Condition

18.24.1. Where a cable is damaged during the location operation or is discovered in a poor condition the Asset Owner must be informed immediately.

18.24.2. The Site Emergency Plan (see EMERGENCY ARRANGEMENTS section) must be followed and where there is a risk of harm to people resulting from the damage/poor condition and arrangements must be made to keep them clear of the area.

18.24.3. In the event of an oil leak from a utility the Environment Agency must be contacted.

18.24.4. Reporting and Investigations must be undertaken in accordance with INCIDENT REPORTING AND INVESTIGATION section.

18.25. INSTALLATION & REMOVAL OF UTILITIES

18.25.1. All works on utility assets must be in accordance with:

- ELECTRICAL AND MECHANICAL (INC GAS AND WATER) section
- Client specifications

18.25.2. Where the scope of the work involves removing or permanent disconnection of existing utilities, the following controls must be implemented:

18.25.3. The Asset Owner must be contacted and a site meeting* organised to record:

- The extent of the utility to be removed
- The timescale of the activity
- Responsibility for the removal. The Asset Owner must be requested to conduct the removal of the utility. If this is agreed, then it must be recorded in the Authorisation
- The means of verifying isolation
- The method of removal
- Request to witness removal of the utility

* Unless the scope of works is on behalf of the relevant Asset Owner.

18.25.4. Once the utility has been removed or disconnected, the Authorising Person will confirm this on the Authorisation which will be maintained on file. Confirmation of the removal/disconnection must be provided to the Asset Owner.

18.25.5. Any new utility installations must be accurately recorded and as-built drawings must be provided to relevant parties as the work progresses and immediately on completion of the works.

18.25.6. Any unidentifiable underground utility (e.g. clay sewers, MDPE pipe, plastic ducting) installed must be fitted with a tracer tape installed at the correct height above utility and a survey conducted to verify its integrity.

18.25.7. Where a site is noted to have unexploded ordnance potential, then a specialist survey should be undertaken, and Risk Assessment produced.

18.25.8. If necessary, ordnance experts should be employed to help develop a suitable and sufficient Method Statement/WPP and be present during the works.

19. CONFINED SPACE

19.1. Competence

19.1.1. If the situation is a Confined Space as defined 'Safe work in confined spaces' Approved Code of Practice and Guidance L101, the Supplier must identify the following applicable roles as part of the Safe System of Work. The designated person(s) for these roles must hold the following competencies detailed in Table 5

Table 5

Designation	Low Risk	Medium Risk	High Risk
Confined Space Co-ordinator	CITB Site Managers Safety Training Scheme (SMSTS) qualification **+** 1 Day Course compliant with the CITB "Confined Spaces in Construction, Low and Medium Risk" Standard for example C&G 6150/6160		CITB Site Managers Safety Training Scheme (SMSTS) qualification* **+** 3 Day Course compliant with the CITB "Confined Spaces in Construction, High Risk" Standard for example C&G 6160 03 Level 2 Award in Working in Confined Spaces High Risk *
Confined Space Entry Team*	1 Day Course compliant with the CITB "Confined Spaces in Construction, Low and Medium Risk" Standard for example C&G 6150/6160		3 Day Course compliant with the CITB "Confined Spaces in Construction, High Risk" Standard for example C&G 6160 03 Level 2 Award in Working in Confined Spaces High Risk
Top Person	1 Day Course compliant with the CITB "Confined Spaces in Construction, Low and Medium Risk" Standard for example C&G 6150/6160		3 Day Course compliant with the CITB "Confined Spaces in Construction, High Risk" Standard for example C&G 6160-04 Level 3 Award in Control Entry and Arrangements for Confined Spaces
Rescue Team Lead	Valid CITB Site Supervisors Safety Training Scheme (SSSTS) qualification **+** 1 Day Course compliant with the CITB "Confined Spaces in Construction, Low and Medium Risk" Standard for example C&G 6150/6160		C&G 6160-07 Level 3 Award in Direct Emergency Rescue and Recovery of Casualties from Confined Spaces **+** 6160-08 Level 3 Award in Working as a Member of a Rescue and Recovery Team in Confined Spaces
Rescue Team	1 Day Course compliant with the CITB "Confined Spaces in Construction, Low and Medium Risk" Standard for example C&G 6150/6160 **+** Valid emergency first aid training qualification		C&G 6160 03 Level 2 Award in Working in Confined Spaces High Risk **+** C&G 6160-08 Level 3 Award in Working as a Member of a Rescue and Recovery Team in Confined Spaces **+** Valid emergency first aid training qualification

19.2. **Safe Working in Confined Spaces**

19.2.1. Working in Confined Spaces is dependent upon strict adherence to a well-devised safe system of work. Prior to any work commencing in a Confined Space, the Confined Space Coordinator must ensure a risk assessment is carried out with detailed safe system of work produced, including suitable emergency rescue arrangements.

19.2.2. The safe system of work must be briefed to all the Supplier employees engaged in working in the Confined Space.

19.2.3. Entry of a Confined Space must be controlled and coordinated using a permit system (HSF-SF-0020b or using the digital solution*). Where more than one permit is required on the site, then a permit register (HSF-TF-0020a) must be used.

19.2.4. ***With effect 1st January 2024**, the company have mandated the use a digital solution for Permits with some exemptions, the project will advise usages prior to work commencing.

19.3. **Gas Testing & Monitoring**

19.3.1. Testing of the atmosphere within a Confined Space must be carried out to detect trends or changes in oxygen concentration (above or below ambient levels) or the presence of toxic or harmful gases or vapours, or gases from Dangerous Substances, that may cause asphyxiation, (Anoxia, hypoxia or hyperoxia), or potentially explosive atmospheres. The Competent Person responsible for gas testing and monitoring will be identified within the Safe System of Work.

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19.3.3. The air within the Confined Space should be tested from outside of the Confined Space before entry into the Confined Space and the test results must be recorded and available at the location of the confined space.

19.3.4. Gas testing may need to be ongoing depending on the nature of the potential hazards and the nature of the work. Conditions can change while workers are inside the Confined Space and sometimes a hazardous atmosphere is created by the work activities in the Confined Space.

19.4. **Emergency Procedures**

19.4.1. At no time may a Top Person enter a Confined Space to attempt rescue. The first duty of any rescuer is to ensure that they do not become a casualty themselves.

19.4.2. If a person is injured in a confined space that has been certified safe to enter without respiratory protection, an entry can be made by the rescue team to rescue and remove them straight away.

19.4.3. When a person collapses in a confined space and the cause is not known, irrespective of whether or not the confined space was certified safe for entry without respiratory protection, no-one must enter unless they are trained and wearing breathing apparatus. The collapse may have been due to deterioration in the atmosphere within the confined space.

19.5. **Inspection of Rescue Equipment**

19.5.1. All rescue equipment must be visually checked prior to each shift.

19.5.2. The inspection and testing of resuscitation equipment must be undertaken in accordance with the manufacturer's instructions and must include all accessories and ancillary equipment. Where provided, Automatic External Defibrillators (AEDs) should also be tested in accordance with the manufacturer's instructions and tests should include regular battery checks.

19.6. **Communication**

19.6.1. A communication system must be set between the entry team and the Top Person.

19.6.2. There must be measures to enable those inside the Confined Space to communicate to those outside the space.

19.7. **Training**

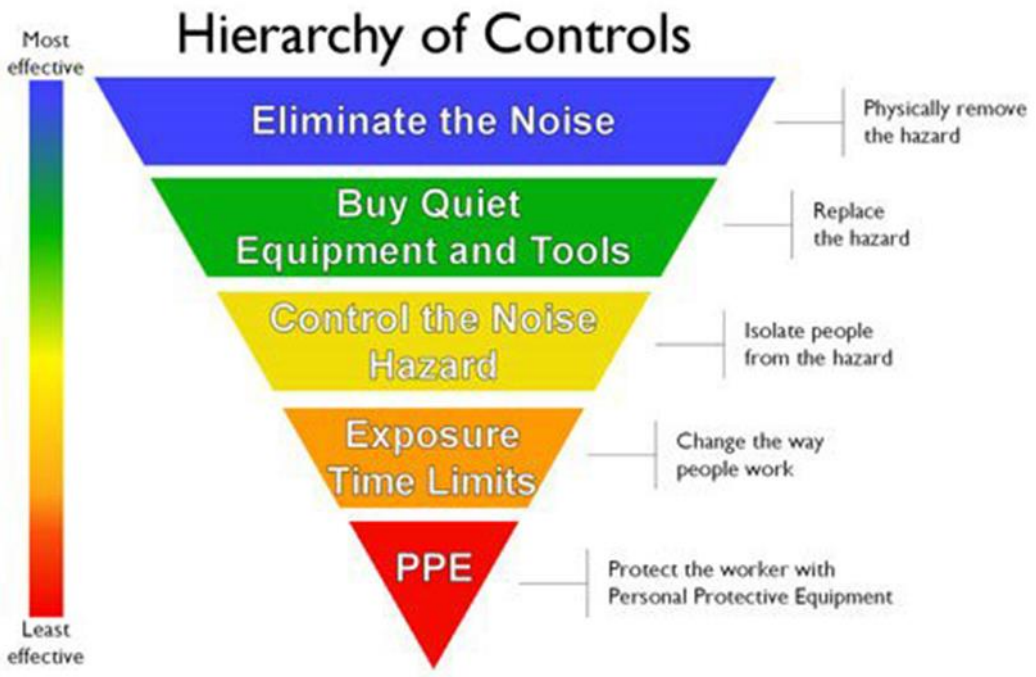
19.7.1. Only those who have received training in the use of all equipment and the precautions and actions to be taken in respect of Confined Space entry will be involved in the operations.

20. CONTROL OF EXPOSURE TO NOISE

20.1. **Hierarchy of Control**

20.1.1. The main requirement under the Control of Noise at Work Regulations 2005 is to eliminate exposure at source, by considering whether exposure can be eliminated at the design stage by, for example, modular and build off-site, and alternative construction methods. Where elimination through such design decisions cannot be achieved, exposure must be reduced to as low a level as reasonably practicable, by selection of low emission plant and equipment and applying engineering controls. The use of hearing protection must be the last resort. Exposure Action Values should not be considered as target values.

Figure 3



20.1.2. To comply with the duty to eliminate or control risk, the Supplier must apply the following points in priority order:

- Consider alternative processes, equipment and working methods
- Follow good practice and industry standard control measures
- Take noise emission levels into account when selecting plant and equipment
- Maintain plant and equipment and noise control measures including absorption materials
- Consider human factors in job organisation and task design to ensure control measures can be used effectively
- Provide suitable PPE

- Where possible, provide employees with periods of relief from exposure

20.2. **Selecting Equipment**

20.2.1. The Supplier must identify the minimum plant specifications and associated checklists for any plant/equipment required for the project prior to procurement and take noise emission levels into account when selecting plant and equipment.

20.2.2. The Plant Specifications must be used when selecting and procuring items of plant,

20.3. **Noise Assessment**

20.3.1. The Supplier must make a noise risk assessment if any employee is likely to be exposed to noise at or above the lower noise exposure action value (80 dB).

20.3.2. A person's daily noise exposure depends on both the noise level and length of time that they are exposed to the noise.

20.3.3. Any person who undertakes Noise Risk Assessments for a project must have a current SMSTS, or Company accepted equivalent, qualification.

20.3.4. Single Activity Noise level monitoring may be undertaken by an individual who has undertaken familiarisation training provided by the supplier of the noise monitoring product with assistance provided where necessary by the HSES lead.

20.3.5. Supply Chain companies who are contracted to undertake noise surveys and assessments on behalf of the Company must be members of the Institute of Acoustics.

20.3.6. The Company's HSES Function will provide specialist support to managers to establish the levels of noise in the workplace, including how to use manufacturers and suppliers' noise emission data and help to access noise surveys if required.

20.3.7. Information (such as manufacturers' noise emission data) used to estimate exposure must match conditions and practices at the workplace to be sure the data is representative of the work. Data from measurements of noise will only be required where other sources cannot give reliable and representative data.

20.3.8. Where the assessment of a noise exposure level is close to an exposure value, controls must either be implemented as if the exposure action value has been exceeded, or the assessment must be sufficiently precise to demonstrate that the exposure is below the exposure action value, by using expert external assistance in undertaking surveys where they are necessary.

20.3.9. The Supplier must ensure the significant findings of the assessment and the measures which need to be taken are recorded in the risk assessment.

20.3.10. For sites with multiple hearing protection zones, the hearing protection zone must be clearly marked with signs. The locations of the equipment/plant, noise exposure level, PPE required and distance from the noise source to the Lower Exposure Action Level must be recorded on the Hearing Protection Zone Register provided by the Company.

20.3.11. The risk assessment must:

- Identify the source(s) of noise hazards
- Identify where there may be a risk from noise and who is likely to be affected
- Contain a reliable estimate of exposures, and compare the exposure with the exposure action levels and limit values
- Specify controls to eliminate or reduce the risks, e.g. whether noise control measures or hearing protection are required, and if so, what controls and what type of PPE
- Identify any employees who are likely to be frequently exposed above the upper exposure action values, or are at risk for any reason, e.g. they already suffer from hearing loss or are particularly sensitive to damage, and provide them with health surveillance.

20.4. **Procure Hearing Protection**

20.4.1. The Supplier must ensure the suitability of hearing protection by reference to the Single Number Rating (SNR) data supplied by the hearing protection manufacturer, when selecting PPE.

20.4.2. Protectors that reduce the level at the ear to below 70dB should be avoided, since this over-protection may cause difficulties with communication and hearing warning signals. Users may become isolated from their environment, leading to safety risks, and generally may tend to remove the hearing protection and therefore risk damage to their hearing.

20.4.3. The Supplier must always ensure that the workforce wear hearing protection where the noise exposure is likely to be at or above an upper Exposure Action Value.

20.5. **Information, Instruction and Training**

20.5.1. The Supplier must ensure that instruction and training are provided to employees where the assessment indicates exposure to noise is likely to be at or above a lower action value.

20.5.2. It is important that employees understand the hazards they may be exposed to, the possible effects and consequences and how the risks are caused.

20.6. **Safe Systems of Work**

20.6.1. The Supplier must ensure that changes to the safe system of work are communicated to the workforce affected and briefings are recorded in accordance with SETTING PEOPLE TO WORK SAFELY

20.7. **Maintain Equipment**

20.7.1. The Supplier must ensure that plant/equipment daily/weekly checklists are completed by plant operators in accordance with PLANT section and that any defects are recorded, reported and where appropriate quarantined.

20.8. **Maintain and monitor PPE**

20.8.1. Suppliers Line Managers and Supervisors must ensure that the use of hearing protection is monitored in accordance with the PERSONAL PROTECTIVE EQUIPMENT section and take appropriate action to correct any non-compliance.

20.9. **Monitor effectiveness of hearing protection zones**

20.9.1. The Supplier must ensure that hearing protection zones established remain effective during the work activity and take appropriate action to maintain the effectiveness.

21. DEMOLITION

21.1. The varied nature and complexity of demolition is such that a specific Risk Assessment and Method Statement/WPP is required for each activity. These will be reviewed by a representative of The Company.

21.2. Demolition Contractors must be a current member of the National Federation of Demolition Contractors (NFDC). Evidence of membership, competency and adequacy of resources must be provided to *The Company* prior to them placing an order.

21.3. A full time Demolition Supervisor must be employed and based on the project to oversee and manage all demolition activities on site. The Demolition Supervisor will be in attendance when work is carried out. Works must stop if the Demolition Supervisor is not in attendance.

21.4. The Demolition Manager must hold a CCDO Demolition Managers qualification (note: this qualification includes training that is equivalent to SMSTS) and the Demolition Supervisor must hold CCDO Demolition Supervisors qualification (note: this qualification includes training that is equivalent to SSSTS).

21.5. All *Supplier* employees involved in Demolition works must have a Certificate of Competence of Demolition Operatives Scheme (CCDO) card and current asbestos awareness training in accordance with the HSE's (UK) Approved Code of Practice and guidance (L143) Managing and working with asbestos- Control of Asbestos Regulations 2012.

21.6. All plant operators involved in Demolition works must hold a blue CPCS Card pertaining to the plant they are operating:

- Category D90 Demolition Plant - Lifting Operations Only
- Category D91 Demolition Plant - Pedestrian Operated
- Category D92 Demolition Operations - Skid Steer Tool Carrier

21.7. A plan detailing the arrangements for how demolition work will be carried out safely and without hazards to health shall be prepared before demolition or dismantling work begins. This applies to all demolition work regardless of size, duration, or whether the job is notifiable or not (as defined by CDM Regulations) and must be provided to the Company for review prior to the works starting.

21.8. A Safe System of Work for use of explosives must be produced including:

- Structural survey of the building to determine the collapse mechanism, fall direction, pre weakening requirements, explosive locations and drilling patterns, blast shielding and final collapse requirements
- Hazardous materials identification and removals
- Services investigations and removals/diversions in liaison with the relevant utility providers
- Pre-weakening of the structure in accordance with the provided calculations
- Test blasts to determine the correct explosive weights
- Blast area preparations and installations of blast shielding (protection)
- The required exclusion zone for the demolition, identifying property and persons who will be affected
- Who will need to be evacuated on the day and their security requirements
- Exclusion zone implementation and security management on the day
- Community liaison procedures
- Means of continuous liaison with the client, local authority, emergency services and utility providers monitoring requirements
- All environmental monitoring requirements
- Client, press and public viewing area management
- Safety management procedures on the day of the demolition
- Post demolition survey of demolition area and adjacent properties
- Post demolition meeting with client, local authority and other relevant parties

22. ELECTRICAL AND MECHANICAL (INC GAS AND WATER)

22.1. Electrical and Mechanical Safe Systems of Work and/or Procedures must be reviewed and approved in advance of works on projects / offices commencing by a Group Authorising Engineer

22.2. Gas Safe registration details are to be supplied to the company and reviewed by a Group Authorising Engineer. All gas works must be carried out by a competent and Gas Safe Registered person(s)

22.3. Electrical testing must be carried out by a competent and qualified person(s)

22.4. Electrical and Mechanical live working must be a last resort with all other options exhausted and approved by a Group Authorising Engineer

22.5. All Projects commencing post June 2023 shall apply a coloured nonconductive key to differ safety lock ssyte across the electrical networks in its entirety:

- Operational Locks – BLACK
- Isolations – RED

- Safety Document Receiver – WHITE
- Earth Locks – GREEN (High Voltage Only)

Fully detailed/completed "Caution Notices" shall without exception be securely fixed to all RED isolation safety locks.

All padlocks, safety Locks and Earth Locks associated with the electrical system shall be kept in the Padlock Safe when not in use. No spare keys shall be provided elsewhere. All keys and padlocks shall be clearly labelled with a Unique reference which shall be engraved on the padlock and the key.

22.6. All Electrical and Mechanical installations including temporary installations must be inspected, tested, and signed off in line with an approved design and current legislation; with records held by supply chain on-site and issued to the company maximum 48hours after final test for the particular system is complete

22.7. All test kit(s) for Electrical and or Mechanical installations must be calibrated with the certificate of calibration included within the relevant test pack. Test kit(s) should be supplied by supply-chain to its employees and never provided by the person(s)

22.8. Competencies of Electrical and or Mechanical operatives must be provided to the company at time of induction or in advance of arriving on-site, including specialist services that require professional registration(s) to be active.

22.9. Where the company and or supply-chain partners are required for whatever reason to, install, maintain, repair and or modify electric vehicle charging points the following competencies must be evidenced along with a completed Assessment Request form (HSF-SF-0068d) to Group Senior / Group Authorising Engineers by the relevant Project Lead in advance of works commencing:
Where the company and or supply-chain partners intend to install Domestic Type electric vehicle charging points:

- City & Guilds 2921-31 (Level 3 Award in the Design and Installation of Domestic and Small Commercial Electric Vehicle Charging Installations).

Note: This course is applicable to a maximum of:

- *5 x electrical supplies to EV Charging Points not exceeding 7kW, Mode 3 Charging units using Type 2 sockets.*
- *3 x electrical supplies to EV Charging Points not exceeding 22kW, Mode 3 Charging units using Type 2 sockets.*

Where the company and or supply-chain partners intend to install Large Scale electric vehicle charging points:

- City & Guilds 2921-32 (Level 3 Award in the Design Quality Assurance of Largescale Electric Vehicle Charging Installations).
- City & Guilds 2921-33 (Level 3 Award in the Installation and Maintenance of Largescale Electric Vehicle Charging Installations).

Note: This course is applicable to:

- *Electrical supplies to Mode 3, EV Charging Points using Type 2 sockets over and above the quantities detailed for 2921-31*
- *All Supercharging EV Charging Points*
- *Any other type of EV Charging Unit other than Mode 3 and Socket Type 2*
- *These courses shall be completed along with 2921-31*

22.10. Portable and handheld tooling should be powered by battery cells unless there is no alternative, where 110Volt shall be accepted upon agreement by the Project Lead. Inspection, storage, charging and use of battery cells should always be in line with manufacturers instructions. 110Volt power leads must be inspected and Portable Appliance Tested (PAT)

22.11. Fixed location permanent or temporary Generator sets must be earthed by a suitable means and confirmed to be suitable by means of testing in advance of use on-site. Portable Generator sets for short term use where class II or Fully Insulated equipment being supplied are not required to be

earthed. Locations for generators permanent or temporary must be agreed in advance of delivery to site with suitable measures in place to deal with spillage and or leak

22.12. Where a water system is installed (permanent or temporary) and has the potential to be used for drinking water a legionella test must be carried out at source, repeated on a monthly basis should the results be favourable. Unfavourable results should result in testing being carried out weekly until such times the issue has been resolved

22.13. When connecting to existing fluid systems suitable testing should be carried out to determine the quality of the fluid contained within the system

22.14. With support and guidance from a Group Authorising Engineer and where required gas works should be notified to building control via Gas Safe

22.15. Where water is being used as a testing medium within mechanical systems, the water being used must not be able to cross-contaminate the supply that it is derived from, pre-treated water must be used

22.16. Quality Assurance systems and processes for electrical and mechanical systems must be submitted and approved in advance of project commencement along with installation benchmarking for permanent systems. Sufficient time must be allowed for all stakeholders to verify Quality Assurance and test certification relating to electrical and mechanical system requested. Timescales shall vary project to project and shall be captured within the RAMS specific to the project

22.17. The digital solution must be used on all projects and Joint Ventures where the company are electrical duty holders. Where the company are electrical duty holders, but are operating within a security sensitive site, permissions should be sought from the customer to utilise the web platform of the chosen digital solution, failing that a derogation should be submitted to use traditional carbon copy safety documents.

22.18. Where responsible for site set ups / welfare / accommodation electrical testing must be carried out at delivery stage before being occupied, and each time the aforementioned is moved to a new location. This responsibility ceases when the aforementioned is off hired and removed from site

22.19. **Prohibitions**

22.19.1. Where electrical power above 110Volts is required for tooling, handheld or otherwise, suitable and sufficient protective devices must be in place at the source of supply and be approved by an electrical design engineer. Physical barriers must be deployed to protect the cable with warning signs in place. A Risk Assessment must also be created ensuring all risks are captured and eliminated within the area of use, risk assessment to be approved by company Site Lead

22.19.2. Defective electrical tooling, electrical and mechanical components and or equipment must be quarantined as soon as found to be defective and thereafter repaired or disposed of in line with approved procedures

22.19.3. All electrical and or mechanical plant and or equipment must be design compliant with CE or UKCA markings

22.19.4. Temporary installations (electrical and mechanical) should as far as reasonably practical be separated from permanent installations

22.19.5. Electrical and Mechanical installations are not to be solely installed by non-competent person(s), apprentices and or semi-skilled workers must be supervised during installations.

22.19.6. Prohibited equipment

- Halogen Lamps
- E-Cigarettes
- Non protected heaters (thermal overload / mechanical guard)

22.20. Batteries have the potential to cause fire and or serious harm to people and or plant, therefore must always be treated as “LIVE”. Ass Projects, offices and JV’s (inclusive of supply chain partners must align with the companies Fire Risk Assessment Procedure.

22.21. Battery cells only to be charged in pre-approved designated locations following manufacturers instructions / guidance

22.22. 3 Pin socket outlets (any type) shall not be permitted to charge EV / Hybrid Vehicles.

Electric Vehicle Charging Points shall be of a manufacturer approved by the company (Refer to ATS Business Plant Standards).

23. EMERGENCY ARRANGEMENTS

23.1. Where specific training is required for nominated site personnel (e.g. confined space, breathing apparatus, tower crane rescue), training must be provided in accordance with the competencies detailed in the relevant section.

23.2. The Company will ensure that relevant emergency procedures are produced and maintained within the Construction Phase Plan/Facilities Management Plan (PMP etc.).

23.3. Arrangements must include, where necessary, the provision of identifiable emergency routes, assembly points, and processes for summoning the emergency services, evacuation, stopping work or any other contingencies identified through the risk assessment procedure.

23.4. Interested parties such as clients or contractors, shall be involved, as appropriate, in the development of emergency plans.

23.5. Task specific emergency response procedures must be included in the risk assessment, Method Statements (Work Package Plans) and task briefings.

23.6. In cases where the Network Rail National Emergency Plan (NR/L2/OCS/250) is implemented, the Company will act on the direction of Network Rail as required.

23.7. **Emergency Matrix**

23.7.1. The Supplier must ensure that any potential emergency situations that could potentially arise from their activities on behalf of the company are identified to The Company Site Lead.

23.7.2. The Supplier must ensure that all relevant emergency equipment is provided. The emergency equipment should include, but not be restricted to:

- Alarm systems
- Emergency Lighting and power
- Means of escape, safe refuges
- Power isolation facilities, switches, and cut-offs
- Firefighting equipment
- First aid equipment
- Communication equipment
- Spill kits
- Emergency evacuation equipment

23.8. **Testing of Emergency Procedures**

23.8.1. Periodic tests / drills of emergency arrangements must be carried out on emergency situations that have been identified.

23.9. **Monitoring and Review**

23.9.1. Arrangements for emergency preparedness and response must be reviewed when site conditions change significantly, following an incident, or as a minimum on a monthly basis in accordance with the requirements of the Construction Phase Plan

24. ENTRY INTO PREMISES OR ONTO SITE AND LEAVING

24.1. On initial arrival, or after an extended period away from site, The Suppliers employees must report to the Site Lead or their designated representative and receive an induction before entering site or

commencing work. Evidence of appropriate skills will be required and be presented to The Company, prior to authority being given to access the workplace.

24.2. The Suppliers employees must only access workplace using authorised and designated access points.

24.3. The Suppliers employees must only leave the workplace using authorised and designated departure points.

25. EXCAVATIONS

25.1. Design Hierarchy

Level	Description	Risk Control Measures
Eliminate	Remove the risk of an excavation	• Avoid the need to excavate by using different techniques
Minimise	Minimise the risk of an excavation causing harm	• Avoid the need for people to enter the excavation • Reduce the depth of the excavation needed • Reduce the number of excavations needed • Incorporate permanent works to provide support to the excavation and installing from ground level
Mitigate	Remaining risk must be mitigated through a robust safe method of work	• Identify when and where excavation works are required • Pass on all relevant information to the Site Lead

25.2. The Designer must:

- Use pre-construction information provided by the Client and other relevant parties to consider how to minimise risks which could arise from excavation work
- Ensure the Project Design Hierarchy is followed
- Ensure pre-construction information is passed onto the Company Site Lead
- Discuss options for redesign, to avoid excavating, with the Company Site Lead
- Where the risk of an excavation cannot be avoided, communicate residual risk to the Company

25.3. The Designer must determine what site investigation works must be undertaken as part of the design process, and ensure the information obtained is considered in the design

25.4. Prior to commencement of works, a design category for the planned works must be allocated by the Temporary Works Coordinator (TWC) in accordance with the TEMPORARY WORKS section. The Design Category of the excavation governs the design checks and approval stages needed in the process.

25.5. If during the excavation process, it becomes clear that the design is no longer suitable, the works must immediately stop until the TWC or TWS (Ex) has been consulted. See 'Change Control' 25.23 section.

25.6. **Excavation Design Categories**

Category	Design	Approval to Load	Classification & Restrictions
Cat 0	Specified by the Excavation Supervisor using Standard Solutions only. Where required, in agreement with the TWS(Ex).	TWS(Ex) or Excavation Supervisor acting as a TWS when delegated by the TWC.	Refer to TEMPORARY WORKS section

Cat 1	Specified by the TWS(Ex) using Standard Designs. Where required, the TWC will be consulted for more complex design requirements that don't fall within the TWS(Ex)	TWS(Ex) or the Excavation Supervisor acting as a TWS when delegated by the TWC.	Refer to TEMPORARY WORKS section
Cat 2 or 3	Bespoke design provided by TWD in consultation with TWC.	TWC or TWS (when acting within the parameters of their authority).	Refer to TEMPORARY WORKS section

25.7. **Competencies**

25.7.1. **Excavation Supervisor**

25.7.1.1. A role profile template detailing the minimum competency requirements and specific responsibilities of the Excavation Supervisor is available (see Appendix H). All Excavation Supervisors must familiarise themselves with the document and fulfil all responsibilities detailed within it.

25.7.2. **Excavation Operatives**

25.7.2.1. Skills, knowledge, training and experience on the hazards and necessary precautions for excavation works and safe digging practices

25.7.2.2. Skills, knowledge, training and experience on the relevant excavation method being undertaken

25.7.3. **Temporary Works Roles**

25.7.4. See TEMPORARY WORKS section for the appointment and competencies of the following roles:

- Temporary Works Designer (TWD)
- Temporary Works Coordinator (TWC)
- Temporary Works Supervisor (Excavations) (TWS(Ex))

25.7.5. * Training must be relevant to the type of support system used by the project / site (i.e. timber, steel or proprietary systems).

25.8. **Excavation Risk Assessment**

25.8.1. The Supplier shall ensure a suitable and sufficient risk assessment, method statement / WPP and task briefing is available prior to the works being undertaken in accordance with the SETTING PEOPLE TO WORK SAFELY section. The extent and complexity of these will be dependent on the size and complexity of the task/project.

25.8.2. Utilising third party excavations that are partially complete must be treated as a new excavation.

25.8.3. Utilising a completed excavation undertaken by a third party must be inspected by a Competent Person before use as defined in the Excavation Design Category section.

25.8.4. Risk Assessment Considerations

25.8.4.1. As a minimum the risk assessment shall consider the following:

- Ground movement. Possible modes of ground failure potential for collapse of the excavation, water table causing ground boiling.
- Plant & vehicles. Proximity of any heavy road and site traffic and the potential for collapse of the excavation, side surcharging, damage to adjacent properties.
- Members of the public. Consider cyclists, pedestrians, and disability scooters etc. and the use of road plates or footway boards.
- Method of excavating. Protection of person(s) who are installing the support system.
- Avoiding Services. Safe location, verification and protection of underground and overhead services (see SERVICES)
- Access & egress. Safe entry and exit from the excavation both in normal operation and in emergency. (Refer to the Excavation Access Hierarchy section).

- Toxic gases and oxygen deficiency. The potential for hazardous gases or vapour to build-up in the excavation, e.g., from vehicle exhausts, confined spaces etc.
- Contaminated land contaminated excavated material, and associated health risks. The potential for working in contaminated ground, contamination of surrounding areas and invasive weeds.
- Waste Material - Waste Management.
- Ground & surface water. De-watering the excavation, if necessary, consider discharge points and settlement tanks, surface water run off contaminating surrounding areas, ground prone to flooding and movement of fines behind sheet piles (running sand).
- Type and condition of ground. Wet / dry or rock / made ground / sand / silt / clay / peat / structural properties of the soil.
- Duration of exposure, the prevailing weather and its effects.
- Stability of adjacent structures and services, subsidence, railway track buckling, adjacent walls, street furniture etc.
- Edge protection. To prevent falls of people, plant and materials into the excavation (refer to the Edge Protection Hierarchy section).
- Depth of the excavation
- Temporary storage of spoil and associated surcharging considerations
- Sites of Special Scientific Interest (SSSI)

25.8.5. There may be additional hazards created as part of the excavation that are not covered by this section.

25.9. **Planning to Excavate**

25.9.1. All necessary approvals, consents and notices must be obtained before commencing excavation operations.

25.9.2. Planning works that involve excavations must include all relevant parties, including management teams, Temporary Works team, Clients, utility owners, relevant authorities, land owners (where applicable) contractors and those carrying out the task.

25.9.3. All materials and equipment required shall be available and inspected before work starts.

25.10. **Stability of Adjacent Structures**

25.10.1. The design and risk assessment must consider the proximity of the excavation to structures such as property foundations, bridges, rail track, garden walls and street lighting columns and the like. Excavating too close to these could cause excessive settlements and undermining of the structure leading to its collapse.

25.10.2. Suitable controls include but are not limited to:

- Moving the excavation away from the structure
- Providing adequately designed temporary support for the structure
- Monitoring arrangements agreed with the TWC/TWS (Ex)
- Obtaining further advice from a TWC before the excavation continues

25.11. **Battering and Stepping**

25.11.1. Shallow, unsupported, Cat 0 excavations must be risk assessed in accordance with TEMPORARY WORKS to determine whether they require stepping or battering.

25.11.2. In many situations battering or stepping back the sides of a Cat 1-3 excavation, in accordance with a temporary works design (standard or bespoke), are the simplest and safest ways of ensuring stability and should receive first consideration. The standard details give typical safe slope angles, however regular monitoring and inspection of the excavation must be conducted to ensure the integrity of the sides.

25.11.3. Battered and stepped excavations shall be subject to inspections by the Excavation Supervisor as prior to use.

25.11.4. Refer to Excavation Inspections and Reports section for additional requirements.

25.12. **Excavated Material (Spoil)**

25.12.1. Materials, spoil and equipment shall be kept away from the edge of the excavation by a distance equal to the depth of the excavation subject to a temporary works assessment considering short and long term durations

25.12.2. These distances apply unless a temporary works design allows it to be less in stable ground or provides support to the excavation to overcome the surcharge load as well as additional protection to prevent the load falling into the excavation.

25.12.3. The height of the spoil must be kept to a minimum to reduce any residual hazards.

25.12.4. Where spoil is not going to be re-used on site it must be removed as soon as reasonably practicable.

25.13. **Edge Protection**

25.13.1. Suitable steps in accordance with the Edge Protection Hierarchy (or other external authoritative guidance) shall be taken to prevent a collapse under the weight of the vehicle.

25.13.2. Edge Protection Hierarchy

Level	Description	Risk Control Measures
Eliminate	Remove the risk of falling into an excavation	• Backfill • Cover the excavation (with suitable and secure material for the load
Minimise	Minimise the risk of falling into an excavation	• Reduce the number of excavations • Guard rail with toe board • Edge safe • Extended sheet piles • Proprietary system • Cordon off where works are taking place
Mitigation	Tasks that require essential personnel to work in or around an excavation	• Robust specific risk assessment and safe system of work required • Signs, lighting and guarding to protect the public in accordance with the Safety at Streets and Road Works ACOP o Reduced depth of excavation o Fall restraint systems

25.13.3. Where plant or vehicles are used to tip or extract materials from an excavation, suitable measures shall be used to prevent the vehicle entering the excavation. (Refer to PEOPLE, VEHICLE AND PLANT INTERFACES). In accordance with the Temporary Work design/assessment they shall be placed at a suitable distance from the edge of the excavation to prevent breaking away under the weight of the vehicle, the distance to be agreed with the TWC/TWS (Ex).

25.13.4. Where there is a risk of injury due to falling into an excavation, the edges shall be protected in accordance with the Edge Protection Hierarchy.

25.13.5. A suitable type of edge protection/restraint shall be identified through the risk assessment.

25.13.6. Edge protection must only be installed by a competent person. Edge protection must be inspected as part of the excavation inspection. Refer to the Excavation Inspections and Reports section.

25.13.7. Scaffold poles used for edge protection rather than distance guarding must be installed by a suitably trained and competent Scaffolder. Depending on complexity this may also require a TW design, inspection and approval by the TWC. See WORK AT HEIGHT section.

25.13.8. Sites shall be secured preventing unauthorised access to the works. These arrangements may be over and above the protection to the excavations. Open unattended excavations in high-risk locations determined by the risk assessment, will require a minimum of 2m Heras panels or hoarding where practicable.

25.13.9. If excavations need to be crossed by pedestrians a secure and safe crossing must be provided and may require design if proprietary system is not available.
25.13.10. Excavations in the public highway must have barriers installed in accordance with Safety at Streets and Road Works Code of Practice.
25.13.11. BS EN 13374:2013 Temporary Edge Protection Systems is available for reference when planning edge protection systems.

25.14. **Temporary Support Systems**

25.14.1. Where the need for a temporary support system is identified, it shall be specified and approved accordingly:
- Category 0 – by the Excavation Supervisor
- Category 1 - by the TWS (Ex)
- Category 2 + - by the TWD in accordance with Temporary Works Design

25.14.2. Temporary works inspections shall be deployed and undertaken by the TWS (Ex)/TWC and the permits to load, proceed or dismantle shall be issued prior to the relevant stages commencing.
25.14.3. Temporary Support systems must be checked prior to installation and be:
- free from defects
- of adequate strength
- of good construction, and
- properly maintained

25.14.4. All temporary support systems shall be erected, altered and dismantled by personnel, who have been briefed on the manufacturer's or System Designer's instructions, under the supervision of an Excavation Supervisor.
25.14.5. Upon completion of the installation the temporary support systems shall be inspected and signed off in accordance with TEMPORARY WORKS section:
- Category 0 – Inspection by the Excavation Supervisor
- Category 1 - Inspection and sign off by the Excavation Supervisor / TWS (Ex)
- Categories 2-3 – Inspection and sign off by TWC/ TWS

25.14.6. All supports must be fully secured to prevent any displacement.
25.14.7. Refer to Excavation Inspections and Reports section for additional requirements.
25.14.8. Utilities spanning along or across a trench shall be adequately protected and supported. Consult the TWC/TWS(Ex) about any additional utilities found. See the SERVICES section.

25.15. **Street Works**

25.15.1. All excavation works in public highway shall have a Notice or Permit in place in accordance with the New Roads & Street Works Act 1991 (NRSWA) and the Traffic Management Act.
25.15.2. Any Temporary Traffic Management (TTM) used to protect excavations in the public highway shall comply with the Safety at Street Works and Road Works Code of Practice
25.15.3. All excavations in public highway shall be signed, lit, and guarded in accordance with the Safety at Street Works and Road Works Code of Practice as a minimum standard.
25.15.4. Any deviation shall form part of a risk assessment/method statement / WPP and be agreed by the Site Lead.

25.16. **No Person Entry Excavations**

25.16.1. No person entry excavations must follow the same methodology detailed in the Excavation Design Category section.
25.16.2. A 'NO ENTRY INTO EXCAVATION' safety sign or tag must be positioned where it can be clearly seen close to the excavation.
25.16.3. Risk assessments must be undertaken to determine the level of protection in line with the Edge Protection Hierarchy.

25.17. **Access and Egress**

25.17.1. Where possible, the need for entry into an excavation should be eliminated. Where entry is necessary, all excavations must have a safe means of access and egress. Refer to the Excavation Access Hierarchy.

25.17.2. Excavation Access Hierarchy

Level	Description	Risk Control Measures
Eliminate	Remove the need to enter	• No person entry excavation, trial holes, test excavations, remote access equipment (e.g. remote trench compactor etc.)
Minimise	Entry required (Restrict who needs to enter, how often and the type of excavation)	• Restrict entry to competent persons, those undertaking the work (e.g. for final connections) o Prefabricated jointing above ground o longer pipe lengths to reduce the number of joints required
Mitigation	Entry required using access equipment	• Person riding basket • Scaffold • Fixed ladder • Proprietary systems • Mobile ladder • Gated access with landings
Mitigation	Where no access equipment is suitable such as very shallow excavations in stable ground	• Safe System of Work including: o Means of escape o Clear landing points o Adequate lighting o Instructions on carrying equipment o Additional supervision

25.17.3. Where entry is required, specified hazards of confined spaces must be considered as part of the risk assessment and method statement / WPP. See CONFINED SPACE section.

25.17.4. Walers, buried services and struts must not be used to access or egress the excavation.

25.17.5. Any excavation requiring access must be suitable for use and assessed to ensure that the risks of failure have been adequately mitigated.

25.18. **Emergency Planning and Evacuation**

25.18.1. All construction sites with planned or open excavations shall have suitable and sufficient arrangements for dealing with any foreseeable emergency in accordance with the EMERGENCY ARRANGEMENTS section.

25.18.2. Evacuations shall be planned and practiced appropriate to the type of works.

25.18.3. Casualties should not be moved unless they are in danger and it is safe to do so or in extreme cases to prevent further injury. Arrangements shall be in place to retrieve casualties from excavations. The requirements will depend on the depth of the excavation. It is not acceptable to rely solely on the emergency services as an emergency plan.

25.18.4. The Emergency Plan must be briefed to the site team and be available on site at all times.

25.18.5. The Emergency Plan will be based upon the requirement to contact the Site Lead who will alert others (as required) to provide additional assistance. The activities undertaken will depend on the nature of the foreseeable emergency. The foreseeable emergencies will be highlighted in the risk assessment.

25.18.6. Foreseeable emergencies may include:

- Excavation collapse
- Ground boiling

- Flooding (ground, surface, mains or supplied water)
- Ingress of gases
- Incapacitated individual
- Structures
- Vehicles entering excavations
- Fire
- Train derailment due to subsidence of track buckle (where applicable)
- Any combination of the above

Note: This list is not exhaustive.

25.18.7. The Emergency Plan must address the following aspects, as a minimum:

- Evacuation (e.g. loss of an egress route) with consideration to the depth of the excavation.
- Assess danger caused by the emergency
- Rescue
- Emergency services and first aid
- Secure the site
- Notify the relevant third parties (e.g. utility owners, highways)

25.18.8. These arrangements shall take into account the size of the site, location, access, type of work undertaken, equipment or materials being used, and the foreseeable emergencies as listed.

25.19. **Excavation Inspections and Reports**

25.19.1. Excavations shall be subject to inspections by an Excavation Supervisor.

25.19.2. Weekly recorded excavation inspections shall be carried out for each excavation.

25.19.3. Where there are multiple excavations on the same site, the results of the weekly recorded inspection must be summarised an Excavation Inspection Register.

25.19.4. For vacant excavations the requirement for daily excavation inspection will be subject to an assessment of the risk due to the surrounding environment, soil type, weather conditions etc. however the 7-day excavation inspection must still be completed.

25.19.5. If the excavation is to be handed over to a third party the third party must be informed of the Company's intention to hand over the excavation making them responsible for further inspections. This handover must be recorded with times, dates and acceptors name.

25.19.6. Where it is expected that the third party will hand back the excavation on completion of their works the Company may maintain responsibility for the inspection regime. This may be by Company inspections or by third party inspections, If the third party has satisfactorily shown themselves to be competent to carry out the inspections.

25.19.7. Copies of third-party inspection records should be forwarded to the Company within agreed timescales.

25.20. **Ground Movement**

25.20.1. The potential for ground movement to cause the collapse of an excavation will vary dependent on a number of factors such as soil type, size of the excavation and weather conditions etc.

25.20.2. It is the responsibility of the Excavation Supervisor to monitor for ground movement during works. Where there is evidence of ground movements this must be reported to the TWC/TWS (Ex) with the immediate removal of all personnel from the excavation.

25.21. **Ground and Surface Water**

25.21.1. The excavation must be monitored and inspected as required and as defined in the design where applicable.

25.21.2. Consideration shall be given to the potential for water to enter the excavation either through the ground or from the surface or pipelines (i.e., heavy rain fall, streams etc.). The presence of water has the potential to affect the stability of the excavation and restrict the amount of effective working space, as well as wash contaminants into it.

25.21.3. The location for the discharge point for dewatering shall be agreed with the approved authority or land owner where appropriate. Refer to relevant Environmental documentation for Interfacing with

Water.

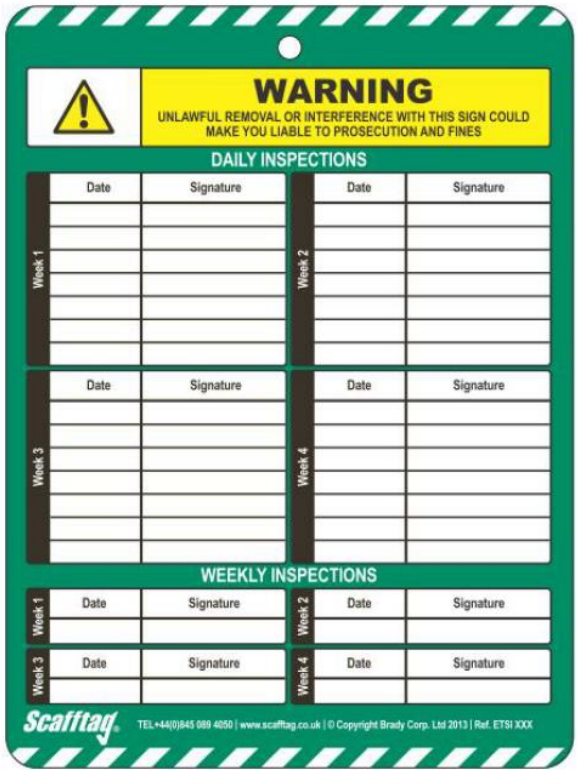
25.22. **Excavation Tags**

25.22.1. Excavation Tags must be used for all excavations requiring person entry and will remain visible at all times at or adjacent to the entrance of the excavation. See Figure 4

25.22.2. The Excavation Supervisor, following their visual inspection, will sign off and date the Excavation Tag on a daily basis. The Site Team will not be allowed to enter the excavation unless the Excavation Tag is valid for that shift.

25.22.3. Excavation tags are not mandated for Category 0 and Category 1 no-person entry excavations.

Figure 4- Excavation Tags



25.23. **Change Control**

25.23.1. Any change to the excavation necessitated by a change in the ground conditions, weather, duration of exposure, size of excavation etc. will require:

- The work to be stopped and re-assessed
- Update risk assessment and method statement if necessary
- Re-brief the team
- Record changes

25.23.2. If any aspect of the temporary design cannot be implemented or there are changes on site which require a new or a redesign of the temporary works, this must be referred to the TWC/TWS (Ex). All associated works will be stopped until the new temporary works have been designed, checked, approved and then implemented.

25.24. **Backfill and Reinstatement**

25.24.1. All excavations must be backfilled and reinstated in accordance with the current Client / industry specifications.

25.24.2. Consideration must be given to the use of remote controlled compaction equipment in preference to pedestrian operated equipment.

25.24.3. Temporary support systems shall be inspected and permitted to be removed by the TWS (Ex) prior to removal in accordance with TEMPORARY WORKS section and 'TW design' / manufacturer instructions.

26. FIRE SAFETY

26.1. All contractors and suppliers must adhere to the Company procedures relating to fire safety.

26.2. Fundamental requirements of fire safety legislation require:

- A duly appointed Responsible Person
- That a there must be a valid fire risk assessment in place and an ability to manage fire risks
- Assurance that the occupants of a building or place of work are safe
- Provision of training for employees including awareness, Fire Marshal, Hot Works and fire risk assessor
- That there is a fire detection system and means of giving warning in case of fire
- That there is a means of fighting fires
- That there is an emergency fire plan
- The provision of a safe means of escape
- That fire is prevented from happening

26.3. At Balfour Beatty we all have a duty to speak up and not walk by if we believe something is wrong. Always follow our GOLDEN RULES.

26.4. Responsible Person for Fire Safety – Each of the Balfour Beatty site will have a nominated 'Site specific Responsible Person' for fire safety. All contractors and suppliers must ensure that there is a person who has been appointed as their own responsible person for fire safety for their particular area of work. This person must work with other nominated 'Responsible persons' to communicate, coordinate and cooperate, ensuring that they meet fire safety statutory expectations.

26.5. Fire safety legislation and guidance:

- Regulatory Reform (Fire Safety) Order 2005.
- Fire Safety Act 2021.
- Fire Safety (Scotland) Regulations 2006.
- Fire Safety (Scotland) Regulations 2006.
- Fire Safety Regulations (Northern Ireland) 2010.
- Fire Precautions (Sub-surface Railway Stations) (England) Regulations 2009.
- The Construction (Design and Management) Regulations 2015.
- British, guidance and applicable legislation

26.6. **Competence**

26.6.1. Responsible Person for fire safety must hold a suitable qualification, appropriate skills, competency and experience. Examples may include: Fire risk management; IOSH Managing Safely; Site Supervisor Safety Training Scheme (SSSTS) qualification or NEBOSH Fire.

26.6.2. The skills and competencies will be assessed through the fire risk assessment process. Responsible Persons must have sufficient status and authority for the effective execution of their duties, and be afforded time to undertaken their duties by the Site/Project/Office/Facility Lead.

26.6.3. Fire Marshal(s) must have successfully completed a Fire Marshal training course (including practical fire extinguisher training) and have sufficient status and authority for the effective execution of their duties and responsibilities.

26.6.4. Hot Works Responsible Person(s) holds a minimum Site Supervisor Safety Training Scheme (SSSTS) (or Company accepted equivalent Table 1), Gas Safe Registered (if applicable) and practical fire extinguisher training.

26.6.5. Fire Risk Assessor(s) must hold an industry accredited accepted qualification. A fundamental requirement of fire safety legislation is the appointment of a suitably qualified, experienced and competent fire risk assessor.

26.7. **Prohibitions**

- Hand bells and klaxons are prohibited for use as fire alarms
- All lithium-Ion battery or hydrogen technology plant must be approved as party of the fire risk assessment process
- Deliberate burning of material is prohibited on all Projects/Offices/Depots and Factories
- Acetylene cutting is prohibited except by a derogation request
- Storage of fuel in plastic containers is prohibited
- Jubilee clips are prohibited for connecting flexible gas supply hoses
- Storage of gas and flammable liquids inside, under and on buildings is prohibited
- Portable Halogen lamps are prohibited
- Smoking is prohibited except in designated areas
- The use of compressed gas welding equipment without flash back arrestors is prohibited
- Storage of additional or unnecessary cylinders (including empty) at the workplace is prohibited
- The use of LPG as a fuel at an office or welfare facility (excluding caravans) is prohibited
- No combustible liquids (petrol/diesel etc.) or gas cylinders are permitted within 6m of the hot work operation
- Sleeping facilities and arrangements are prohibited in our buildings or on our sites

26.8. **Requirements**

26.8.1. In addition to complying with the Regulatory Reform (Fire Safety) Order 2005 or relevant legislation in Scotland or Ireland. it is also a requirement that the Supplier comply with The Joint Code of Practice titled “Fire Prevention on Construction Sites”.

26.8.2. The Company applies and enforces the Code of Practice therefore Suppliers must make suitable provision within their tender.

26.8.3. Where flexible protective covering materials are used, these must conform to the requirements of the Loss Prevention Standard LPS 1207: Fire Requirements for the LPCB Approval and Listing of Protective Covering Materials or equivalent standard. The materials shall be manufactured in accordance with a quality assurance and certification programme and the manufacturer shall be certified by a third-party approval body accredited by the United Kingdom Accreditation Service. The relevant approval mark shall be printed on the material.

26.8.4. When flexible materials, including decorative films are used to clad scaffolding or temporary/ permanent steel work these materials must conform to the requirements of LPS 1215: Requirements for the LPCB Approval and Listing of Scaffold Cladding Materials equivalent standard (for example, ref. 16). The material shall be manufactured in accordance with a quality assurance and certification programme, and the manufacturer shall be certified by a third-party approval body accredited by the United Kingdom Accreditation Service. The relevant approval mark shall be printed on the material.

26.8.5. The use and storage of fuel can introduce additional risks to a site and must be considered as part of the sites fire risk assessment. All contractors must inform the company and gain approval for any fuel storage or battery charging units they are intending to bring to the site, along with the necessary safety arrangements needed.

27. FIRST AID

27.1. **Competence**

27.1.1. First Aid training must be provided by a *Company* recognised body (e.g., St Johns Ambulance, British Red Cross or St Andrews Ambulance).

27.1.2. Appointed Person (First Aid) first aid training must be provided by a Company recognised body.

27.1.3. The *Supplier* must have suitable arrangements in place to ensure suitable and appropriate first aid provision is maintained while their workers are on the work site

27.2. **Requirement**

27.2.1. First aid facilities will be provided under the control of a First Aider or appointed person at every site. *Suppliers* will be expected to assess their first aid needs and provide a number of first aiders and provisions appropriate to their manpower and nature of their works to support the common arrangements of the project. First aider names and location must be prominently displayed on the site notice board for fixed project sites.

27.2.2. The common arrangements will be confirmed to the *Supplier* by completion of the 'Supply Chain Quality, Safety and Environmental Summary' prior to finalising the subcontract.

27.2.3. The first aid kit contents must be determined by the findings of the Assessment of First Aid Needs however, it must include the following as a minimum for low-risk workplaces:

- a leaflet providing general guidance on first aid (for example, HSE's leaflet Basic advice on first aid at work)
- individually wrapped sterile plasters (assorted sizes), appropriate to the type of work (hypoallergenic plasters can be provided if necessary
- sterile eye pads
- individually wrapped triangular bandages, preferably sterile
- safety pins
- large sterile individually wrapped un-medicated wound dressings
- medium-sized sterile individually wrapped un-medicated wound dressings · individually wrapped moist cleansing wipes
- at least one litre of sterile water or sterile normal saline (0.9% w/v) in sealed, disposable containers for eye irrigation
- disposable gloves

27.2.4. If a work site is located in a remote area with a potentially transient workforce, the *Supplier* must consider appointing a number of individuals qualified to First Aid at Work above Emergency First Aid at Work Level to enable a more detailed assessment of injuries and to assess the need for enhanced first aid kits (Field dressings etc.)

27.2.5. Any event requiring first aid treatment must be reported to the *Company* immediately.

28. GAS CYLINDERS

28.1. Suppliers to ensure they are supplied in accordance with 'The Pressure Equipment Regulations 1999', bear the CE marking and comply with any relevant European Standards.

28.2. The Supplier must ensure that cylinders are stored, transported, maintained and used etc. in compliance with this document and current legislation.

28.3. Gas cylinders must be used in a vertical position, unless specifically designed to be used otherwise, located in a cylinder rack or stillage and restrained by wire, chain or nylon strap to prevent them falling over. Both the size of the gas cylinder, its mode of construction and the gas product within must be appropriate to the intended use.

28.4. When cylinders are used for welding purposes, firefighting equipment must be made available and a hot works permit obtained from the Company in accordance with the HOT WORKS section.

28.5. All connections to equipment and/or pipework, including the regulator must be appropriate to the type of gas and pressure being used and within their replacement date. Flash back arrestors must be fitted at the regulators.

28.6. Jubilee clips must NEVER be used for connecting flexible gas supply hoses. Hoses must be secured to fittings by way of an 'O' ring band which is crimped into place with a special tool.

28.7. Neither PTFE tape, nor grease may be used on any connections on oxygen systems.

28.8. The correct PPE must be worn for the task being undertaken in accordance with the PERSONAL PROTECTIVE EQUIPMENT section and the task specific Method Statement (Work Package Plan) and risk assessment when handling, moving or connecting-up gas systems.

28.9. The practice of 'snifting' or venting a valve assembly by momentarily cracking open a valve to displace dust and dirt in the valve orifice, before screwing home a connector, must be discouraged and absolutely prohibited for toxic and flammable gases.

28.10. If a valve thread or orifice is contaminated by dust or grit the debris should be removed with suction from a vacuum cleaner or by blowing out with dry nitrogen. Safety spectacles must be worn.

28.11. All Supplier employees involved in the handling and/or transport of LPG cylinders must be briefed on the safe Carriage of Dangerous Goods by Road and the Use and Storage of Compressed Gas Cylinders as applicable.

28.12. When lifting using a hoist or crane, gas cylinders must only be lifted using a lifting cradle, slings, clamps or other equally effective means. Valves, shrouds and caps **must not** be used for lifting cylinders unless they are specifically designed to do so. Projects must stipulate this at the time of order or confirm with the supplier prior to lifting operations being carried out. Cylinders must not be raised or lowered on the forks or lift trucks unless a task specific Method Statement (WPP) and risk assessment has been produced and implemented which determines the control measures to prevent them from falling.

28.13. Only sufficient quantities of gas cylinders to cover short-term needs must be procured and stored on site. Arrangements for the regular collection of empty cylinders must be made. In addition, stocks of cylinders must be rotated to ensure 'first-in' is 'first-used'.

28.14. Gas cylinders must be stored away from sources of ignition and combustible or flammable materials, on a flat surface in the open air and at least 3 metres from buildings in a locked cage, above ground and well away from drains and other low-lying areas. If this is not reasonably practicable, cylinders must be stored in an adequately ventilated building or part of a building specifically reserved for this purpose. Gas cylinders containing flammable gas, such as LPG, must not be stored in part of a building used for other purposes or within 3 metres of opening windows and doors in buildings.

28.15. Gates and doors to the storage area/compound must always open outwards and always be left unlocked when someone is in the area/compound. At all other times the storage area/compound must be kept locked.

28.16. Gas cylinders used on site must be returned to the storage area at the end of each shift except in the case of vehicle mounted cylinders. The location of the gas cylinder storage area shall be included within the Fire Risk Assessment/Fire Plan in accordance with the FIRE SAFETY section.

28.17. At the end of each shift any vehicle-mounted gas cylinders which remain stored on the vehicle must be isolated.

28.18. LPG cylinders must be stored at least 3 metres away from oxygen, highly flammable liquids, oxidisers or corrosive gases or substances, although they may be kept in the same compound. It is preferable to separate flammables from other gases by provision of a fire wall which is at least 2 metres high. The storage area must be kept away from any boundaries, buildings, fixed sources of ignition or electrical equipment by at least the distances below Table 6:

Table 6

LPG storage (including empties)	Separation from building / boundary
Under 1,000 kg	3 m
1,001- 4,000 kg	4 m

28.19. Empty cylinders must be stored with their valves securely closed to prevent any residue of gas escaping, or air being drawn into the cylinder. In addition, empty cylinders should be labelled as MT, an abbreviation for 'Empty'.

28.20. LPG must not be used as a fuel for heating or cooking within any temporary accommodation unit, other than caravans.

28.21. Signs must be clearly displayed indicating the presence of the relevant gas, prohibiting smoking and the use of any flame in the area of the store.

28.22. Ensure gas cylinders are clearly marked to show their contents (including their UN Number) and the hazard warning signs associated with their contents during storage on site and when being transported.

28.23. Suitable protective valve caps and covers must be fitted to cylinders, before and during transportation, unless the gas cylinder and equipment is designed to be in use during transportation, such as Hot Boxes etc.

28.24. The Supplier must ensure that an external visual inspection of the gas cylinder is carried out, along with any attachments (e.g., valves, flashback arresters, and regulators), to determine whether they are damaged.

28.25. Cylinders must be subject to examinations prior to use to ensure safety valves and case is in good condition, hasn't been tampered with or been damaged.

28.26. All Supplier employees using gas cylinders must be provided with relevant information (including documentation from cylinder suppliers and distributors), instructions and training. This includes:

- The dangerous substances present and the risks they present, including access to any relevant safety data sheets, COSHH assessments and information on any other legislation that applies to the dangerous substance.
- Task Specific Method Statement (WPP) and risk assessment, in the form of a Task Briefing.
- Emergency procedures/plans.

29. HAND ARM VIBRATION

29.1. The Supplier must ensure every element of a design is challenged to ensure that all reasonably practicable measures have been taken to achieve this and that the design contains no 'Red Risks' (as listed in the CITB industry guidance on the CDM15 Regulations).

29.2. There are no safe levels of exposure to vibration. Consequently, we must seek to eliminate exposure or reduce it to the lowest reasonably practicable level.

29.3. The Company is committed to work with Clients and Designers to ensure that so far as is reasonably practicable all HAV exposure is eliminated or controlled through the design process.

29.4. **HAV Hierarchy and Risk Assessment**

29.4.1. The approach of the Company is that all works will be planned to eliminate exposure to vibration at source, where practicable. If this is not practicable the Company has adopted the Health and Safety Executive's (HSE) points system or exposure calculator for measuring vibration exposure.

29.4.2. The approach to be taken to reduce health risks associated with vibration exposure should apply the following Hierarchy of Control. A hierarchy means that you start at the top and only if it is not reasonably practicable to do so can the next lower level be used. See Table 7

Table 7

1 Eliminate	Consider / use alternative technologies and working practices that avoid exposure to vibration e.g. Mechanised and remote control or automated 'hands free' vibrating tools / plant / equipment. Note: It is important to ensure that measures to eliminate vibration exposure do not introduce other significant risks to health or safety.
2 Minimise	Where exposure cannot be avoided, ensure hand-held or guided vibrating tools / plant / equipment is selected that minimises potential for exposure above the Exposure Action Value based on manufacturers' emission data and suitability for the task with good ergonomic design. Note: The efficiency of the tool / plant / equipment is important – tools / plant / equipment which take a long time to do a job may not be popular and could result in a higher vibration exposure than a more efficient tool with greater vibration emission. Tools / plant / equipment may also be too powerful for the job, and this too could result in exposure to unnecessarily high vibration levels.
3 Mitigate	Where exposures cannot be reduced below the Exposure Action Value, consider / use job rotation (sharing the work and the vibration exposure between several people) to reduce trigger time and risk to health. Where exposure cannot be reduced below an individuals' specific Exposure Action Value levels, implement a Safe System of Work which includes operators and supervisors being provided with information and training about the risks from vibration, use and maintenance of the tools / plant / equipment and implement the use of an ATPMS to monitor exposure levels. Note: The use of an ATPMS must be considered as a last resort and must not be used as a substitute for implementing the elimination and minimising control measures – its principle purpose being to ensure planned exposure levels above the Exposure Action Value are being followed.

29.5. **Managing Exposure**

29.5.1. The Site Lead should ensure that the risk control measures as defined in the Safe System of Work are implemented in full including:

29.5.2. Use of plant/tools or work methods that avoid exposure.

29.5.3. Adherence to trigger time exposure limits where exposure cannot be avoided.

29.5.4. Measuring/logging trigger time exposure where appropriate as identified in the risk assessment. Training and supervision of operatives to ensure the SSOW is followed.

29.6. **Exposure Level below 100 Points**

29.6.1. If the Exposure Level derived from this assessment falls below 100 points per individual the task may commence in accordance with the risk assessment and Safe System of Work. Using an Auditable, Tamper Proof HAV Exposure Management System (ATPMS) may provide useful information about likely exposure in complex situations or where exposure level is difficult to predict but must be authorised by the Project Lead.

29.7. **Exposure Level greater than 100 points**

29.7.1. If the Exposure Level is above 100 points per individual undertaking the task, the works must be re-planned with additional resources, changing the process and/or selecting alternative equipment. The task must then be reassessed using the HAV risk assessment form and the new exposure level determined. If the exposure level now falls below 100 points per individual the task may commence in accordance with the Safe System of Work. If, however the level remains above 100 points (after at least one additional iteration of the risk assessment process), a Safe System of Work must be implemented including adoption of an (Auditable, Tamper Proof HAV Exposure Management System (ATPMS) to monitor exposure levels. The use of an ATPMS where vibration cannot be reduced requires authorisation by the project lead using the HAV control risk assessment.

29.7.2. Anyone required to use hand held or guided vibrating tools/equipment must be engaged in a suitable health surveillance programme (see OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT) before starting work where they are required to operate hand held or guided vibrating tools/equipment.

29.8. **Exposure action values and limit values**

29.8.1. Where there is a diagnosis of HAVS Stage 0 on employment or following an occupational health assessment, the approach of the company is that exposure should not **routinely** exceed 100

points per shift/day (equivalent to the HSE Exposure Action Value). All reasonable steps should be taken to reduce exposure below this value where practicable.

29.8.2. Exposure must never exceed 350 points (50 points lower than the HSE Exposure Limit Value). This value should not be a target level because of the significant health risks associated with exposures above 100 points.

29.8.3. Where an Occupational Health Assessment diagnoses HAVS Stage 1 or Stage 2 Early, exposure to vibration should be reviewed and reduced as far as reasonably practicable in accordance with current HSE guidelines. The exposure for the affected individual must not **routinely** exceed 50 points and must never in total exceed 75

29.9. Weekly Averaging Scheme

29.9.1. The only permitted exception to exceeding an individual's specific ELV of 350 points or alternatively 75 points is in exceptional circumstances such as an emergency not exceeding 1 shift (day / night), where the risks / consequences associated with not dealing with the emergency promptly outweigh the risks / consequences associated with increased hand arm vibration on a 'one-off' basis.

29.9.2. In such cases the use of a weekly averaging scheme must be implemented i.e. the weekly averaging scheme would permit increased exposure as a 'one-off' when exposure on the remaining days of the week is reduced to zero.

29.9.3. Where an Occupational Health Assessment diagnoses HAVS Stage 2 Late or Stage 3 and the assessment recommends an employee is permanently removed from vibration exposure, individuals are prohibited from using hand-held vibrating tools/equipment.

29.10. Competency, Training and Instruction

29.10.1. The Suppliers Site Lead and/or person responsible for implementing this procedure must have successfully completed the following:

- Site Manager Safety Training Scheme (SMSTS) or company accepted equivalent.
- Setting People to Work Internal Training Course (in accordance SETTING PEOPLE TO WORK SAFELY). Hand-arm Vibration – Guide for Managers (HSF-RM-0060a).
- ATMPS training where applicable

29.10.2. All Supplier employees exposed to the risk of Hand Arm Vibration must receive the suitable information and training so they understand the hazards associated with working with hand-held vibrating tools/equipment and how to use the selected controls.

29.10.3. When enrolling on the Health Surveillance Programme to obtain a Reactec Points Card, operatives must also have completed the above requirement as part of the card request process.

29.11. Auditable, Tamper Proof HAV Exposure Management System (ATPMS)

29.11.1. The company approach is to utilise an ATPMS where the vibration control risk assessment indicates exposure is likely to routinely exceed 100 points or where an occupational health assessment indicates there is a risk to health necessitating restrictions on tool usage.

29.11.2. The exception to this is in environments where intrinsically safe equipment is required e.g., confined spaces, petro-chemical and nuclear sectors etc. Note that the Reactec ATPMS is not intrinsically safe. Also in Regional Scotland Business Unit where the use of ATPMS is a mandatory requirement.

29.11.3. If there is no occupational health diagnosis, then Supplier must only give authorisation to use an Auditable, Tamper Proof HAV Exposure Management System (ATPMS) if they are satisfied that all options have been exhausted to reduce vibration levels below 100 points and that all supervisors and users are trained and competent in its use.

29.11.4. The Supplier must ensure that each named individual using the system is issued with a 'ATPMS swipe card' which is programmed with the person's personal details including a unique number

and the individuals permitted vibration exposure levels (as defined by this procedure / their individual HAVS Assessment).

29.11.5. The Supplier must ensure the ATPMS data is obtained and reviewed on a regular basis to ensure that vibration exposure levels detailed within the Safe System of Work have not been exceeded. Where excursions above the exposure levels are evident the Site Lead must instigate an investigation into the causes of the breach and reassess the effectiveness of the risk control measures for the works prior to recommencement.

29.11.6. The Supplier is responsible for ensuring and monitoring implementation of these measures and for keeping auditable site records.

29.11.7. Any individual exceeding the Exposure Limit Value (ELV) of 350 points must cease using vibrating tools with immediate effect until such time as an Occupational Health Incident Investigation has been carried out in accordance with the INCIDENT REPORTING AND INVESTIGATION section.

29.11.8. Where the ELV of 350 points is exceeded during exceptional emergency work, not exceeding 1 shift (day/night) the investigation must confirm a weekly averaging scheme is being utilised, or otherwise.

29.12. **Supply Chain**

29.12.1. The requirements outlined in this procedure are also applicable to our supply chain, who must demonstrate that their own procedural controls are suitable and sufficient to protect their workforce from exposure to harmful vibration to at least the same standard, and that an appropriate health surveillance programme is in place. Supply chain employees must not be set to work unless they can supply evidence that they are fit to work or have work restrictions following an occupational health assessment.

30. HOT WORKS

30.1. At all Balfour Beatty sites and places of work we insist that all contractors and suppliers follow our HOT WORKS procedure.

30.2. Hot Work Permits must be applied where heat, sparks or flames may be generated. The Permit must be raised and closed by the Hot Works Responsible Person.

30.3. The Company will appoint a Hot Works Responsible Person to issue Hot Work Permits and ensure the requirements of the Permit are periodically monitored.

30.4. Hot Work Permits are not required where an area is specifically designed for this purpose, for example factory welding workshops.

30.5. Any combustible material within 6m of the operation that cannot be moved must be protected from sources of ignition

30.6. Fire extinguishers must be present at all times during the hot work operation. The type of fire extinguisher will be detailed in risk assessment for the task being completed.

30.7. In the event of a metal spill when using an Aluminothermic Welding process, Water or AFFF Extinguishers must not be used; the flow of molten steel or slag will be contained using sand and sand trays.

30.8. Any area of hot work must be actively monitored for at least one hour after completion of the operation, to confirm that there is no form of ignition. This will mean hot work cannot be carried out near the end of the day (within at least 1.5 hours of the time the site will be vacated).

31. HOUSEKEEPING

31.1. The Supplier must keep their work area free from slip, trip and fall hazards at all times and remove all waste to a designated area. All combustible waste must be removed each day to a designated area and covered to prevent accidental or malicious fire. Supervisors must continually monitor and record compliance.

32. LIFTING OPERATIONS

32.1. Design Risk Analysis

32.1.1. Designers must consider the following measures at the design stage which can assist safe lifting operations:

- allowing space around structures and site boundaries for safe lifting operations;
- considering how site lifting operations can avoid hazards such as overhead electricity lines, railway lines etc. and how routes need to change as work progresses on site;
- indicating the maximum loading limits of floors used by plant for lifting or storing materials/loads, particularly during construction, demolition, and refurbishment;
- relocating or protecting vulnerable services such as gas pipes and electricity cables; and
- passing on information on any features of the design presenting significant risks from lifting operations to other project team members as necessary, including significant risks during future construction work or maintenance.

32.2. Principal Contractor Responsibilities

32.2.1. Where the Company are appointed as the Principal Contractor and the lifting contractor has been appointed by the client; Lifting team roles must be clarified and recorded in the Construction Phase Plan. These arrangements must be treated as a 'Contract Lift' and the lift plan as a Supply chain lift plan with the exception of the appointment of the contractor

32.3. Appointed Person

32.3.1. The Supplier must appoint a Lifting Operations Appointed Person for every lifting operation, whom has the appropriate competence, knowledge and experience for the lift being undertaken to ensure lifting operations are properly planned. This appointment must be recorded in the Lift plan.

32.3.2. The selection of the Appointed Person must also consider geographical/travel limitations for site visits, observation of lifting operations and accessibility for advice.

32.3.3. All lifting operations must be planned to ensure that they are carried out safely and that all foreseeable risks have been considered. An Appointed Person must sign off/approve the lift plan.

32.3.4. The Appointed Person must be:

- Competent and holds a valid CPCS or NPORS(CSCS) Appointed Person qualification, except for lorry loaders where an ALLMI Appointed Person qualification is acceptable.
- The Appointed Person must have previous experience of similar lifts and have authority over any other Lifting Operations Appointed Persons associated with the work. The Appointed Person must be sufficiently familiar with the work to enable him/her to effectively fulfil their duties regarding the lifting operation.
- Familiarisation of relevant procedures (As a minimum LIFTING OPERATIONS section)
- **WHILST WORKING ON NETWORK RAIL AND LONDON UNDERGROUND RAIL INFRASTRUCTURES**
    - **Sentinel Lift Planners** will be competent and hold a valid Sentinel Lift Planners competency

32.4. Loads & Equipment

32.4.1. The Supplier must identify all types of lifting operations required for the project in conjunction with the Appointed Person, as part of the programme / schedule of works.

32.4.2. The Supplier (in conjunction with the Appointed Person) must identify the minimum plant specifications and associated checklists for the Lifting Equipment required for the project prior to procurement.

32.4.3. Lifting operations involving the demolition of a structure must also be in accordance with the DEMOLITION section.

32.4.4. When utilizing cast in lifting points for lifting bespoke construction elements; temporary works approval must be obtained, and secondary lift security must also be deployed i.e., suitably rated lifting slings.

32.5. Planning the Lift

32.5.1. All lifting operations must be carried out in accordance with 'Lifting Operations: Our Expectations' document (HSF-RM-0039a).

32.5.2. Topping and tailing during lattice tower and pile cage erection must be planned by an Appointed Person but does not require AP supervision unless the environmental hazards warrant their attendance.

32.6. Assess Environmental Conditions

32.6.1. An Assessment of environmental conditions must be undertaken by the Appointed Person commensurate with the risks involved in the lift, and in accordance with Table 8. Refer to the relevant BS7121 standard for more information on assessing environmental conditions.

Table 8 - Assessment of site conditions

Type	Basic	Intermediate	Complex	The Appointed Person must:
General				• Visit the site personally
Lorry Loader				• Visit the site personally, or • Delegate a competent person† to undertake the visit on their behalf*
Telehandler				• Visit the site personally, or • Delegate a competent person† to undertake the visit on their behalf, or • Make an assessment based on information with which they have been provided*
Excavators used as cranes				
Mobile Cranes				
Bridge and Gantry Cranes				
Tower Cranes				

*The AP must visit site if they have any concerns about the detail and quality of the information provided.

† Another Appointed Person or Crane/Lifting Supervisor deemed competent for the task by the Appointed Person

32.6.2. An assessment of ground conditions must be carried out to determine whether it will support the imposed loads. Where load reduction or ground improvement measures are required the Appointed Person must ensure a design has been carried out by a competent Temporary Works Design Engineer.

32.6.3. For tower, mobile and crawler cranes, the Appointed Person must consult with the company Temporary Works Coordinator (TWC). The TWC is responsible for ensuring that there is an engineering assessment of the ground bearing capacity and a design of the outrigger pads/piling mats.

32.6.4. For crawler cranes, the pressures imposed on the ground should be calculated or obtained from the crane manufacturer. This should take account of all routes the crawler crane may traverse.

32.6.5. All platforms from which lifting operations are to be undertaken must be designed, installed and maintained to have sufficient capacity for the maximum loads applied. This includes suspended floors, walls, scaffolding, piling mats and all delivery and storage areas.

32.6.6. For bridge and gantry cranes, where either:

- maintenance activities on the crane are planned; or

- construction operations are planned or taking place within the vicinity of the normal operating envelope of the crane that are unrelated to its intended use; or
- a new crane has been installed and commissioned as part of an ongoing construction project;
    - the crane must be de-energised and locked off. Energisation and use of the crane must be controlled by means of a written authorisation by the Company Site Lead and incorporated into the lift plan. Re-energisation and use of the crane under these circumstances must only be categorised as an intermediate or complex lift.

32.7. Hazardous Areas

32.7.1. To prevent plant movement over or near hazardous areas, prohibited zones must be established and defined in the risk assessment e.g., over a live highway, railway line or near to live overhead cables.

32.7.2. The crane must be fitted with a Movement Limiting Device (MLD). The MLD must limit both slewing and derricking if required.

32.7.3. BS7121 – 1 (Annex E) provides details of additional recommendations for operation of cranes on or adjacent to sites of exceptional hazards (i.e. if the crane or its load falls onto high-hazard areas, within or adjacent to the site, a catastrophic incident might result).

32.7.4. The use of a limiting device must be applied as part of an overall safe system of work, and not relied upon as the only control. Where a limiting device is utilised the level of functional safety achieved must be declared. Further guidance can be sought from BS EN 13849, BS EN 61511 or BS EN 61508.

32.7.5. If used under overhead cables or obstructions, consider using smaller equipment that cannot infringe clearances, otherwise the equipment must be fitted with height restrictors and indication on the machine. Where slew or height restrictions are required, these must be specified in the Lift Plan. If under electricity cables, a Safety Clearance Check Sheet (provided by the company) must be completed as part of the safe system of work.

32.7.6. Lifts within the vicinity of an overhead power line are not necessarily deemed to be complex when the operations are directly related to work on or for that power line. Robust procedures must be in place to ensure safety from the electrical system and a Safety Clearance Check Sheet (provided by the company) must be completed as part of the safe system of work.

32.7.7. Where lifts are planned simultaneously and there is a potential for adjacent lifting operations to meet, a Crane Coordinator must be appointed to coordinate the lifts.

32.7.8. No one is permitted to stand in the area directly under the load as it is deemed to be extremely hazardous.

32.7.9. As loads can become unstable and move when being lifted, slinger signallers must adopt the ‘Hands Off Stand Clear’ approach after a test lift to ensure their own safety.

32.8. Notification of Crane Use

32.8.1. With effect 6th Sept 2021, the UK Civil Aviation Authority (CAA) must be notified if a crane is:

- to be used within 6 km of the aerodrome/airfield and its height exceeds 10m Above Ground Level (AGL) or that of surrounding structures or trees, if higher or
- is to be operated at or above a height of 100m AGL regardless of location

See CAA guidance

32.8.2. The CAA recommends initial contact using the Notification Form at Annex A at least eight weeks before the erection of the crane. This will allow correct identification of local aerodromes and allow consultation time and possibly further instructions from aerodrome operators. Additional notification periods are available for unforeseen/urgent projects (see CAA guidance 1096)

32.8.3. Summaries of the requirements and recommended practices for lighting and marking of cranes are provided in the CAA ‘Guidance to crane users on aviation lighting and notification’ (CCA1096),

also see the CPA Technical Information Note (TIN) 039.

32.9. **Work at or adjacent to railway property**

32.9.1. When undertaking lifting operations near railways, the relevant Railway Infrastructure Managers Asset Protection Team must be informed who will assess the works and advise anyone who is planning activities on or near the railway. These operations may not materially change the rail infrastructure but may have engineering and safety implications. It is worth noting that requirements and notice periods for approvals may vary between operators.

32.9.2. The Railway Infrastructure Managers Asset Protection team will assess the work being undertaken with respect to several items, including:

- Proximity of the work to the railway
- Nature of the work being undertaken, the imposed risk and how these can be mitigated
- The programme of works and specifically tasks that interface with the railway
- Requirement for any track closures or isolations for the work
- Agreeing deliverables that are required for the work to take place in accordance with Railway Infrastructure Managers policy and Group or Line Standards
- Review and comment on proposed methodology before work commences for the activities being undertaken.
- Providing site staff to ensure that the risks to the railway and the Outside Party are reduced.
- Liaison with the other Railway Infrastructure Managers departments as necessary to provide a clear focus and customer service for the Outside Party

32.10. **Exclusion Zones & Plant Interface Zones**

32.10.1. To keep non-authorised personnel safe, Exclusion Zones must be established for all lifting operations including static lifts. All lifting and lay down areas must be adequately controlled to prevent unauthorised access during lifting operations. The size and extent of the exclusion zone must be determined by a risk assessment.

32.10.2. To keep non-authorised personnel safe, Exclusion Zones must be established for all lifting operations including static lifts. All lifting and lay down areas must be adequately controlled to prevent unauthorised access during lifting operations. The size and extent of the exclusion zone must be determined by a risk assessment.

32.10.3. The zone between the lifting and lay down area for a lifting operation must be segregated where reasonably practicable. Where it is not reasonably practicable, sufficient control measures must be implemented in accordance with the safe system of work.

32.10.4. To keep any authorised (those directly involved in the lifting operation) personnel safe, People, Vehicle Plant Interface Zones' (HSF-RM-0047a) must be established. Refer to the PEOPLE, VEHICLE AND PLANT INTERFACES section.

32.10.5. For drum winch and capstan lifting operations, all personnel associated with the lifting operation must vacate the exclusion zone during lifting and lowering operations.

32.10.6. For loads being lifted or lowered slinger/signallers must stand clear and never be directly under the load.

32.10.7. As loads can become unstable and move when being lifted, slinger signallers must adopt the 'Hands Off Stand Clear' approach after a test lift to ensure their own safety.

32.11. **Work at Height whilst Un/Loading Transport**

32.11.1. When planning unloading transport activities, the risk of falls from height must be considered and the appropriate control measures put into place. Refer to the HSE guidance 'Safe driving: loading & unloading'

32.12. **Confirming Lift Complexity**

32.12.1. The Appointed Person must establish the category which best reflects the complexity of the lift following reference to the relevant part of BS7121. The category of the lift determines the documentation required. Refer to paragraph 32.6.6 for circumstances where bridge and gantry cranes must not be categorised as basic lifts.

32.12.2. BS7121 Series has been accepted as representing the consensus of practical experience for safety on cranes. The following parts of BS7121 details complexity indexes and considerations with the specific crane types:

- BS7121-3 Code of Practice for Safe Use of Cranes. Mobile Cranes
- BS7121-4 Code of Practice for Safe Use of Cranes. Lorry Loaders
- BS7121-5 Code of Practice for Safe Use of Cranes. Tower Cranes
- BS7121-11 Code of Practice for Safe Use of Cranes. Offshore Cranes
- BS7121-12 Code of Practice for Safe Use of Cranes. Recovery Vehicles and Equipment
- BS7121-13 Code of Practice for Safe Use of Cranes. Hydraulic Gantry Lifting Systems
- BS7121-14 Code of Practice for Safe Use of Cranes. Side Boom Pipelayers
- All other types of lifting equipment not featured above, must use BS7121-1: 2016

32.13. **Multiple lifting (tandem) (complex)**

32.13.1. All tandem lifts must be reviewed by a Company Temporary Works Designer.

32.13.2. Lifting Equipment of compatible lifting characteristics must be used with sufficient margins within the rated capacity of each crane to allow for any additional dynamic loading that could be transferred from one crane to another during movement of the load.

32.13.3. Further guidance on Multiple lifting is available in section 14 of BS7121-1: 2016

32.14. **Suitability of plant**

32.14.1. The Lifting Operations Appointed Person must be responsible for considering the suitability of the equipment for the task and specifying the selection of lifting equipment. The following must be considered to ensure the most suitable equipment is selected:

- Weights, dimensions and characteristics of the load(s) and accessories
- Operational speeds, radii, height of lifts and areas of movement
- Number, frequency and types of lifting operations
- Length of time the lifting equipment is required
- Site, ground and environmental conditions, or restrictions arising from use of existing structures
- Space available for delivery, access, erection, travelling, operation, and dismantling
- Lifting on Structures e.g. Bridges
- Any special operational requirements or limitations imposed
- Type of lifting equipment i.e. telehandler, excavator, mobile crane etc.

32.14.2. The Lifting Operations Appointed Person must ascertain whether the lifting equipment is being operated within its rated capacity and must also de-rate for:

- How the lifting accessory is attached to a load (e.g. the angle of sling legs)
- Using a multi leg sling with one or more legs not used
- Lifting of people
- Where the load being lifted is affected by adverse weather conditions
- Lifting from or onto a floating vessel

- Tandem lifting

32.14.3. The Lifting Operations Appointed Person must ensure that the selected lifting equipment is of adequate strength and stability for each load, in particular to the stress induced at its mounting or fixing point; and every part of a load and anything attached to it and used in lifting it is of adequate strength, also lifting equipment must be suitable/protected for any sharp edges of the load.

32.14.4. Forks fitted to 360 excavators and the backhoe of 180 excavators must not be used for lifting operations.

32.14.5. Using excavators, telehandlers and lift trucks for the lifting of personnel may only be undertaken providing they conform to the requirements of BS EN 280 Mobile Elevated Work Platforms i.e. they must be fitted with a CE marked fully integrated platform with controls that are linked to and isolate the machine controls so that in normal use, only a person in the platform can control the lift height of the platform and machine movements. Further guidance is available in:

- CPA - Guidance on Lifting with Excavators
- Strategic Forum for Construction Good Practice Guide – Safe Use of Telehandlers in Construction

32.14.6. The lifting of personnel in non-integrated suspended baskets may only be undertaken providing they conform to the requirements of BS EN 14502-1 Cranes - Equipment for the lifting of persons Part 1: Suspended baskets. Further guidance is available in:

- Section 20.1 of BS7121-1: 2016
- The Management of Lifting Operations with Lorry Loaders CPA - ALLMI Best Practice Guide

32.14.7. Gin wheels must be inspected and used in accordance with all statutory regulations, guidance notes and the Manufacturer's Operating Instructions. Gin wheels used on scaffolding or as part of a permanent system must only be used with an automatic brake fitted.

32.14.8. When deciding if plant is the most appropriate lifting equipment for lifting operations the following must be applied:

- **Tower Cranes** - The Site Lead must undertake an analysis of the tower cranes utilisation in conjunction with the materials and activity anticipated on site.
- **Telehandlers/Lift Trucks -** must only be used to carry suspended loads if designed to do so, and if the method is included in the Manufacturers Operating Instructions. This method must be included in the Lift Plan and lifting attachments must be compatible with the base machine, or by the same manufacturers with load charts verified by the manufacturer.
- **Excavator** - When an excavator is being used to lift loads whilst travelling from one location to another i.e. "pick and carry duties", its rated capacity must be reduced by 50% of that stated on the duty chart when it is in 'cross-carriage' orientation. Also see 'Limitations of use when lifting with excavators' (HSF-RM-0039r)
- **CFA and LDP piling rigs** – Unloading of vehicles must never be undertaken by the rigs. The service lines of LDP and CFA rigs must never lift anything over 1 tonne; an attendant crane or suitably rated 360 excavators should be used. The rig should only be used to lift items for drilling or excavating; All items to be lifted by the rig should be detailed on the lift plan.
- **Driven piling rigs** – Unloading of vehicles may take place by the piling rigs providing a suitable and sufficient risk assessment is in place and an approved lift plan. The rig must only be used to lift items to facilitate the piling operation and not be used for general lifting operations around the site.
- **Mini piling rigs** – Unloading of vehicles should never be undertaken by the rigs. Wherever possible, alternative lifting equipment must be provided to assist the piling operation. Where access restrictions prevent alternative lifting equipment being used, the use of the service line is permitted to avoid manual handling operations. Cranes must not be supplied with a free fall facility unless required for the specific circumstances. Cranes supplied with a free fall facility must be fitted with interlocks that operate in a positive and fail-safe manner. See minimum plant specifications.

32.14.9. Due to the long-term effects on the telescopic rams, derricking cylinders and slew ring, and the potential for jib whip, mobile cranes must not be used for installation and extraction of sheet piles. Sheet piling work is restricted to the vibro-installation or extraction only, where this has been specifically agreed with the crane supplier/owner.

32.14.10. Mobile cranes must only be used to suspend personnel in a man basket where a specific Method Statement/Work Package Plan is in place and the hierarchy of risk control deems this to be the safest manner having considered all other access options, or for emergency rescue. See minimum plant specifications.

32.14.11. Crawler cranes must only be used with hydraulic hoist mechanisms. See minimum plant specifications.

32.14.12. The use of swivel platform hoists are prohibited. (see WORK AT HEIGHT section)

32.14.13. Refer to 'Lifting Operations – Our Expectations' for examples of lifting hooks which are acceptable and prohibited for use within the Company.

32.14.14. Where a quick hitch is fitted, the weight of this accessory must be considered in the lift plan.

32.14.15. Longitudinal Load Moment Indicators (LLMI) must not be relied upon for establishing the weight of the load.

32.14.16. See Construction Plant-hire Association (CPA) guidance on the Safe Use of Telehandlers

32.14.17. The use of vacuum lifting equipment is only permitted:

- The system must always fail to safety, for example:
  - a minimum of two battery back-ups in case of the battery failure
  - suction retained in the event of battery failure
  - any loss of suction is sensed by the system and automatically initiates the vacuum to re seal the suction pads
  - the system emits an audible alarm for system failure such as loss of suction or battery failure
- where lifting zones are clearly established to ensure all personnel are clear of the suspended load
- where there is an established pre-use check including battery charge status and robust maintenance regime

32.15. **Thorough Examinations**

32.15.1. All Lifting equipment and accessories (incl. static equipment) available for use must have a current thorough examination, carried out and certified by a competent person independent of the operational team.

32.15.2. An independent third-party inspection body must be appointed by the company to provide thorough examination of gantry cranes following installation by a supplier completing their own thorough examination, and at 12 monthly intervals thereafter.

32.15.3. An independent third-party inspection body must be appointed by the company to provide thorough examination of self-erecting cranes following each new deployment and installation on site, and at 12 monthly intervals thereafter.

32.15.4. Maximum intervals for periodic Thorough Examinations are:

- 12 months for lifting equipment
- 6 months for lifting accessories, equipment used to lift people*

*See PERSONAL PROTECTIVE EQUIPMENT for inspection requirements of harnesses, lanyards and rope access equipment.

32.15.5. The Supplier must ensure that the above periods are reviewed and reduced, if necessary, for works which include more than one shift each day, such as double shifting or in regularly wet, abrasive or corrosive environments.

32.15.6. Where externally hired lifting equipment is used a written plan of maintenance for that equipment and any accessories must be agreed with the supplier, taking account of the environment in which, the equipment is used.

32.16. Lifting Accessories

32.16.1. A system must be in place to uniquely identify all lifting accessories. This will include as a minimum the identification mark and safe working load/working load limit.

32.16.2. A tagging/colour marking system to give a visual indication that the lifting accessory has been thoroughly examined must be applied. The colour code for the colour marking system must indicate the current inspection period as per Table 9 below.

Table 9

Blue		15 December 2021 to 15 June 2022	15 June 2023 to 15 December 2023	15 December 2024 to 15 June 2025
Yellow	15 December 2020 to 15 June 2021	15 June 2022 to 15 December 2022	15 December 2023 to 15 June 2024	15 June 2025 to 15 December 2025
Green	15 June 2021 to 15 December 2021	15 December 2022 to 15 June 2023	15 June 2024 to 15 December 2024	15 December 2025 to 15 June 2026

32.16.3. New colour code cycles can commence from the 1st of the month and be completed by the end of the month. A change of colour before the 1st of the month would need to be approved by the Company Site Lead.

32.16.4. Sites which will be open for less than six months but will span a colour code change can use a unique colour code if agreed by the company Site Lead in conjunction with the Competent Person.

32.16.5. Supplier lifting accessories must have a unique tagging/colour marking system of identification or comply with the above requirements.

32.16.6. Lifting accessories used to offload deliveries and which are immediately removed by the supplier do not require tagging or colour coding under this system.

32.16.7. Lifting accessories must not be used until a current thorough examination certificate (or current CE certificate for new equipment) is available and the item is tagged/colour coded.

32.16.8. All lifting accessories must be properly stored. Suitable storage must be provided, along with clear indication of the current examination colour, working load limit charts, and a colour coding chart where relevant for webbing slings. Damaged accessories or accessories with lapsed examination periods must be placed in a designated quarantine area and not used until repaired and re-certified.

32.16.9. Lifting accessories for lifting glass must not be controlled by radio operation.

32.17. Selecting the Team

32.17.1. The following roles must be identified within the lift plan for every lifting operation in accordance with the Summary of Lift Plan, Documentation and Competency Requirements:

- A **Crane/Lift Supervisor** who is:
  Competent and holds a valid CPCS or NPORS(CSCS) Crane/Lift Supervisor qualification except for:
  - lorry loaders where an ALLMI Crane Supervisor qualification is acceptable.
  - basic lifts using a telehandler/fork truck requires a minimum competency of SSSTS.
- A **Slinger and Signaller** for all lifting operations where lifting accessories are being used* Must never stand underneath a load being lifted or lowered and adopt the 'Hands Off Stand Clear' approach once loads have been slung and a test lift carried out.

  whom is:

- Competent and holds a valid CPCS or NPORS(CSCS) Slinger/Signaller qualification except for Lorry Loaders where an ALLMI Slinger/Signaller qualification is acceptable.
- NOTE: CPCS category A40A is required when conducting pick and carry duties
- Familiarised with relevant procedures

- A **Crane Coordinator** where there are two or more lifting operations which have the potential to impact on each other, whom is:
  - Holds a valid CPCS or NPORS(CSCS) Crane/Lift Supervisor qualification with previous experience of the role in similar circumstances.
  - Familiarised with relevant procedure

* the only exception to this is non-crane lifts using attachments such as hydraulically operated material handlers and proprietary mechanical and vacuum grab systems.

32.17.2. Where the scope of the project is restricted to Static Lifts, the Lifting Operations Appointed Person and Crane/Lift Supervisor appointments can be held by a Static Lift Supervisor, whom is:

32.17.3. Competent and holds a current SMSTS or Company accepted equivalent qualification. They must also have passed the internal Static Lift competency course.

32.17.4. The Lifting Operations Appointed Person is responsible for reviewing that the team meet the competency requirements detailed, but also have the authority to stipulate further training or competency assessments required before the lift may commence.

32.17.5. In certain circumstances, it might be possible to combine some of the roles of members of the lifting team where they have the required competency and can undertake these roles without having any of their decisions affected/biased due to other responsibilities. See 'Construction Plant Hire Association for guidance; however, it is the Lifting Operations Appointed Persons responsibility to determine the combination of roles for each lifting operation and record in the Lift Plan.

32.18. Fitness for task

32.18.1. Fitness for task and health surveillance is covered in OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT section. Client contractual health surveillance / assessment requirements may differ and where this is the case this must be agreed in writing within the terms and conditions of the contract and agreed with the employees involved.

32.18.2. External crane suppliers must ensure that their employed Operators are subject to medical surveillance and are fit for the task.

32.19. Producing a Lift Plan

32.19.1. An appraised Lift Plan is required for all lifting operations and must be in place prior to commencing the lifting operation, The lift plan must be reviewed at least every 3 months for construction sites and 6 months for factories and depots or whenever the scope of work, equipment or environment changes

32.20. Tower erection using a derrick

32.20.1. A specific lift plan/method statement/WPP must be created in conjunction with the Design Engineer. This must consider:

- equipment to be used
- rigidity of panels to be lifted (if single panels are to be installed)
- weight and position of each lift, and
- stability of the structure during erection

32.20.2. The final erection method must be approved by the Company Temporary Works Designer prior to starting work and the erection method adhered to by the Lift Supervisor during the lift(s).

32.21. **Supply chain lift plans**

32.21.1. The supply and delivery of goods by lorry loader is a contract lift. 'A Suppliers Guide to Lifting Procedures for Lorry Loaders' is available to suppliers via the company external website for further guidance.

32.21.2. Supply chain lift plans must be prepared by the Subcontractor in line with their own procedures and legal requirements and submitted to the company for review by the company.

32.21.3. The company Site Lead must determine if the Appointed Person should physically visit site using Table 8 Assessment of site conditions.

32.22. **Deliveries to site**

32.22.1. All deliveries/collections must be accompanied by a Lift Plan (which may form part of a method statement/WPP) produced by an Appointed Person on behalf of the supplier. This plan may be generic but must cover the requirements for the material being offloaded.

32.22.2. Prior to carrying out lorry loader lifting operations defined as complex, consideration must be given to other items of lifting equipment that may be more appropriate, such as a mobile crane.

32.22.3. Truck mounted forklifts and other small forklifts used by delivery companies must not be used on unmade ground. Deliveries must be restricted to a suitable hard standing.

32.23. **Lift Preparation**

32.23.1. **Supervision**

32.23.1.1. Supervision should be proportionate to the risk, taking account of the competencies and experience of those undertaking the lift. Many everyday lifting operations do not require direct supervision (e.g., experienced fork-lift operators undertaking routine lifts). Also see Construction Plant Hire Association for guidance.

32.23.1.2. **Basic lifts:**

- A Crane/Lift Supervisor - Attendance is not required on site at all times but must ensure all plans and competencies are in place and be immediately available.

32.23.1.3. **Intermediate** (including carrying suspended loads):

- A Crane/Lift Supervisor must be present for the duration of the lifting operation.

32.23.1.4. **Complex lifts**:

- A Crane/Lift Supervisor must be present for the duration of the lifting operation, and
- An experienced blue card Appointed Person must be present on site for the duration of the lifting operation, however; it does not necessarily need to be the AP that planned the lift.

32.23.1.5. For lifting on rail infrastructure, also see Whilst Working on Network Rail And London Underground Rail Infrastructures

32.23.1.6. The Crane/Lift Supervisor must monitor the effectiveness of the safe system of work, identify any changes in circumstances and if necessary, stop the lift and seek further direction from the Appointed Person.

32.24. **Methods of Communication**

32.24.1. Methods of reliable and effective communication between the Plant Operator(s) and Essential Personnel must be established, agreed, and documented in the Lift Plan.

32.24.2. During the planning and commencement of lifting operations and as part of the pre-activity briefing, the method of communication(s) must be confirmed by all parties.

32.24.3. Hand Signals

- Only a trained and competent Signaller will signal the Plant Operator.
- The Plant Operator must only follow the signals given by the designated Signaller for that specific item of plant, except the emergency stop can be given by any person on site.
- The use of dual/tandem Signallers is permitted when line of sight, radio frequency and personal factors prevent effective use of radio communications.
- Hand signals must be precise, simple and easy to make and understand. See BS7121 - figure 3.

32.24.4. Radio communication must be used where:

- the continuous visibility between both parties may be jeopardised. (Consider blind spots, position of the load, behind structures/obstructions, environmental factors and line of sight in trenches), or
- background noise is liable to interfere with effective communication, or
- where there is potential for pedestrian worker interface (See PEOPLE, VEHICLE AND PLANT INTERFACES, Hierarchy of Control), or
- other circumstances where communication may be difficult.

32.24.5. Only approved communication systems or other approved radio devices must be used:

- Simplex - Back to back digital radio system – Motorola DP4400 or higher
- Part Duplex - 3M Peltor LiteCom Pro
- Full Duplex - SwatCom Multicom Wireless Portable Communications
- **Network Rail**
  - The Machine Controller and Operator must use a Network Rail approved duplex communications system for plant operations.

32.24.6. Radio communications do not replace hand signal, they are to be used as well as hand signals where possible. The Signaller must always signal from a place of safety.

32.25. Briefings and Communications

32.25.1. The Crane/Lift Supervisor must brief those involved on the contents of the Lift Plan. The briefing must be recorded to confirm that it has been received and understood.

32.25.2. All OHT Crane Operators must be briefed and issued with a copy of the Operator's guide card which will authorise them to operate the crane and undertake the daily/pre-use checks in accordance with the PLANT section.

32.25.3. The Static Lifting Equipment Operator must be briefed on the Lift Plan, the Safe System of Work and receive familiarisation training.

32.26. Pre-Use Inspections

32.26.1. All lifting equipment and accessories (incl. static equipment) must have a recorded weekly inspection by a competent person. Any deterioration detected must be reported, recorded, and remedied or the item quarantined.

32.26.2. Prior to commencing a lift, the following must undertake inspections:

Role	Equipment	Inspection
Plant Operator	Lifting Plant	Daily/Weekly checklists
Slinger/Signaller	All lifting accessories	Pre-use visual check every shift
Plant Operator	All man-riding equipment	Pre-use visual checks every shift

32.26.3. Tyre condition is critical to lifting operations where the equipment relies on tyre pressure for part or all of its weight bearing and stabilisation capacity. Condition checks are part of the Daily/Pre-use Checklist. See PLANT section.

32.27. **Prestart checks**

32.27.1. Prior to any lifting operation commencing*, an acceptance to start checklist must be completed by:

- **Basic/Intermediate Lift** – Lift Supervisor
- **Complex lift** – Appointed Person

32.27.2. The acceptance to start checklist must be recorded and available for inspection.

32.27.3. Where slew or height restrictions are required, the Crane /Lift Supervisor must check with the Operator that the limits have been set as specified prior to signing the Lift Plan.

32.28. **Tower Cranes**

32.28.1. For Tower Cranes, the Tower Crane operating manual must be followed. In addition, when using remote controlled Tower Cranes, the Operator must maintain visual contact with the load at all times.

32.28.2. Balfour Beatty Tower Crane Team are responsible for ensuring a Permit to Proceed with Change in Tower Crane Configuration is complete and authorised before the erection, change or dismantling of a tower crane.*

32.28.3. A copy of the authorised permit must be available at all times by the BBAST Supervisor overseeing the task for the duration of the work operation.

32.28.4. Key personnel must be notified at least 7 days prior to works:

Project Notification 7 days prior to works:	PFS Internal Notification 7 days prior to works:
• BU Managing Director • Project Director • Project Manager • Project HSES Advisor • BU HSES Director	• Managing Director • Strategic Asset Director • Tower Crane Business Manager • Director of Engineering, Safety & Assurance • HSES Manager

32.28.5. The Supplier must ensure that the use of Tower Cranes on site is sufficiently controlled such that lifting operations are performed in a safe manner in accordance with its instruction manual. The Appointed Person must ensure that the correct equipment and accessories are used and that all parties are aware of their responsibilities and the lifting restrictions when working on site.

32.28.6. The Supplier must ensure that tower cranes and their foundations are designed, constructed and checked in accordance with the Temporary Works design and procedures. A formal check of the foundation must be undertaken and recorded prior to erection of the Tower Crane. The Tower Crane Pre-Erection Inspection Approval Certificate (HSF-SF-0039b) or an equivalent form must be completed prior to erection of the tower crane.

32.28.7. The Supplier must ensure that a Safe System of Work for the erection, climbing, operation and dismantling of tower cranes is established, implemented and monitored by the Appointed Person.

32.28.8. As a contingency a safe system of work or equivalent is completed prior to first use of the tower crane, following each climb of the mast or following a collision or damage to the tower crane.

32.28.9. The Appointed Person must ensure that a physical survey of mast heights is completed prior to first use and after each climb of the mast.

32.28.10. Anti-collision / zoning systems must be fitted to all cranes on multi crane sites or where there is potential to over sail live and third-party areas. The Appointed Person must ensure that an Anti-collision Device Set Up, Test and Acceptance Certificate or equivalent is completed prior to first use of the tower crane.

32.28.11. The anti-collision system must be tested before use. The Crane Operator must undertake a daily check of the anti-collision / zoning system to ensure it is working correctly.

32.28.12. An anti-tamper device must be fitted to the anti-collision system which can only be overridden in an emergency or with the prior permission of the Crane Coordinator. The anti-collision / zoning system 'key' must never be left on the crane and must be controlled by the Appointed Person.

32.28.13. As a contingency a safe system of work must be developed in case of anti-collision failure.

32.28.14. Emergency arrangements for the rescue of operators or maintenance worker must be established, tested and regularly reviewed in accordance with the EMERGENCY ARRANGEMENTS section.

32.28.15. Emergency arrangements must include the provision of a trained and competent rescue team. An emergency rescue drill must be undertaken within the first week following hand over of the crane and at pre-determined regular intervals thereafter not exceeding six months.

32.28.16. The Appointed Person must ensure that a planned maintenance programme is established and undertaken for all lifting equipment and associated lifting accessories.

32.28.17. The Appointed Person must ensure that all applicable crane records and certification are retained on site for the duration of the operations.

32.28.18. The Crane Supervisor/Lift Supervisor must undertake a monthly tower crane safety check.

32.28.19. It is best practice for the Crane Supervisor to bring the lifting team together on a regular basis to plan the following weeks work, the planning of lifts is critical to safe delivery, while at the same time reviewing the previous weeks operations.

32.29. Lifting with 180 & 360 Excavators

32.29.1. Limitations and controls specific to lifting with 180 and 360 excavators are detailed within 'Limitations of use when lifting with excavators' (HSF-RM-0039r)

32.29.2. Best practice is always to attach lifting equipment to the quick hitch (where fitted) lifting point not the dipper arm's

32.30. Lifting with Lorry Loaders

32.30.1. The use of a lorry loader must be via one of two contractual arrangements shown below. The supply and delivery of goods by lorry loader is a contract lift (see Table 10). Also see a 'A Suppliers Guide to Lifting Procedures for Lorry Loaders' for further guidance.

Table 10

The Business Unit requiring the load to be moved	
HIRED LORRY LOADER (Hired or Managed)	**CONTRACT LIFT** (Formally Contracted or Included with the delivery of goods)
The Site Lead must: • carry out all work in accordance with BS 7121 • supply the Appointed Person (AP) • The AP must plan the lift and operate a safe system of work • ensure that the lorry loader hired is of a suitable type and capacity • check the credentials of the lorry loader hire company and certification supplied • Consult the AP to ensure that the ground conditions are assessed and that stabilizer loads are adequately spread to ensure the ground bearing capacity is not exceeded	The Site Lead must: • specify that all work is to be undertaken in accordance with BS 7121 • specify that the contractor is to supply an Appointed Person • provide information on the ground conditions of the lifting area • confirm what other information and/or services will be provided to the Contractor
The lorry loader owner has a duty to: • provide a lorry loader that is properly maintained, tested and certified • provide a competent operator (if specified) • confirm to the Site Lead the size of standard spreader pads supplied with the lorry loader	The Lifting Contractor is responsible for: • supplying the Appointed Person; • planning the lift, and operation of a safe system of work • organisation and control of the lifting operation • providing a lorry loader that is properly maintained, tested and certified • providing a competent operator • Ensuring stabilizer loads are adequately spread to ensure the ground bearing capacity is not exceeded
The category of the lift determines the documentation required.	
Basic	**Intermediate & Complex**
• A Lift Plan • Risk assessment • Evidence of Operator Competence • Thorough examination certificates for all lifting equipment & accessories • The operator must assess the ground to ensure that the supporting ground is firm and can take the weight of the vehicle for the lifting operation.	• In addition to the Basic requirements • The Safe System of Work and Lift Plan are specific to the task • The Lift Plan includes a detailed dimensioned drawing of the lifting operation, the lorry loader and the load, the load path, pick-up and lay-down areas and slinging arrangements • The ground conditions and outrigger pad requirements have been assessed by a Competent Person

32.31. Lifting with Drum Winches and Capstans

32.31.1. The equipment Operator is responsible for setting up the winch in accordance with the manufacturers and relevant work instructions ensuring that the winch's anchorage is sufficient for the loads to be lifted. It must be located in a position giving clear lines of sight to all personnel involved in the lift. If this is not possible the method of communication will be established and agreed by the affected parties.

32.31.2. The Slinger attaching the load is responsible for ensuring that the rigging and rating of the rope and accessories are suitable for the loads to be lifted.

32.32. Passenger Lifts

32.32.1. If you are a lift owner or someone responsible for the safe operation of a lift used at work, such as a Facilities Manager or Supervisor, you are a 'duty holder' under LOLER. This means that you have a legal responsibility to ensure that the lift is thoroughly examined and that it is safe to use.

32.32.2. Regulation 9 of the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) requires that all lifts provided for use in work activities are thoroughly examined by a competent person at 6 monthly intervals where lifts are used to carry people and 12 monthly intervals where lifts are used to carry materials only.

32.33. Whilst Working on Network Rail And London Underground Rail Infrastructures

32.33.1. All lifting operations on rail infrastructure must be planned in compliance with the following:

- Network Rail infrastructure – NR/L2/RMVP/0200 Infrastructure Plant Manual

- All other Rail infrastructures – M&EE Codes of Practice (COPs)

32.33.2. Any Line Open (ALO) working must comply with M&EE COP0032.

32.33.3. Multiple Lifting (Tandem) on rail infrastructure with On-Track Plant must meet the requirements of the following:

- Network Rail – NR_L2_RMVP_0200 Module P503 - Lifting operations
- All other – M&EE COP 0008 – Multiple Lifting (Tandem) with Two or more Excavator Cranes

32.33.4. Balfour Beatty Rail excavator crane requirements:

- Similar basic characteristics, e. g same size & weight
- Have the same load/radius capacity
- Have the same RCI type
- RCI with the tandem lift (TL) facility which must be used.

32.33.5. The Sentinel Crane Controller must be present for the duration of all lifting operations on the rail infrastructure.

33. LONE WORKING

33.1. Lone working must only be carried out following approval from The Company Site Lead and once other options for eliminating lone working have been explored and dismissed, or if having more than one person undertaking the work increases the risk to the health and safety of the individuals involved.

33.2. Lone working must not be permitted for the following activities:

- Working in a confined space
- Activities requiring someone dedicated to a rescue role
- Working at or near exposed live electricity conductors
- Diving operations
- Vehicles carrying explosives
- Fumigation work
- Work near/on water
- Work at height (Incl MEWP operation)
- Working in an excavation
- Working on live gas pipes

33.3. Other activities may exist that are considered too difficult or dangerous to be carried out by an unaccompanied worker. This must be determined by a risk assessment.

33.4. Where a Suppliers employee is new to a job, undergoing training, performing a job that presents specific risks, or dealing with new situations, they must be accompanied until considered competent to carry out tasks alone.

33.5. Lone workers must be sufficiently experienced and fully understand the risks and precautions involved in their work and the locations they are scheduled to work in.

33.6. Training appropriate to the role must also be given to enable employees to cope with:

- Unexpected circumstances
- Potential exposure to violence and aggression
- Personal safety
- Conflict resolution or defusing techniques
- Summoning help
- Reporting Incidents
- Emergency situations, such as first aid or fire

33.7. The level of training must be based upon the level of risk to the Lone Worker.

33.8. The Supplier must implement a safe system of work to monitor lone workers, as effective means of communication are essential. The Supplier may be required to use a system already established on the project, if so this will be detailed within the PRE-START SUBCONTRACTORS MEETING.

33.9. The supervisor must also check and verify that communication devices are working effectively prior to commencing each lone working activity.

33.10. All weekend or night-time working must be agreed by prior arrangement with The Company Site Lead. Specific safe systems of work must be in place and competent supervision shall be in attendance at all times during the work activity.

34. MANUAL HANDLING

34.1. Designers have a key role in minimising manual handling issues. Wherever it is possible to design out manual handling operations, for example by specifying smaller, lighter building materials or identifying automated or mechanical processes, Designers should ensure these are included within their design. If a designer has failed to address manual handling issues in the design the Company will raise this and request a review of the specification.

34.2. **Competencies**

34.2.1. The Manual Handling – Competent Person must hold a current CITB Site Managers Safety Training Scheme Certificate (SMSTS) (or Company approved equivalent) and have attended a Manual Handling Training Course, or hold an industry accredited Manual Handling Assessor qualification (e.g. RoSPA).

34.2.2. All persons undertaking manual handling must have attended a Manual Handling Training Course.

34.2.3. The Manual Handling training course should cover:

- manual handling risk factors and how injuries can occur
- how to carry out safe manual handling including good handling technique
- appropriate systems of work for the individual's tasks and environment
- use of mechanical aids
- practical work to allow the trainer to identify and put right anything the trainee is not doing safely

34.3. **Manual handling – competent person**

34.3.1. At the commencement of each project the Company Site Lead will nominate a Manual Handling Competent Person.

34.3.2. On large, complicated or geographically spread contracts, it may be desirable to have more than one Manual Handling Competent Person

34.4. **Assessment**

34.4.1. The Supplier must ensure the task-specific risk assessment considers manual handling activities, that the hierarchy is followed where practicable, and manual moving and handling of loads is avoided, e.g. by using mechanical means to deliver / transport loads to the point of use whenever possible, etc.

34.4.2. If this is not possible a manual handling assessment must be completed, and a documented action plan devised to reduce the risk to the lowest reasonably practicable level e.g. sack trucks, powered hoists etc.

34.4.3. A Manual Handling Assessment must be completed for all materials identified which could create difficulty with manual handling and for all repetitious work involving the same personnel.

34.5. **Responsibilities**

34.5.1. The Supplier must ensure:

- All employees have attended relevant training sessions
- That those employees who fail to attend a training session for which they are nominated are counselled and re-nominated for an appropriate training session as soon as possible
- Documentation is produced and risk assessments reviewed specific to their task if a moving and handling operation cannot be avoided
- The findings of these assessments are communicated to all employees
- Any employee's concerns about moving and handling operations are acted on as soon as reasonably practicable
- Specialist advice is obtained from a Competent Person where necessary
- That all equipment used for moving and handling is proprietary equipment*, suitable for its use, inspected, thoroughly examined, serviced and maintained in accordance with the Lifting Operations and Lifting Equipment Regulations and the Provision and Use of Work Equipment Regulations and the Manufacturer's Instructions
- Moving and handling requirements are clearly identified during the recruitment process so appropriate medical and occupational health advice can be taken as part of pre-employment screening
- Allowance is made for any known health problems which may have a bearing on an employee's ability to carry out moving and handling operations safely
- That if an individual's state of health might significantly increase their risks of injury from moving and handling operations, they are referred to our Occupational Health Service Provider
- That safe systems of work are being implemented in the workplace
- That adequate staffing levels are maintained to meet the requirements of moving and handling operations

* custom or bespoke equipment must be certified and suitable for use (see PLANT)

34.5.2. Employees must:

- Follow appropriate systems of work laid down for their safety
- Make full and proper use of equipment provided for their safety
- Co-operate with the Company on health and safety matters
- Report any defects in systems, practices or equipment
- Co-operate with the Company in undertaking manual handling risk assessments
- Attend training when required to do so
- Take reasonable care of their own health and safety and that of others who may be affected by their activities
- Inform their supervisor when they believe that there is a risk of injury to health from a manual handling activity
- Inform their supervisor when they suspect the risk assessment is no longer valid
- Inform their supervisor of any health problem or condition that might affect their ability to handle loads safely
- Comply with any health advice given by Occupational Health

34.6. **Manual handling injuries**

34.6.1. In the event that an individual suffers a muscular-skeletal injury, which affects their ability to conduct manual handling tasks, the Supplier must consider whether any modification of the employee's duties is needed. They may consider making a management referral to the

Occupational Health Service Provider so that appropriate advice and guidance on fitness to work and a rehabilitation programme can be arranged, supporting the employee returning to work as quickly and as safely as possible.

34.6.2. All injuries shall be reported in accordance with the INCIDENT REPORTING AND INVESTIGATION section

35. NON-COMPLIANCE PROCEDURE

35.1. The Company takes its rules and standards seriously, and any breach by The Supplier or their employees will result in a relevant level of corrective action being taken. This corrective action could include a formal review of The Suppliers H&S performance and contract agreement.

35.2. The Company will always look to system and root cause failures in all incidents, but where a breach is wilful it will be dealt with appropriately.

35.3. All employees of The Supplier need to be aware that following a breach of an HSE rule or standard they may be subject to immediate corrective action which may include being excluded from site.

35.4. Corrective action will not be taken as immediate reaction to an incident but will follow a thorough investigation. Until the investigation is completed however, an individual may be suspended from working for The Company.

36. OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT

36.1. The supplier must ensure a suitable and sufficient Health Surveillance program that demonstrates legal compliance should be undertaken after a risk assessment is completed. This will show if there is exposure to a health risk. i.e., use of vibrating tools, noise, dust, night working. With this information the appropriate medical requirements can be completed as per the example below Table 11.

36.2. Baseline medical assessments should be conducted within the first 3 months of employment and prior to the conclusion of any probation period being signed off. Probation period must not be signed off without baseline health surveillance being undertaken.

36.3. Key: **Q =** Online questionnaire. **FFR =** Fit for Role medical. **PTS =** Personal track safety medical

Table 11

	Operative	Staff
Pre-Employment New Starter	Health Assessment Questionnaire	Health Assessment Questionnaire
Months 0-3 Baseline Measurements	*FFR medical for cat 1 workers (see appendix) Health surveillance: Respiratory Q Health surveillance: HAVS Q Health surveillance: Night workers Q Health surveillance: **Audiometry (Baseline test if exposed to high levels of noise (>80Db)	DSE self-assessment
Year 1	Health surveillance: Respiratory Q Health surveillance: HAVS Q Health surveillance: Audiometry assessment Health surveillance: Skin Q	

Year 2	Health surveillance: Respiratory Q Health surveillance: HAVS Q Health surveillance: Audiometry assessment Health surveillance: Skin Q	Eyesight Test (where requested) DSE self-assessment
Year 3	FFR medical for cat 1 workers Health surveillance: Night Workers Q Health surveillance: HAVS Tier 3 (Face to Face) Health surveillance: Skin Q	Office Staff Wellness Assessment (desirable) offered but not mandatory
Year 5	Appropriate Network Rail or London Underground Track Safety Medical Assessment at prescribed interval	Appropriate Network Rail or London Underground Track Safety Medical Assessment at prescribed interval
Leaver	***Exit medical if subject to Fit for Role medical Exit Health Surveillance: HAVS diagnosis Respiratory and/or audiometry function if not recorded within last 12 months or during Fit for Role medical	No specific requirements

*FFR medical will include health surveillance for respiratory, audio and skin
** Audio surveillance is conducted annually for the first 2 years and then 3 yearly after that (normally during FFR)
*** If internally transferring a full exit medical can be utilised as a baseline medical for another area of the business if consent is sought and this is made clear at the time of booking.

36.4. **Year 0 - New Start/Tupe - Baseline Assessment**

36.4.1. All new starters should complete a health questionnaire as provided in their pre-employment pack. Additional questionnaires may be required if the employee will be operating vibrating tools (HAVS Questionnaire) and/or is a Night Worker (Night Worker questionnaire).

36.4.2. All new start operatives, whose role exposes them to respiratory and noise health hazards, should have baseline health surveillance during their probation period, to record baseline respiratory and audiometry (hearing) measurements unless able to provide evidence of valid prior surveillance*. These measures are required where there is repeated exposure to specific workplace health hazards requiring the use of RPE and/or hearing PPE as a control measure.

36.4.3. Employees detailed in the Figure 5 “Cat 1 workers” are subject to a Fit for Role medical (FFR). Any role that requires this FFR to be completed (formerly known as Safety Critical) must have it conducted within the probation period. These medicals are repeated every 3 years.

*Conducted by a SEQOSH accredited OH provider and approved by the BBUK occupational health team

*FFR medical will include health surveillance for respiratory, audio and skin.

36.5. **Year 1 Operatives**

36.5.1. All operatives who have been risk assessed as being exposed to respiratory health hazards must complete a Respiratory Questionnaire. A Tier 1/2 HAVS questionnaire will need to be completed if the operative uses handheld vibrating tools. Skin Surveillance online questionnaire must be completed where exposure to known skin irritants is demonstrated through risk assessment.

36.6. **Year 2 Operatives**

36.6.1. All operatives exposed to respiratory health hazards requiring the repeated use of RPE must complete the annual Respiratory Questionnaire. A Tier 1/2 HAVS questionnaire will be required if the operative uses handheld vibrating tools. Skin Surveillance online questionnaire must be completed where exposure to known skin irritants is demonstrated through risk assessment.

36.7. **Year 2 Staff**

36.7.1. All staff identified as DSE users must complete a DSE self-assessment form. DSE users may decide to have an eyesight test undertaken by a qualified optician. This is done by the individual and is not organised centrally. Staff may be entitled to claim this cost back through employer.

36.8. **Year 3 Operatives**

36.8.1. All Cat 1 (Figure 5) operatives must have a Fit for Role medical and, if applicable depending on their activities and role, a HAVS face-to-face- assessment and Night Worker questionnaire. Skin Surveillance online questionnaire must be completed where exposure to known skin irritants is demonstrated through risk assessment.

NOTE: This Periodic FFR Medical covers all the requirements of safety critical workers; there is no need for any additional assessment but may not cover all health surveillance needed.

NOTE: Night worker is mandated to be offered and the offering must be recorded but the employee is not mandated to complete.

36.9. **Year 3 Staff**

36.9.1. All Staff can be offered an Office Staff Wellness Assessment; however, this is not a mandatory requirement to attend or be offered.

36.10. **Track Safety Medical Assessments**

36.10.1. All operatives who are required to have Network Rail medical must complete a PTS in line with age requirements and for London Underground a Track Safety certification must be completed. In addition, those exposed to respiratory health hazards requiring the repeated use of RPE, must complete annual respiratory questionnaires as appropriate. Annual HAVS questionnaires and HAVS face-to-face assessment, may be required to be completed if the operative uses hand held vibrating tools. A completed Night Worker questionnaire may also be required if applicable. They must also have a Fit for Role medical at intervals of no greater than 30 months, unless the PTS medical interval is less than this period.

36.10.2. Office based staff who need a current PTS requirement would only be subject to the appropriate PTS medical and not health surveillance or the 30-month FFR medical.

36.11. **Skin Surveillance**

36.11.1. Skin surveillance must be conducted in line with HSE guidelines, employees assessed as being exposed to potentially hazardous skin irritants must be shown how to perform daily hand checks and be aware of how and where to report any changes that are recorded in this daily check.

36.12. **Other Statutory Medical/Health Surveillance**

36.12.1. All other Statutory Medical/Health Surveillance (e.g. asbestos, lead etc.) will be conducted in accordance with appropriate legislation. Guidance can be obtained from the Occupational Health (OH) Administration Team.

36.13. **Leavers**

36.13.1. Where possible leavers who have had an on-going exposure to the aforementioned hazards requiring detailed Health Surveillance Programme should have an exit assessment to record

relevant measurements. This should be completed if not conducted in the preceding 12 months. Those people who have had Fit for Role Medicals conducted through employment could be offered an exit assessment and this should be either be conducted or a record confirming the decline of this offer by the employee.

36.14. **Consent**

36.14.1. In accordance with the provisions of the Access to Medical Records Act 1988, the employee has the right to have access to any medical report relating to themselves, which is to be, or has been, supplied by a medical practitioner for employment purposes or insurance purposes.

36.14.2. The employee will normally request access to information themselves, however when from a third-party consent must be specific and obtained via consent forms.

36.14.3. All requests for access to information pertaining to an employee's medical details must only be processed when consent is obtained. This is consent from the person who owns the information, and only the individual can consent to the release of their own information.

36.14.4. Consent must be specific and not in any way ambiguous. It must use specific language and directly consent to specific details being released to a specific individual or department. The OH Admin Team will not accept consent that is non-specific.

36.14.5. There are varying forms of acceptable consent:

- Handwritten consent
- Email consent from a Balfour Beatty email account
- Email from a personal account, as long as this has been verified and is recorded on the internal HR systems (apply caution with requests from colloquial or inappropriate email addresses)
- Documented verbal consent

36.14.6. There are varying forms on unacceptable consent:

- Text message
- Undocumented verbal consent E-mails from shared/generic inboxes

36.14.7. When medical information is being requested by a Balfour Beatty department or external body about an employee or prospective employee, consent or proof of consent must be obtained prior to any release. This must be kept with the OH file, as documented evidence that consent was obtained.

36.14.8. Major Projects – Highways Only – are required to complete an Occupational Health Privacy Statement.

36.15. **Exceptions (Disclosure of Information)**

36.15.1. Advice must be sought from a member of the OH Management Team. If the employee withholds consent, or if consent cannot be obtained for whatever reason, disclosures may be made only where:

36.15.2. They can be justified in the public interest (usually where disclosure is essential to protect the employee or another person from the risk of significant harm).

- They are required by law or by order of a court.
- Where there is an issue of child protection, the occupational health professional must act at all times in accordance with legal boundaries of a disclosure and be aware of their duty of care.
- If disclosure is clearly in the employees' interest but it is not possible or is undesirable to seek consent i.e. If the employee is thought to be a real danger to themselves and cannot be persuaded to seek help e.g., if they are displaying suicidal tendencies.
- If it is necessary to safeguard national security or to prevent a serious crime.

Figure 5 – Cat 1 workers detailing the need for Fit for Role Medical to be conducted

Fit For Role Medical (FFR) Conducted on a 3 Yearly basis "Where the ill health of an individual may compromise their ability to undertake a task defined as safety critical thereby posing a significant risk to the health and safety of others"			Health Surveillance				
Type of Worker	Examples/Explanation	Fit for Role Medical Required	HAVS	Respiratory	Audio	Skin Surveillance	NightWorkers
Asbestos Worker	Working with Asbestos materials. (Applicable to Sub-Contractor specialists only - evidence required)	√		√	√	√	
Using Breathing Apparatus (BA)	Those working under compressed air/Breathing apparatus/Hyperbaric	√	√	√	√	√	
Cabling	Low voltage and high voltage	√	√	√	√	√	
Confined Spaces	Tunnelling workers or as defined by HSE- Safe work in confined spaces 1997 (3rd Ed 2014)	√	√	√	√	√	√
Crane Workers	Operators, slinger, signaller, rescue teams	√		√	√	√	
Electrical Workers	Electricians	√	√	√	√	√	
Fabrication/Welding/Pipe Fitter	Fabricaton, scuplting processs, thermoplastics	√	√	√	√	√	
Gas Worker	Those working with installation and decommissioning of Gas	√	√	√	√	√	√
Highways Worker	High speed roadside, Paver, Asphalter, road constructors. Working within 5 meters of live traffic without a fixed barrier or any person within traffic managemnt in a high speed environment >50mph. Meet Highways England criteria for office workers loacted near traffic works	√	√	√	√	√	√
Offshore Workers	Wind Turbine workers, Danish sea farer, Gas & Oil	√	√	√	√	√	√
Plant Operators	Excavators, Dozer, Dumper, IPAF - 1B, 3A, 3B HGV, LGV.PVM	√	√	√	√	√	
Rail	Trackside workers, PTS cardholders	√	√	√	√	√	√
Traffic Management	Personel responsbile for traffic management, Banksman/PVM, signaller	√	√	√	√	√	√
Working at Height	MATS, OHL, Steeplejack, Scaffolders, Steel errectors, cladding workers, Those meeting "The Work at Heights Regulations 2005"	√	√	√	√	√	√

37. PEOPLE, VEHICLE AND PLANT INTERFACES

Table 12 PVPI Hierarchy of control

Level	Description	Risk Control Measures	Radio Communication Assessment
1 Eliminate	People plant/vehicle interface removed	Large fenced off area or designated access roadway, where reasonably practicable with people eliminated from the work area/route. Plant can operate without marshalling.	N/A
2 Minimise	Full, physical segregation of people and plant/vehicle	Erect physical barriers around a single operation outside the maximum reach of the machine. Marshall the Plant Safe Zones by physically restricting people from entering.	Radio communication required to control entry into the Exclusion Zone (see * below)
3 Minimise	Partial segregation of people and plant/vehicle	Use a visual means or clear separation (cones or spray marks) that denote the Exclusion Zone. Marshall the Exclusion Zone by physically restricting people from entering. This requires increased supervision and measures to prevent unauthorised access and all pedestrians must be in a position of safety.	Radio communications must be adopted for all activities in this scenario in conjunction with hand signals. (see * below)
4 Mitigate	No segregation of people and plant/vehicle	Exceptional tasks that require essential personnel to enter the 'amber' Plant Safe Zone (for example, kerb laying, disconnecting attachments, slinging loads, off-loading materials from forklift trucks or lorry beds). Must be mitigated through a robust site and task specific Safe System of Work.	Radio communications is imperative in ensuring that giving and receiving safety critical information and/or instructions are

Level	Description	Risk Control Measures	Radio Communication Assessment
		These tasks must only be conducted with: • clear communication between the plant operator or vehicle driver and essential personnel performing the task • a method of preventing non-authorised access • a full time Plant & Vehicle Marshal • increased supervision, and a strict discipline in executing the task exactly as written Personnel must not enter the red zone unless the machine functions are fully isolated, engine switched off where reasonable and operator indicates the plant is isolated & safe to approach	clear and concise and instant. (see * below)

***** Only when the Risk Assessment identifies that the introduction of radio communications either introduces additional risk (e.g. where the plant operator and PVM cannot maintain clear and unobstructed radio communications contact with each other throughout the full operation etc.) or adds no benefit can the requirement for radio communications be omitted from a safe system of work with Director authorisation.

37.1. Network Rail approved duplex communication is mandated on Network Rail infrastructure regardless of the hierarchy of control.

37.2. A hierarchy means that you start at the top and only if it is not reasonably practicable to do so can the next lower level be used. The justification for progressing down the hierarchy must be detailed within the People, Vehicle and Plant Management Plan (PVPMP)

37.3. Design Risk Analysis

37.3.1. Designers need to examine, assess and reduce the risks associated with their designs. The hierarchy of control Table 12 must be used for this purpose.

37.3.2. Considering the following measures at the design stage can assist safe site vehicle operations:

- allowing space around structures and site boundaries for safe traffic movement;
- designing one-way systems and drive-through areas to reduce the need for reversing;
- removing hazardous gradients and embankments;
- specifying suitable profiles, surfaces and traffic management for site roads, and the early installation of permanent roads with safe site access to and from the public highway;
- considering how site traffic routes can avoid hazards such as overhead electricity lines, railway lines etc. and how routes need to change as work progresses on site;
- indicating the maximum loading limits of floors used by vehicles, particularly during construction, demolition and refurbishment;
- relocating or protecting vulnerable services such as gas pipes and electricity cables; and

- passing on information on any features of the design presenting significant transport risks to other project team members as necessary, including significant risks during future construction work or maintenance.

37.4. Appointments

37.4.1. The Company Site Lead responsible for the day to day running of the project/facility will appoint an individual to act as a People, Vehicle and Plant Co-ordinator.

37.4.2. Based upon the risks of un/loading mobile plant, the Site Lead will review the need to appoint a 'Loadmaster' responsible for the safe practice of loading and unloading mobile plant on project sites and in plant depots. E.g., when multiple items of mobile plant are being delivered/collected, or the role is mandated by a client (i.e., National Highways). The appointed must be recorded within the People, Vehicle and Plant Management Plan (PVPMP).

37.4.3. Where the hierarchy prescribes that a Plant and Vehicle Marshal (PVM) is needed:

- Competent PVM(s) must be appointed and briefed on the relevant sections of the PVPMP
- The PVM must have:
  - Attended a Balfour Beatty recognised PVM courses which is either a
  - CPCS Plant and Vehicle Marshal, or
  - NPORS (CSCS)/NPORS* Plant and Vehicle Marshal, or
  - Internal+ Balfour Beatty Plant and Vehicle Marshal training course.
  - Any other Subcontractor or external PVM courses will only become recognised by Balfour Beatty through attendance / vetting by a Balfour Beatty approved PVM Trainer.

37.4.4. Their primary function will be to ensure segregation and they will also supervise the movement of vehicles/plant. When plant is undertaking a work activity (i.e., lifting, excavation or piling) a person with a relevant competency for the work activity will be required (i.e., Excavator Banksman/Slinger/Signaller/Machine Controller/Piling Rig Attendant).

Note: An individual with the relevant competency for the work activity can also act as the PVM only following a suitable and sufficient risk assessment where the situation allows the individual to carry out the PVM role and the relevant competency for the work activity; where this is not possible a separate PVM will be required supported by the individual with the relevant competency for the work activity.

37.4.5. The Company Site Lead will appoint one or more relevant individual(s) to undertake a Construction Logistics and Community Safety (CLOCS) Compliance Check.

37.5. Planning Site Set up

37.5.1. The risks from People, vehicle and plant interface(s) must be planned and controlled by application of the hierarchy Table 12.

37.5.2. Site speed limits must be set at 5 mph adjacent to pedestrian work areas, whilst travelling through a work area and when travelling over trackway/matting. A speed limit of 10 mph must be imposed elsewhere unless otherwise determined as a result of risk assessment and approved by the PVPC.

37.5.3. Where there are to be loading or collections, then the Company Site Lead will ensure a suitable Loading/Unloading Area is provided and Loading/unloading must only take place in designated areas.

37.5.4. The need for any item of plant or vehicle to undergo reversing manoeuvres on site must be avoided where reasonably practicable, by providing one-way systems, turning areas and drive-through loading and unloading areas**.**

37.5.5. Relevant signage, instructing drivers to report to the site office, will be displayed at site entrance(s).

37.5.6. All plant must have 360-degree vision/detection e.g. multiple mirrors, cameras or other means to eliminate potential blind spots. In the case of excavators' dual mirror upper/lower positions to be advocated to ensure visibility when the dipper arm is in the raised or lowered position.

37.5.7. The selection of plant and Plant Operators must be in accordance with PLANT section

37.6. **Radio Communications**

37.6.1. In cases where radio equipment is required between the Plant Operator and the PVM, only approved communication systems or other approved radio devices will be used (32.24). This must be documented within the PVPMP. Network Rail approved duplex communication is mandated on the Network Rail infrastructure between the Machine Controller and Operator.

37.6.2. Radio communications do not replace hand signals; they are to be used as well as hand signals. People must still always signal from a place of safety.

37.6.3. Using open channel communications requires discipline and there are some simple rules to know when safety critical information/instructions are being transmitted.

37.6.4. Personal communications or other media devices of any kind must not be used when operating or marshalling plant or vehicles.

37.7. **People, Vehicle and Plant Management Plan (PVPMP)**

37.7.1. The People, Vehicle and Plant Co-ordinator will ensure a PVPMP is produced for the site to ensure any remaining risk of interface between people, vehicles and plant is controlled safely.

37.7.2. The PVPMP must be supported by a detailed, clear, annotated and colour site drawing(s) or sketch for each depot, office location, section of the works or construction site. A separate PVPMP is not required for every section of highways works.

37.7.3. *NB: For smaller non-permanent sites and short duration transient sites (e.g. Repair, Maintenance, Faults, and Services or other short cycle works with restricted space), arrangements must be clearly agreed and documented as part of the site documentation to show how plant and vehicle movements will be managed to remove the risk of contact with people and property in accordance with the principles within this procedure. A model plan can be produced to cover these areas providing it is applicable to the layout and configuration of the site / activity. If the model plan is not applicable it must be reviewed and amended to suit the site conditions. Approved traffic management (Chapter 8) drawings can be utilised for this purpose.*

37.7.4. All drawings / sketches must be produced in sufficient time by a competent person to allow review in the context of proposed work activities and space requirements.

37.7.5. All relevant control measures of the PVPMP must be briefed to people entering or working on site. A record of this briefing must be documented

37.7.6. The PVPMP must be updated following any significant changes or reviewed at least every two months throughout the lifecycle of the works or activity. Static sites (e.g. depots, offices, and factories) must be reviewed annually unless there is significant change. Any changes must be communicated.

37.8. **Coordination of Plant Activities**

37.8.1. Any hazards associated with plant or vehicle movements and the inherent risks they present must be identified and assessed at the planning stage of the activity. See SETTING PEOPLE TO WORK SAFELY.

37.8.2. The Yellow, Amber and Red Zones detailed in the 'People, Vehicle and Plant Interface Zones' reference material (HSF-RM-0047a) must be observed wherever practicable.

37.8.3. Details of the Plant Interface Zones must be identified in the Safe System of Work and all of the work teams must be briefed on exclusion zones and the safe system of entry into the zones.

37.8.4. Where appropriate coordination meetings will be held collectively with our own teams, sub-contractors and Principal Contractor (where appropriate) both at the planning stage and at intervals throughout the work. Also, see 'Deliveries To & Collections from Site' (37.10)

37.8.5. Hazards arising from separate activities which may be occurring in the same or adjacent space and / or at the same time (by separate work groups or multiple contractors) must be given adequate consideration and the risk assessment must provide adequate control measures for every activity and their effect on each other. The hazards and controls arising from these interface issues will be included in the safe system of work.

37.8.6. Plant operators must be reminded during daily briefings that they become a pedestrian worker when they step out of plant.

37.8.7. PVM's are not authorised to direct traffic on a public highway.

37.8.8. Plant operated on a public highway must be in accordance with the 'PLANT' section.

37.8.9. For refuelling operations refer to the 'PLANT' section.

37.9. Reversing

37.9.1. Plant and Vehicles must not reverse out of a site onto the Public Highway unless a safe system of work can be established.

37.9.2. Where the potential for pedestrian worker interface exists, reversing manoeuvres must be carried out under the direction of a trained PVM.

37.9.3. Vehicle drivers must make sure any reversing aids (mirrors, CCTV, etc.) are working correctly and clear before operating the item of plant or vehicle.

37.9.4. Vehicles reversing into designated parking bays in dedicated car parks do not require a PVM.

37.9.5. The PVM must have an unobstructed walking route that is not in the direct route of the reversing vehicle.

37.10. Deliveries To & Collections from Site

37.10.1. Deliveries to and collections from sites must be planned in advance.

37.10.2. For delivery/collection of plant, see 'PLANT' section.

37.10.3. Deliveries/collections of 'Abnormal Loads' must have a load plan agreed with the relevant haulier (see HSF-RM-0047h for further guidance on 'Load plans')

37.10.4. Driver Site Rules will be communicated to suppliers in advance of all deliveries and collections.

37.10.5. Drivers in Highway Lane Closures must be briefed on the requirements of the Driver Flash Card for Highway Lane Closures This 'flash card' briefing MUST always be provided to all delivery drivers, at a physical barrier hold point in the closure (see PVPI Site setup specification before they reach areas where there may be pedestrian workers and before it is necessary for them to reverse.

37.10.6. Detailed Delivery Requirements will be used to inform hauliers and suppliers of delivery requirements; except for smaller non-permanent sites and short duration transient sites (e.g. Repair, Maintenance, Faults, and Services or other short cycle works with restricted space) where hauliers and suppliers must be informed of the defined plant and vehicle routes to the site, holding area, loading and unloading areas or facilities. Hauliers and suppliers must be encouraged to designate 'regular drivers' and the project must induct them.

37.10.7. Project sites are encouraged to provide accurate location details for deliveries, using tools such as 'What3words' etc

37.10.8. Where reasonably practicable drivers / operators working in **Highway Lane Closures** must receive the Project Induction (or relevant part of) prior to being allocated project operations / tasks / deliveries. This means that there is a strong preference to providing delivery drivers with a relevant induction before they are dispatched to a lane closure. However, it is accepted that for one time deliveries due to arrive mid shift this will not always be possible.

37.10.9. A safe means of unloading must be established and agreed prior to dispatch.

37.10.10. Any deliveries will be restricted to off peak times, local hazards (such as school opening and closing times) and any other client specific requirements as far as reasonably practicable. The PVPMP must highlight any control measures to be implemented, and these must be briefed to all relevant parties.

37.10.11. Where a supplier turns up outside of any expected/agreed delivery times they will be turned away unless they can be accommodated within the controls contained within the PVPMP.

37.10.12. Also see SITE ESTABLISHMENT procedure for more information about deliveries to site.

37.11. Un/loading Goods

37.11.1. Drivers must wear Personal Protective Equipment (PPE) detailed in the Site Induction (or delivery driver briefing) and the Risk Assessment and Method Statement/Work Package Plan.

37.11.2. Deliveries or collections made with Lorry loaders must comply with the 'A Suppliers Guide to Lifting Procedures for Lorry Loaders' (HSF-RM-0039d), which is also available on the companies external website for suppliers.

37.11.3. The vehicle driver must ensure that the load is stable prior to loosening any restraining straps upon arrival at the loading area. Any unusual loads will only be unloaded when a safe system of work has been agreed between the Company and the supplier.

37.11.4. Vehicles used for deliveries where the operator is required to work at height to un/load must be suitable for this purpose, i.e. steps, handrails or safety lines etc. As a minimum requirement, the principle of 3 points of contact must be adhered to along with suitable edge protection. In all cases the method of working must be covered in the Risk Assessment and Method Statement/Work Package Plan.

37.12. HGV Trailers Un/coupling

37.12.1. Before an HGV trailer is allowed to park and un/couple on site, the company Site Lead will ensure that the following control measures are in place:

- The un/coupling area is level and firm enough to support both the trailer landing legs
- Sufficient lighting is available -additional lighting may be necessary if uncoupling and coupling operations are being carried out during hours of darkness
- The vehicle drivers must be trained in the vehicle's specific coupling and uncoupling process and simple monitoring systems must be set up to check that safe systems are followed at all times
- Coupling and uncoupling must only be conducted by the vehicle driver
- Plant Vehicle Marshals must ensure they and others remain in a position of safety during coupling/uncoupling operations.

37.12.2. All HGV coupling and uncoupling operations on our sites are prohibited, unless:

- An audible alarm is fitted to the tractor unit warning the driver that the parking brake has not been applied. Such an alarm must be activated by the driver's door, must be clearly audible inside and outside the cab (preferably where the airlines are located). The alarm must also be distinctively different to the audible alarm warning for other matters – e.g. that the vehicle's lights have been left on; AND
- The semi-trailer is fitted with a device that prevents the trailer's parking brakes being released when the airlines are reconnected, until the driver provides a positive input – e.g. through manually resetting the trailer's park brake or depressing the brake pedal when he/she is back in his cab and in control of the vehicle.

37.13. Construction Logistics and Community Safety (CLOCS)

37.13.1. Where CLOCS is a client requirement, all vehicles over 3.5 tonnes must be compliant.

37.13.2. For all sites where vehicles are accessing project sites on a regular basis (i.e. more than 3 times in any 3-month period), vehicles are required to be compliant in accordance with the Fleet operator duties in the CLOCS standard.

37.13.3. Any non-compliance with the CLOCS Compliance Check form and Non Conformance Report must also be recorded

37.13.4. A copy of all compliant and non-compliant records will be issued to the driver of the vehicle, who must be advised to pass the information to their employer.

37.14. **Supervising the work**

37.14.1. The management and supervision of people, vehicle and plant interface MUST ALWAYS be planned, the safe system of work communicated to all involved and its implementation monitored by a nominated competent supervisor(s).

37.14.2. Supervision must be fully briefed on the approved safe system of work, Method Statement/Work Package Plan and PVPMP and have a copy available on site.

37.14.3. All personnel to whom this section is relevant must have a recorded briefing on the relevant sections in addition to the safe system of work. Also, see 37.14.5.

37.14.4. Supervisors will ensure that works are executed in accordance with the approved Safe System of Work, Method Statement (Work Package Plan) and PVPMP (direct or subcontractor), as applicable. Where the need arises to alter or depart from the plan for the work the Supervisor must place the affected part of the work on hold (in accordance with the GOLDEN RULES) while the safety of the change is reviewed and approved by line management with the authority to approve plans.

37.14.5. Supervisors must ensure that the workforce have received a briefing at the start of the shift and the relevant task briefing for the work to be undertaken before it starts.

37.14.6. Supervisors must ensure that clear information is communicated and briefed to specifically include the information that reversing cameras / CCTV on plant & vehicles are an aid to reversing in the same way as mirrors. Neither of which are a reliable means of adequately controlling plant and / or vehicle movements where the potential for pedestrian worker interface exists.

37.14.7. Where plant and vehicles are directed to secondary waiting locations, Supervisors must impose clear requirements via the PVM(s) to ensure that NO movement is permissible unless under express instruction from the PVM.

37.14.8. Zero Tolerance rules apply to People, Vehicle and Plant Interface

37.15. **People and Plant Interfaces in Highways (Motorways and High-Speed Dual Carriageways)**

37.15.1. Where response to ‘emergencies’ forms part of the project activities: -

- **Foreseeable** (e.g. Incident Support Unit operations) a standard safe system of work will be developed as far as is reasonably practicable and training provided to operatives in location specific risk assessment to implement the safe system of work to each situation.
- **Larger scale foreseeable** (e.g. emergency resurfacing) a standard safe system of work will be developed as far as is reasonably practicable which must be updated to reflect specific site conditions, specifically covering people, vehicle and plant interface issues (e.g. PVPMP sketch of the interfaces).

37.15.2. In situations where public safety requires that work must start at short notice, as a minimum, a pre-start discussion using a site sketch must be held between the PCs management / supervision and the contractors management / supervision to run through space restrictions, access points and the logistics of plant / vehicle movements and pedestrian worker segregation, including the stationing of PVMs and ‘hold points’ where reasonably practicable. Work may not proceed until both PC and Contractor have agreed how the measures required in this document for segregation, reversing and PVM control will be effectively implemented.

37.15.3. The provision of access / holding point location instructions must be provided to drivers at their despatch point. This will take the form of a map and clear written directions.

37.15.4. All personnel working at night in road closures must use helmet lamps showing red to the rear and white to the front, see PERSONAL PROTECTIVE EQUIPMENT for details. Replacement supplies of lamps and batteries must be readily available on site.

37.15.5. PVMs must instruct drivers to switch off flashing beacons when safely parked in the closure and to switch to sidelights rather than headlights. This will ensure that vehicles remain visible without causing glare. Drivers must switch beacons and headlights on before moving under the control of the PVM whilst in the site.

37.15.6. See PLANT for requirements relating to mobile plant movement on public highways.

38. PERSONAL PROTECTIVE EQUIPMENT

38.1. PPE layering requirements must be determined by a risk assessment and thermal protection requirements calculated to ascertain the level of FR/Arc flash protection that may be needed. The basic principle is that the Garment ATPV must be at least higher than the Arc Flash energy level as calculated.

38.2. Arc Reflective PPE, minimum Cal 8 must be worn by all company employees and supply-chain to the company when working on or near electrical plant and or equipment which is LIVE or has the potential to become LIVE at any voltage level. Cal ratings of Arc Reflective PPE must increase relative to the task to ensure adequate protection is provided to the person.

38.3. Balfour Beatty Electrical Authorised Persons must wear a minimum of Cal 8 Arc Flash PPE at all times regardless of voltage level. Cal ratings of Arc Reflective PPE must increase relative to the task to ensure adequate protection is provided to the person.

38.4. In order to maintain a uniform approach across the Company, standardised Personal Protective Equipment (based on risk assessment) has been identified.

38.5. **COMPANY MINIMUM STANDARDS**

38.5.1. The minimum PPE requirements on all Company sites are:

- Safety Helmet
- Eye Protection
- Safety Boots
- Gloves
- High visibility upper body PPE, Class 2 or above
- High Visibility Trousers, EN 20471:2013 Class 1 (where mandated by SBU). Balfour Beatty Rail mandates Orange Trousers as a minimum on all projects. Balfour Beatty Living Places mandates Class 2 Trousers as a minimum on all projects.

38.5.2. Supplier employees undertaking the role of Plant and Vehicle Marshall must be easily identified by means of unique PPE and wear, as a minimum, orange high visibility upper body PPE, Class 2 or above, as well as the hard hat requirements in section 38.6 below.

38.5.3. All employees, including subcontractors and agency personnel, and third parties must adhere to the above requirements along with any site-specific PPE requirements (as determined by risk assessment, regulation or client's requirements).

38.5.4. All employees, including subcontractors and agency personnel, and third parties must keep their torsos covered at all times. Shorts, cut offs or skirts are not permitted on construction sites.

38.5.5. All areas in which PPE must be worn must be identified, demarcated and appropriately signed where possible.

38.5.6. The Supplier or an individual's Line Manager is responsible for ensuring that suitable and sufficient information, instruction and training is provided to their employee(s) on the safe use, storage and maintenance of the PPE. They must also ensure their employees are instructed on when and how to wear it.

38.5.7. PPE must be visually inspected prior to use, to ensure that it is clean and in good condition.

38.5.8. PPE must be corrected sized for the user and comfortable to wear.

38.5.9. Periodic spot checks by the suppliers Line Managers and HSES Advisors, will be conducted to ensure PPE is worn and is in a good, clean condition.

38.5.10. PPE must not be used when it is:

- damaged
- no longer adequate to protect against the hazard; or
- contaminated and cannot be cleaned

38.5.11. Helmets must be replaced periodically as per the manufacturers' guidance or every five years as a minimum. Helmets must also be replaced after a significant impact.

38.5.12. NOTE: No headwear or clothing is to be worn beneath the hard hat which prevents the internal mesh from being in contact with the head of the wearer and impairing its function. Subject to a risk assessment, the Site Leader may authorise the issue of hard hat thermal liners.

38.5.13. On Network Rail Infrastructure only NRIL approved and issued thermal under-helmets and Balaclavas with the provision of side mesh to aid hearing are permitted for use.

38.5.14. To ensure peripheral vison and hearing is not compromised, hoodies are not permitted to be worn under a hard hat or bump cap whilst working in a safety critical environment, i.e. Depots, Factories, Construction Sites, Rail Infrastructure, and Workshops.

Hoodies are not permitted when working on any Network Rail Infrastructure.

38.6. Safety helmet colour scheme

38.6.1. The following colour scheme (Table 13) is applicable for Safety Helmets on all Company projects/sites/ facilities:

Table 13

	
BLACK – Site Supervisors	**ORANGE** – Slinger/Signaller
	
WHITE – General Use (including sites where colour coding is impractical), Manager, Client, Competent Operative	**BLUE** – Inexperienced Person/Visitor

38.6.2. Reflective markings and the role specific helmet decals below are permitted:

		
Plant and Vehicle Marshal	First Aider	Fire Marshal

38.6.3. Coloured high visibility vests are permitted to identify other roles.

38.6.4. Where these colour schemes do not match the Client's requirements (such as Network Rail projects), then the Client's requirements will take precedence.

38.6.5. Bump caps are acceptable in factories, offices, depots and occupied residential properties, following a specific risk assessment and where this is no risk of falling objects.

38.7. Safety harnesses, lanyards and inertia reels

38.7.1. All works carried out at height must conform to the requirements of the WORK AT HEIGHT section.

38.7.2. A certificate of conformity with the relevant BS EN standard must be provided with all new safety harness/lanyard/inertia reel equipment and carry a relevant CE mark. See Appendix G.

38.7.3. Safety harnesses/lanyards and inertia reel equipment must only be used for its intended purpose and in accordance with the manufacturer's instructions.

38.7.4. Safety harness systems must not be used unless a suitably positioned and fully secure anchorage point is available.

38.7.5. Safety harness users must receive IRATA, NPORS(CSCS), NPORS* (non cscs), IPAF or manufacturer's Harness training which enables the user to conduct a pre-use visual inspection, adjust their harness and know how to connect themselves to the structure or suitable anchor point.

38.7.6. Pre-Use visual inspections of safety harnesses, lanyards and inertia reels must be undertaken by the user and a recorded inspection must be undertaken weekly.

38.7.7. Safety harnesses, lanyards and inertia reels must have a recorded detailed inspection every 3 months. For low risk and infrequent harness use, extended inspection periods may be requested via the derogation process.

38.7.8. Harnesses issued to individuals for sole use (Personal issue equipment): The initial pre-use, inspection and use must be undertaken by a competent person who is trained in harness use and holds a recognised harness qualification from IRATA (Level 1 for rope access, IPAF (for use in MEWPs) or the manufacturer standards.

38.7.9. All harnesses must undergo a quarterly detailed inspection, undertaken by competent person who holds a recognised harness qualification from IRATA (Level 1 for rope access), IPAF (for use in MEWPs) or the harness manufacturer.

38.7.10. Hired harnesses must be supplied with a current examination certificate. Pre-use inspections should still be completed.

38.7.11. All users of harnesses must be suitably trained in harness use for the activity they are undertaking.

38.7.12. **Interim Inspections** – Where the risk assessment has identified a risk that could result in significant deterioration of the equipment before the next detailed inspection is due, an interim inspection should be undertaken at frequencies agreed by the Suppliers Site Lead and HSES Representative. Results of interim inspections must be recorded. See INDG 367 Inspecting fall arrest equipment made from webbing or rope.

38.8. **Respiratory protective equipment (RPE) (including breathing apparatus)**

38.8.1. Some pre-existing medical conditions (examples include breathing disorders such as asthma, skin allergies, or even heart problems) may restrict or prevent some workers wearing any RPE, or certain types of RPE. Workers must be fit to wear the selected and required RPE. If unsure, an appropriate medical assessment must be arranged via an Occupational Health advisor

38.8.2. All RPE must be manufactured in accordance with the Personal Protective Equipment Regulations (current edition) and equipment 'CE' marked – this appears with the letters 'CE' and a four-digit code that identifies the body responsible for checking manufacturing quality.

38.8.3. Before the user is provided with RPE, it is important that they are deemed medically fit to wear the RPE. See OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT.

38.8.4. The supplier's employee must have been face fit tested by a competent person (Trained by an Accredited Fit2Fit Fit test Provider) and a record kept of the results. Retesting of the face fit will be carried out at periods not exceeding two years unless there is a significant change to the shape or other characteristics of the face. Face fit testing is only valid for the equipment the user has been tested on. If equipment changes the user must receive a face fit test for that equipment.

38.8.5. Supply chain employees must be able to provide evidence of current face fit testing on site. The Site Lead is responsible for ensuring copies are kept.

38.8.6. The minimum standard disposable filtering face piece for particulates is FFP3 – unless identified by a risk assessment of the need for a higher standard.

38.8.7. The manufacturer's maintenance schedule (including recommended replacement periods and shelf lives) must always be followed.

38.8.8. Thorough maintenance, examination and tests of RPE (except for disposable, single-use RPE) must be carried out at least once a month and recorded on an RPE (including BA) Inspection Sheet. However, if the RPE is used only occasionally, an examination and test must be carried out before use and, in any event, not exceed three months. Emergency escape-type RPE must be examined and tested in accordance with the manufacturer's instructions as a minimum.

38.8.9. Respiratory health surveillance must be undertaken in accordance with the OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT.

38.9. **Chainsaws**

38.9.1. Chainsaw operators must be issued with, and instructed in the use of:

PPE	Activity
Suitable head protection (e.g. a motorcycle helmet which conforms with BS 6658 or UN ECE regulation 22.05). OR An ATV helmet/other head protection which conforms with BS EN 1384.	ATV driving operations.
Suitable head protection (mountaineering-style helmet complying with BS EN 12492.	Tree climbing / rope access operations.
Suitable protective leather gloves.	Clearing saw + pruning operations + any operations where there is a risk of contact with thorns, brambles and harmful weeds.
Suitable protective gloves for handling materials such as fuel, ropes or chemicals.	Plant and equipment refueling operations.
Chainsaw gloves which conforms with EN 381-7.	Chainsaw operations.
A mesh visor which conforms with EN 1731 and secondary eye protection which conforms with EN 166	Clearing saw + pruning + chainsaw + bench-saw + wood chipping operations.

Hearing protection which conforms with EN 352	All activities where noise levels exceed 85dB(A).
Leg and groin protection incorporating chain-clogging material which conforms with EN 381-5 NB: Type C leg protection for aerial work, because of the high all-round chainsaw cut protection. Where wearing Type C is impractical (e.g. because of the higher risk of heat stress), it may be appropriate to use Type A, where justified by risk assessment.	Chainsaw operations.
Protective boots with good grip and protective guarding at front vamp and instep which conforms with BS EN 17249.	Chainsaw + wood chipping operations.
Non-snag high visibility outer clothing appropriate to the prevailing weather conditions.	All activities.
A personal first-aid kit including a large wound dressing.	All activities.
A harness for supporting clearing saws (must be fitted and adjusted correctly).	Clearing saw operations.
Respiratory Protective Equipment (RPE) – minimum standard is FFP3.	Where COSHH assessment identifies their use – users must also be Face Fit Tested prior to use.
Upper body protection: Arm protection Chainsaw jackets to BS EN 381-11 - Chainsaw jackets can provide additional protection where operators are at increased risk (eg trainees, unavoidable use of a chainsaw above chest height). However, this needs to be weighed against increased heat stress generated by physical exertion (eg working from a rope and harness).	Chainsaw operations.

38.10. **Working over or adjacent to water**

38.10.1. All personnel working over, or near to water, and at risk of falling in must, as a minimum, wear a retro reflective life jacket designed to keep the wearer afloat in the water face up. The following standards of life jackets must be worn at all times:

38.10.2. Life jacket - BS EN ISO 12402-2, 12402-3, 12402-4 (designed to support an unconscious person in the water and turn them face upwards, either by built-in buoyancy, or by automatic inflation); or

38.10.3. Life jacket - BS EN ISO 12402-5 (designed to support a conscious person in the water and should only be used by those who are competent swimmers and who are near to the bank or shore, or who have help and a means of rescue close at hand)

38.11. **DISCIPLINARY PROCEDURES**

38.11.1. Any person who wilfully damages personal protective equipment or refuses to wear personal protective equipment when instructed to do so, may be subject to disciplinary proceedings.

39. PLANT

39.1. **Selection of Plant**

39.1.1. The Plant Specifications must be used when selecting and procuring items of plant (Plant and Equipment Specification).

39.1.2. Any item of plant which does not have a current Plant and Equipment Specification must be identified and approved by the company.

39.1.3. The Supplier must ensure that Plant and accessories provided are suitable and sufficient for the task and meet the requirements of the relevant Plant and Equipment Specification.

39.1.4. When selecting plant and equipment, consideration must be given to the risks introduced by their fuel sources, including storage and/or charging facilities.

39.1.5. The Supplier must ensure that all relevant permits or exemptions (i.e., waste exemption: T5 screening and blending waste) are identified applied for and in place before the plant is used.

39.1.6. Any 'Quick Hitch' attachments required to be fitted to Plant must be supplied, fitted and used in accordance with the Safe Use of Quick Hitch Devices.

39.1.7. All vacuum/suction excavation equipment must be procured or hired directly through the Company's Asset & Technology Services Centre of Excellence to ensure equipment and operators are provided to the correct specifications. This applies to both directly procured and subcontracted operations.

39.1.8. Human Form Recognition Cameras will be mandatory from June 2024 for Plant Supply Partners, and January 2025 for Sub-contractors. See HSF-SP-0047b HFR Camera System Specification for more details.

39.2. Tipping

39.2.1. Tipping can be dangerous. The machinery or load can cause serious harm. If not managed safely on site there is a risk of vehicles overturning, with a potential; to cause fatal accidents. HSE guidance should be followed to help establish a safe system of work. Refer to Workplace Transport Information for guidance when Tipping activities are taking place on site.

39.2.2. The Company's Site Lead and Plant Operator must make sure that tipping faces are suitable and safe.

39.2.3. Tipping sites should be:

- Level (a gradient that is within parameters set by the project (and calibrated on the inclinometers and free from ruts, potholes, mounds etc.)
- Firm and stable (the whole site must be able to hold the vehicle and load during tipping)
- Clear overhead (there must be no power cables or pipe work)

39.2.4. All Articulated Dump Trucks (ADT) working on Balfour Beatty projects must be fitted with an interlocked inclinometer to warn the driver when the skip of the ADT is outside of set parameters.

39.2.5. The reversing of ADTs up or down stockpiles is banned on Balfour Beatty projects.

39.2.6. Forward Tipping Dumpers must not travel on stockpiles and only discharge the load at the foot of the stockpile.

39.2.7. From Jan 1st 2020 where using a forward tipping dumper 6 tonne and above all Balfour Beatty project sites are encouraged to use an approved* cabbed version. Operators of approved cabbed dumpers can remain in the cab when loading** due to the additional risks of people, plant segregation when on foot. With effect 5th October 2020 approved cabbed dumpers are mandatory on all Balfour Beatty project sites. (See Plant and Fleet Specifications)

* Approved by Plant and Fleet Services

**(excluding in combination with excavators over 20t)

39.2.8. A site and task specific risk assessment must be undertaken in line with SETTING PEOPLE TO WORK SAFELY section to mitigate any residual risks e.g. types of attachment on dipper arms.

39.2.9. The Company's Asset & Technology Services will assess and over-see any further testing from other manufacturers and advise if and when other manufacturers have completed robust similar assurance tests.

39.2.10. Articulated Tipper Wagons

39.2.11. All non-licensed, road going tipper wagons, rigid or articulated are prohibited.

39.2.12. The use of licenced articulated tipper wagons is prohibited, unless discussed with the HSES Function and approved by the relevant Regional/Delivery Unit/Sub Sector Director, following a site

specific risk assessment that addresses the common causes of overturns: excessive gradients, ground failures, sticking or uneven loads, and mechanical failures.

39.3. Pipe Coil Trailers

39.3.1. Following Safety Alert 2023-UK-SA-002 HDD Pipe Coil Trailer, all coiled PE pipe trailer operations involving pipe diameters of more than or equal to 125mm must remain on hold pending investigation.

39.3.2. Coiled PE pipe trailer operations involving pipe diameters of less than 125mm are subject to a new temporary permit. This permit must be authorised and accepted by the Responsible BB Person, the Competent Person (either BB Site Manager or Subcontractor) and the PE Pipe Installation Team Leader.

39.3.3. ***With effect 1st January 2024**, the company have mandated the use a digital solution for Permits with some exemptions, the project will advise usages prior to work commencing.

39.3.4. Operatives and Supervisors must be trained and competent to carry out the works. Training must include EUSR Pipe Coil Trailer Course.

39.3.5. A method of controlling stored energy within the pipe end must be provided. For example, by means of a winch and attachment or strap into the trailer chassis.

39.4. Delivery/Collection of Plant

39.4.1. Based upon the risks of un/loading mobile plant, the Company's Site Lead may appoint a 'Loadmaster' responsible for the safe practice of loading and unloading mobile plant on project sites and in plant depots. E.g. when multiple items of mobile plant are being delivered/collected, or the role is mandated by a client (i.e. National Highways).

39.4.2. Loading/unloading must only take place in designated areas. Delivery Drivers must be briefed on the need to familiarise themselves with the area and make any necessary amendments to their Risk Assessment and Method Statement/Work Package Plan/Lifting Plan. The site will also advise any additional measures required

39.4.3. The Company's Site Lead will ensure that a suitable Loadmaster/Site Representative is available to accept the delivery/collection of plant/equipment. Under circumstances where the Loadmaster/Site Representative is not available, the delivery/collection will be postponed until a Site Representative is available.

39.4.4. All deliveries/collections must have a written Risk Assessment and Method Statement/Work Package Plan for unloading and loading, together with any necessary on-site assembly instructions, including attachments and accessories. This must take into account the following considerations:

- Delivery/collection location
- Ground conditions
- Weather conditions and weather forecast
- Overhead structures and cables
- Temporary Traffic Management arrangements
- Transfer routes
- People, vehicles and plant interfaces
- Load security
- Work at height (if applicable)
- Plant/Tools/Equipment used as part of the delivery
- Competences required to load/unload

39.4.5. The Supplier must ensure plant delivery/collection Risk Assessment and Method Statements/Work Package Plan are suitable and sufficient in advance of the delivery/collection taking place and must be accessible to the driver at the time of delivery/collection.

39.4.6. Upon arrival to site, the driver must park in a designated area and report to the Site Office (or Site Representative) to receive any site-specific instructions/induction. No unloading or loading operations are permitted until the Loadmaster/Site Representative has given authority to do so.

39.4.7. The Loadmaster/Site Representative will ensure that delivery operators meet the following minimum requirements:

- Lift Plan:
  - Basic* / generic lifts – may form part of a method statement / WPP
  - Intermediate / complex* - require a specific lift plan
    *Refer to LIFTING OPERATIONS for details on lift complexity.
- Valid (in date) CPCS/ALLMI or NPORS card or proof of in-house training covering the operations being undertaken
- Valid (in date) Thorough Examination Reports for all lifting accessories carried on the vehicle and potentially being used
- Valid (in date) Thorough Examination Report for the crane attached to the vehicle
- The SWL/WLL of the crane clearly displayed for all positions of the boom with the outriggers down and in place

39.4.8. Deliveries/Collections involving Plant which is driven or operated in order to complete the loading/unloading activity, must be operated by a sufficiently competent and trained operator/driver for the type of vehicle they are loading/unloading. The training must be sufficient for the loading/unloading activity to be completed in a safe manner. The training as a minimum must cover all aspects of operation necessary to complete the activity. The operator/driver must be able to produce upon request evidence that they have met the competency requirements for the activity they are undertaking.

39.4.9. Drivers must wear Personal Protective Equipment (PPE) detailed in the Site Induction (or delivery driver briefing) and the Risk Assessment and Method Statement/Work Package Plan.

39.4.10. Deliveries involving working at height must be in accordance with the WORK AT HEIGHT section

39.4.11. Vehicles used for plant deliveries where the operator is required to access the plant whilst loaded must be suitable for this purpose, i.e., steps, hand rails or safety lines etc. As a minimum requirement, the principle of 3 points of contact must be adhered to. In all cases the method of working must be covered in the Risk Assessment and Method Statement/Work Package Plan.

39.4.12. All lorry mounted cranes with swing up stabilisers must have been modified to ensure there is no fixed control entrapment risk. A QR code should be applied to compliant lorries. Any unmodified swing up stabilisers are not permitted on Balfour Beatty sites. When arranging deliveries, these requirements must be discussed with the company before dispatch.

39.5. Inspection of Delivered Plant

39.5.1. A visual inspection will be conducted and the relevant Plant Specification Checklist completed by the Site Representative. Additional information may be added to the Checklist if required e.g. actual sound level (dBA) where relevant etc. Any items found to be non-conforming must be evaluated by the company Site Lead to ascertain the severity of the non-conformance.

39.5.2. All suction excavation equipment regardless of the hirer must have the Plant and Equipment Specification Checklist – Vacuum Excavator fully completed prior to first use.

39.5.3. All plant, when received on site, must be entered into the site Plant Register.

39.5.4. All non-road mobile machinery (NRMM) deployed in Greater London and other geographies must be inspected to ensure that it meets the NRMM requirements outlined in (ENV-RM-0011a) and

registered accordingly on the on-line NRMM register.

39.6. **Authorisation to use**

39.6.1. The Supplier will ensure that authorisation to use plant will be given either verbally or by appointment to a specific role.

39.6.2. Suppliers must ensure only competent plant operators who are in possession of training specific to the item of plant are authorised to use it.

39.6.3. Competence requirements are detailed for in the following:

Plant Operator and Vehicle Drivers	Plant Operators – must only operate plant for which they have been authorised and hold a relevant & valid training/competency card from one of the following accreditation bodies: • Construction Plant Competence Scheme Card (CPCS) • National Plant Operators Scheme (NPORS (CSCS))* • International Powered Access Federation (IPAF) • Association of Lorry Loader Manufacturers and Importers (ALLMI) • Road Transport Industry Training Board (RTITB) • Energy & Utility Skills Register (EUSR) • Mineral Products Qualification Council (MPQC) bearing the Construction Skills Certification Scheme (CSCS) logo. • *Traditional (non CSCS) NPORS Plant training cards – See HSES TRAINING AND COMPETENCE Familiarisation of relevant procedures (As a minimum People, Vehicle and Plant Interface, Avoiding Danger from Services and Excavations)

Suction Excavator Operators	* The principal operator must hold the following competency:
	• CPCS card category
	  ○ A78E Vacuum Excavator – LGV – semi powered arm
	  ○ A78F Vacuum Excavator LGV – fully powered arm
	• Must have a valid, minimum category C, driving licence for driving on the public highway
	• Shall hold a current Driver CPC qualification
	• A minimum NRSWA operative competency
	• Familiarisation of relevant procedures (As a minimum People, Vehicle and Plant Interface, Avoiding Danger from Services and Excavations)
	• All operators must be trained in Working at Height to a recognised standard
	• Driver must have CLOCS standard training competency
	The secondary operator must hold as a minimum the following competencies:
	• (Non LGV driver) – CPCS A78G semi powered arm / A78H fully powered arm

	• Familiarisation of relevant procedures (As a minimum People, Vehicle and Plant Interface, Avoiding Danger from Services and Excavations) *Excludes Mini (non-powered arm) tracked suction excavators.
Skipper/Captain	The Skipper/Captain must hold: • a Boat Masters License (BML) or Standards of Training, Certification and Watch keeping (STCW) – appropriate to the vessel and the area of operation. • Skipper to be experienced in the vessel • When towing and/or pushing, the specific endorsement is also required. • Must be able to demonstrate they are fit for work Operators must be competent and hold a valid industry recognised competence card – as per BB competency standard

* fully & semi powered arm suction excavators must be supplied with two qualified operators

39.6.4. The Supplier must ensure that any trained but inexperienced or 'new to project' operatives, have direct supervision to ensure they have the competence and abilities to work to a high standard of safety in line with their training and Balfour Beatty GOLDEN RULES

39.6.5. Young Persons (as defined in YOUNG PERSONS) are prohibited from operating all Plant.

39.7. Pre-Use Inspection

39.7.1. Before any item of plant is used for the first time in a shift it must be visually inspected by the operator and any controls checked for any defects or faults. The results of the inspection must be recorded on the relevant Pre-Use-Daily-Weekly Checklist or in the case of Road Rail Vehicles, the rail specific document such as machine log book.

39.7.2. Where more than one operator inspects the item of plant in the day/shift, then the operator must review the previous operators' inspection record and update it only if there are any changes.

39.7.3. Inspections of trailers or towable plant must be completed before the trailer or item of plant is moved.

39.8. Mobile Plant Movement on Sites

39.8.1. The risks associated with the movement of plant on site must be either eliminated or controlled to prevent injury to pedestrians. See PEOPLE, VEHICLE AND PLANT INTERFACES

39.8.2. If there is a risk of mobile plant overturning from a gradient and or unstable ground conditions, then suitable control measures must in place e.g. A minimum distance of 0.5m must be kept from the slope/edge during plant movement and the edge must be suitably demarked.

39.8.3. At no time must anyone work or walk underneath the boom or vacuum nozzle of a vacuum excavator, whether it is being operated or not.

39.8.4. All lorry mounted cranes with swing up stabilisers must have been modified to ensure there is no fixed control entrapment risk. A QR code should be applied to compliant lorries. Any unmodified swing up stabilisers are not permitted on Balfour Beatty sites.

39.9. Mobile Plant Movement on Public Highways

39.9.1. Any plant that is to be used on the public highway (including the towing of trailers) must be covered by a safe system of work and risk, assessment and must comply with statutory highway and vehicle Regulations.

39.9.2. Operators must possess a valid driving licence for the category of plant or vehicle and the correct endorsement for towing a trailer, where applicable. Note that these statutory requirements can be particularly complex and may change if an empty trailer is loaded during the day or a payload on a trailer is off-loaded.

39.9.3. The Supplier must ensure that all construction site plant (excluding towed plant) that is used on the public highway has an Authorisation to Take Plant onto the Public Highway from the Company and is correctly prepared for travelling on the highway in accordance with the manufacturer's instructions.

39.9.4. Where plant is required to be escorted, the escort vehicle must be fitted with lighting and signage in accordance with New Roads and Street Works Act, Chapter 8. Routes must be planned in advance to ensure that any height, load and width restrictions have been identified.

39.9.5. The principle operator of any suction excavator must hold a valid, minimum category C, driving licence if driving on the public highway and hold a current Driver CPC qualification.

39.9.6. At no time must anyone work or walk underneath the boom or vacuum nozzle of a vacuum excavator, whether it is being operated or not.

39.10. Plant Used for Pumping Concrete/ Cementitious Screeds/Grout

39.10.1. In advance to the works the project manager representing the concrete pumping contractor or specialists works must complete and submit a Concrete Pumping Management Plan (HSF-SF-0046D) as required by our Plant Procedures. This plan must include the plant used, the competency of the people involved and the safe systems of work for pumping, cleaning and handling blockages as a minimum.

39.10.2. The Supplier must obtain a Permit from the Company prior to any plant being used to pump concrete/cementitious screeds/grout, and issue it to the plant operator, whom must follow the controls detailed within it.

39.10.3. ***With effect 1st January 2024**, the company have mandated the use a digital solution for Permits with some exemptions, the project will advise usages prior to work commencing.

39.11. Plant requiring an Environmental Permit

39.11.1. In order to operate, some pieces of plant such as crushers and concrete batching plant require permits from the Local Authority (called Local Air Pollution and Control (LAPPC) Permits). This includes mobile crushers & screeners and concrete batching plants operating on a Balfour Beatty site.

39.12. Parking & Security Arrangements

39.12.1. Mobile plant and trailers must be parked, keys removed and immobilised in designated areas on site at a safe distance from the site security fence and permanent and temporary buildings. Pressure must be released from air tanks, hydraulics, parking brakes engaged and other relevant methods specific to the item of Plant used to prevent movement.

39.12.2. Plant operators must ensure that their equipment cannot be operated by unauthorised persons at any time, including removing/securely storing keys and using security equipment where provided.

39.12.3. The coupling or uncoupling of HGV trailers must be in accordance with the PEOPLE, VEHICLE AND PLANT INTERFACES section.

39.12.4. Uncoupled trailers must have the trailer park brake applied or stop blocks (wheel chocks) placed behind the wheels.

39.13. Bulk Fuel Deliveries

39.13.1. The following controls must be in place during fuel deliveries:

- Deliveries must be carried out on surfaces that are impermeable to oil (e.g. concrete, asphalt etc.) and isolated from drainage systems
- Where drains are located next to storage tanks, these must be sealed using a drain cover
- An automatic overfill prevention device must be in place if the tank or vent pipe cannot be seen by the delivery personnel

39.13.2. During delivery of fuel, a Balfour Beatty employee must be present at all times to ensure that:

- The correct liquid is placed in the correct tank
- That the tank has sufficient capacity to take the delivery quantity
- Spill kits are readily available and clearly identified
- Any spillages are contained, cleared up as soon as possible and reported

39.14. Refuelling Plant

39.14.1. PPE must be worn in accordance with the requirements of the PERSONAL PROTECTIVE EQUIPMENT section.

39.14.2. Portable fuel containers:

- Must be a UN approved type, the contents clearly labelled and the container regularly inspected for signs of damage. Relevant safety signs must be displayed on the container
- Plastic containers must have a limited capacity of 10l
- Must be protected from sources of heat and stored out of direct sunlight
- Must be opened slowly to release any pressure that may have built up inside the container
- Must be opened or decanted at least 10 m from a heat source
- Must only be used with a pouring spout that is purposely designed for the fuel container
- Must be opened or decanted at more than 10 m from water courses and drains

39.14.3. Refuelling must take place away from potential sources of ignition with the engine switched off and when the equipment has cooled down.

39.14.4. When re-fuelling or decanting fuel, a minimum safe distance of 3 metres from other people, plant & vehicles must be maintained at all times.

39.14.5. Refuelling vehicles and mobile plant must only take place at designated refuelling points utilising fixed installations or proprietary fuel bowsers, with no pedestrians in the vicinity whilst the vehicles are being positioned in preparation for fuelling. For guidance see Plant Specification HSF-SP-0046HT – Refuelling Station.

39.14.6. Where multiple refuelling locations are required, these must be specifically designated and segregated from normal site operations. Where this is not possible due to space restrictions, a mobile refuelling area must be designated using appropriate signs and barriers.

39.14.7. Refuelling must take place at least 10m away from any watercourse or drain where practicable.

39.14.8. Drip trays/plant nappies must be used when refuelling and absorbent material must be available on site to deal with inadvertent spillages

39.14.9. Fuelling of plant by means of transferring fuel from one vehicle to another is prohibited, except mobile fuel bowsers.

39.14.10. Suitable firefighting equipment (typically an AFFF foam fire extinguisher) must be available at a designated re-fuelling point. Where re-fuelling is undertaken away from a fixed re-fuelling point the fire extinguisher fitted to the vehicle must be made available.

39.15. **Communication**

39.15.1. Mobile phones or personal media devices must not be used by Plant operators, plant and vehicle marshals or other duty holders whilst they are in the process of conducting their duties.

39.15.2. Approved methods of communication and the requirements for use are detailed within the PEOPLE, VEHICLE AND PLANT INTERFACES section and must be followed at all times.

39.16. **Maintenance & Adjustments**

39.16.1. Planned preventative maintenance and inspection must follow manufacturer's instructions. The Site Lead must ensure that all Plant is subject to planned inspections and maintenance by a competent person and that records are maintained.

39.16.2. Pre-Use Daily/Weekly Checklists must be used to record an inspection, any defects and corrective actions taken.

39.16.3. All plant operators must report all defects immediately to their supervisor who must arrange for the item of plant to be quarantined if the defect impedes the safe operation of the machine. All quarantined plant must be physically identified as "out of use" by use of a red card or similar site-specific scheme, until the defect has been rectified or the item removed from site.

39.16.4. Unless the manufacturer's instructions state otherwise, all electrical and mechanical Plant must be switched off or isolated before adjustments are made and before any accessories are connected or disconnected.

39.16.5. Maintenance personnel/fitters must receive the full project induction if allowed to work unaccompanied on site or must be accompanied by the Site Representative at all times.

39.16.6. The Company Site Representative must brief the maintenance personnel/fitter on the access/egress points to the location of the plant/equipment and must ensure that an exclusion zone is set up and enforced if the item cannot be moved from its work location.

39.16.7. All articulated dump trucks must be subject to instrumentation brake testing (such as SIMRET) prior to the vehicle commencing on site and at two weekly intervals thereafter. In situations where it is not feasible to carry out instrumentation brake testing, a weekly ramp/brake test must be conducted.

39.16.8. In the event of an unexpected battery discharge, (flat battery) that does not allow the plant item to start up independently, repairs must be carried out by a competent person. Recharging batteries in this situation must be completed by approved methods, i.e. removing the battery and charging via a battery charger, dedicated battery boost pack, etc. Charging batteries via jump leads attached between two items of plant is prohibited.

40. PUBLIC INTERFACE

40.1. Where any subcontracted activity is to be carried out in an area accessible to the public, The Supplier must produce a site-specific Method Statement/WPP and Risk Assessment, detailing the controls which are to be applied to ensure the safety of the public.

40.2. The Supplier will ensure that they conform to the project specific requirements regarding maintaining the integrity of the site boundary.

40.3. The Companies' Site Lead/Facilities Manager will appoint a 'point of contact' or 'public liaison' person to oversee communication with the local community, where appropriate.

40.4. Where any proprietary barriers are provided by The Supplier, they will be erected in accordance with the manufacturers' instructions or subjected to temporary works design.

40.5. Controls must be implemented to prevent members of the public, including children, falling from height or into voids including outside of working hours.

40.6. Plant operated on a public highway must be in accordance with the PLANT section.

40.7. The Suppliers' plant and vehicles must not reverse out of a site onto the Public Highway unless a safe system of work can be established. Plant Vehicle Marshall's are not authorised to direct traffic on a public highway

40.8. Site plant and vehicle arrangements must be planned to avoid adverse effects on nearby public parking areas such as school access and egress, to ensure that visibility for traffic (both pedestrian and vehicular) and pedestrians using nearby crossing points is not restricted. The arrangements will be highlighted and detailed in the sites People, Vehicle and Plant Management Plan.

41. TEMPORARY TRAFFIC MANAGEMENT

41.1. Balfour Beatty conducts a wide range of activities, which require us to install temporary traffic management arrangements to provide a safe working environment for its employees as well as others affected by its works. This policy, along with supporting documentation, addresses the Company arrangements for the provision of temporary traffic management when working on or alongside open to the public.

41.2. All temporary traffic management arrangements shall be designed, planned, installed, maintained and removed so as to ensure the safety and health of those operatives involved and all others affected by these activities.

41.3. In each supply chain partner that manages or undertakes temporary traffic management operations is responsible for:

- Establishing effective arrangements to ensure safe working on and within temporary traffic management, and safe passage for others through and adjacent to the works.
- Comply with relevant regulations, codes of practice and industry standards.
- Providing clear guidance to individuals on limits of their authority when responding to requests from clients, police and other enforcement authorities.

41.4. **Training and Competency**

41.4.1. All personnel who design, plan and approve temporary traffic management arrangements shall have demonstrable relevant experience, skill and knowledge.

41.4.2. All personnel involved with the installation, maintenance and removal of temporary traffic management shall possess demonstrable competence and must hold the relevant certificates/cards for the appropriate training scheme.

41.4.3. An exception to this rule on high speed roads is the trainee traffic management operative. This person will have successfully completed the one day off the job training and be working towards his assessments. No person shall be involved with traffic management operations unless they have successfully completed the relevant training course. Once completed they are allowed to work on the network providing they are accompanied by a registered TMF to mentor on a one to

one basis. These individuals are classed as untrained and must be working towards their assessments.

41.4.4. All personnel who work within and behind the protection of temporary traffic management shall be briefed on the risks, controls and personal disciplines required to work safely in this environment.

41.4.5. **Certification**

41.4.6. Operatives with a registered qualification in Unit 002 (Signing, lighting and guarding) in relation to the New Roads and Street Works Act 1991 (Qualifications of Supervisors and Operatives) Regulations, may only erect, maintain and remove 2 way portable traffic, Give and Take priority, signals, Stop Go boards, Stop – Works sign and full road closures (in accordance with design and TTRO) on single carriageway roads of up to and including 60mph.

41.4.7. Operatives with a registered qualification in Unit 002 (Signing, Lighting and guarding) in relation to NRSWA (Qualifications of Supervisors and Operatives) Regulations or NHSS 12D T1-T2 may only manually operate portable signals on single carriageway roads after receiving appropriate training and a site-specific briefing.

41.4.8. Operatives with a registered qualification in Unit 002 (Signing, lighting and guarding) in relation to the NRSWA (Qualifications of Supervisors and Operatives) (England) Regulations and a relevant National Highways Sector Scheme (NHSS – 12D T1 – T5) accreditation module, may implement, maintain and dismantle all temporary traffic management including, multi-phase portable traffic signals and complicated lane and road closures on high speed single carriageway roads and dual carriageways of 40mph and below.

41.4.9. Operatives with current accreditation under NHSS 12A and/or 12B module may install, maintain and dismantle traffic control measures on high speed dual carriageway roads subject to an appropriate risk assessment.

41.4.10. For all 12A works the team will be led by a fully certified Traffic Management Foreman (TMF). This person must not be acting as the IPV driver during the installation of the traffic management.

41.4.11. For all 12B works the team will be led by either a fully certified Traffic Management Foreman or a Lead Traffic Management Operative. The nominated person in charge must not be acting as the IPV driver whilst installing the traffic management.

41.4.12. On every major project or maintenance contract, involved on the strategic road network, the principal contractor must appoint a Traffic Safety and Control Officer (TSCO). The TSCO must have a NHSS TSCO card which must include a current 12A TMF certificate, first aid at work certificate and an IOSH managing safely (or similar approved) certificate.

41.5. Supply Chain

41.5.1. All suppliers of temporary traffic management will be selected from the Balfour Beatty approved suppliers list. Where a client requires the contract to use local resource, the subcontract approval process must be adhered to.

41.5.2. All contractors must have a quality management system in place, the scope of which includes traffic management operations.

41.5.3. All personnel involved with the installation, maintenance and removal of temporary traffic management shall possess demonstrable competence and must hold the relevant certificates/cards for the appropriate training scheme.

41.5.4. Where the contractor who designs their own traffic management, these designs must be approved by the contract TSCO

41.6. Design and Planning

41.6.1. Individuals involved in designing traffic management must be able to demonstrate competence through experience and training. Individuals must have attended the appropriate level of training as detailed in Table 14 below:

Table 14 -Temporary Traffic Management Designer Training

Business	Position	Competence (Engtech MIHE RegTTME (IHE))	Comments
Highways (New Post TBC)	TM Lead	Expert	Postgraduate Higher Diploma (PgHD)
Contract/Project Based	Senior TSCO	Expert	Postgraduate Higher Diploma (PgHD)
	TSCO	Intermediate/Expert	Postgraduate Diploma (PgD)
	TMF	Foundation	Postgraduate Certificate (PgC)
	LTMO	Foundation	Postgraduate Certificate (PgC)

41.6.2. Individuals signing off temporary traffic management drawings must have, as a minimum, successfully completed the intermediate course and remain registered as an Engineering Technician with the Institute of Highway Engineers. For complex schemes and the business TM Lead role the individual must have completed the Expert course and remain registered as an Engineering Technician with the Institute of Highway Engineers. Those individuals who are required to undertake dynamic risk assessments before installing temporary traffic management, must, as a minimum have successfully completed the foundation course and remain registered as an Engineering Technician with the Institute of Highway Engineers.

41.6.3. Planning for temporary traffic management operations must include reference to the time of day, location, traffic volumes, peak flows and the surrounding environment including the possibility of events effecting traffic flows or changing site dynamics. These issues must be identified as part of the design risk assessment.

41.7. Installation and Removal

41.7.1. Activities involving the installation or removal of traffic management must be carried out after making reference to the appropriate risk assessment and method statement found in the library of traffic management documentation.

41.7.2. Anyone involved in these operations must hold the appropriate NHSS/NRSWA competency card

41.7.3. As part of the risk assessment consideration must be given to working during the hours of darkness or poor visibility

41.7.4. Lone working is not permitted at any time when installing, maintaining or removing traffic management on high speed roads i.e. 50mph or above. Lone working on low speed roads may be permitted only after a site-specific risk assessment is carried out.

41.7.5. Prior to a closure being installed the TMF/LTMO must ensure they have a valid TTRO/SRW and the person in charge of the works, designated as the Permit Holder, must be in possession of a completed and signed Permit Control for the Installation and Removal of Temporary Traffic Management. The requirements of which must be adhered to.

41.8. Maintenance

41.8.1. All temporary traffic management, once installed, will be inspected periodically. The frequency of these inspections will be governed by the complexity and location of each scheme. The aim of these regular inspections is to ensure that:

- The layout is still fit for purpose
- Any missing or damaged items are removed and replaced with serviceable equipment.
- The conspicuity of the equipment is maintained through washing of the cone sleeves, signs etc. replacement of batteries or cone lamps. (A safe system of work must be in place for these maintenance operations).

41.9. **Equipment**

41.9.1. All equipment used for installing temporary traffic management must conform to the requirements of Chapter 8 of the Traffic Signs Manual or the Approved Code of Practice Safety at Streetworks and Roadworks.

41.9.2. Chapter 8 Part 2: Operations makes reference to vehicle standards in section 05 general vehicle issues, these are the minimum standards that Balfour Beatty or our supply chain equipment must meet.

41.9.3. Guidance on general sign condition can also be found in Chapter 8; Part 2 in Appendix A4 – Miscellaneous. This section shows photographs of what is acceptable and what is not with regards to the condition of signs and cones.

41.9.4. Safety at Street Works and Road Works Part 3: Equipment and Vehicles, details the standards and expectations for vehicles and equipment being used for traffic management operations.

41.10. **National Highway Sector Scheme Guidance**

41.11. **Sector Schemes**

41.11.1. **12A.** Installing, maintaining and removing static temporary traffic management on motorways and high speed dual carriageways for schemes incorporating contraflow operations and/or temporary road markings.

41.11.2. **NHSS 12B. I**nstalling, maintaining and removing static temporary traffic management on motorways and high speed dual carriageways for schemes not incorporating contraflow operations and/or temporary road markings.

41.11.3. The crew ratio for 12A/B works shall be as follows:

- 2-person crew = 12A Foreman or LTMO + 1 trainee
- 3-person crew = 12A Foreman or LTMO + 12A/B operative + 1 trainee

41.11.4. **NHSS 12C.** Mobile lane closure, temporary traffic management on motorways and other dual carriageways.

41.11.5. **NHSS 12D.** Installing, maintaining and removing temporary traffic management on rural and urban roads.

41.11.6. **12D Modules T1 – T7**

- **T1 & T2 -** Static works on single carriageways including all forms of traffic control except multi-phase traffic signals.
- **T3** – Static works on dual carriageways restricted to 40mph or less.
- **T4** – Convoy working
- **T5** – Multi-phase traffic signals
- **T6** – Registered Lead Traffic Management Operative (RLTMO).
- **T7** – Management and Client officers

41.12. **Competencies**

41.12.1. **12D Registered Lead Traffic Management Operative (RLTMO) –** An operative, who will have successfully completed an approved training course which included modules 1, 2 & 6 as a minimum, completed the competency assessment and has been issued with a registration card

issued by Lantra Awards. This person can supervise works for convoy working, multi**-**phase traffic signals and dual carriageways. The RLTMO should be able to demonstrate proven experience of relevant traffic management.

41.12.2. **12D Registered Traffic Management Operative (RTMO)** – An operative, who will have successfully completed an approved training course which included modules 1&2 as a minimum, completed the competency assessment and has been issued with a registration card issued by Lantra Awards.

41.12.3. **12A/B & C IPV Driver** – An operative who has successfully completed training and assessment and has been issued with a registration card by Lantra Awards. There are 3 categories of IPV driver:

- **Non- live lane** – hard shoulders only
- **Live lanes only** – driving an IPV as part of 12A/B works
- **Non- live lane & live lane** – Hard shoulders and driving an IPV as part of 12A/B

41.12.4. **12A/B & C registered** – An operative who has successfully completed training and assessment and has been issued with a registration card by Lantra Awards

41.12.5. **12A Traffic Management Foreman (TMF)** – The person named in the organizations quality plan as having the responsibility, training and experience to control 12A & 12B static temporary traffic management measures to meet the requirements of the contract specification. The individual must be registered as TMF by Lantra Awards. The TMF shall be site based and shall be an active member of the installation and removal team.

41.12.6. **Lead Traffic Management Operative (LTMO) –** The person named in the organization's quality plan as having responsibility, training and experience to control only 12B static temporary traffic management measures to meet the requirements of the contract specification. The individual must be registered as LTMO with Lantra Awards. The LTMO must be site based and be an active member of the installation/removal team.

41.12.7. **Traffic Management Operative (TMO)** – An operative who has successfully completed an approved training course and competency assessment and has been issued with a registration card by Lantra Awards.

41.12.8. **Traffic Management Unregistered Operative** An operative who has completed the 1 day safety training and works under the control of a TMF or LTMO and is directly involved with the installation, maintenance or removal of static temporary traffic management measures. Only 1 unregistered operative shall be allowed in any 1 gang, all other operatives must be qualified and registered as appropriate to their role and responsibility within that gang.

41.12.9. **Traffic safety and Control Officer (TSCO)** – A person who is registered as a TSCO by Lantra Awards and is appointed by the Principal Contractor to make all necessary arrangements for traffic safety and control.

41.13. **Standard and Relaxed works.**

41.13.1. **Standard** – Schemes are appropriate for works carried out in all weather, visibility and traffic flows and are likely to include temporary road markings and contraflows.

41.13.2. **Relaxed** – Schemes are appropriate for short term works with good visibility and low traffic flows. '**Short term situations'** are those that are expected to last less than 24 hours 'good visibility' means visibility extending to the full length of the stopping sight distance and 'low traffic flows' means flows less than the reduced available carriageway capacity when the works are in place. 'Stopping distance' is the distance required for a vehicle to come to a stop, taking into account the time taken to perceive, react, brake and stop safely as detailed in the Highway Code.

41.13.3. **Maximum length of site** – The maximum length of a site on a trunk road is 4km, the length of site is taken from the end of the lead taper to the beginning of the end taper.

41.13.4. **Distance between sites** – The minimum distance between sites should be at least 4km, the distance should be measured from the road works end sign and the start of the coning at the next

site.

42. TEMPORARY WORKS

42.1. The purpose of this section is to ensure that Temporary Works required for all the Company projects are designed, constructed, loaded, unloaded, and dismantled safely, and do not cause distress to the permanent works or adjacent third party assets. This section is based on Section 2 of BS5975:2019, which describes the procedural control of Temporary Works

42.2. Contained within BS5975:2019 (clause 5.1.3) is information on the many combinations of organizations that can be involved in temporary works. The framework of contractual relationships should be taken into account when planning the management of temporary works however, irrespective of each projects' contractual arrangements, the over-arching principle is that the PC's TWC has overall responsibility on a site.

42.3. **Temporary Works Coordinator (TWC)**

42.3.1. Individual responsible for the safe control and coordination of temporary works design and construction on site. They have the authority to stop the works if they believe there is a safety, program, or reputational risk of proceeding with inappropriate temporary works. Every project must have a TWC appointed.

42.3.2. The TWC is appointed by the Project Lead (PL) and approved by the DI.

42.3.3. The TWC will normally be based on site, but if deemed a small site or multiple isolated sites, then directly responsible from a remote location. (Note: G&W have multiple sites geographically distant from each other; hence there is no TWC based on every site)

42.3.4. The main duties and responsibilities of the TWC are:

- Ensure they have records of their TWC appointment and approvals from their DI.
- Coordinate with all parties involved in the design and construction of temporary works.
- Undertake regular interdisciplinary meetings to update the Temporary Works Register and continually review risk.
- Liaise with clients to determine if schemes may affect the public and to ascertain approval process and certification required.-
- Compile and periodically update the Temporary Works Register with all relevant information and to periodically review the Register with the TWD and PL to suit the project timeframe.
- Prepare/review Design Briefs for adequacy/completeness prior to issue to the TWD.
- As part of the requirements of Construction (Design and Management) Regulations (CDM), ensure all TWDs and their organisations, working for their project, are competent to undertake the design work.
- For all sole design services arrangements, the PL and TWC are to ensure that all external designers have completed the Designer Assessment Questionnaire. However, for all designs procured through either, supply of equipment, or as part of a construction subcontract arrangement, the PL and TWC are to ensure that all external designers have completed the Subcontractors Demonstration of Competence and to ensure that all previous prequalification exercises are registered on the Balfour Beatty supplier database.
- To understand the Project Fire Strategy, and to review temporary works risks for relevant fire safety design issues, in particular: design, location, protection of escape routes, identification and specification of all fire safety systems that are required, surface spread of flame requirements for surface materials, structural fire resistance requirements, fire compartmentation requirements including fire-stopping and cavity barriers, external fire spread, access and facilities for fire services.
- The TWC is to liaise with the DI to advise on TWD competency as necessary.
- Ensure that an adequate temporary works design is carried out.

- Ensure that temporary works are planned and designed in accordance with the relevant requirements of BB procedures e.g. Work at Height procedure.
- When selecting a Standard Solution those responsible will ensure that they understand and take account of the limitations of these designs so that they are only used in appropriate circumstances. The TWC is to ensure this process is followed, and that the Standard Solution is clearly illustrated in sketches, risk assessments if necessary, and described in the Method Statement.
- Supervise and assess the competency of the TWS with the PL, and to gain approval from the DI where the TWS is responsible for signing off Permits to Proceed.
- Ensure the TWS appointments have clearly defined limits of responsibility.
- Brief all TWSs on their duties and scope of responsibility.
- Ensure that the duration for temporary works designs, checking and construction are realistically timed in the construction programme.
- Ensure that the completed designs are obtained from the TWD within the required deadline. Ensure that the designer complies with the design brief and adequately describes the residual risks.
- Ensure that the TWD has assessed design risks specific to that design and has demonstrated a reduction of risk to an acceptable level through design mitigations. All residual risks are to be clearly shown on drawings. It is essential for the TWC to understand the designers risk assessment process to allow them to incorporate additional measures into specific RAMS.
- Discuss any changes to the design with the TWD and manage the design change process using the Design Change Form.
- Ensure that a temporary works design is checked by a TWDC with the correct level of independence.
- Ensure that a Temporary Works Design & Check Certificate is issued.
- Ensure that designs are issued to the construction team and other interested parties, e.g. client.
- Ensure that construction is only carried out from drawings issued ‘for construction’.
- Ensure that the construction method statement incorporates the requirements of both the permanent and temporary works designs, e.g. loads on foundations/permanent works, structural integrity, stability, specific sequence and hold points, etc.
- Check that materials and equipment are adequate, especially when they have been used before.
- Check preparations for temporary work structures (e.g. foundations) and allow erection to proceed through issuing of permits to proceed.
- Draw up and agree with the site team a list of hold points for certain operations for which inspection is required prior to work progressing further. This forms the basis of the Inspection and Test Plan.
- Carry out inspections of temporary works and permanent works at temporary stages, prior to loading and unloading, and ensure the competence of any persons where delegated to carry out on-site inspections. Records of inspections can be made on the Temporary Works Inspection Sheets Inspections should align with company defect free delivery plans and recorded in inspection and test plans.
- Ensure that all Basic Scaffolds (as defined by NASC document TG20:13) are inspected by a person who has passed a CISRS Basic Scaffold Inspection course. All other designed, or bespoke, scaffolds must be inspected by either:- a competent CISRS Advanced Scaffolder, who was not involved with the erection of the structure, or a person who has passed the CISRS Advanced Scaffold Inspection course.
- Ensure coordination of permanent and temporary works is achieved.

- Ensure that all temporary works are maintained and inspected at a defined frequency. (A stepped/battered excavation is covered by temporary works and therefore even though unshored, and is not erected, it still needs to be maintained and inspected.)
- Maintain adequate site records of all temporary works documentation:
  - TWC, ATWC, TWS appointments
  - Designer Assessment Questionnaires
  - Subcontractors Demonstration of Competence, with design
  - Temporary Works Register
  - TW Design Briefs and any subsequent changes to the brief.
  - TW drawings, risk assessments, & schedules.
  - Design and Check Certificates
  - Written authorisation for changes to design TW's from TWD using the Design Change Form.
  - Inspection and test records
  - Signed off permits to proceed/load/unload
  - Site TW meeting minutes.
- The procedure only requires Classes 1 to 3 to maintain the above documents. However, it is recommended to adopt similar records for Class 0 where possible, and also where the client may require documentation for all Management Classes of Temporary Works. Records of decisions of Class 0 Temporary Works being selected are useful for Method Statements, commercial decisions and for investigating incidents.

42.4. **Temporary Works Supervisor (TWS)**

42.4.1. Individual responsible for assisting the TWC with their inspection and administration duties.

42.4.2. TWS's are appointed by the TWC and PL, and approved by the DI using form Appointment of TWC/ATWC/TWS

42.4.3. When the TWS's inspections are counter signed by the TWC (and therefore accountability is taken by the TWC), then the approval of the DI is not required.

42.4.4. When the TWS is employed by a sub-contractor they are to be appointed and approved by their own company's DI, and reviewed and approved by the Balfour Beatty DI.

42.4.5. A TWS will be appointed for a specific item(s) of work on site (i.e. excavations, formwork, falsework) to suit their experience and expertise. The TWS will be able to carry out inspections and issue permits on the behalf of the TWC within the skill area they have been approved for. Records of inspections can be made on the Temporary Works Inspection Sheets.

42.4.6. In particular the TWS shall:-

- Ensure they receive a briefing from the TWC on their duties and scope of responsibility.
- Check that materials and equipment are adequate, especially when they have been used before.
- Check preparations for temporary works structures (e.g. foundations) and allow erection to proceed.
- Carry out inspections of temporary works, and permanent works at temporary stages, prior to loading and unloading.
- Ensure that erected temporary works, and permanent works at temporary stages, are maintained and inspected regularly.
- Refer back to the TWC to clarify all uncertainties before signing off any permits.

42.5. **Subcontractor's TWC's and TWS's**

42.5.1. There are 2 scenarios:

1 - BB retains responsibility for coordination of the Temporary Works

In this case the subcontractor should appoint a TWS. (Figure 2 in BS5975:2019 refers)

2 - BB delegates responsibility to the subcontractor for coordination of their own Temporary Works

In this case the subcontractor must appoint a TWC. They may also choose to appoint TWS's as deemed required. (Figure 3 in BS5975:2019 refers)

42.5.2. All subcontractor's TWC and TWS appointments are to be made by their subcontractor's DI, and approved by the principal contractor's TWC and DI.

42.5.3. The PC's TWC will retain responsibility for all temporary works on a project, irrespective of delegating these duties to subcontractors, and will agree the signatories for each permit applicable to an item of temporary works. However, each project will decide, through approvals by the PL, the PC's TWC and the DI, on how their temporary works are planned, managed and co-ordinated, and the levels of responsibility delegated to the subcontractors for signing off their own work.

42.5.4. Where there is any doubt over the competence of the subcontractor, the default must be that the PC's TWC, or their TWS's, are to inspect the works and sign off all permits and other required documentation.

42.6. **Temporary Works Designer (TWD)**

42.6.1. Individual or organisation responsible for the design of a temporary works scheme.

42.6.2. They will prepare competent designs in accordance with the Design Brief issued by the TWC. The TWD will be responsible for resourcing all designers necessary to meet the deliverables of the site brief. Design risks are to be assessed by the TWD and designed out or minimised where possible. All residual risks that cannot be minimised to acceptable levels must be communicated on all documentation, including drawings, so that design risks can be managed by others. The TWD must understand their duties under the Construction (Design & Management) Regulations.

42.6.3. If TW designs are procured outside of the company then these external designs must be checked or reviewed by a suitable internal BB TWDC, unless the TWC is confident that both external design and check will not subject the company to technical and safety risks.

42.6.4. Designers will consider, amongst other items: the Design Brief; construction sequence; erection and construction tolerances; testing; loadings; design life; design codes and standards; statutory requirements; ground conditions; health and safety; environmental effects.

42.6.5. Designers will prepare suitable calculations based upon British Standards, industry guidance, and recognised engineering principles. Sufficient drawings, sketches, design statements and outline method statements will be produced to enable the Temporary Works to be constructed, inspected, used, maintained and dismantled in a safe manner.

42.6.6. Where appropriate, the designer will identify inspection and test requirements, including hold points. The TWC must ensure that these requirements are incorporated into the Inspection and Test Plan.

42.6.7. The designer will sign a design certificate.

42.7. **TEMPORARY WORKS DESIGN CHECKER (TWDC)**

42.7.1. Individual or organisation responsible for carrying out a design check of a temporary works scheme.

42.7.2. The TWDC must view the Design Brief and ensure that the design complies with its requirements. The TWDC must complete the design check for structural adequacy and issue a Temporary Works Design & Check certificate when completed

42.7.3. For Management Class 2, 3 & 4 the TWDC should prepare their own calculations without sight of the TWD calculations, unless the design is complex and disputes need to be resolved by comparing design assumptions, computer inputs and outputs. It is good practice for the TWDC to review the TWD's Design Risk Assessment. Communication of design issues should be resolved

with the TWC or the TWD.

42.8. **Competence**

42.8.1. The TWC is responsible for allocating temporary works design to the most suitable, appropriate and competent TWD. Assessment of the competency of internal BB TWD's is to be undertaken by their SBU DI.

42.8.2. External TWD competence is to be undertaken by the TWC, with assistance from the DI and the BB TWD where necessary.

42.8.3. All TWD's must be reviewed for their appropriate skills, knowledge and experience, to perform structural calculations, analysis and organise the delivery of working drawings. All TWD's must have engineering knowledge and understanding, and the ability to identify design risks, and minimise these through competent, practical, buildable and safe temporary works designs.

42.8.4. There are no mandatory qualifications to be a TWD, although the DI and/or the TWC must appoint someone who is suitably competent and experienced for the project which they will be undertaking. Whilst it might be desirable to use Chartered Engineer TWD's for projects with highly complex, high value and high risk temporary works this is certainly not the case for projects that are relatively simple, low risk temporary works where a suitably experienced TWD would be most suitable. The experience and competence of the TWD should be commensurate with the scale and complexity of the temporary works which they are assigned to design.

42.9. **External TW design**

42.9.1. External temporary works designs may originate from either a consultant, proprietary supplier, or subcontractor's designer.

42.9.2. The DI or their nominated person, normally the TWC, is responsible for ensuring that all subcontractors that have an involvement in temporary works, have used competent designers and will review the competence questionnaires.

42.9.3. Subcontractors must demonstrate that their designers are competent by using the standard form Subcontractors Demonstration of Competence

42.9.4. All subcontract designs must be reviewed by the TWC with input from the Balfour Beatty TWD for Classes 1-4. Where designers are engaged directly by the project team, they must demonstrate their competence by completion of template form Designers Assessment Questionnaire.

42.10. **TEMPORARY WORKS REGISTER**

42.10.1. **Description of Temporary Works**

42.10.1.1. Describe the item of temporary works, e.g. formworks to west abutment wing wall, external brickwork scaffold to Sports Hall, ground support to MH 123. Each item of temporary works to be designed must have its own unique reference number.

42.10.2. **Management Class**

42.10.2.1. Temporary works will be classified according to the design complexity, execution risk, and consequences of failure in line with BS5975. The below classification may dictate the arrangements for design, design checking, inspection and release of hold points.

42.10.2.2. The temporary works Management Class may be dictated by the highest contributing risk as identified in the table below (refer to PAS 8811).

Design Complexity Risk	Execution Risk	Consequence of Failure Risk	Management Class
DC0: Standard Solutions.	E0: No identified practical mode of failure.	CF0: Benign, no impact.	**MC0:** Designer: Site Check: TWC
DC1: Simple designs.	E1: Minor structures with high level of robustness and redundancy.	CF1: Low impact, entirely within site, inconvenient but personal injury unlikely.	**MC1:** Designer: TWD Check: TWDC (Cat 1)

DC2: More complex or involved designs, or where there is an interaction between separately managed schemes.	E2: Conventional structures.	CF2: Potentially major effect & impact, but would not initiate any secondary events, chain reactions or major incidents.	**MC2:** Designer: TWD Check: TWDC (Cat 2)
DC3: Complex or innovative design, or which results in complex sequences or moving and/or constructing either the temporary works or permanent works.	E3: Schemes with dependency on critical structural details, significant tensile details, little or no redundancy, or inherent instability.	CF3: Catastrophic failure, or minor failure leading to secondary events, chain reactions or major incidents.	**MC3:** Designer: TWD Check: TWDC (Cat 3)
DC4: Abnormal and highly innovative designs beyond the scope of normal design codes and practice		CF4: Major catastrophic failure, leading to major financial or reputational damage to the overall business	**MC4:** Designer: TWD Check: TWDC (Cat 3) Independent Peer Review

42.10.2.3. For example, if your risks are; DC1, E1, CF2, you would use the highest associated Management Class of MC2 for the temporary works item.

42.10.2.4. The increase in Management Class indicates an increased risk with the temporary works item. This increases the independency of the design and check, and the scrutiny placed on the implementation of the temporary works scheme on site.

42.10.2.5. Examples of Design Complexity Risk items (DC0 – DC3) within each minimum Management Class can be found within Temporary Works Management Classes with Examples

42.10.2.6. Also note that BS5975:2019 (clause 13.8.5) states that for Cat 3 designs and design checks, the design parameters should be identified in an AIP or similar document (design statement), prepared by the designer and agreed by the client's technical advisor, or the PD. This is in line with the requirements of Highways England's BD2, but may not be necessary on many projects, so is at the discretion of the client and project contract.

42.10.2.7. The project controls for managing the temporary works are identified in Table 15:-

Table 15

Management Class	Identify the Temporary Works	Temporary Works Classification (see Note 1)	Options and Concept Review	Prepare Design Brief	Design and Design Risk Assessment	Design Check and Certification (see Note 2)	Site Inspection & Permit Sign Off (See Note 5)
Class 0	Project Team	TWC	Project Team	(see Note 1)	Project Team/TWC	TWC/TWD (see Note 3)	TWC, ATWC, or TWS
Class 1	Project Team	TWC agreed by TWD	Project Team	Project Team and approved by TWC	TWD	Collaborative check by another Engineer within the organisation	
Class 2	Project Team	TWC agreed by TWD	Project Team with assistance from TW dept if requested	Project Team and approved by TWC	TWD	Independent check by another Engineer within the organisation	
Class 3	Project Team	TWC agreed by TWD	Project Team with assistance from TW dept if requested	Project Team and approved by TWC	TWD	Independent check by a Designer from a different organisation	TWC, ATWC

Class 4	Project Team	TWC agreed by TWD and DI	Project Team with assistance from TW dept and DI	Project Team and approved by TWC	TWD	Independent check by a Designer from a different organisation. Also Peer Review (see Note 4)	TWC, ATWC

Notes

1. Design Brief not required for Class 0 however the scheme details must be recorded by a competent person and approved by the TWC. *Also, it is recommended to prepare a record for Class 0 solutions where possible, and also where the client may require documentation for all Management Classes of Temporary Works. These records are useful for Method Statements, commercial decisions and for investigating incidents.*
2. It is recommended that design check certifications are carried out in house. For all external designs, a design check/review must be undertaken by a suitable TWD outside that organisation. All designs must be reviewed by Balfour Beatty to ensure that the company business management system (BMS) is complied with.
3. A Temporary Works Design Check Confirmation/Approval form is required for Class 0 temporary works, unless it can be demonstrated clearly, that two competent persons have separately designed (originator) and checked (TWC, TWS) the scheme, and there are sufficient records demonstrating this e.g. referenced, signed and dated sketches.
4. The DI may appoint a representative or specify an independent review team.
5. The DI will approve all TWS appointments where they are both inspecting and issuing permits.

42.10.3. **Location**

42.10.3.1. Location of the temporary works item to be included in relation to existing assets, i.e. grid reference & level.

42.10.4. **Programme**

42.10.4.1. A record must be made of construction start date; submission date of the Design Brief to the TWD; considering time for client approvals, and any need for a design statement.

42.10.5. **Temporary Works Designer & Checker**

42.10.5.1. The TWD and the TWDC must be identified in line with the independency required as indicated from the Management Class table above.

42.10.5.2. Temporary Works in Management Class 0 do not require design calculations. However, sketches will be prepared to show the arrangement of the Temporary Works and identify the equipment chosen.

42.10.5.3. Designers are reminded to comply with requirements of the Construction (Design and Management) Regulations. The designer will provide information to the Principal Designer, via the TWC, as may reasonably be requested by the Principal Designer.

42.10.5.4. Where a complex temporary works scheme involves design contributions from more than one designer, one of the designers will undertake the role of lead designer. The lead designer for a temporary works scheme may not necessarily be the Principal Designer.

42.10.5.5. The lead designer will ensure that:

- There is an appropriate distribution of design tasks amongst the designers, especially where the design of temporary works is an integral part of the permanent works methodology.
- The communication of design data between organisations is controlled
- Design contributions from all designers are compatible with each other, and any necessary iterations are completed.
- The lead designer has a holistic understanding of the whole design.
- The design output is complete and clearly communicated.
- The Principal Designer is informed of significant risks that cannot be eliminated.

42.10.5.6. The same approach will be taken where the check of a complex temporary works scheme involves contributions from more than one checker.

42.10.5.7. Design will be carried out in accordance with sub-section 9 of BS 5975.

42.11. **Inspections and Permits**

42.11.1. Inspection & Hold Points

42.11.1.1. Initial construction hold points must be indicated here, along with the requirement for ongoing checks throughout the use of the temporary works scheme.

42.11.1.2. A hold point is defined as a stage in the temporary works process where no further progress is to be made until the necessary permit or action has been completed. An example of a certificate issued to release a hold point for an excavation includes permit to proceed, permit to load, permit to take out of use/unload.

42.11.1.3. Client Specific Design Statements and Checking Requirements

42.11.1.4. Additional documents and sign off required by specific clients.

42.11.1.5. Clients such as Network Rail, Crossrail, London Underground, Highways England, HS2 etc will have minimum technical approval systems to follow.

42.12. **Standard Solutions**

42.12.1. BS 5975 permits the use of Standard Solutions. Section 9.4.1 of BS 5975 states:-

"A "standard solution" comprises a suitable arrangement for which the basic design work has already been carried out and presented in a tabular or other easily assimilated form, and for which no further structural calculations are necessary."

For example, a Standard Solution may be the use of a trench box for excavation support, used in accordance with the supplier's recommendations.

42.12.2. Where suppliers produce Standard Solutions to suit their products, these should be in accordance with the recommendations of BS 5975 and should be accompanied by information covering layout, loading, limitations and tolerances, together with information for safe installation and removal.

42.12.3. When selecting a Standard Solution, those responsible will ensure that they understand and take account of the limitations of these designs so that they are only used in appropriate circumstances. No further design or design check is required, but the Standard Solution will be clearly illustrated in sketches and described in the Method Statement. The use of the Standard Solution will be recorded in the Temporary Works Register, and appropriate Permits used to release Hold Points.

42.13. **DESIGN BRIEFS**

42.13.1. It is the responsibility of the TWC to review and issue all Design Briefs to the TWD and TWDC. The TWC may enlist assistance from the site team to prepare the Design Brief and gather all necessary information.

42.13.2. Enquiries relating to the Design Brief must always be directed through the TWC.

42.13.3. Each Design Brief will have a unique number referenced back to the TW Register.

42.13.4. Information required for each Design Brief will differ depending on the nature of the temporary works scheme. In general, minimum information required includes:

- Specific unusual loading conditions - e.g. stockpiles /heavy plant hard standings next to cofferdams.
- Specific 'required by' date allowing a realistic design period (agreed with TWD).
- Relevant permanent works drawings (note that the designer may be able to obtain these directly e.g. from Business Collaborator or similar).
- Buildability notes or sketches by site.

- Preferred or available materials.
- A plan showing site topography (services, levels, existing buildings, cabins, etc).
- Appropriate site investigation with quantitative data e.g. borehole logs with soil descriptions; locations and ground levels; ground water regime; lab test results; interpretive report etc.
- Supplier plant loading information with dimensions, weights and imposed loadings.

42.13.5. Note that an incomplete Design Brief may delay preparation of the scheme, and an inaccurate brief will normally result in an inappropriate design.

42.13.6. Particular attention should be given to Design Briefs issued to specialist proprietary equipment suppliers and scaffolding companies, as they only accept responsibility for the ability of their components to resist the applied loads. Usually, interface design elements such as foundations, effects on the permanent works, large timber form make ups, timber wedges and packs, providing stability of 'top restrained' falsework are not covered within their design, which normally results in other designers completing additional supporting design work.

42.14. Temporary Works Risk 'Five by Five' Matrix

Severity	***S1***	***S2***	***S3***	***S4***	***S5***
Structural Integrity (st)	*No Loading*	*Acceptable Loading*	*Structural Distress*	*Structural Failure*	*Structural Collapse*
Safety (s)	*No Injury*	*Minor Injury*	*Major Injury*	*Fatality or Multiple Injury*	*Multiple Fatality*
Programme (p)	*No Delay*	*Hours Delay*	*Days Delay*	*Weeks Delay*	*Months Delay*

Likelihood	***L1***	***L2***	***L3***	***L4***	***L5***
	Improbable	*Remote*	*Possible*	*Probable*	*Almost Certain*
Probability of Occurrence	*0 - 1%*	*1 – 10%*	*10- 50%*	*50 – 90%*	*90 – 100%*

42.15. Risk Assessment Matrix

	L1	***L2***	***L3***	***L4***	***L5***
S5	***5***	***10***	***15***	***20***	***25***
S4	***4***	***8***	***12***	***16***	***20***
S3	***3***	***6***	***9***	***12***	***15***
S2	***2***	***4***	***6***	***8***	***10***
S1	***1***	***2***	***3***	***4***	***5***

42.16. Risk Descriptions

Risk Index	***Definition***
(Red)	*The risk is unacceptable. The level of risk must be reduced by alternative design.*
(Orange)	*The risk is on the borderline of acceptability. Design alternatives to be assessed or risk passed-on with guidance on control/monitoring arrangements together with contingency measures.*
(Yellow)	*The risk may be acceptable. Design alternatives need be assessed only if this can be done without detriment to other design aspects.*
(Green)	*The risk is acceptable. Design alternatives need not be assessed.*

42.17. Notation for Further Action (if applicable)

Symbol	***Description***
D	*Information to be included on drawing.*
S	*Information to be included in specification.*
H	*Information to be included in the Health and Safety Plan.*

F	*Maintenance and Demolition information to be included in the Health and Safety File.*
Des	*Action by another Designer.*
C	*Action by the Client.*

*42.18. **Design Check***

42.18.1. It is the responsibility of the TWDC to carry out a review of the temporary works design scheme in accordance with the Management Class assigned.

42.18.2. In detail:

- Management Class 0 - This could be the TWC; if suitable design experience (competency to undertake design) can be demonstrated.
- Management Class 1 - A member of the design team who has not been involved in preparation or in aiding the preparation of the design.
- Management Class 2 - An individual not involved in the design and not consulted by the designer.
- Management Class 3 - A member of a separate design organisation, which might be an external consultant, who can be regarded as fully independent of the original design group.
- Management Class 4 - A member of a separate design organisation, which might be an external consultant, who can be regarded as fully independent of the original design group. This will be subject to an independent Peer Review.

42.18.3. The design check ensures that the design is specific for its purpose, buildable, complete with specification, method and setting out data, conveys residual risk information, and also complies with the Design Brief.

42.18.4. The original designer's calculations will not normally be referred to except to determine relevant assumptions or specific codes used or to resolve any disagreement on matters of loads/stresses etc.

42.18.5. If the check is a completely independent check to Management Classes 3 & 4, the TWDC will communicate through the TWC, and not directly with the TWD, to close out any comments or amendments to the design.

42.18.6. On successful completion of the check, the TWDC will issue a design check certificate.

42.19. **Power T&D Specific Items**

42.19.1. National grid projects must have the design verified by a qualified TP141 engineer. This typically includes all Management Class 2 and above designs.

42.19.2. Design verification and assurance, in accordance with National Grid's UKBP/TP188, shall be applied to all Management Class 3 TW as well as sealing end protection scaffolds & temporary scaffold guards for power line crossings. Additionally, Management Class 2 TW will be categorised as either high or low risk, in accordance with TP184, Cl 7.2.

42.19.3. All Design must comply with ENATS 43-119.

42.19.4. Where TWS(Ex) training is needed for management of excavations, refer to 42.20 below for requirements.

42.20. **Gas and Water Specific Items**

42.20.1. To further support the work carried out within the TW Procedure a G&W Temporary Works Guidance Document has been produced. This Guidance document requires to be read in conjunction with this TW section.

42.20.2. Temporary Works must be managed by a TWC, however where they are based off site, they must delegate the management of standard or bespoke solutions, inspections, and issuing of permits, to authorised TWS's.

42.20.3. However, as the majority of temporary works schemes within G&W, focus on stepped/battered excavations and supported excavations, the role of the TWS (Excavations) is in place to manage

the use of the standard solutions. The TWS(Ex)'s are required to have specific excavation training and experience to manage the temporary works, and to have attended and passed, a BB internally delivered two day specific TWS(Ex) training course, where they understand: -

- Excavation temporary works, wider roles and the management thereof
- The range of technical standard solutions available from the BMS
- How to apply these standard solutions, if deemed suited, to shored excavations up to
- 2.0m deep, and unshored excavations up to 3.0m deep. (Battered / stepped excavations
- between 2.0m and 3.0m must have involvement and sign-off from the TWC)
- How to develop, deliver and issue a briefing of the excavation permit to the Site Team
- If the technical standard solutions not deemed to be sufficient then the TWD is contacted

42.20.4. Where the TWC requires a higher level of TW competency on a site or the use of bespoke solutions (excavation related or not), they must ensure a TWS is engaged to manage the temporary works. The authorised TWS must have attended a specific TWS training course, where they understand: -

- An introduction to Temporary works, wider roles and the management thereof
- The range of technical standard solutions available

42.21. **Balfour Beatty Rail**

42.21.1. Where Temporary Works are installed on Rail based projects the risk to the operational railway must be taken into account. The TWC will be required to liaise with the relevant railway authority and agree if approval for the works is required. The TWC will take into account the available access for inspection when specifying the Temporary Works via the Design Brief.

42.21.2. For temporary works on London Underground / TfL Infrastructure a Temporary Works Concept Design Statement must be prepared and accepted by the relevant head of profession or delegated authority.

42.21.3. Temporary Works on Network Rail will be reviewed by the TWC and Network Rail Designated Project Engineer (DPE) to determine if Network Rail approval is required.

42.21.4. Where Network Rail approval is required Network Rail forms F002 and F003 as per NR Business Process NR/L2/CIV/003 must be completed using the Temporary Works option and submitted to the Network Rail Designated Project Engineer for approval. The F003 form will act as the Design Check Certificate.

42.21.5. Temporary Works Designers and TWCs are to be appointed as Contractors Responsible Engineer (CRE) as per Network Rail standard NR/L2/INI/02009.

42.21.6. Typically, the CEMs take on the role of DI as agreed with the ORR

42.22. **HIGH RISK ACTIVITIES**

42.22.1. **Demolition Work**

42.22.1.1. All demolition work shall follow the DEMOLITION section

42.22.1.2. For high-risk demolition the TWC is to ensure that both the HSES, and Engineering (Temporary Works), TWD functions are to review the Risk Assessment and the Work Package Plan to identify key structural stage hold points and temporary structural support.

42.22.1.3. Demolition Works Pre-start Planning Checklist and safe system of works checklist forms to be followed and signed by the Engineering (Temporary Works) functions where necessary.

42.22.2. **Ground Support Methods**

- "Dig and Push"
  The ground support term which defines installation of ground sheeting systems progressively during excavation normally whilst installing propping support.

The method is normally selected where good ground conditions exist and where risk assessments dictate ground movements can be controlled appropriately.

- "Pre-driven"

  The ground support term which defines pre-installation of ground sheeting systems before excavation commences.
  The method is normally adopted where control of ground movement is important.

  The pre-driven sheeting system has to be designed for both driving conditions and excavation stages.

42.23. **Dewatering**

42.23.1. Appropriate dewatering methods must be engineered to allow for any excavations to be in the dry.

42.23.2. Dewatering systems must be designed so that there are no detrimental ground settlement effects on surrounding assets, structures and ground generally. It is normal that complex dewatering systems are designed, supplied and installed by external companies.

42.24. **OHL Work**

42.24.1. For all Fall Protection Scaffolding, the clearance between conductor and scaffold should be assessed on site, if the 'cold' sag of a conductor is approaching the 'live zone' or 'vicinity zone', some experience and guidance should be sought on this from a line designer. Power Line Fall Protection Scaffolds shall comply with the requirements of Energy Networks Association – ENA-S-43119 issue 2.

42.25. **Excavations**

42.25.1. Excavations pose a high risk to projects.

42.25.2. All excavations are temporary structures and therefore need designing, checking and construction using this temporary works process.

42.25.3. There are statutory requirements under the Health and Safety at Work Act for regular monitoring and inspection of excavations, further guidance is available within EXCAVATIONS section.

42.26. **Rebar Stability**

42.26.1. All steel reinforcement structures will be treated as Temporary Works until encapsulated in hardened concrete. The risk of instability increases with cage weight and height. Risks are much greater when a cage is freestanding at any stage of its assembly due to buckling & sway.

42.26.2. Reinforcement cages for walls, columns, slabs and other slender elements are engineered temporary structures, where safe stability is ensured through the Temporary Works process. Traditionally, safe stability has been ensured by fixing cages against rigid elements e.g. shutters to prevent buckling & sway, reliance on experience, custom and practice using competent steel fixers and competent supervisory staff. However, a number of recent industry reinforcement incidents has resulted in the requirement for more site guidance and the need for increased technical controls.

42.26.3. If reinforcement cages are adequately restrained horizontally either by:- the formwork shutters, access scaffolds or, external props, then these cages do not require designing as free standing structures with sway affects. However, sufficient design checks then will be needed to satisfy the structural capacity of those shutters, scaffolds and props. The restrained cage must be checked to ensure it will not buckle or bend between support points. Loads imparted to the cage from the support system also need to be considered in this check. The overall assembly sequence, including placing and removing temporary restraints, must be specified in the design, and controlled on site. There may be several key stages of assembly with different stability conditions. Each stability condition must be identified in the design, together with the required site controls.

42.26.4. If reinforcement cages are not restrained horizontally by external elements then the cage must be designed to support itself, wind loads etc. The effect on stability from cage deformation must also be considered in this design. Internal stiffening bracing bars, additional to the permanent works reinforcement, is routinely needed to provide a truss effect, to strengthen many forms of cage.

42.26.5. Base, slab and beam cages can rack over sideways. Where this could cause harm, the system supporting the top reinforcement must be designed to resist horizontal sway affects and vertical loads, throughout all stages of cage assembly. (Sway causes deflection leading to greater bending, buckling and probable collapse).

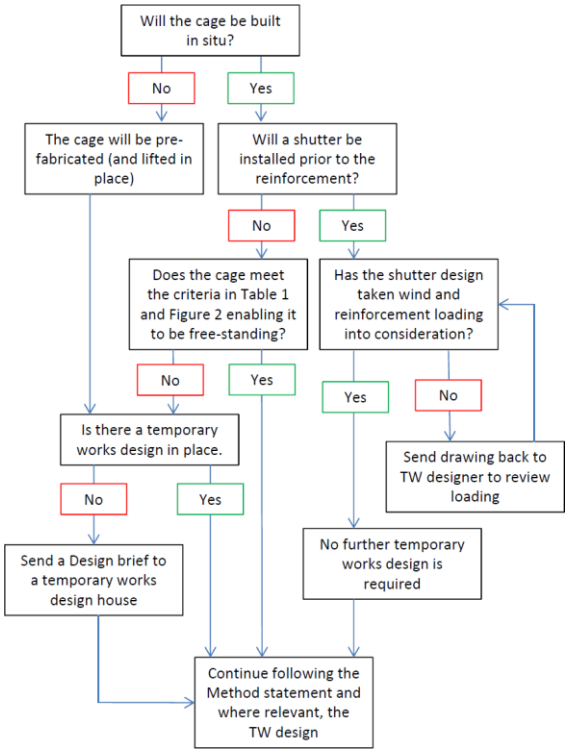
42.26.6. Triggers for recent cage collapses include: incorrect perception that cages are rigid and will self-support (failure to appreciate a TW design is required); un-designed, improvised support solutions; failure to check installed TW is in exact accordance with the design; departure from an approved TW design; no planned sequence of support for each key stage or failure to follow the prescribed sequence. This procedure therefore treats all cages as Temporary Works, requiring design for stability and the implementation of site controls (inspection and hold points). The level of control must be appropriate to the risk and consequence of failure. This is broadly dictated by cage size.

42.26.7. There is a lack of industry guidance on the assessment of strength and stability of reinforcement cages. TW designers should not only be aware of the normal buckling, bending & sway effects, but also the potential for non-linear behaviour of cages which may amplify sway.

42.26.8. The TWC is responsible, with advice from the TWD and others, to list all rebar elements onto the Temporary Works Schedule and to decide on the Management Class. Grouping cages by area, element type, cage form or location and developing several standardised design solutions for the main cage forms, are practical expedients to support efficiency of the TW design, TW control and construction process. It is important to understand that when the form of the cage changes significantly, a new or amended TW design is likely to be required. Close coordination with the PWD is necessary for the communication of any residual design risks, and they may also enable a degree of standardisation to be introduced to the cage form and the TW solutions. The TWC should follow the flowchart shown in Figure 6 to understand how the height of wall cages and other custom and practice checks can raise or lower the management class recommended.

42.26.9. Note that additional design and checks will be needed for lifting of pre-assembled rebar cages (Design class 2 or 3, depending on degree of risk and complexity)

Figure 6



42.27. DESIGN CHANGE

42.27.1. The TWC must manage all design change. If design changes are required after the checked design has been issued, it must be identified and communicated to the TWD using the Design Change form or with a newly issued Design Brief Form.

42.27.2. The TWD must review and amend the design in accordance with the changes required. The revised design must be checked by the TWDC, and a new Temporary Works Design & Check Certificate issued.

42.27.3. The amended design must be approved by the TWD and the TWDC.

42.27.4. The TWC must ensure that all variations to the original design have been incorporated and agreed by all parties, before release of any hold points.

42.27.5. The Design Change Forms should be used for Classes 1, 2, 3 and 4.

42.27.6. It is also recommended to be used for Class 0, where necessary to suit the project, at the discretion of the TWC.

42.28. INSPECTION & PERMITS

42.28.1. The TWC, with input from the TWD via the design details, will specify mandatory inspections at hold points throughout the construction of a temporary works scheme.

42.28.2. On appointment, the TWC is empowered to use engineering judgement when managing temporary works across the project. They are accountable for delivering the temporary works with a safety first approach, yet are also authorised to make engineering decisions, when competent, to support the project team

42.28.3. Hold points are cut-off points to inspect the works, after which access to rectify work would be very difficult, such as falsework foundations after grid erection, or varying levels of cofferdam support frames. Generally, hold points will be specified:

- Prior to loading the works, e.g. placing concrete onto falsework.
- Prior to a change in loadings, e.g. prior to pre-stressing operations or excavating below a level.
- Prior to striking or removing the temporary works.
- After any accidental damage occurs, which might cause instability.

42.28.4. These inspections are recorded and signed by the person who carried out the inspection. In all cases any of the TWC, ATWC, or TWS will sign off the Permit to Proceed when the work is satisfactory.

42.28.5. The permits are issued with a 'load by' time and date, i.e. the works will require re-inspection if a delay occurs in loading, or unloading them.

42.28.6. Stop if anything changes: The TWC certifies that 'The works are in accordance with the listed drawings /documents'. The TWC must use discretion and if in any doubt consult the TWD on items built but not in accordance with the design.

42.28.7. Signed off inspection forms are auditable records and must be kept securely on site.

42.28.8. The TWC will monitor the ongoing works regularly, so that potential problems are foreseen at an early stage.

42.28.9. The following points are to be noted when carrying out inspections:

- Inspections are to be carried out in a systematic fashion.
- Ensure safe access.
- Ensure correct documentation, e.g. use latest drawings.
- Ensure correct materials have been used and no damage or undue corrosion is apparent.
- Confirm all members present with correct sizes and spacing.
- Check connections between these members.
- Check tolerances where specified.
- Understand the principal load paths and check that these are continuous at each interface.
- Check on the bracing provisions in all planes (vertical, lateral horizontal).

42.28.10. Inspection should be recorded using standard inspection checklists where possible or similar bespoke checklists developed and used.

42.28.11. The TWC will, where appropriate, obtain specialist assistance in checking particular works e.g. complex scaffolding.

43. TOOLS AND EQUIPMENT

43.1. Competencies

43.1.1. Supervisors or Managers of users of tools and equipment must have received adequate information, training and instruction to supervise its safe use.

43.1.2. **Abrasive Wheels** can only be used by persons who have been trained and hold an appropriate (relevant class or description) certificate. An abrasive wheel can only be mounted by a person who has been trained and who holds an appropriate (relevant class or description) certificate to mount wheels and discs.

43.1.3. **Cartridge-operated tools** can only be used by persons who have been trained and hold an appropriate (relevant class or description) certificate. Due to colour coding of cartridges, the Site Lead must ensure that operatives using cartridge-operated tools do not suffer from any condition affecting their ability to perceive colour. Explosive cartridges, which resemble blank ammunition, used in tools of this type must be safely and securely kept.

43.1.4. **Carpentry/Woodworking Machinery** can only be used by persons who have been trained and hold a relevant CSCS card commensurate with their role and briefed on the safe use of the tool, in accordance with manufacturer's instructions, and along with the safe system of work.

43.1.5. **Chain saws** can only be used by persons who have been trained in First Aid at Work, who hold current certificates of competence for portable equipment of this type and have experience in the

work being undertaken. (https://www.nptc.org.uk/qualificationschemes.aspx?id=3)

43.1.6. **Rotary Disc Cutters** can only be used by persons who have completed the BB Handheld Disc Cutter/Floor Saw course (EUSR or NPORS accredited), or a similar course of at least the same standard.

43.2. **Interaction with other sections**

43.2.1. Tools and equipment can be the source of a number of hazards. Some of these hazards are also dealt with in other sections, which must be referred to where relevant:

- **Vibration** – The use of vibrating hand tools must be in accordance with the HAND ARM VIBRATION section
- **Noise** – The use of tools and equipment which generate/cause noise must comply with the CONTROL OF EXPOSURE TO NOISE section
- **Personal Protective Equipment** – Users of tools and equipment must be issued with all task specific protective equipment, and instructed in its safe use. See PERSONAL PROTECTIVE EQUIPMENT
- **Lifting Operations** - Tools or Equipment used in Lifting Operations, must comply with the LIFTING OPERATIONS section
- **Hot Works** – Any equipment that generates heat or emits hot particles (welding, cutting, grinding, hot air torches etc.) must be in accordance with the HOT WORKS section
- **Work at Height** – Tools and equipment used or worked on at height must be in accordance with the WORK AT HEIGHT section.

44. TRAINING AND COMPETENCE

44.1. Subcontract personnel must have received appropriate recognised training and certification and be sufficiently experienced to discharge their responsibilities. *The Company* requires everyone engaged on our projects to be in possession of a recognised skills card, e.g. CSCS, CPCS scheme, or certificate commensurate with their job role to demonstrate this. Anyone wishing to undertake work on our Project will be required to provide evidence of their recognised skills prior to admittance to the project.

44.2. The minimum training and certification requirements (Supervisors Passport) is mandated for selected key Supply Chain Supervisors from November 2023 and all Supply Chain Supervisors from April 2024.

44.3. *The Company* will from time-to-time host training sessions on site. Subcontract employees must attend these training sessions if requested to do so. Time costs associated with this type of training will be borne by each Supplier.

44.4. Suppliers' employees with training certificates which do not have a fixed expiry date must either:

- Refresh the training after 5 years,
- Be able to demonstrate current updated knowledge and skills via either Continual Professional Development (CPD), or a Professional Development Review (PDR) process
- Complete supplementary training suitable to the business (i.e. NEBOSH & IOSH beyond 5yrs takes SMSTS), or
- No longer undertake activities related to the training.

45. TREE WORK OPERATIONS AND VEGETATION GROUND CLEARANCE

45.1. **Appointments**

45.1.1. Balfour Beatty (the Company) do not directly employ arboriculture and forestry workers, therefore, when appointing Subcontractors to work on a project the Company will ensure that those

appointed have the skills, knowledge and experience to carry out the work in a way that secures health and safety.

45.1.2. Only Subcontractors who have current Forest Industry Safety Accord (FISA) membership can be appointed by the Company. Evidence of membership, competency and adequacy of resources must be provided to the Company prior to placing an order as part of their Demonstration of Competence.

45.1.3. Once a subcontractor has been appointed, they must attend a Pre-Start Subcontractors Meeting to discuss the specific health and safety aspects of the subcontract.

45.2. Individual Competence

45.2.1. The subcontractors Works Manager and Supervisors involved in site clearance (vegetation and trees) work must hold Trees and Timber National Occupational Standards (NOS) / Quality Credit Framework (QCF) qualifications commensurate with the tasks being undertaken in addition to mandatory management and supervision competencies (such as Site Managers Safety Training Scheme / Site Supervisors Safety Training Scheme).

45.2.2. NOS / QCF Tree Work Qualifications must be delivered by recognised training bodies such as Lantra and City & Guilds NPTC, See Table 20.

45.3. Plant

45.3.1. Plant and accessories provided must be suitable in relation to the specific work location and the task to be undertaken. The Balfour Beatty Plant Specifications must be used when selecting and procuring items of plant. See Plant and Equipment Specification

45.3.2. Any item of plant that is not currently covered by an existing Balfour Beatty Plant Specification must be identified and approved by the Company's New or Modified Plant & Equipment process.

45.3.3. The UK forestry sector traditionally refer to the nominal working scale of plant and equipment by size. The working scale indicated by plant and equipment size is detailed in 'Nominal Working Scale' reference material (HSF-RM-0071b)

45.3.4. Plant operators must only operate machinery for which they have been authorised and must hold a relevant & valid training/competency qualification from an industry accredited body. See Table 20 NOS / QCF Tree work Qualifications and the PLANT section.

45.3.5. Plant and Equipment Pre-Use-Daily-Weekly Checklists must be used to ensure plant is being maintained and kept in good working order

45.4. Tools and Equipment (incl Hand tools)

45.4.1. Chain Saws

45.4.1.1. Chainsaw operators must hold a relevant & valid training/competency qualification commensurate with the specific task(s) to be undertaken (see NOS / QCF Tree work Qualifications Table 20).

45.4.1.2. Chainsaw operators must be fit for role to operate a chainsaw.

45.4.1.3. All personnel working with chainsaws must operate in teams of two or more and must have at least 1 Emergency First Aid at Work trained personnel within the team.

45.4.1.4. Top-handled chainsaws must only be used for off the ground operations. Chainsaw operators must use rear-handled saws when working on the ground.

45.4.1.5. Chainsaw operators must be issued with, and instructed in the use of:

- Personal protective equipment (see PERSONAL PROTECTIVE EQUIPMENT)
- Emergency equipment:
- A first aid kit with large wound dressing and eye wash
- Means to call for emergency assistance i.e. radio or mobile telephone

45.5. **Safe Systems of Work**

45.5.1. The varied nature and complexity of site vegetation and tree clearance is such that careful pre-planning, implementation of control measures and robust briefing methods are required as the work may involve mechanical down-taking or hand down-taking in any location from a greenfield site to a site with significant public, overhead power lines, buried services or nearby structures interface.

45.5.2. Where openings, may be hidden by ground vegetation, the Supplier must ensure that a survey of the site is conducted to establish site hazards prior to work commencing, including obtaining information on:

- utility drawings, and
- site maps showing any local hazards

45.5.3. Vegetation clearers must watch where they are putting their feet when walking over unprepared ground. During the initial walkover, vegetation clearers must probe the ground in front of themselves with a non-conductive pole.

45.5.4. A suitable risk assessment, Work Package Plan (or Method Statement) must be carried out for all site vegetation and tree clearance operations. This must include and emergency situations that may arise from site activities

45.5.5. Risk assessments, Work Package Plans (or Method Statements) and briefings must be prepared by the subcontractor in line with their own internal procedures and legal requirements and submitted to the Company for review.

45.6. **Safe Working Distances**

45.6.1. For all work locations it must be ensured that safe working areas are identified and applied between other workers, machinery, third parties and any local infrastructure. All the work teams must be briefed on the safe working area, exclusion zone requirements and the safe system of entry into these zones.

45.6.2. The following (Table 16) minimum safe distances must be applied, unless exceptional conditions and the risks arising from closer working have been robustly assessed and judged to be acceptably low:

Table 16

Activity	Minimum Safe Working Distance
Hedge, scrub clearing operations using non-powered hand tools	At least 5 metres must be maintained between workers + at least 3 metres maintained out-with the ‘running line’ + the maximum ‘slewing radius’ of any plant or machinery operating in the area.
Clearing saw / strimming / brush cutting operations	At least 15 metres between workers + at least 3 metres maintained out-with the ‘running line’ + the maximum ‘slewing radius’ of any plant or machinery operating in the area.
Tree felling operations	At least 2 tree lengths must be maintained between other workers, machinery, third parties and any local infrastructure and never directly below on steep slopes.

Chainsaw snedding operations	At least 2 tree lengths must be maintained between other workers, machinery, third parties and any local infrastructure and never directly below on steep slopes.
Chainsaw cross cutting and stacking operations	At least 5 metres must be maintained between workers + at least 3 metres maintained out-with the 'running line' + the maximum 'slewing radius' of any plant or machinery operating in the area.
Winching operations	At least 2 tree lengths + twice the length of the winching rope under tension must be maintained between other workers, machinery, third parties and any local infrastructure.
Wood chipping operations	At least 5 metres between workers + at least 3 metres maintained out-with the 'running line' + the maximum 'slewing radius' of any plant or machinery operating in the area. Discharge chute must be positioned so that it does not emit chippings / debris into other workers, machinery, third party areas.
Extraction by skidder operations	Two tree lengths + length of hauling rope must be maintained between other workers, machinery, third parties and any local infrastructure.
Loader operations	Two tree lengths + length of machine lifting boom and attachment must be maintained between other workers, machinery, third parties and any local infrastructure.
Roadside processing operations	Operations must be planned to ensure all processing is carried out in a direction working two tree lengths away from other workers, machinery, third parties and any local infrastructure. A clearly designated processing area must be identified. Processing plant / equipment must be positioned so that it does not emit chippings / debris into other workers, machinery, third party areas.
Re-fuelling or decanting fuel	At least 3 metres between workers + at least 3 metres maintained out-with the 'running line' + the maximum 'slewing radius' of any plant or machinery operating in the area. Fuel containers must be opened or decanted at more than 10 metres away from water courses, drains and heat sources.

If conditions prevent the clear sight of all personnel engaged in the above activities, then an alternative method, such as a radio, or the use of a third person to relay messages must be used.

45.6.3. On all reasonable approaches to the worksite, warning and prohibition signs conforming to the Health and Safety (Safety Signs and Signals) Regulations 1996, indicating a 'hazardous worksite' and that 'unauthorised access is prohibited' must be clearly displayed and maintained. In areas of high public interface additional controls e.g. fencing, additional marshalling must be implemented.

45.6.4. Warning and prohibition signs must also display contact details of the subcontractors Works Supervisor to ensure all works are stopped prior to the Works Supervisor authorising controlled entry into the work area(s).

45.7. Steep Slopes

45.7.1. When planning how the work should be carried out on a specific site, the following must be considered:

- the terrain classification, e.g. slope measurements, soil/ground condition, ground roughness, erodible soils, boulders etc
- operational factors, e.g. size and type of tree, type of tree/brash quality, potential stump height, cutting specification
- environmental conditions, e.g. weather conditions, water on site, possibility of flash floods, siltation, pollution, visibility
- identifying alternative work areas
- recovery arrangements including dealing with oil spills
- the possibilities of modifying the site by constructing tracks or ramps

45.7.2. When work is planned to use a machine on a slope, see FISA 705 for guidance on selecting a suitable machine.

45.8. Overhead Power Lines

45.8.1. Surveys must be undertaken on the presence of existing overhead power services (including buried services) if this information is not already known by the Client/Principal Contractor.

45.8.2. Where operations are to be carried out within 2 tree lengths + the vicinity zone distance of an overhead power lines or close to underground services, discussions must be held with the owner of the overhead power lines, usually the Network Operator and usually at least 2 months prior.

45.8.3. The vicinity zones around overhead power lines are the areas in which there is the danger of electricity flashover if someone enters, this distance increases as the voltage increases - as identified in Table 17:

Table 17

Nominal System Voltage (kV)	Minimum Vicinity Zone Distance
Up to and including 1kV.	1 metre
Exceeding 1kV but not exceeding 11kV.	2 metres
Exceeding 11kV but not exceeding 33kV.	2.5 metres
Exceeding 33kV but not exceeding 66kV.	3 metres

Exceeding 66kV but not exceeding 132kV.	3.5 metres
Exceeding 132kV but not exceeding 275kV.	6 metres
Exceeding 275kV but not exceeding 440kV.	7 metres

45.8.4. Trees must be assessed for their falling distance in relation to the overhead powerline(s). They must then be categorised as falling within one of the following zones:

Table 18

Zone	Description
Red Zone	The area next to the overhead powerlines containing all trees within falling distance of the Vicinity Zone of any conductor and all trees which could cause damage to any support structure. In normal circumstances the extent of the Red Zone is measured on the ground from directly underneath the outermost conductor to the centre of the tree (minimum 10 metres). This must be carried out in consultation with the Network Operator. The extent of the Red Zone can vary greatly along the length of the line when taking full account of variations in height, cross-arm widths, steep slopes, valleys and variations in tree heights. Only when this is specifically addressed in the risk assessment and agreed by the Network Operator can a more specific assessment of tree falling distance to the Vicinity Zone of any Conductor or supporting structure be made.
Amber Zone	The area from the Red Zone up to a distance of one further tree length. This zone acts as a buffer to protect the Red Zone and within it trees may be felled either away from or parallel to the overhead power lines following the conditions set out in
Green Zone	The area beyond the Amber Zone that is two tree-lengths + the Vicinity Zone (normal forestry operations).

45.8.5. Where trees are to be felled in the Red or Amber Zone, the Network Operator must be consulted.

45.8.6. Agreement must be reached with the Network Operator to de-energise and make the power lines safe wherever it is reasonably practicable.

45.8.7. Where an overhead powerline CANNOT be de-energised, then Red Zone trees must not be felled and felling within the Amber zone will only be permitted providing the following conditions are met:

- consultation with the Network Operator must take place. There must be a written agreement for the marking of Red and Amber Zones and the felling and extraction arrangements. This will make it clear that no Red Zone trees will be felled with the line energised
- workers must be made aware of the dangers from electricity, how to avoid the danger and what to do in an emergency. If this is not carried out through formal electrical awareness training, then it must be justified in the risk assessment
- only trained and competent operators with the relevant chainsaw or forestry machine operator qualification are to be used
- felling must be arranged so that trees are felled away from, or parallel to the conductors, taking account of terrain, aspect, species and tree height

- traffic movement on site must be properly controlled. Control measures to ensure that no part of any plant / equipment, load, or tree being processed can come within 10 metres of any overhead powerline conductor when working alongside them
- the ground condition must be assessed prior to commencing felling operations
- weather conditions must be assessed prior to commencing felling operations to ensure wind direction does not affect control of the felling direction. If it is likely to have an adverse effect, operations must cease until the wind speed drops to an acceptable level
- all those on site must be made aware that they must treat the overhead power line(s) as energised until the Network Operator's safety document is in place and the line confirmed as de-energised
- The Network Operator's safety document must be signed off before the line is re-energised and all working parties must receive appropriate instruction when the line is being re-energised

45.8.8. If tree-felling work is required within the Red Zone with the line energised, then this must only be carried out by workers engaged directly with the Network Operator, with the Network Operator managing and supervising the activity.

45.8.9. An Authorisation to Work Near Existing Services (AWNES) must be compiled and issued to the subcontractor prior to commencing any works:

- at or near to near to overhead power lines
- which have or may have the potential for breaking ground

45.9. Lone Working

45.9.1. Lone working must be avoided whenever it is reasonably practicable. Where it is not reasonably practicable, This must be determined by a risk assessment and be in accordance with the LONE WORKING section.

45.9.2. Lone working must not be permitted* for the following site vegetation and tree clearance activities:

- Chainsaw operations - all personnel working with chainsaws must operate in teams of two or more
- Activities requiring someone dedicated to a rescue role
- Work near water
- Work at height (i.e. MEWP operation / tree climbing / rope access)
- Working under / adjacent to overhead power lines

45.9.3. Other activities may exist that are considered too difficult or dangerous to be carried out by an unaccompanied worker. This must be determined by a risk assessment and be in accordance with the LONE WORKING section.

45.10. Additional Hazards

45.10.1. Tree work and vegetation clearance tools and equipment can be the source of a number of hazards. Some of these hazards are also dealt with in other procedures, which must be referred to where relevant.

45.10.2. Other hazards specific to vegetation and site clearance are detailed in this section.

Hazard	Activity	Procedure
Control of Access	Associated with visitors (authorised and unauthorised) to site, ensuring those accessing the facilities are not placed at risk.	

Emergency Situations	Any situation requiring emergency communication, response, treatment or evacuation.	EMERGENCY ARRANGEMENTS
Hand Arm Vibration	Site Vegetation and Tree Clearance activities must be planned to eliminate exposure to vibration at source, where practicable.	HAND ARM VIBRATION
Lifting	Use of equipment to lift or lower materials or people	LIFTING OPERATIONS
Manual Handling	e.g. pulp hooks, lifting tongs, can't hooks and picaroons etc.	MANUAL HANDLING
MEWP's	Use of mobile elevated work platforms (MEWPs) to work at height i.e. tree felling.	WORK AT HEIGHT
Noise	The use of various items of plant and power tools.	CONTROL OF EXPOSURE TO NOISE
People, vehicle and plant interface	The operation and movement of plant and vehicles, the interface, segregation and access points of people on site.	PEOPLE, VEHICLE AND PLANT INTERFACES
Temporary Traffic Management	Work activities near to or on roads and streets.	
Winching	Directional felling, skidding operations.	
Work at Height	Working at height (i.e. tree climbing / rope access, use of ladders etc.) and the use of tools and equipment at height.	WORK AT HEIGHT

45.11. **Personal Protective Equipment**

45.11.1. The risk assessments/COSHH assessments for vegetation and tree clearance works must determine the PPE requirements in addition to Balfour Beatty's minimum standards.

45.11.2. Examples of additional PPE that may be required includes:

Table 19

PPE	Activity
Suitable head protection (e.g. a motorcycle helmet which conforms with BS 6658 or UN ECE regulation 22.05). OR	ATV driving operations.

An ATV helmet/other head protection which conforms with BS EN 1384.	
Suitable head protection (mountaineering-style helmet complying with BS EN 12492.	Tree climbing / rope access operations.
Suitable protective leather gloves.	Clearing saw + pruning operations + any operations where there is a risk of contact with thorns, brambles and harmful weeds.
Suitable protective gloves for handling materials such as fuel, ropes or chemicals.	Plant and equipment refuelling operations.
Chainsaw gloves which conforms with EN 381-7.	Chainsaw operations.
A mesh visor which conforms with EN 1731 and secondary eye protection which conforms with EN 166	Clearing saw + pruning + chainsaw + bench-saw + wood chipping operations.
Hearing protection which conforms with EN 352	All activities where noise levels exceed 85dB(A).
Leg and groin protection incorporating chain-clogging material which conforms with EN 381-5 NB: Type C leg protection for aerial work, because of the high all-round chainsaw cut protection. Where wearing Type C is impractical (e.g. because of the higher risk of heat stress), it may be appropriate to use Type A, where justified by risk assessment.	Chainsaw operations.
Protective boots with good grip and protective guarding at front vamp and instep which conforms with BS EN 17249.	Chainsaw + wood chipping operations.
Non-snag high visibility outer clothing appropriate to the prevailing weather conditions.	All activities.
A personal first-aid kit including a large wound dressing.	All activities.
A harness for supporting clearing saws (must be fitted and adjusted correctly).	Clearing saw operations.
Respiratory Protective Equipment (RPE) – minimum standard is FFP3.	Where COSHH assessment identifies their use – users must also be Face Fit Tested prior to use.

45.12. **Supervision and Monitoring**

45.12.1. Subcontractor Supervision

45.12.2. Subcontractors must provide suitable and sufficient supervision for their works at all times.

45.12.3. Specific supervisory responsibilities and competencies are required for lifting operations. Refer to Crane/Lift Supervisor details in LIFTING OPERATIONS & HSF-RM-0039d 'A Suppliers Guide to Lifting Procedures for Lorry Loaders'.

45.13. **Stacking**

45.13.1. Cut materials must be stacked frequently so that it does not create trips/slips/fall hazards underfoot.

45.13.2. Stacks of timber must always be made and maintained in a stable condition. DO NOT stack on steep ground at the roadside.

45.13.3. Where stacks are manually produced, the height of the stacked timber must not exceed approximately 1m – otherwise, so far as is reasonably practicable, stack height must not exceed 2m.

45.14. **External Guidance**

45.14.1. The forestry industry within the United Kingdom has produced guidance on the health and safety of all forest operations, machinery and tasks. A suite of guidance leaflets is available https://www.ukfisa.com/safety-information/safety-library/fisa-safety-guides.html and http://www.hse.gov.uk/treework/resources/index.htm

Table 20

NOS / QCF Reference	Tree work qualification title
(NOS) LANTw22	Level 2 Award in Cross-cut Timber Using a Chainsaw
(NOS) LANTw19 & (NOS) LANTw22	Level 2 Award in Chainsaw Maintenance and Cross-cutting
(NOS) LANTw20	Level 2 Award in Felling and Processing Trees up to 380mm
(NOS) LANTw21	Level 2 Award in Remove Branches and Breakdown Crowns Using a Chainsaw
(NOS) LANTw24	Level 3 Award in Severing Uprooted or Windblown Trees Using a Chainsaw
(NOS) LANTw25	Level 3 Award in Assisted Fell Operations
(NOS) LANTw18	Level 3 Award in Emergency Treework Operations
(NOS) LANTw19	Level 2 Award in Chainsaw Maintenance
(NOS) LANTw20	Level 3 Award in Felling and Processing Trees over 380mm
(NOS) LANTw27	Level 2 Award in Supporting Colleagues Undertaking Off Ground Tree Related Operations

(NOS) LANTw17	Level 3 Award in Preparing and Agreeing Emergency Treework Operations
(NOS) LANTw26	Level 2 Award in Safe Use of a Powered Pole Pruner
(QCF) 0020-16	Level 2 Award in Forest Machine Operations - Forwarder
(QCF) 0020-17	Level 2 Award in Forest Machine Operations - Felling
(QCF) 0020-18	Level 2 Award in Forest Machine Operations - Processing
(QCF) 0020-19	Level 2 Award in Forest Machine Operations - Cable Crane
(QCF) 0020-20	Level 2 Award in Forest Machine Operations - Skidder
(QCF) 0020-21	Level 2 Award in Forest Machine Operations - Chokerman
(QCF) 0020-30	Level 2 Award in Forest Machine Operations - Base Machine
(QCF) 0020-31	Level 2 Award in Forest Machine Operations - Processing Timber (Mobile)
(QCF) 0020-32	Level 2 Award in Forest Machine Operations - Drainage and Mounding
(QCF) 0020-36	Level 2 Award in Forest Machine Operations - Flail/Mulcher
(QCF) 0020-16	Level 2 Award in Forest Machine Operations - Static Loader
(QCF) 0020-16	Level 2 Award in Forest Machine Operations - Base Machine with Forwarder
(QCF) 0020-16	Level 2 Award in Forest Machine Operations - Base Machine with Felling and Processing
(QCF) 0020-16	Level 2 Award in Forest Machine Operations - Base Machine with Skidder
(QCF) 0020-16	Level 2 Award in the Safe Use of Stump Grinders
(QCF) 0020-16	Level 2 Award in the Safe Use of Forestry Clearing Saw
(QCF) 0020-16	Level 2 Award in Safe Use of Manually Fed Wood-Chipper
(QCF) 0020-16	Level 2 Award in Chainsaw Maintenance and Operations - Occasional User
(QCF) 0020-16	Award to Fell Utility Poles

NOS / QCF Ariel Tree work Qualifications for Subcontractor employees must be delivered by recognised training bodies such as Lantra and City & Guilds NPTC. Qualification types include:

NOS / QCF Reference	Ariel Tree work Qualification Title
(NOS) LANTw28	Level 2 Award in Accessing a Tree Using a Rope and Harness
(NOS) LANTw28	Level 3 Award in Aerial Tree Rescue Operations
(NOS) LANTw30	Level 3 Award in Aerial Cutting of Trees with a Chainsaw Using Free-fall Techniques
(NOS) LANTw31	Level 3 Award in Aerial Tree Rigging
(NOS) COSVR386; (NOS) COSVR392; (NOS) LANTw14; (NOS) LANTw15; (NOS) LANTw19; (NOS) LANTw29; (NOS) LANTw30; (NOS) LANTw31	Level 3 Award in Using a Chainsaw from a Mobile Elevated Work Platform
(NOS) LANTw29	Level 3 Award in Aerial Tree Pruning
(NOS) LANTw32	Level 3 Award in Aerial Cutting of Trees Using a Crane
(NOS) LANTw33	Level 3 Award in Installation and Maintenance of Structural Tree Supports
(NOS) LEO30 (NOS) SEMME3-197; (NOS) SEMME293	Level 4 Award in Thorough Examination of Arboricultural Lifting Equipment

46. WELFARE FACILITIES

46.1. **General Requirements**

46.1.1. Welfare facilities must be provided for all stages of a site/project as identified by a suitable and sufficient risk assessment and in accordance with the minimum welfare requirements detailed below in Table 21:

Table 21

	Duration < 1 week	Duration 1 – 4 weeks	Duration > 4 weeks
Workforce of 1 - 4	A	B	B
Workforce of 5 - 10	A	B	C
Workforce > 10	B	C	C

	A - Local Transient Site/Project	B - Mobile Transient Site/Project	C - Permanent Site/Project

Toilets	Private or public facilities within 20 minutes	Mobile private facilities within 20 minutes	Permanent private facilities within 20 minutes
Washing Facilities	Hot water (not hand wipes) included in vehicle within 20 minutes	Hot water (not hand wipes) in mobile private facilities within 20 minutes	Permanent unit with full washing facilities within 20 minutes
Changing/ Drying Facilities	Transport provided to full facilities at start and finish of work	Transport provided to full facilities at start and finish of work	Transport provided to full facilities at start and finish of work
Drinking Water	Drinking water containers with suitable cups provided for each gang at work location	Running drinking water or drinking water containers with suitable cups provided at each mobile unit	Running drinking water with suitable cups provided at each permanent establishment
Messing Facilities, including heating food and water	Private or public facilities within 20 minutes	Mobile private facilities within 20 minutes	Permanent private facilities within 20 minutes

46.1.2. Sites/projects that are transient in nature, are on site longer than 4 weeks and/or have a greater workforce than 10 employees must liaise with their HSES Advisor to ascertain the best type of welfare facilities to be implemented.

46.1.3. For projects undertaken on the Network Rail Managed Infrastructure the welfare requirements must be assessed in accordance with the Welfare Provision Form (HSES-SF-0006a). This form must be displayed on the project.

46.1.4. Welfare facilities must have sufficient lighting, heating and ventilation. Storage or drying of clothing should only be allowed within specifically designed drying rooms and not within general welfare facilities. Gas and electric (open bar/non convection) fires/heaters must not be used on company projects.

46.1.5. Welfare facilities and equipment must be maintained in a clean, tidy, and hygienic condition. Additional checks on the condition (exterior and interior) of welfare facilities must occur if the facilities are kept on site longer than originally planned.

46.1.6. Welfare services (water main) must be protected from inclement weather in order that they remain operational at all times.

46.1.7. Welfare facilities must be accessible and suitable for use taking into account the needs of those with disabilities.

46.1.8. Every effort shall be made to encourage the use of the canteen facilities provided.

46.1.9. An adequate supply of fresh drinking water must be provided at the work location. It must be clearly marked “Drinking Water” and must be supplemented by the provision of a suitable number of drinking vessels.

46.1.10. Suitable provision for the disposal of waste arising in welfare facilities must be in place.

46.1.11. Welfare facilities must not be used for the storage of plant, equipment, cleaning or construction materials.

46.2. CANTEEN

46.2.1. Sufficient chairs and tables must be provided to accommodate all persons for whom the facility is intended.

46.2.2. A sufficient means of heating/chilling food and boiling water must be provided to accommodate all persons for whom the facility is intended. Unsecured hot water urns must not be used on company projects.

46.2.3. On larger projects, a canteen may be provided where food is prepared for sale. These premises are subject to the Food Safety Act and the Food Standards Act which regulate hygiene standards.

46.2.4. The food provider and facilities must:

- be registered with the local Environmental Health Department and display a copy of the registration certificate, or a copy of the application form
- Provide a copy of the organisations HACCP based 'Food Safety System'
- Ensures that each member of the catering staff must hold a minimum of Level 2 Food Hygiene and Safety Certificate or a suitable training plan to get all personnel trained (commensurate with their activities in the facility)
- Provide copies of catering staff qualifications

46.2.5. See the Food Standards Agency website for more information.

46.2.6. Gas cookers must not be used on company projects.

46.2.7. The consumption of food within the working area is not permitted.

46.2.8. All sinks must discharge to sewer (with relevant permission from the sewerage undertaker) or to an effluent waste tank or septic tank which must be emptied regularly by a licensed waste contractor and removed from site, Under no circumstances are discharges allowed to ground.

46.3. DRYING ROOM

46.3.1. There must be adequate provision (sufficient for the number of users and of appropriate type) for changing and storage of clothing where the work activity requires a change of clothing to be undertaken.

46.3.2. The designated area should provide fixed seating, a means of hanging clothing and must incorporate heating by either an unobstructed fan type heater or other suitably guarded heater. The facilities must be ventilated.

46.3.3. A suitable number of lockers for personal belongings and for separating dirty and clean clothing must be provided. Lockers must be fixed to prevent overturning.

46.3.4. The drying room must be a separate room to the mess room or canteen and must not be used for consuming food / beverages.

46.3.5. Separate facilities must be provided for men and women. Windows must be opaque and lockable.

46.4. TOILETS & WASHING FACILITIES

46.4.1. Toilets and washing facilities must include:

- Sufficient number of separate facilities for men and women
- Supply of toilet paper and sanitary products
- A means of hygienic disposal of products for both males and females
- Basins, with plugs, each with its own hot/warm and cold running water supply and large enough to wash hands and forearms, with sufficient soap, barrier creams, moisturisers and drying materials

46.4.2. Table 22 indicates the minimum facilities that must be provided.

Table 22

Number of people at work (Mixed or women only)	Number of toilets	Number of washbasins
1-5	1	1
6-25	2	2
26-50	3	3
51-75	4	4
76-100	5	5

Number of people at work (Men only)	Number of toilets	Number of urinals	Number of wash basins
1-15	1	1	1
16-30	2	1	2
31-45	2	2	2
46-60	3	2	4
61-75	3	3	4
76-90	4	3	5
91-100	4	4	5

46.4.3. Single occupancy portable chemical toilets (plastics) conforming to HSF-SP-0046G may only be used to supplement the above minimum facilities for short duration or remote works.

46.4.4. Sufficient number of showers (as identified by risk assessment) must be provided. Where facilities are connected to the mains sewerage system, all sinks, showers and toilets should discharge to sewer (with relevant permission from the sewerage undertaker).

46.4.5. Where facilities are not connected to the main sewerage system, waste must be suitably contained by discharging to an effluent waste tank or septic tank. These must be emptied regularly by a licensed waste contractor and removed from site, as a waste in accordance with Waste Management.

46.4.6. Plumbed toilets must be provided when the site/project is classed as Category C in the table in Table 21 above. An instant start, stand-alone welfare unit, which provides compliance with this procedure may only be utilised where this cannot be achieved, or as an interim measure, until full facilities are provided.

46.4.7. Use of combi welfare vehicles is permitted providing that they satisfy the minimum requirements above.

46.4.8. When identifying what provision is required, the journey times from site to welfare accommodation must be taken into account (max 20 minutes from the facilities).

46.4.9. Sun screen or block with a minimum SPF of 30 will be made available at appropriate times of the year.

46.4.10. Insect repellent will be made available at appropriate times of the year and where appropriate.

46.5. **PROVISION OF ROOM FOR USE BY NEW OR EXPECTANT MOTHERS**

46.6. New or expectant mothers must be allocated private rest facilities. This room may not necessarily be dedicated solely for this purpose, but should the room be in use when required by the new or expectant mother, she must be given priority.

47. WOODWORKING MACHINERY

47.1. Carpentry/Woodworking Machinery can only be used by persons who have been trained and hold a relevant CSCS card commensurate with their role and briefed on the safe use of the tool, in accordance with manufacturer's instructions, and along with the safe system of work.

47.2. Chain saws are not permitted onto site without the permission of *The Company* Site Lead. They will only be permitted when their use is essential and not as a convenience tool to cut light or medium timbers. Subcontract management must only authorise competent trained persons to use chain saws and they must ensure that all necessary safe system of work and protective clothing is provided and worn.

47.3. Where possible the use of engineering control measures for airborne dust must be employed. The first line of defence must not be PPE; it must be the provision of, where appropriate, dust extraction at source.

48. WORK AT HEIGHT

48.1. When carrying out a risk assessment the following controls must be considered, and were applicable, detailed in the assessment:

48.2. Safe systems for protecting people from falls from height which where practicable must include a physical rigid barrier to prevent falls from height. Where this is not practicable, the risk of a fall must be controlled by netting, airbags, or fall arrest / restraint harnesses and lanyards.

48.3. Rope access activities require health checks to be conducted for operators. Operators must be able to demonstrate their fitness for role in accordance with the OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT section.

48.4. The throwing ('bombing') of materials or objects from height is strictly prohibited.

48.5. The implementation of suitable and sufficient risk control measures is mandatory (e.g. toe boards, guard rails, brick guards/screens, material storage boxes/areas, approved tool / equipment tethers and/or tool kits, fan/crash decks, exclusion zones etc.) where there is a significant risk of people falling, or tools or materials being dropped from height.

48.6. All forms of temporary edge protection must be inspected by a competent person (e.g Scaffolder or Temporary Works Supervisor):

- After installation or assembly in any position
- After any event likely to have affected its stability, e.g. following strong winds, substantial alteration or impact damage
- At intervals not exceeding seven days

48.7. **Protection measures** (e.g. Guardrails, toe-boards, barriers or other similar means of protection)

48.7.1. All guardrails, toe boards and brick guards must be inspected by a competent person:

- After installation or assembly in any position
- After any event likely to have affected its stability, e.g. following strong winds, substantial alteration or impact damage
- At intervals not exceeding seven days

48.8. **Openings**

48.8.1. Works must be planned and the risks assessed to ensure that protection is in place at openings during all phases of the works.

48.8.2. All openings in concrete slabs, floors, decking, risers and manholes must be effectively highlighted and protected with securely fixed covers (Approved by Temporary Works Coordinator) to prevent persons or materials falling through them.

48.8.3. Lift shafts must be protected by:

- A proprietary system to prevent persons, tools, equipment or materials falling into them, or if this is not available, a physical secured barrier
- Warning signage, or have an authorised person access control system established

48.9. **Requirements for working platforms**

48.9.1. The use of the following items are prohibited at all Company properties and projects for work at height:





Low Level Access Systems (Metal Trestles / Bandstands / Ironmen)	Stilts	Kick Stool Steps	Hop-Up or Step-Up platforms	Plastic / GRP Modular Crash Decks or Working Platform System

48.9.2. Netlon must not be used as edge protection.

48.10. **Safety nets and soft-landing apparatus**

48.10.1. Safety Nets. Safety net installers/providers must be members of FASET.

48.10.2. Safety netting installers must be carried out by a holder of the CSCS / FASET Safety Net Rigger Card. Note that this is not applicable to the nets used to protect assets during overhead line work.

48.10.3. Documented proof of a CSCS or FASET qualification (original format only) must be provided and retained on site.

48.10.4. All forms of safety nets and soft-landing apparatus must be designed and inspected by a competent person in accordance with the manufacturer's training or instructions, relevant to each apparatus in use.

48.11. **Safety or debris netting**

48.11.1. Where safety netting or debris netting is to be installed, temporary works approval must be obtained. See TEMPORARY WORKS section.

48.11.2. A handover certificate must be issued by the netting installer before being put into service.

48.11.3. Safety netting must be formally inspected (in accordance with manufacturer's instructions or recommendations) by a trained and competent person (CSCS or FASET Safety Net Rigger card holder):

- After installation or assembly in any position.
- After any event likely to have affected its stability, e.g. following strong winds or substantial alteration.
- At intervals not exceeding seven days.

48.11.4. The use of horizontal line systems as a means of fall prevention or protection must only be used as a last resort and following Scaffold Designer / Temporary Works Designer approval. The Site Lead / Temporary Works Coordinator must ensure the Scaffold Designer / Temporary Works Designer confirms that the Work at Height hierarchy of control has been followed with no other viable fall prevention or protection methods available.

48.12. **MOBILE ELEVATED WORKING PLATFORMS (Mewps) INCLUDING PUSH AROUND VERTICALS (PAVS)**

48.12.1. MEWP- Coordinator – Provided by the Company

48.12.2. MEWP Operators MEWP Operators must have IPAF, CPCS or NPORS (CSCS) training applicable to the item of plant to be used. In addition, the operator must be given familiarisation training on the particular equipment prior to use. This familiarisation must include machine specific emergency lowering information. Operators must also be able to demonstrate their fitness for their role in accordance with the OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT section.

48.12.3. PAV Operators. PAV Operators must have IPAF or CPCS training applicable to the item of plant to be used and must be given familiarisation training on the specific equipment prior to use. This familiarisation must include machine specific emergency lowering information.

48.12.4. All MEWPs used on Company projects must be designed to prevent entrapment through sustained involuntary operation of the MEWP, through interference with either electronic or mechanical systems. Examples include SkySiren or SiOPS pressure sensitive systems, shrouded protection to the platform controls or Sanctuary Zones.

48.12.5. Emergency lowering procedures must be demonstrated by the supplier or hirer to employees as identified by the MEWP Coordinator(s). The MEWP Coordinator must ensure a record of this demonstration is recorded on the MEWP Recovery Checklist.

48.12.6. Exiting or entering a MEWP is only permitted when it is not elevated or not operating at height, unless the access or egress is part of a formal emergency rescue plan.
48.12.7. Driving and operating MEWPs from outside the platform is not permitted unless in an emergency.
48.12.8. Also see HSE guidance 'Safe driving: loading & unloading'
48.12.9. The issue and wearing of a full body harness (BS EN 361) and restraint lanyard (BS EN 354), which restricts the limit of travel to the confines of the basket, is only mandatory in Boom Type MEWPs and must be worn at all times. The only exception to this mandate is when working over or adjacent to water that presents a risk of drowning should the MEWP inadvertently overturn. In such circumstances an automatically inflating life jacket must be worn.
48.12.10. Scissor lift MEWPs must only be traversed when in lowered position. If traversing is required at any other height, a safe system of work must be in place and a harness and restraint lanyard must be worn.
48.12.11. When an attachment is fitted to a MEWP or PAV and is used to lift equipment or materials (such as a SkyRak) a lift plan must be produced in accordance with the Lifting Operations section.
48.12.12. The Site Lead, in conjunction with the MEWP Coordinator, must ensure that MEWP operations are suspended during adverse weather conditions, in accordance with the manufacturer's instructions. This may include periods of high wind speed, lightning, snow, fog and heavy rain.
48.12.13. MEWPs Working on the Rail Infrastructure – Additional Requirements
48.12.14. When planning to use MEWPs on the rail infrastructure the following documents must be consulted or used:

- **Network Rail**
  - Infrastructure Plant Manual – NR/0200/PLANT
  - NR/0200/Plant – Module P300 Plant approval and design, section 4.2
  - NR/0200/Plant – Module P508 Mobile elevating work platforms MEWPs
- **London Underground**
  - S1171 - All Plant - Acceptance, Use and Maintenance
  - S1173 - On Track Plant – Design and Acceptance
  - M&EE Codes of Practice
  - COP0023 - Inspection of Demountable MEWP and Lifting Equipment
  - COP0024 - Use and Loading of MEWPs

48.13. **Mast Climbing Work Platforms (Mcwp)**

48.13.1. MCWP Operator. An MCWP Operator must have attended the IPAF Operator – OP training course and must also receive MCWP specific familiarisation training from the supplying company's demonstrator.
48.13.2. MCWP Mobile Operator. Must have attended IPAF Mobile Operator – OP(M) training course. In addition, the MCWP Operator must also receive MCWP specific familiarisation training from the supplying company's demonstrator.
48.13.3. All MCWP supplied must comply fully with BSEN1495:1997+A2:2009.
48.13.4. The MCWP supplier must undertake a site survey for each MCWP location which will include:

- Establishing the primary purpose that MCWPs will be used for, together with any other additional requirements there might be for the unit, e.g. prevention of falling debris
- Length of the work platform required and the work platform configuration, including any edge extensions, for the full duration of the installation
- Mast positions
- Maximum height of travel
- The work platform loading capacity and method of loading
- Access and egress for personnel and materials
- Ground and supporting base conditions (levels and load bearing capacity)
- Area conditions around base with particular relevance if an MCWP is movable and is to be moved while on site

- Tie fixing point strengths and fixing point details on the structure, including suitable means of access to such points for installation and dismantling
- The results of the assessment of the strength of the structure to support MCWPs carried out by Temporary Works Designer
- Identification of uninsulated electrical conductors in the vicinity of MCWPs. These exposed conductors must be adequately shielded or moved as appropriate
- Windows or doors that open into path of the work platform.
- Identification of fire escape routes and location of fire hydrants
- Balconies or voids that necessitate special guarding methods or create special trapping hazards
- Power supply and connection arrangements (if applicable) in suitable locations with adequate earth protection and power supply capacity
- Extent of ground level fencing of MCWP requirements, when required by risk assessment
- Access provision to and from site for MCWPs, with details of obstacles etc.
- Transfer clearances for mobile MCWP movement
- Position of any cable snagging hazards
- Access provision for maintenance of machinery

48.13.5. The results of the site survey will be used by the MCWP supplier to compile a safe system of work for the erection and dismantling of the machine.

48.13.6. MCWPs must only be erected, dismantled or altered by persons who are trained, competent and authorised to do so. For static MCWPs this will be a representative from the supplier. For mobile MCWPs this will be an individual with the relevant training as detailed in the competencies section.

48.13.7. MCWPs must only be used on suitable surfaces that are level, firm and within the tolerances specified by the manufacturer. All MCWP locations must be reviewed and approved in accordance with the Temporary Works section.

48.13.8. Platform weather enclosures, tarpaulins, signs or any other construction which could affect the wind load on the platform, which are outside of the pre-determined manufacturer's specification, must also be reviewed and approved by the company Temporary Works function.

48.13.9. The MCWP must be tied to structural members of the building, unless adequate strength of alternative tie locations can be assured. The building or structure must be assessed in by the company Temporary Works function to ensure it will withstand the loads imposed. The load parameters must be supplied by the MCWP supplier.

48.13.10. The access point for the MCWP must be at one level only. Access points at levels higher than ground level must be installed to ensure that tripping hazards are eliminated. If the access point is at height the access must provide suitable protection against falling regardless of the position of the MCWP on the mast.

48.13.11. An exclusion zone must be implemented with physical barriers around the base location of the MCWP to ensure that the risk of injury from being trapped and / or crushed by the descending platform or being struck by falling debris is eliminated. Suitable, clear and durable notices warning of the danger and instructing persons to keep clear must be conspicuously displayed.

48.13.12. If the base of an MCWP is erected in an area accessible by vehicles a specific safe system of work must be implemented and arrangements made to divert the traffic and secure the area against vehicle incursion.

48.13.13. When a MCWP is handed over to the site/project, the installer must ensure the following:

- The installation is complete
- The MCWP is not fouling the structure anywhere in its travel
- All mast sections and mast ties are secure
- All safety interlocks, including limit switches, are working correctly
- All electricity supply cable is coiling or reeling correctly
- The MCWP is responding correctly to the controls
- The MCWP has been thoroughly examined and tested in accordance with section 12
- The correct rated load for the configuration is clearly and durably marked on the work platform

- All guards are re-installed correctly
- Finally, the formal handover must be recorded

48.13.14. Inspection and testing by the MCWP supplier must be carried out after erection and before being taken back into their service, after the occurrence of a dangerous incident (prior to being put back into service) and at least quarterly thereafter. A Thorough Examination must be carried out every 6 months.

48.13.15. At the beginning of each shift or working day, the MCWP operator must undertake an inspection to ensure that the MCWP are in a fit condition to start work using the MCWP Pre-Use/Daily Weekly Check forms are available from the company.

48.13.16. On a weekly basis the MCWP Coordinator must inspect the MCWP, using the MCWP Pre-Use-Daily-Weekly Check forms are available from the company to ensure that no damage or wear has occurred and that all safety systems are functioning correctly. The MCWP Coordinator must also consult the MCWP operator's manual for any specific items not covered in the MCWP Weekly Checklist.

48.13.17. MCWP must not be used as shores or jacks.

48.13.18. Emergency arrangements must be tested in accordance with the Emergency on a 3 monthly basis and the recorded on the projects Emergency Evacuation and Drill Response Record.

48.14. **Temporary suspended access equipment (cradles)**

48.14.1. **Cradle Coordinator:** A Cradle Coordinator must have attended an approved temporary suspended access training course such as SAEMA Part 1.

48.14.2. **Cradle Operators:** Cradle Operators must have attended an approved temporary suspended access training course such as SAEMA Part 1 and also receive cradle specific familiarisation training from the supplying company's demonstrator.

48.14.3. The Cradle supplier must undertake a site survey for each cradle location. The results of the site survey will be used by the cradle supplier to compile a safe system of work for the erection and dismantling of the machine.

48.14.4. Cradles must only be erected, dismantled or altered by persons who are trained, competent and authorised to do so.

48.14.5. After the installation has been completed and before a cradle is taken into use, the supplier will ensure a Thorough examination and handover certification is issued

48.14.6. Once the initial installation has been completed in accordance with the supplier method statement, no modification to the installation will be allowed without a reassessment by the supplier. This will include a full study of the proposed modification, implications for safety during the remainder of the cradles planned use, and its subsequent dismantling. Any modification must only be undertaken by the cradle supplier's qualified workforce.

48.14.7. Repositioning of a cradle must only be carried out by the cradle supplier's qualified workforce.

48.14.8. The cradle will be maintained by the Supplier in accordance with the manufacturer's recommendation and the supplier organisations thorough examination regime.

48.14.9. The use of harnesses within Cradles is obligatory for all personnel. Harnesses must be fixed to a structural member.

48.15. **Scaffold (all)**

48.15.1. Scaffold Design. All tube and fitting scaffolds must be assembled and dismantled by trained and competent scaffolders in line with a TG20 or specific design, Basic scaffold as described in NASC document TG 20, must be constructed by trained and competent scaffolders within their scope of training (tube & fitting, system scaffolds). All complex scaffolding works must be supervised by an Advanced scaffolder. System scaffolds must be designed, assembled and dismantled by a trained system scaffolder in accordance with the manufacturer's guidelines and instruction.

48.15.2. See TEMPORARY WORKS section for further details.

48.15.3. Scaffolder. A Scaffolder must hold a current and valid CISRS qualification, relevant to the type of scaffold being erected or dismantled. Erection of a designed scaffold must be carried out under the direct supervision of a CISRS Advanced Scaffolder with relevant competence for the type of scaffold being erected. See here for Scaffolders CISRS CPD requirements from July 2017

48.15.4. Scaffolding Inspectors. A person who has passed a CISRS Basic Scaffold Inspection Course is deemed competent to inspect basic scaffold structures, as defined in NASC document TG20. All other scaffold structures must be inspected by one of the following:
- An Advanced Scaffolder who was not involved in the erection of the structure
- A person who has passed a CISRS Advanced Scaffold Inspection course
- A scaffold/temporary works designer

48.15.5. Persons who are required to carry out inspections of system scaffolds must, in addition to the above, attend a product training course for the specific system and hold certification for that scaffolding system.

48.15.6. Prefabricated mobile tower scaffolds. These scaffolds must only be erected, altered, and dismantled in accordance with the manufacturer's instructions by those holding a valid PASMA or CISRS qualification competency with mobile tower endorsement.

48.15.7. Users of mobile tower scaffolds who do not hold a PASMA qualification must receive the Company 'Safe Working from Mobile Towers' briefing

48.16. **Independent scaffolds**

48.16.1. All scaffolding companies responsible for designing scaffolding must hold Professional Indemnity (PI) insurance or have employed a design engineer who holds PI insurance. In both cases the validity of the insurance must be checked before the contract is awarded.

48.16.2. Emergency Access Routes and Emergency rescue arrangements must be discussed and agreed with the HSES Function and/or Emergency Services prior to erection of the scaffold.

48.16.3. Completed scaffold must be in accordance with BS EN 12811-1, BS EN 12810-1, TG 20 or to a specific engineered design

48.16.4. All scaffolding contractors must work in accordance with NASC guidelines.

48.16.5. Scaffold structures including scaffold edge protection, must be erected and inspected by an appropriately qualified CISRS operative with the appropriate grade of training and competence (this includes tube and fitting scaffolding around lift shafts, openings, prefabricated staircases, etc.).

48.16.6. Scaffold structures and edge protection must be inspected:
- After installation or assembly in any position
- After any event likely to have affected its stability, e.g. following strong winds, substantial alteration or impact damage
- At intervals not exceeding seven days

48.16.7. Handrails must be erected and inspected by an appropriate qualified CISRS operative with the appropriate grade of training/competence (Class A handrails (Steel work erection – BS EN 13374 etc.) must be designed as such to be inspected by a competent person (CISRS).

48.16.8. Handrails used for demarcation / excavation (tubes pushed into the ground / 'A' frames) need to be inspected by competent trained scaffold inspector with TW coordinator input).

48.16.9. Any scaffold erected for more than 7 days must have a proprietary staircase installed for all primary access routes where this is reasonably practicable.

48.16.10. During the erection or dismantling of scaffolds all works must be carried out in accordance with SG4 (latest issue). Advanced guardrails must be given the priority as the preferred erection method.

48.16.11. Timber scaffold boards and battens must be clearly marked showing that they are graded to BS2482, normally located on the end bands.

48.16.12. Where there is a requirement for sheeting or encapsulation, the scaffold must be designed to withstand the potential loads imposed, following advice from a competent Temporary Works Supervisor. The sheeting must conform to LPS 1215 (Flame Retardant Certification).

48.16.13. Hemping or topping up of scaffold standards must be kept to distances as small as reasonably practicable. Twenty-one foot tubes must not be hemped or topped up.

48.16.14. Prior to a hand over certificate being issued, a joint inspection between the Company and the scaffold provider must be carried out. The company Handover Certificate or an equivalent form provided by the scaffold provider (stating scaffold type, loading(s), intended use and pull out test

results including tie counts, design drawings) is required for all scaffold and subsequent major adaptions. All hand over certificates must be retained and used for reference where required.

48.16.15. All hand over certificates must be accompanied by a completed company Scaffold Inspection Checklist or an equivalent form provided by the company handing over the scaffold.

48.16.16. Design drawings and / or a TG20 NASC Compliance Sheet must be on site and in the possession of the Scaffold Supervisor prior to commencing erection and must be available at the time of handover and during any inspections.

48.16.17. Full dropped object protection must be in place and any tools which are needed for the work must be tethered to the operator, or to a suitable anchor point, where there is significant risk of injury, property damage, etc. below

48.16.18. Tools / equipment tethers and tool kits must meet the following criteria:

- Tools that have removable attachments (e.g. ratchets with sockets) must have a positive-locking system to prevent Dropped Objects
- Tethered tools/equipment must be properly engineered and rated for their weight to prevent them from dropping if released while working at height
- Secure, approved carrying pouches must be utilised while transferring tools and equipment to and from heights
- Radios must be secured using engineered clips. If engineered clips are not available, radios must be secured in the carrying pouch only when necessary

48.17. **Prefabricated mobile towers**

48.17.1. An inspection must be carried out by a trained competent person and an appropriate tag (e.g. Mobile Tower Scafftag) must be completed and fixed to the tower:

- Before first use
- When the tower is erected for more than 7 days
- After an alteration is made to the platform e.g. removal of handrails and alteration of platforms

48.17.2. As the stability of any mobile tower scaffold can be easily affected by inappropriate use the Supplier must ensure, unless the tower has been specifically designed for such use, the following activities are <u>never</u> carried out from a mobile tower:

- Fixing of sheeting, or other similar materials
- Grit blasting or water jetting
- Using the tower to hoist materials or support rubbish chutes
- Attaching, supporting plant or materials to the exterior of the tower

48.17.3. The Supplier must ensure emergency and rescue procedures are included within the safe system of work in accordance with the requirements of EMERGENCY ARRANGEMENTS section in this document.

48.18. **Podium steps**

48.18.1. Podium Steps. Users of podium steps must familiarise themselves with the equipment by reviewing the manufacturer's guidance and instructions. If the equipment is hired, this familiarisation must be provided by the hire company.

48.18.2. Podium steps are commonly used as a safer alternative to stepladders as they offer the additional protection of an enclosed platform. All Podium steps must meet the PAS 250 / BS8620 Standard. Only Anti- Surf podiums are permitted for use.

48.18.3. Podium steps must have a unique identification number and be tagged with an inspection tag e.g. a Scaftag or Microtag.

48.18.4. All podiums must have the contractor's or owner's name clearly displayed.

48.19. **Roof working and fragile surfaces**

48.19.1. **Rooftop Workers:** Must have a rooftop worker training qualification to meet any Client specific requirements. From **March 2023**, anyone accessing, supervising, or carrying out work e.g. inspection, servicing, maintenance etc. on a flat roof which does not have suitable edge protection in place must hold a valid EUSR Rooftop Worker – Safety & Access qualification.

48.19.2. A specific Safe System of Work (Method Statement, Work Package Plan and Risk Assessment) must be produced before any roof work is undertaken. Where the risk assessment identifies a risk of falling, a company permit system must be considered as a specific control measure. Fragile roofs must only be accessed under a Permit system.

48.19.3. *__With effect 1st January 2024__, the company have mandated the use a digital solution for Permits with some exemptions, the project will advise usages prior to work commencing.

48.19.4. Edge protection must be provided at all leading edges before work commences in accordance with BS EN 13374 (Temporary Edge Protection) and in conjunction with the Temporary Works Coordinator and Temporary Works Function, as required. Where this requirement cannot be implemented specific control measures must be identified and implemented in conjunction with the HSES Function (i.e. running lines, restraint systems, etc.).

48.19.5. The use of horizontal line systems as a means of fall prevention or protection must only be used as a last resort and following Scaffold Designer / Temporary Works Designer approval. The Site Lead / Temporary Works Coordinator must ensure the Scaffold Designer / Temporary Works Designer confirms that the Work at Height hierarchy of control has been followed with no other viable fall prevention or protection methods available.

48.19.6. When roof construction works are being undertaken, leading edge protection must be provided as work progresses where practicable in preference to other means of fall prevention.

48.19.7. All roof openings, including roof lights, ventilation ducts etc., must be adequately protected to prevent falls of persons or materials. This protection may include temporary works, signage and fencing. Exclusion zones must be put in place below any roof openings where practicable.

48.19.8. The roof must be assessed by the Temporary Works Function to ensure that storing materials will not exceed the safe working load.

48.19.9. Parapet walls must not be used as a working platform.

48.20. **Rope access**

48.20.1. Rope Access - Anyone supervising, using or inspecting rope access techniques or equipment must be trained, competent and able to provide documentary proof of an accredited qualification e.g. IRATA, LANTRA approved (original format only), relevant to the type and complexity of the technique being used. Copies of documentary proof will be retained on site.

48.21. **Stepladders and loose ladders**

48.21.1. All projects and locations must commence with a prohibition on the use of stepladders and loose ladders. Stepladders and loose ladders must only be used as a last resort.

48.21.2. Stepladders and Loose Ladders that are to be used to work from, must be under the control of the Permit to Work on Steps or Loose Ladders. The Permit to Work on Ladders is valid for a specified timeframe, however the TASK, the EMPLOYEE and the LADDER must all remain the same for the permit to remain valid. Ladders that are used purely for access or egress onto or into work areas (such as scaffolding, excavations etc.) do not require a ladder permit.

48.21.3. *__With effect 1st January 2024__, the company have mandated the use a digital solution for Permits with some exemptions, the project will advise usages prior to work commencing.

48.21.4. Stepladders and loose ladders that are used on site must comply with BS EN 131.

48.22. **Loading unloading deliveries of plant and equipment etc.**

48.22.1. Work at height on vehicles must be avoided whenever possible.

48.22.2. Where access to the delivery vehicle is unavoidable, the following hierarchy of controls must be considered:

- Vehicle-based edge protection systems, or alternatively, location-based edge protection systems
- Fall restraint systems (e.g. Safety harness and restraint lanyard)
- Fall protection systems (airbags and/or mats)

48.22.3. The use of horizontal line systems as a means of fall prevention or protection must only be used as a last resort and following Scaffold Designer / Temporary Works Designer approval. The Site

Lead / Temporary Works Coordinator must ensure the Scaffold Designer / Temporary Works Designer confirms that the Work at Height hierarchy of control has been followed with no other viable fall prevention or protection methods available.

48.22.4. Personnel must not be permitted to gain access to areas of a vehicle at height unless a risk assessment has been carried out and a safe system of work is in place relative to the type and size of edge protection afforded by the vehicle.

48.22.5. If a safe means of unloading or loading is not achievable, then the activity must not proceed, and the vehicle must be turned away until a safe method of unloading/loading is provided.

48.22.6. Three points of contact must be used at all times when accessing or climbing on/off a vehicle using the designated access point(s).

48.22.7. See HSE guidance 'Safe driving: loading & unloading'

48.23. **Man-riding baskets**

48.23.1. All users of man-riding baskets must use a fall restraint harness and fixed length lanyard attached to a designated anchor point. The only exception to this being where working over or adjacent to water that presents a risk of drowning. Automatic inflation life jackets must be worn in such cases.

48.24. **Hoists**

48.24.1. Hoist Operator.

- Familiarisation training by the hoist supplier and,
- a valid CPCS A20 Category Card, or
- NPORS N111 Hoist

Note: Red card holder's must be enrolled on an NVQ and working toward a blue card.

48.24.2. Appointed Person for hoist activities. Must have attended a 2 hour awareness session as a minimum on Managing Hoists to gain an understanding of statutory legislation, in particular BS7212.

48.24.3. Competent Person for hoist activities. Must have received familiarisation training from the suppler of the hoist.

48.24.4. Hoist Erector. NVQ levels two or three in Hoist Installation.

48.24.5. The Supervisor of Hoist Erection must be on location at all times during erection and must not undertake the Thorough Examination for the equipment.

48.24.6. Ground Base and Tie Stability

48.24.6.1. All necessary load bearing data, including the tying arrangements must be received, appraised and approved prior to commencing the erection of a hoist by a competent person in consultation with the Temporary Works Function.

48.24.6.2. The Supplier must undertake routine maintenance activities as specified in the Manufacturers Instruction Manual and details must be recorded in the Lifting Equipment Accessories Register

48.24.7. Statutory Examinations

48.24.7.1. A competent engineer must be appointed to conduct the statutory examination and test which must be witnesses by an independent and impartial engineer. Timescales for examinations are:

48.24.7.2. Rope Hoist - Six Month

48.24.7.3. Rack and Pinion Hoist - Three Month

48.24.7.4. Electrical Installation - Three Month

48.24.8. A documented procedure must be in place for passenger hoists to rescue personnel whilst it is in operation at its maximum passenger load and its maximum height or worse-case scenario. This must be in place prior to commissioning the hoist for use and include emergency communication or signalling arrangements.

48.24.9. Hoist way, Gates, Interlocks and Notices

48.24.10. The hoist platform must be fully enclosed to a height of at least 2m and where possible fully enclose the hoist way.

48.24.11. 2m high close-meshed gates must be provided at every landing point and these must be equipped with electrical and mechanical interlocks.

48.24.12. An additional exclusion zone must be provided around the base to restrict plant interface and exclude unauthorised personnel.

48.24.13. All hoists must be fitted with mechanical and electrical overrun devices to prevent travel beyond safe limits.
48.24.14. To prevent unauthorised use the hoist controls must be fitted with an isolator.
48.24.15. Commissioning and Testing Arrangements
48.24.15.1. A testing regime must be in place and will be dependent upon the hoist location and configuration. It must include a 25% overload test. A record of the test must be recorded on Lifting Equipment Accessories Register.
48.24.16. Manufacturers Operating Instructions
48.24.16.1. The Manufacturers Operating Instructions for the hoist must be available on site and be held by the or other delegate.

48.25. **Emergency procedure**
48.25.1. Where fall arrest harnesses are used, the Rescue Plan must address the avoidance and relief of suspension trauma and in particular first aiders must be made aware of the proper treatment. Paramedics arriving at the site must be made aware that the casualty may have suffered from suspension trauma. Conscious casualties should be kept in a sitting position where possible.
48.25.2. Where appropriate the emergency services must be consulted at the planning stages for work at height, they should not be relied upon as the primary option for rescue and should only be used as a last resort.
48.25.3. Appropriate training must be provided to sufficient personnel to ensure the planned rescue techniques can be successfully implemented without delay. Refresher training will be provided at appropriate intervals.

49. YOUNG PERSONS

49.1. **Competencies**
49.1.1. Anyone supervising a child or young person must have:
- a relevant and current check as required by the Companies Safeguarding arrangements,
- a CSCS/CPCS card (or Company accepted equivalent) commensurate with the role,
- attended a Site Manager Safety Training Scheme (or Company accepted equivalent).

49.2. **Permissions**
49.2.1. The Company Site Lead or Office/Facilities Manager, and the HR Function must ensure children/young persons are protected by the Company's Insurance Policies before the visit, work experience or employment commences.
49.2.2. Children must not be employed by the Company;
- If the Young Person or Work Experience student is under the age of 16 then the manager taking on the student must have a DBS check (previously known as CRB).

49.2.3. Young persons can by employed by the Company, the Recruitment Policy must be followed, along with the requirements of this procedure and all other relevant Company procedures. Young persons can also undertake work experience in an office in a controlled environment under direct supervision and observe site activities on an accompanied tour.

49.3. **Responsible person**
49.3.1. Children and young person(s) on visits or work experience must be accompanied at all times and be under the direct supervision of a responsible person.
49.3.2. The responsible person must:
- Be responsible for the timekeeping of the child/young person
- Take charge of them in the event of an emergency, such as a fire or evacuation or in the event of illness or minor injury.
- Securely hold contact details for the child/young person's next of kin
- Agree and implement hand-over at the end of the working day to a parent or guardian (if practicable) or ensure travel arrangements are agreed.

- Ensure the control measures within the Risk Assessment are implemented and remain valid.

49.4. **Risk assessment**

49.4.1. The Company Site Lead or Office/Facilities Manager must identify the activities in which the child or young person is to be engaged and ensure a suitable risk assessment is undertaken in accordance with the SETTING PEOPLE TO WORK SAFELY section. This risk assessment must take into account the characteristics of a child or young person, including the following considerations:

- School authorities and parents/guardians must be made aware of the key findings of a risk assessment undertaken for a child.
- Steps must be taken to ensure the content of the risk assessment has been briefed to and understood by both the child/young person and their supervisor.
- Young person(s) must be provided with any necessary PPE.

49.5. **Restrictions**

49.5.1. A young person can carry out work involving the above risks if the work:

- is necessary for their training
- is properly supervised by a responsible person, and
- the risks are reduced so far as reasonably practicable

49.5.2. All risks, controls and limitations must be documented in the specific risk assessment for the young person.

49.5.3. Children below the minimum school leaving age must not be employed in industrial workplaces such as factories or construction sites, except on work experience.

49.5.4. Limitations or special arrangements need to be considered for existing health conditions of children or young person(s) e.g. asthma, defective colour vision, hearing impairment etc. Refer to OCCUPATIONAL HEALTH SURVEILLANCE-ASSESSMENT. All risks, controls and limitations must be documented in the specific risk assessment for the child/young person.

49.5.5. The Working Time Regulations 1998 provide entitlements and restrictions to young person(s) working hours and rest breaks. All risks, controls and limitations must be documented in the specific risk assessment for the child/young person.

49.5.6. Client specific restrictions may apply such as drugs and alcohol testing prior to approval to work on the rail infrastructure.

49.6. **INDUCTION**

49.6.1. The Supplier must ensure that children and young person(s) receive a location induction with information about potential site specific hazards and restrictions that may be encountered.

49.6.2. The Supplier must ensure that the nominated supervisor is present at the induction. The nominated supervisor must understand what the arrangements are to ensure that the child or young person(s) is safe and the extent of the work which may be undertaken.

49.6.3. The EMERGENCY ARRANGEMENTS must be clearly explained. Emergency escape routes must be walked through and muster points visited.

49.6.4. Action must be undertaken to ensure the induction has been understood by both the nominated supervisor and the child or young person(s) and that health and safety rules and controls are complied with.

Abbreviations/Definitions

Abbreviation	Definition
ABNORMAL LOAD	An abnormal load is a vehicle that has any of the following: • a weight of more than 44,000kg • an axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle • a width of more than 2.9 meters • a rigid length of more than 18.65 meters
ABRASIVE WHEEL	• a wheel, cylinder, disc or cone which, whether or not any other material is comprised therein, consists of abrasive particles held together by mineral, metallic or organic bonds whether natural or artificial; • a mounted wheel or point and a wheel or disc having in either case separate segments of abrasive materials; • a wheel or disc made in either case of metal, wood, cloth, felt, rubber or paper and having any surface consisting wholly or partly of abrasive material; and • a wheel, disc or saw to any surface of any of which is attached a rim or segments consisting in either case of diamond abrasive particles.
APPOINTED PERSON (AP)	The person responsible for a lifting operation. Each site undertaking lifting operations shall have a nominated AP responsible for overall control of all the lifting operations.
AT WORK	Any time when a person is being paid and is 'on duty', including periods of paid 'on call' or 'standby' duties. This includes driving on Company business or using a Company vehicle for any purpose. Attendance at evening functions, periods of free time at the end of a training day within residential courses, etc., are not generally considered to be time at work for the purpose of this policy.
AUDIOMETRY	The assessment of hearing should be conducted every year for the first 2 years and then every 3 years thereafter. If a risk assessment demonstrates exposure levels of noise are exceeding the action value of 80Db (lower) or 85Db (action) then this surveillance program should be completed. Action level clearly indicates that additional measures should be sought to control/reduce noise at source or via control measures.
BREAKING GROUND	Where work activities which involve ground penetration by (this list is not exhaustive): • excavation (mechanical and non-mechanical) • drilling/boring/cutting • driving pins or posts (including setting out) • road surface cutting or planning operations • road surface laying operations (which has the potential to damage surface valves and valve housings)

	• piling • Vegetation clearance (see TREE WORK OPERATIONS AND VEGETATION GROUND CLEARANCE) • planting vegetation/tree(s) any other work which involves breaking the surface of the ground at, or below, surface level
EXCAVATOR BANKSMAN	Responsible for assisting plant operators and vehicle drivers to safely operate on site to prevent injury to people, damage to property or materials, and to stop operations if necessary, during any work mode.
CARPENTRY/ WOODWORKING MACHINERY	Includes: • portable circular saws • bench saws • chop saws • cross cut mitre saws • jigsaws • reciprocating saws • routers
CHAIN OF CUSTODY	The process used to maintain and document the chronological history of a drugs and alcohol sample, which guarantees the identity and integrity of the sample from collection through to reporting of the test results. This leads to the production of a legally defensible report.
CHILD / CHILDREN	A child includes any person who has not yet reached compulsory school leaving age. See gov.uk for further details of the School Leaving Age.
CONFINED SPACE	Under these Regulations a 'Confined Space' shall have both of the following defining features: • it shall be a space which is substantially (though not always entirely) enclosed; and • one or more of the specified risks below will be present or reasonably foreseeable.
CONFINED SPACE CO-ORDINATOR	The competent person responsible for the management of working in a Confined Space.
CONTRACT LIFT	A specialist crane company or external supplier taking on the responsibility for planning, organising and controlling the lift, including providing the relevant competent duty holders to plan and execute the lift.
CRANE COORDINATOR	Coordinates multiple lifting operations where they may impact upon each other and to liaise with individual Appointed Persons and Crane/Lift Supervisors.
CRANE/LIFT SUPERVISOR (LS)	Supervises the lifting operation to ensure that it is carried out in accordance with the Lift Plan and the Safe System of Work.

DRUG	A “controlled drug” as defined in the Misuse of Drugs Act 1971 and its subsequent modification orders, including, but not limited to: · • Cannabis • Cocaine • Amphetamines • Barbiturates • Benzodiazepines • Methadone • Opiates • Ketamine
DSE USER	An employee who habitually uses Display Screen Equipment for a significant part of their normal work
ESSENTIAL PERSONNEL	A trained and competent Slinger, Signaller, Plant & Vehicle Marshal, Excavator Banksman or Machine Controller with the appointed duty of communicating with the Plant Operator.
EXPOSURE LIMIT VALUE (ELV)	The level of daily or weekly personal noise exposure or of peak sound pressure which must not be exceeded. These values are: (a) a daily or weekly personal noise exposure of 87 dB (A-weighted); and (b) a peak sound pressure of 140 dB (C-weighted).
FFR	Fit for Role
GAS OR LIQUID CHROMATOGRAPHY AND MASS SPECTROMETRY (GC-MS OR LC-MS):	A technique used to identify and accurately measure the concentration of drugs or their metabolites present in a sample.
LABORATORY ANALYSIS	Confirmation of the nature and concentration of substances present in a sample, using current scientific best practice under the supervision of a toxicologist in a laboratory accredited for the purpose, and where the laboratory participates in a recognised external quality assurance scheme.
LIFTING ACCESSORY	The accessories such as chains, slings, shackles, web slings, which are used to attach loads to lifting equipment.
LIFTING EQUIPMENT	The equipment used for lifting and lowering loads. This includes attachments used to anchor, fix or support the equipment (e.g. the runway of an overhead travelling crane).
LOWER EXPOSURE ACTION VALUE	(a) a daily or weekly personal noise exposure of 80 dB (A-weighted); and (b) a peak sound pressure of 135 dB (C-weighted
MAJOR INCIDENT	A Major Incident is defined as an event with serious or extreme consequences. It is the realisation of an actual level 4 or 5 severity rating, as defined in the ISMS Incident Severity Classifications Matrix

METHOD STATEMENT/ WORK INSTRUCTION	A Method Statement/Work Instruction is a document detailing how a particular task or activity will be carried out. It should detail the possible dangers/risks associated with the particular part of the project and the methods of control to be established, to show how the work will be managed safely
MLD	Motion Limiting Device (e.g. slew or height restrictor).
MULTIPLE LIFTING (TANDEM)	Balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk.
NON-NEGATIVE	This is an interim Point of Collection result highlighting which drug group requires further investigation by laboratory analysis
OH	Occupational Health
OUR PEOPLE	All employees of the Company and any other individual who carries out work on its behalf.
POINT OF COLLECTION	At the time and place when a sample is collected. An immediate result can be obtained regarding the absence or potential presence (non-negative) of a range of substances in urine. In the event of a non-negative result, the sample is then sent, using a Chain of Custody process, for laboratory analysis.
PPE	Personal Protective Equipment
PSYCHOACTIVE SUBSTANCE	Substances and products that mimic the effects of traditional controlled drugs such as cannabis, cocaine, amphetamine and MDMA (ecstasy), together with other substances that have been used as intoxicants for many years, e.g. nitrous oxide (excludes alcohol, nicotine and caffeine).
PTS	Network Rail Personal Track Safety
REASONABLY PRACTICABLE	Balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk.
RISK ASSESSMENT	A systematic process of evaluating and mitigating the potential risks that may be involved in a projected activity or undertaking.
ROTARY DISC CUTTER (RDC)	A portable powered cut off saw, generically known as Stihl saws, Road (floor) saws, cut-off saws or simply disc cutters
RPE	Respiratory Protective Equipment
SHIFT	Continuous period of work between breaks.

SIGNALLER	Appointed within the Lift Plan with the responsibility for directing the Operator to ensure safe movement of the lifting equipment and load.
SIGNIFICANT	*"Risks which are significant are those that are not trivial in nature and are capable of creating a real risk to health and safety which any reasonable person would appreciate and would take steps to guard against."*
SIGNIFICANT CHANGE	A significant change can be defined as follows: • If the change increases the severity or likelihood of a particular hazard • If there is a change to key personnel with in the supervisory or team structure where it is essential for a set number of supervisors & team members in the gang structure to complete the task safely. E.g. Foreman/Ganger, specialist plant operator or one of the essential team members does not come into work due to illness and there is no replacement for the day • A change where the engineering principles in the originally approved RAMS are compromised (e.g. If a piece of lifting equipment has to be re-sited changing the loading calculations) • If there was a period of heavy rainfall that invalidates the 'temporary works' ground conditions • If the originally approved safety clearances cannot be achieved
SINGLE NUMBER RATING (SNR)	The single number rating value is provided for all CE marked hearing protectors. The SNR provides a simple estimate of the protection when corrected for the frequency content of the noise.
SITE LEAD	The person directly responsible for the Health and Safety of all employees, subcontractors and third parties, and for the care of the environment, affected by our works.
SLINGER	A person responsible for attaching and detaching the load to and from the crane, for correct selection and use of lifting accessories in accordance with the specifications of the appointed person and for initiating the movement of the load
SPECIFIED RISK	Means a risk of a) serious injury to any person at work arising from a fire or explosion b) without prejudice to paragraph (a) i. the loss of consciousness of any person at work arising from an increase in body temperature ii. the loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen c) the drowning of any person at work arising from an increase in the level of liquid; or d) the asphyxiation of any person at work arising from a free flowing solid or the inability to reach a breathable environment due to entrapment by a free flowing solid.

STATIC LIFT SUPERVISOR	Only manages and supervises Static Lifting Operations.
STATIC LIFTING EQUIPMENT	Non-powered equipment used for lifting operations using vertical elevating/lowering lifting equipment (including but not restricted to winch forklift, chain blocks, gin wheels fitted with an automatic clutch and SkyRak system for use in MEWPs).
STATIC LIFTING OPERATION	Lifting operations that are conducted by using static lifting equipment.
SUBSTANCE ABUSE/MISUSE	The abuse and or misuse of any substance including but not limited to: • Glue • Solvents • Tranquilisers • Sleeping Pills • Anti-Histamines, that cause drowsiness • Cough Medicines, usually containing codeine Or any other drugs or substances that could affect a person's ability to conduct their duties safely. This includes medication, whether prescribed by a medical practitioner or purchased over the counter. When a medication is prescribed by a GP, the employee has a duty to inform the GP of their occupation and whether they drive or operate machinery at work, the GP may then prescribe alternative medication which does not cause drowsiness. An Occupational Health referral will be advised where the manager is concerned about medication side effects.
THOROUGH EXAMINATION	A systematic and detailed examination of lifting equipment by a competent person to detect any defects that is or may become dangerous.
TOOLS AND EQUIPMENT	• Hand tools, such as hammers and screwdrivers, • Powered tools, including electric (such as hand drills and circular saws), pneumatic, hydraulic, cartridge or compressed air, stationary remote-controlled equipment • Welding and oxy/fuel gas equipment.
TOP PERSON	The competent person in charge on the surface and remains outside the Confined Space.
TOPPING AND TAILING	This is a process in which one machine lifts one end of a horizontal load just clear of the ground whilst the main crane lifts the other end, repositioning the jib as necessary, until it has the entire load in a vertical position and the tailing machine can be released.
UPPER EXPOSURE ACTION VALUE	(a) a daily or weekly personal noise exposure of 85 dB (A-weighted); and (b) a peak sound pressure of 137 dB (C-weighted).
VEHICLE MARSHAL	See section 5 of HSF-PR-0047 People, Vehicle and Plant Interface for competencies, training, definitions and requirements.

WORK EXPERIENCE	Short term period experience of employment and / or training.
WORKER (i)	Person performing work or work-related activities that are under the control of the organisation Workers include top management, managerial and non-managerial persons. Workers include persons employed by the organization, workers of external providers, contractors, individuals, agency workers, and by other persons to the extent the organisation shares control over their work or work-related activities.
WPP	Work Package Plan
YOUNG PERSON	A young person is any person who is above the compulsory school leaving age and below the age of 18.

Appendix A – Method statement/WPP appraisal

A WORK PACKAGE/METHOD STATEMENT DETAILS

- Has the work been clearly defined to allow sufficient planning and risk assessment?
- Has a specific sequence of work been clearly defined in sufficient detail incl. deliveries/access to site?
- Has a detailed risk assessment been produced?
- Have all relevant risks in relation to the work been identified with suitable control measures?
- Have any risks associated with Fatal Risks been identified and adequate control measures detailed?
- Are details and signature of the assessor included on the risk assessment?
- Have health and safety roles and responsibilities of Supervisors been detailed in the document (Subcontractors) or as specified in CPP (Direct)
- Are the personnel required to complete the activities clearly identified, including supervision?
- Has the number and competence of personnel and supervisors been identified and deemed adequate for the intended works including PVMs, Slinger/Signallers etc.
- Is the type of equipment to be used identified, including any specific requirements?
- Are the materials and tools to be used identified in sufficient detail (e.g. logistics, deliveries, movement on site)?
- Have the relevant COSHH assessments been provided?
- Is the Manufacturers' information in accordance with the COSHH assessments?
- Is the standard of PPE to be worn identified, including any non-mandatory PPE?
- Have applicable drawings/sketches, etc. been identified?
- Have the requirements for any permits been identified, and details of how these will be controlled and provided?
- Are the specific Installation Inspection Check Lists and Test Certificates to be completed for the work identified?

B SITE DETAILS

- Are there specific arrangements for the movement of personnel around site and have the on-site controls been taken into consideration with particular attention to People and Plant Interface?
- Are the details in line with the Project PVPMP/Traffic Management Plan and has consideration been given to movement around the site?
- Has loading / unloading been considered (if applicable)?
- Have the site location and layouts specific to the work at each location been identified, including details of sufficient space for plant & vehicle operations/interfaces, relevant lay down areas, storage areas and safe places?
- Are appropriate protection and isolation measures detailed (if applicable) e.g. fencing, and the responsibility for implementing and maintaining these measures?
- Have clear communication routes been identified and are contact details available for all relevant parties?
- Have all foreseeable emergencies been identified and are appropriate arrangements detailed, (e.g. working at height, fire, environmental, release of gas, etc.) including escape, evacuation and muster arrangements?
- Have interfaces with the public and other workers been considered?
- Have welfare arrangements been considered?

C BRIEFING

- Has the document been broken down into manageable elements to assist delivery and understanding of briefings (e.g. Task Briefings, RAMS briefings)
- Is there detail on the required frequency of briefings?

- Is there detail on how, when and who will brief operatives prior to setting them to work complete with a method of acknowledging understanding?
- Has consideration been given to the correct level of detail to be included in such briefings so that information is clear and concise for operatives to understand?
- Have associated Work Instructions or any additional information included been reviewed for suitability (if applicable)?

Appendix B – Risk Assessment minimum considerations

- Company fatal risks
- Occupational health risks
- Human factors including skills, knowledge, or experience
- Selection of products, plant, and equipment
- Substances hazardous to health
- Any specific customer requirements or standards
- Environmental factors i.e. terrain, weather, location
- Members of the public
- Routine and non-routine activities and situations
- Potential emergency situations
- Past relevant incidents, internal or external to the organisation, including emergencies, and their causes
- Situations occurring in the vicinity of the workplace caused by work-related activities
    - Under the control of the organisation
    - not controlled by the organisation

Appendix C – Daily Activity Briefing

This checklist is to be used to ensure the work team is briefed on site conditions, tasks for the day and controls etc. before every shift.

Time must also be made for operatives to raise any concerns.

		Yes	N/A
1	Is all the team gathered at the workplace?		
2	Is the team fit and healthy for work and are specified group numbers, correct?		
3	Has the team received their specific Task or RAMS briefing?		
4	Are any permits to work required? If so, have you discussed who the permit holder is and reminded the team of the importance of following all of the permit controls?		
5	Are the team using a method/process today that they haven't done before? If so, has a task briefing been compiled and have you discussed the critical steps with the team and any potential mistakes that may be made?		
6	What is the safe access / egress route to the point of works? Have you discussed this with the team?		
7	Are there any issues arising from yesterday's work? If so, have you discussed and agreed what can be done to remove these issues with the team?		
8	Are there any interfaces with others that could affect the team's or others safety? If so, have you discussed and agreed how these interfaces are to be defined/controlled?		
9	Have you discussed People, Vehicle and Plant Interface with the team and agreed how segregation is to be achieved?		
10	Will weather conditions affect the safety of your work today? If so, have you discussed any additional controls that are required to mitigate these risks with the team?		
11	Have you checked to ensure everyone has all the plant, tools/equipment, materials and PPE they need to carry out their job safely?		
12	Have you reminded the team of the importance in carrying out daily checks to ensure all plant, tools/equipment have been inspected and are in good order prior to commencing work?		
13	Have you reminded the team to stay within their safe limits when using hand-held vibratory equipment?		
14	If work at height is to be undertaken, has the appropriate safe access methods been discussed and agreed with the team (including rescue)?		
15	If work in and around overhead live electrical wires is to be undertaken, has the appropriate segregation from live electrical wires / equipment been discussed and agreed with the team?		
16	Have you reminded the team of the Golden Rules and What3Things and the importance of ensuring all unsafe acts and conditions are reported immediately?		
17	If you are including an emergency location (What3words) in your emergency arrangements, has this been identified, discussed and shared with those affected?		

18	Does your team feel they can complete their work safely today and have you informed them to **'Stop work if anything changes'** or if they have a concern that may impact on their health, safety and wellbeing?		

IF YOU ARE UNABLE TO RECTIFY ANY UNSAFE CONDITION DO NOT START WORK. REPORT TO YOUR SUPERVISOR OR THE BALFOUR BEATTY SITE MANAGER.

PLEASE ENSURE THIS FORM IS SIGNED ON THE BACK BY THE WORK TEAM.

OTHER ISSUES TO BE CONSIDERED/COVERED IN THE DAILY ACTIVITY BRIEFING (DABS)

As an open, two-way conversation, talk through the following with the team:

- **Hazards** – any others not on the list (what could hurt members of the team or others)?
- **Risks** – (how could the hazards hurt someone)?
- **Controls** – (what will the team put in place to stop anyone getting hurt)?
- **Deliveries.**
- How we will get **materials and tools** to the work area.
- The need to **keep the area tidy** and free from slips, trips & falls – arrangements for removing rubbish.
- The Network Rail Lifesaving Rules:
- **Observation cards** received yesterday - thanks and **what is being done**.
- **Encouragement** to use observation cards today.

Appendix D – Training/Competence Requirements for Underground Services

Major Projects

Designation	All New Roads and Street Works Act Projects	Non NRSWA Service Location & Works Inside Exclusion Zone	Works outside Exclusion Zone
Utility Coordinator (Authorising Person)	NRSWA Supervisor or IOSH Avoiding Danger from Underground Services RD8000 and TX3*	NRSWA Supervisor/ EUSR cat1 or IOSH Avoiding Danger from Underground Services RD8200 and TX5*for Stats Coordinators and G CAT4+ and Genny for the Deputes	NRSWA Supervisor/ EUSR cat1 or IOSH Avoiding Danger from Underground Services RD8200 and TX5*for Stats Coordinators and G CAT4+ and Genny for the Deputes
Excavation Supervisor (only required when >1x excavation gangs)	NRSWA – Supervisor	SMSTS NRSWA – Supervisor	SMSTS
Responsible Person (Works Supervisor)	NRSWA – Supervisor CAT3+* and generator	SSSTS Utility Excavations (Category 1 & 2) or NRSWA – Operative CAT3+ and generator	SSSTS
Operatives breaking ground	NRSWA – Operative	Utility Excavations (Category 1 & 2) or NRSWA – Operative	Relevant CSCS Card

Regional Construction

Designation	All New Roads and Street Works Act Projects	Non NRSWA Service Location & Works Inside Exclusion Zone	Works outside Exclusion Zone
Utility Coordinator (Authorising Person)	NRSWA Supervisor or IOSH Avoiding Danger from Underground Services RD8000 and TX3*	NRSWA Supervisor or IOSH Avoiding Danger from Underground Services RD8000 and TX3*	NRSWA Supervisor or IOSH Avoiding Danger from Underground Services RD8000 and TX3*
Excavation Supervisor (only required when >1x excavation gangs)	NRSWA – Supervisor	SMSTS NRSWA – Supervisor	SMSTS
Responsible Person (Works Supervisor)	NRSWA – Supervisor CAT3+* and generator	SSSTS Utility Excavations (Category 1 & 2) or NRSWA – Operative CAT3+ and generator	SSSTS

Operatives breaking ground	NRSWA – Operative	Utility Excavations (Category 1 & 2) or NRSWA – Operative	Relevant CSCS Card

Living Places

Designation	All New Roads and Street Works Act Projects, including outside and inside exclusion zones
Pre-Construction Lead / Designer	Knowledge of the dangers and control measures associated with underground and overhead utilities Information and instruction on the requirements of this procedure. Appointed and Recorded in the Contracts, projects, offices and, facilities Construction Phase Plan (PRM-PR-0001)
Site Lead **Authorising Person –** High Hazard Services (4-5) **SDP** - L3	NRSWA – Supervisor SMSTS CSCS Card EUSR Cat 1 & 2 Combined CAT Manager Online user Appointed and Recorded in the Contracts, projects, offices and, facilities Construction Phase Plan (PRM-PR-0001): and the project specific Works Package Plan or method statements
Supervisor / Black Hat **Authorising Person -** Low Hazard Services (1-3) **SDP** – L1 & L2	NRSWA – Supervisor EUSR Level 1 & 2 Combined SSSTS CSCS Card CAT Manager Mobile and/or Online user BBLP – AWNES Awareness Training Appointed and Recorded in the Contracts, projects, offices and, facilities Construction Phase Plan (PRM-PR-0001): and the project specific Works Package Plan or method statements
Reactive/Routine/Emergency Works **Authorising Person -** Low Hazard Services (1-3) **(2 person Team)**	NRSWA – Operative EUSR Cat 1 & 2 Combined CSCS Card CAT Manager Mobile user Breaking Ground Competency Assessments BBLP – AWNES Awareness Training

	Recorded in the Contracts, projects, offices and, facilities training matrix
Operatives breaking ground	NRSWA – Operative CSCS Card EUSR Cat 1 & 2 Combined CAT Manager Mobile user Breaking Ground Competency Assessments BBLP – AWNES Awareness Training Recorded in the Contracts, projects, offices and, facilities training matrix
Excavation Marshal	NRSWA – Operative CSCS Card EUSR Cat 1 & 2 Combined BB Academy - Excavation Watch Module / EUSR Banksperson Training Breaking Ground Competency Assessments BB Academy – AWNES Awareness Training BB People Vehicle Marshall Recorded in the Contracts, projects, offices and, facilities training matrix

BB Homes

Designation	All Works involving the work near existing services and breaking surfaces
Permit Issuer (Site Lead/Site Manager)	SMSTS NRSWA – Supervisor – (where required) EUSR – CAT 1 (Safe Use of Locator Equipment) Avoiding Dangers from Services Training CAT4+ with data logging* and signal generator
Permit Acceptor (Team Lead/Supervisor)	NRSWA – Operative - (where required) SSSTS EUSR – CAT 1 (Safe Use of Locator Equipment) Avoiding Dangers from Services Training CAT4+ with data logging* and signal generator
Operatives breaking ground (Note: minimum one member per team)	NRSWA – Operative - (where required) EUSR – CAT 2 (Safe Digging) Avoiding Dangers from Services Training

Rail

ALL WORKS INVOLVING BREAKING GROUND OR CROSSING SERVICES			
DESIGNATION	**ALL NRSWA PROJECTS**	**NON-NRSWA PROJECTS**	
		INSIDE EXCLUSION ZONE	OUTSIDE EXCLUSION ZONE
Authorised Person (Permit Issuer)	• SMSTS(1) • NRSWA – Supervisor ◦ LA, S1 Certificates (minimum) • CAT4+ with data logging(2) and signal generator familiarisation training qualification	• SMSTS(1) • NRSWA – Supervisor (LA, S1 Certificates) or EUSR – Category 1 • CAT4+ with data logging(2) and signal generator familiarisation training qualification	
Responsible Person (Permit Receiver)	• SSSTS(1) • NRSWA – Supervisor ◦ LA, S1 Certificates (minimum) & ◦ Relevant S2 – S8 Certificate • CAT4+ with data logging(2) and signal generator familiarisation training qualification	• SSSTS(1) • EUSR – Category 1 & 2 • CAT4+ with data logging(2) and signal generator familiarisation training qualification	• SSSTS(1) • CSCS qualification(1)(3)
Excavation Supervisor (Only required when >1 excavation gang)	• SSSTS(1) • NRSWA – Supervisor ◦ LA, S1 Certificates (minimum) & ◦ Relevant S2 – S8 Certificate	• SSSTS(1) • EUSR – Category 1 & 2	• SSSTS(1) • CSCS qualification(1)(3)
Works Party	• NRSWA – Operative ◦ LA, O1 Certificates (minimum) & ◦ Relevant O2 – O8 Certificate • EUSR – Category 1 & 2 • CAT4+ with data logging(2) and signal generator familiarisation training qualification *Note: Only one NRSWA qualified operative is required in the team, however, they must be on site at all times whilst work is being undertaken.*	• EUSR – Category 1 & 2 • CAT4+ with data logging(2) and signal generator familiarisation training qualification	• CSCS qualification(1)(3)

(1) Or Company accepted equivalent.
(2) Listed equipment must be used as a minimum. Update models may be used. In all cases must meet Company specifications
(3) EUSR is affiliated to the Construction Skills Certification Scheme (CSCS) and card carries the logo.

Appendix E – Minimum Exclusion Zones – Underground Utilities (MP and RC)

The following reference material is only applicable to the following SBU's:

- UK Construction Services
- Major Projects

All other SBU's must refer to Appendix F

The minimum extent of exclusion zones vary according to the type of underground utility and the Asset Owner. The Asset Owner must be contacted to confirm safety clearances and any additional requirements. The table below provides guidance on the minimum distances around underground utilities which must not be encroached by any plant or equipment.

	Exclusion zones				
Type of utility	 Air Lance & Vacuum excavator	 Hand Dig	 Powered hand tool	 Mechanical Excavation	 Piling
Telecom cable	0.0m	0.0m - Safe digging techniques must be applied, using insulated tools and controls defined in a safe method of work.	1m	1m	1m
Low pressure water			1m	1m	1m
Low Voltage Electric Cables			1m	1m	1m
High Voltage (11 & 25Kv) Electric Cables			1m	1m	5m
High Voltage (132Kv) Electric Cables			5m	5m	10m
Low-Medium Pressure Gas < 2bar			1m	1m	1m
Intermediate Pressure Gas 2-7bar			3m*	3m*	15m*
High Pressure Gas > 7 bar			3m*	3m*	15m*
High Pressure clean/waste water			1m	1m	1m
Heating Networks			2m	2m	5m
High Pressure fuel lines			10m	10m	30m
Fuel storage tanks			10m	10m	30m

* Subject to accurate trace by the Asset Owner

Appendix F – Minimum Exclusion Zones – Underground Utilities (GW, PTD, LP, Rail)

The following reference material is only applicable to the following SBU's

- Gas & Water
- Power Transmission & Distribution
- Living Places
- Rail

All other SBU's must refer to Appendix E

Owner. The Asset Owner must be contacted to confirm safety clearances and any additional requirements. The table below provides guidance on the minimum distances around underground utilities which must not be encroached by any plant or equipment.

	Exclusion zones				
Type of utility	 Air Lance & Vacuum excavator	 Hand Dig	 Powered hand tool	 Mechanical Excavation	 Piling
Telecom cable	0.0m	0.0m - Safe digging techniques must be applied, using insulated tools and controls defined in a safe method of work.	0.5m depth	0.5m depth	1m
Low pressure water			0.5m depth	0.5m depth	1m
Low Voltage Electric Cables			0.5m	0.5m	1m
High Voltage Electric Cables			0.5m	0.5m	5m
Low-Medium Pressure Gas < 2bar			0.5m	0.5m	1m
Intermediate Pressure Gas 2-7bar			3m*	3m*	15m*
High Pressure Gas > 7 bar			3m*	3m*	15m*
High Pressure clean/waste water			0.5m	0.5m	1m
Heating Networks			1m	1m	1m
High Pressure fuel lines			10m	10m	30m
Fuel storage tanks			10m	10m	30m

* Subject to accurate trace by the Asset Owner

Appendix G – PPE EN Standards

Part of the body	Example PPE to use (as determined by risk/COSHH assessment)	Current EN standard
Head	Safety helmet (chin straps worn if working at height).	EN 397 or EN 12492*
Eyes	Safety glasses, safety goggles, visors, face shields.	EN 166
Ears	Ear defenders or plugs.	EN 352 Class 1 – Headband Class 2 – Ear plugs Class 3 – Helmet
Respiratory	Respirators or breathing apparatus.	EN 136, EN 138 EN 140, EN 149
Body	High visibility jacket, coat, vest, overalls, boiler suits, disposable overalls, specialist protective clothing, wet weather coats, jackets / trousers. (Shorts, cut off or skirts are not permitted on construction sites)	EN 20471:2013 (Class 2, 3) Hi-Vis EN 343 – Protection against rain
Hands / arms	Appropriate gloves	EN 388 EN 374 – Chemicals and Micro Organisms
Feet / Ankle	Safety Boots – with midsole, protective toe caps and ankle protection, wellingtons – with midsole and protective toe caps. **(Rigger type boots are not acceptable)**	EN 20345 (Type S3)
Body	FR/Arc Flash Protection of outer and under garments	IEEE Std.1584 IEC 61482-1-2 / EN 61482-1-2 IEC 61482-1-2 / EN 61482-1-2
	Material and design requirements for electrostatic dissipative protective clothing	EN 1149

**EN 12492 helmets have different requirements for the harness or cradle, which must incorporate an integral chin strap that does not break or stretch under force. EN 397 helmets, however, do not require a mandatory chin strap, and an optional chin strap must break under a force of between 150N and 250N to reduce the risk of a wearer being injured by becoming caught in machinery in an industrial environment. EN 12492 helmets also feature an internal impact liner to improve side impact protection.*

Appendix H – Excavation Supervisor Competence and Responsibilities

Excavation Supervisor	
Name(s)	
Deputy(s)	
Definition	A competent person who fully understands the hazards and necessary precautions involved in excavation works. Responsible for supervising the operational aspects of the excavation, undertaking inspections, assessing environmental conditions, and controlling access.

Training and Competency Requirements

- A competent person who fully understands the hazards and necessary precautions for excavation works
- Skills, knowledge, training and experience on the hazards and necessary precautions for excavation works, safe digging practices and excavation inspections
- Relevant* training, instruction and experience in the on-site transport, storage, assembly, installation and dismantling of excavation support systems
- Minimum safety training of Site Supervisor Safety Training Scheme (SSSTS) or other Company accepted equivalent
- Selected by the Site Lead
  * Training must be relevant to the type of support system used by the project / site (i.e., timber, steel, or proprietary trench box and other systems)
- Familiarisation of relevant procedures (As a minimum HSF-PR-0015 Avoiding Danger from Services, HSF-PR-0016 Excavations)

Area of Designated Responsibility

Excavation Design Categories

- Acting as a TWS when delegated by the TWC.

Battering & Stepping

- Battered and stepped excavations shall be inspected by the Excavation Supervisor prior to use:
- Category 0 temporary works must be inspected
- Category 1 temporary works inspections must be recorded on HSF-TF-0016a (or HSF-TF-0016a PTD/HSF-TF-0016a-G&W). Where required, the TWC will be consulted for more complex design requirements that don't fall within the 'TWS(Ex) using HSF-TF-0016a (or HSF-TF-0016a PTD/HSF-TF-0016a-G&W)'
- Category 2 and 3 temporary works inspections must be recorded on an SBU specific Record of Inspection Permit to Load

Temporary Support Systems

- Supervise the erection, alteration and dismantling of all temporary support systems
- Specify and approve temporary support systems for category 0 excavations
- Inspect temporary support systems for category 0 excavations
- Inspect and sign off temporary support systems for category 1 excavations
- Inspect and sign off temporary support systems for category 2 and 3 excavation (If acting as a TWS delegated by the TWC)

Ground Movement

- It is the responsibility of the Excavation Supervisor to monitor for ground movement during works. Where there is evidence of ground movements this must be reported to the TWC/TWS (Ex) with the immediate removal of all personnel from the excavation.

Ground & Surface Water

- The Excavation Supervisor is responsible for monitoring and assessing the prevailing weather conditions and deciding if additional precautions are needed (e.g. suitable dewatering arrangements, prevention of surface water run-off entering the excavation), which may include the immediate removal of all personnel from the excavation. See section Change Control section of procedure.

Excavation Inspections and Report

Excavations must be inspected by an Excavation Supervisor:

- Visually before entry, and an Excavation Tag completed and attached at the access point. (also see section 21 Excavation Tags)
- A recorded excavation inspection every 7 days following installation of shoring, battering, or benching and authorisation of entry
- After any event likely to have affected the strength or stability of the excavation or any part of it e.g. adverse weather, extending excavation, damage to excavation wall or surface; and
- After any accidental fall / dislodgment of rock, earth, or other material
- If required by the TW design
- The Excavation Supervisor shall decide whether the excavation is safe or not (in consultation with the TWS (Ex) where necessary) and implement any rectification required to make the excavation safe before use.
- In addition, they must understand whether the ground is as assumed by the TWC or TWS (Ex) who may liaise with the TWD where required.

Excavation Tags –

- The Excavation Supervisor, following their visual inspection, will sign off and date the Excavation Tag daily. The Site Team will not be allowed to enter the excavation unless the Excavation Tag is valid for that shift.

Appointed Person(s) Signature:

Deputy(s) Person(s)

Appendix I – Scale of Drugs & Alcohol Testing and Cut-off levels

Balfour Beatty has set a minimum 5% target for random testing across the Company.

Scale of testing shall be determined by the Safety & Health Executive Leadership Team, having regard to perceived risk and cost. If client requirements demand a greater scale of testing, we will also meet these client defined standards, following a planning phase to allow for any increased or decreased target percentage.

'Scale' encompasses size of sample and frequency of testing. If initial testing produces a nil or low number of non-negative or positive results, then the scale of testing need not be large. However, a higher proportion of confirmed positive results may indicate a larger scale of future testing.

'Risk' encompasses the risk inherent in the consequences of impairment of judgment or performance, and the risk of incidence of misuse.

The potential for impairment will be accepted as the limits of testing for substances of abuse as recommended by the United Kingdom Laboratory Guidelines for Legally Defensible Workplace Drug Testing, and the prescribed drink drive limit of the Country or Region in which the individual is working/tested for alcohol.

The approved provider responsible for conducting Drug & Alcohol testing will randomly identify dates and areas to be tested, to ensure a fair and unbiased process. They will also identify individuals to be tested from a list of all people on the relevant site.

The following maximum permissible alcohol limits apply to employees and contractors working within each of the Strategic Business Units or Enabling Functions, unless a lower limit has been specified on a project due to client specific requirements (e.g. Network Rail projects) or other relevant statutory legislation (Railways and Transport Safety Act 2003 for Aviation).

Those temporarily working outside of the SBU or Enabling Function to which they are assigned, or who are visiting projects must comply with the relevant limits set of the host SBU or project.

It is always an employee's responsibility to ensure they make themselves aware of the policy that applies. If advice is needed then the Project Manager, HSES or HR Enabling Function staff should be contacted.

Alcohol Cut-off Limits

<table>
<tr><th>SBU</th><th>Source of Limit</th><th colspan="2">Cut-off Limits</th></tr>
<tr><td>UKCS</td><td rowspan="4">UK Drink/drive Limit
(Road Traffic Act 1988 s.11)</td><td rowspan="2">England, Wales & Northern Ireland</td><td rowspan="2">Scotland and Republic of Ireland</td></tr>
<tr><td>Major Projects*</td></tr>
<tr><td>Enabling Functions</td><td rowspan="2">35 micrograms of alcohol in 100 millilitres of breath, or
80 milligrams of alcohol in 100 millilitres of blood, or 107 milligrams of alcohol in 100 millilitres in urine</td><td rowspan="2">22 micrograms of alcohol in 100 millilitres of breath, or
50 milligrams of alcohol in 100 millilitres of blood
or
67 milligrams of alcohol per 100 millilitres of urine</td></tr>
<tr><td>Investments</td></tr>
<tr><td>Power Transmission & Distribution</td><td rowspan="2">National Grid Standard
(European Standard)</td><td colspan="2" rowspan="2">22 micrograms of alcohol in 100 millilitres of breath, or
50 milligrams of alcohol in 100 millilitres of blood
or
67 milligrams of alcohol per 100 millilitres of urine</td></tr>
<tr><td>Gas & Water</td></tr>
<tr><td>Rail UK</td><td rowspan="2">Network Rail Standard NR/L1/OHS/O 51
London Underground Cat 1 Standards</td><td colspan="2" rowspan="2">13 micrograms of alcohol in 100 millilitres of breath, or
29 milligrams of alcohol in 100 millilitres of blood, or
39 milligrams of alcohol in 100 millilitres of urine</td></tr>
<tr><td>Highways</td></tr>
</table>

*Major Projects in the Rail Sector (e.g. Crossrail, HS2) conform to Network Rail cut-off limits.

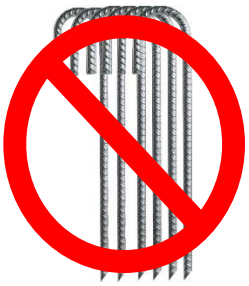
Appendix J – Level of Severity

Scale(level)	Health	Safety	Legal action
Catastrophic (5)	• Multiple deaths e.g. asbestosis, cancers	• Multiple deaths	• High profile prosecution • Public Inquiry • Class action
Major (4)	• Single death • Life-shortening health effect • Health effect causing significant irreversible disability e.g. lung diseases • Irreversible health effect e.g. noise induced hearing loss, confirmed HAVS cases	• Single death • Multiple major injuries (worker or third party) • Major injury resulting in significant irreversible disability • High Potential incidents as defined in Paragraphs 15.4 and 15.5	• Company or individuals facing prosecution • Citation • Fines • Loss of licence/safety case • UK Prohibition Notice • Ban on operational activity by enforcing authority until stated requirements are met • Written warnings from environmental enforcing authorities
Moderate (3)	• Serious illness from which there is full recovery e.g. poisoning, Legionnaires disease, MRSA, serious dermatitis • Reversible health effect e.g. minor dermatitis, asthma, tinnitus • Minor illness, e.g. poisoning followed by full recovery	• Single major injury (reversible disability) • Worker injury resulting in three days away from work • Telecoms cable – industrial / multiple users affected	• UK Improvement Notice • Actions required by enforcing authorities for continued operations • Written warnings from health & safety enforcing authorities including HSE Notification of Contravention
Minor (2)	• Restricted work • Medical treatment beyond first aid	• Minor injury (worker or third party) • Injuries resulting in one day away from work • Restricted work • Medical treatment beyond First aid	• Recommendations by enforcing authorities
Insignificant (1)	• Mild health effect for short period with no lost time e.g. local skin irritation	• First aid case with no lost time • Negligible safety impact	

Appendix K – Prohibited Equipment and Work Practices

The following are '**Strictly Prohibited'** on Balfour Beatty sites. Please refer to the relevant procedure for more information.

				
Knives with fixed blades	Knives with snap off blades	Homemade or adapted tools	Use of Rotary Disc Cutter within 500mm of a known live utility*	The use of mechanical equipment within utility exclusion zones
				
Low Level Access Systems (Metal Trestles / Bandstands / Ironmen)	Stilts	Kick Stool Step	Hop-Up or Step-Up platforms	Plastic / GRP Modular Crash Decks or Working Platform System
				
All non-licensed, road going tipper wagons (Rigid or Articulated)	The use of licenced articulated tipper wagons*	All HGV coupling and uncoupling operations on our sites*	Transferring fuel from one vehicle to another (except mobile fuel bowsers)	Charging batteries via jump leads attached between two items of plant

				
The use of LPG as a fuel at an office or welfare facility (excluding caravans)	Open Sling Hooks (without safety catches)	The use of swivel platform hoists	Hand held vibrating tools for users diagnosed Stage 2 Late or Stage 3 HAVS	Young person's using mobile plant, power tools and equipment
				
The throwing ('bombing') of materials or objects from height	The use of hand-held mobile phones/Radios whilst driving or operating mobile plant	Prefabricated Mobile Tower 'surfing'	Water Jetting from ladders	The practice of 'snifting' or venting a valve for toxic and flammable gases.
				
Swivel Hooks without integral thrust bearing	DJI Phantom 4 RTK Drone	Use of steel pins, spikes or long pegs		

*Exceptions may apply