Welcome to the Morgan Sindall Infrastructure site standards handbook

As part of our Protecting People commitment, we provide safe and healthy places to work with the right people and equipment. This handbook contains the minimum Safety, Health, Environment, and Quality (SHEQ) standards across a wide spectrum of activities specific to our division. It supports us in achieving excellence and delivering our projects safely, whilst protecting the safety, health, and wellbeing of our people, partners and wider stakeholders.

This has been designed to be a quick reference guide to complement our Integrated Management System (IMS) and the associated comprehensive standards and guidance documents.

Derogations from these standards must be agreed by the business unit SHEQ lead and the relevant operations director, recorded in writing and captured in the relevant management plan.

Our customers, or partners may request different standards to be applied to the works we undertake for them. Where this is the case, our standards, as detailed in this handbook, must remain as the minimum acceptable standards.

The handbook is designed to be a live document and will be reviewed regularly to allow innovation, legislation changes and lessons learnt from incident investigations to be incorporated.

Throughout the handbook there are yellow warning triangles and red stop signs in the top right hand corner of certain sections to support you in implementing our standards.

Yellow warning triangles mean liaise with your contract Safety, Health and Environment (SHE), environmental advisor or quality engineer before proceeding with any activities in the section.

Red stop signs mean refer to our IMS before proceeding with any activities in this section as further guidance is available.

We are committed to continuously improving our business, so if you have any feedback, or would like further sections to be added then please contact me or speak with your business unit SHEQ lead.

Carole

Carole Bardell-Wise
SHEQ & People Director

Doc reference	Revision	Review date	Doc Owner	Next review date
SHEQ STD 02	Rev 03	Nov 2024	Carole Bardell-Wise	Nov 2025

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PROTECTING PEOPLE

Together, we protect the health, safety and wellbeing of everyone connected to our business.

Protecting People means that we support, encourage, and nurture behaviours that make us all ambassadors for each other's health, safety and wellbeing.

Everyone has the responsibility, individually and collectively, to create a culture of care and respect, by showing kindness and concern for others and to enable all colleagues to feel safe to speak. We provide safe and healthy places to work, with the right people and equipment and learn from each other to improve. We positively acknowledge our colleague's achievements and contributions and celebrate great performance.

Together, we protect each other

Together, we protect the health, safety and wellbeing of everyone connected with our business.

Our standards

- → Have a means for communicating Protecting People across all colleagues and supply chain partners
- → Monitor performance against Protecting People by completing a Protecting People maturity assessment annually
- → Define communication methods for sharing the outcomes of incident investigations amongst all levels, which is maintained and up to date
- → The 'Development Conversations' must include a review of individual performance against the Protecting People commitment
- → Use the Morgan Sindall Infrastructure system to record and report leading and lagging indicators e.g. Positive Interventions, engagement and leadership activity, incidents, monthly data, inspection findings etc.

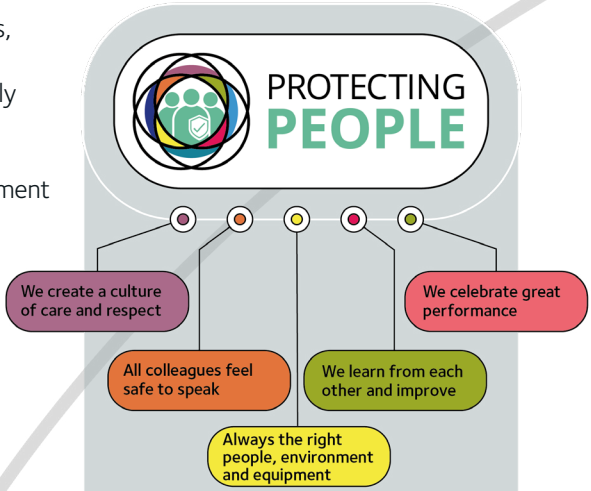
Each business unit must also:

- → Carry out a quarterly review to identify learning opportunities, including; monitoring of known risks, identification of new ones, detection of trends over time and development of effective preventative measures. The output from this session will be shared via appropriate methods across the business unit
- → Identify performance trends against Protecting People, utilising the standard Morgan Sindall Infrastructure Protecting People Key Performance Indicators (KPIs). An action plan to address these shall be developed by representatives from all levels (management, supervisory, workforce, supply chain and customer)
- → Have a schedule which defines the frequency and criteria of leadership visibility e.g. safety tours for; senior management, project management, and supply chain
- → Define how supervisors, workforce, and supply chain have the opportunity for open discussion on Safe Systems of Work (SSoW), identification of risks and mitigation for the risks
- → Define how 'confirmation of the plan' will be undertaken, throughout the planning and delivery of work. This should include testing the plan at the start and how to respond to changes to the plan as works progress
- → Monitor the individual performance of high risk and frequently used suppliers and subcontractors against Protecting People
- → Have processes in place to accurately measure and record the following information:
  - Leadership visibility e.g. safety tours planned and completed
  - Planned engagement activities and those completed
  - Learning opportunities raised and those that have been fully implemented
  - Positive Interventions, health, safety and/or wellbeing concerns, near misses and close calls reported by both supervisors and operatives, and taking the time to provide feedback to the reporters
- → Use the Morgan Sindall infrastructure system to record and report leading and lagging indicators e.g. Positive Interventions, engagement and leadership activity, incidents, monthly data, inspection findings etc.

Requirements for all projects

Each project must:

- → Include an explanation of our commitment to Protecting People within the project or site induction
- → Individuals must be informed of the company approach for just culture, positive intervention, and actively intervene when 'at risk' behaviour is observed
- → Have a mechanism for the reporting of health, safety and wellbeing concerns and good practices from the workforce to project management
- → Have a defined process for managing the stopping of work due to a health and/or safety concern; which is communicated to all individuals (project management, supervisors, workforce and supply chain)
- → Define a means for providing timely feedback
- → Comply with the Morgan Sindall Infrastructure Integrated Management System (IMS)
- → Use the Morgan Sindall Infrastructure system to record and report leading and lagging indicators e.g. Positive Interventions, engagement and leadership activity, incidents, monthly data, inspection findings etc.



Together, we protect each other

Together, we protect the health, safety and wellbeing of everyone connected with our business.

Revision summary

Revision	Section	Detail
Rev 01 Jan 2020	First edition.	
Rev 02 Apr 2023	Revision summary previously provided.	
Rev 03 Nov 2024	All sections below have been reviewed, please see significant changes below:	
	Introduction	
	New section: Protecting People	
	Environmental Management - Waste Management	Updated to include Wales requirements to waste recycling.
	Environmental Management - Protected Sites and Species	Update to Figure 1 Ecology survey calendar to reflect update to Bat surveys
	New section: Health and wellbeing - Working with lead	
	Health and wellbeing - Exposure to airborne material	Updated to align to our Personal Protective Equipment standard
	Health and wellbeing - Exposure to irritant substances	Visual removed
	Health and wellbeing - Exposure to vibration	Spelling mistake: Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR)
	Vulnerable individuals - Young or inexperienced individuals	Visual updated
	Personal Protective Equipment	Updated to align to our Personal Protective Equipment standard
	New section: Charging of electric vehicles, plant and equipment	
	New section: Entry to site	
	New section: Mechanical safety	
	New section: Pre-agreement to safe work practices	
	New section: Management of enforcement authority visits	
	New section: Sustainable timber sourcing	
	New section: Vehicle drivers including delivery drivers	
	New section: Work Related Road Risk	

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Revision updates

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Buried services

When undertaking work around or adjacent to buried services, sufficient time must be allowed to plan the works and a suitable Safe System of Work (SSoW) must be implemented to minimise the possibility of incidents occurring.

Our standards

THIS SECTION MUST BE READ IN CONJUNCTION WITH EXCAVATIONS, TEMPORARY WORKS AND SHORING SECTIONS.

- → Services can be buried below ground or above ground, in walls, floor screeds or ceiling cavities
- → Any delay between the services survey and the activities to be performed must be minimised and a limit specified on the permit to break ground. This limit for the permit(s) must be agreed with the Buried Services Coordinator (BSC)
- → The Risk Assessment Method Statement (RAMS) must be referenced on the permit to break ground or break surfaces above ground
- → Permits to break ground and break surfaces above ground must be approved and issued by Morgan Sindall Infrastructure
- → All trial holes must be discussed with the Temporary Works Coordinator (TWC), even if they are classified as category 0 Temporary Works. (see What is Temporary Works section)
- → Metal spikes or pins must only be used as a last resort, in conjunction with approval from the operations director, and must be insulated, unless the spike is to act as a temporary field earth for generators or working in close proximity to live overhead conductors.

Exclusion zones

- → Installation of an exclusion zone prior to ground penetration is a major factor in reducing damage to buried services and injury to operatives
- → Wherever practicable, all exclusion zones must be physically demarcated to provide a visual reminder to those involved in ground breaking activities
- → For underground services the exclusion zone is defined as the horizontal distance from either side of the outside dimensions of any buried services and will vary depending on the type of service and the means of breaking the ground
- → Excavating in the exclusion zone must only be carried out by hand digging to identify the exact location of buried services

Excavations near intermediate or high pressure gas (>7bar) mains, oil pipelines etc. must only be commenced after consultation with the asset owner and linesearch (www.lsbud.co.uk).

→ Mechanical excavation techniques must not be used within any exclusion zone.

→ The methodology for breaking ground must follow the following hierarchy of control:

- Vacuum excavation
- Air lance
- Hand dig
- Machine dig.

The business unit managing director or operations director must

→ Employ a Service Protection Manager (SPM), where the scope of work justifies the appointment.

The project or site manager must

→ Appoint a BSC to ensure that all necessary information regarding buried services is available to the project team and a SSoW is implemented and monitored. Competencies are detailed on relevant appointment letters

→ Undertake a constructability review with key stakeholders to develop and agree the scope of work to determine whether a Publicly Available Specifications (PAS) 128 survey is required to be undertaken by a competent subcontractor for buried services below ground or a refurbishment and demolition asbestos survey for services buried above ground

→ PAS 128 surveys are a four stage survey – desktop study of statutory or utility drawings, a field study, geophysical survey using Genny and Cable Avoidance Tool (CAT) or ground penetrating radar and trial holes to positively identify and locate known services

→ Agree the site colour coding scheme for marking up excavations and detected services on the project

→ Make available suitable service location equipment e.g. Cat4+ series for below ground services and Bosch D-TECT 150SV for above ground services and a competent operator(s), who is appropriately trained in the use of detection equipment

→ Commission any Temporary Works design for the proposed excavation support, including any access arrangements and proposed service support for services buried below ground

→ Ensure a SSoW is in place, prior to works commencing, including

→ RAMS referencing Health and Safety Guidance (HSG)47 and PAS128 for below ground services, permits to break ground or break surface above ground and extracts of relevant statutory authority and services drawings

→ Services buried in the highway must be subject to a geophysical survey and trial holes to positively identify and locate known services

→ Arrange for representative sampling of trial hole arisings to be undertaken to determine waste characterisation

→ Undertake a specific site investigation, in conjunction with the Safety, Health, Environment and Quality (SHEQ) team, in the event of service damage (see Reporting of accidents and incidents section).

The BSC or SPM must

→ For services buried below ground:
- Seek and retain all statutory authority and services drawings
- Liaise with linesearch (https://lsbud.co.uk/) when working in proximity to high risk services
- Undertake desk top studies and field studies to validate records provided
- Maintain the master services drawing, detailing all known services, including as built records of newly installed services
- Appoint a Buried Services Locator (BSL) to undertake the geophysical surveying to locate and identify buried services
- Requests identified services to be isolated or pipework to be purged before commencing trial holes and records justification, if isolation cannot be granted on the permit to break ground
- Liaise with the BSL to specify when and where trial holes are to be dug
- Issues and closes the permit to break ground part A for trial holes and part B for excavation works, considering the hierarchy of control; vacuum excavation, air lance, hand or machine dig
- Support the project or site manager in investigating any service damage event

→ For services buried above ground:
- Seek and retain all customer or landlord drawings, including any relevant refurbishment and demolition asbestos surveys
- Undertake desk top studies and field studies to validate records provided
- Appoint a competent individual to use an approved detector to survey the location of services buried in walls, ceilings, floor screeds etc.
- Requests identified services to be isolated or pipework to be purged before commencing trial holes and records justification if isolation cannot be granted on the permit to break surfaces above ground
- Issues and closes the permit to break surfaces above ground
- Support the project or site manager in investigating any service damage event.

The BSL must

→ Hold the permit to break ground and remain at the point of work whilst the works are being undertaken,

→ Use the CAT and Genny in all three modes (Power, Radio and Genny) to clearly mark the position of the services on the ground

→ Assist in establishing the location and type of services identified when the trial holes have been dug

→ Notify the BSC of any uncharted service encountered

→ Continue to use service detection equipment whilst the works proceeds, to establish the presence of any services missed or not located during the initial sweep, frequency as determined by the BSC.

The competent individual must

- → Hold the permit to break surfaces above ground and remain at the point of work whilst the works are being undertaken
- → Use the detection equipment to clearly mark the position of the services on the surface above ground
- → Assist in establishing the location and type of services identified
- → Notify the BSC of any uncharted service encountered.

The supervisor or engineer must ensure

- → Individuals undertaking ground or surface breaking activities always wear the correct Personal Protective Equipment (PPE) (see PPE section and Project Execution Plan (PEP))
- → Works involving the penetration of the ground or a surface above ground do not commence until a permit to break ground or a permit to break surfaces above ground has been approved and issued by the BSC
- → Only fully insulated hand tools are used when excavating
- → Trial holes are excavated by hand; the number will be dependent on the nature of the works being undertaken
- → When breaking the surface of the ground, digging tools are fitted with a spade attachment or short point
- → Powered digging techniques are not used below any marker tape, tile or board or where ducts are exposed
- → Exclusion zones are identified and enforced for each type of service and excavation works
- → Exclusion zones are dug by hand only, unless a contract specific arrangement has been agreed with the SHEQ manager
- → All trial holes are considered and logged in the temporary works schedule
- → A sufficient number of competent first aiders are in attendance (see First aid section)
- → Reduction in ground levels over services is undertaken in layers, depths determined by the BSC, until 150mm of cover remains and this layer must be removed by hand digging or vacuum excavation
- → Written authorisation is sought to allow authorised individuals to break into existing ducts.

In the event of a buried service damage

- → Work must stop and no unauthorised repairs undertaken
- → The area must be clear and assessed before further action is taken
- → Rescuers must not put themselves in danger
- → All services must be treated as live
- → A damaged service must not be approached until the owner's authorised individual confirms that it is safe
- → The asset owner must be contacted as soon as possible giving accurate location details
- → In the event of a gas pipe damage, all sources of ignition, including mobile phones and electrical equipment, must be moved at least 200m upwind and 500m downwind of the area of damage and the public and traffic prevented from approaching
- → In the event of a fluid release, temporary damns or bunds must be constructed to prevent fluids flowing into watercourse or drainage systems
- → The site must be secured to prevent unauthorised access and to allow an investigation to be undertaken by the Safety, Health and Environment (SHE) team.

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Construction (Design and Management) Regulations

The Construction (Design and Management) (CDM) Regulations state the legal requirements for the management of health, safety and welfare when designing and delivering projects.

Our standards

- → Manage risk by applying the general principles of prevention
- → Appoint the right people and organisations at the right time
- → Ensure all parties have the information, instruction, training and supervision needed to fulfil their roles
- → Encourage duty holders to cooperate, communicate and coordinate their work
- → Consult and engage with individuals to promote and develop effective measures relating to health, safety and welfare
- → Morgan Sindall Infrastructure typically undertakes the role of Principal Contractor (PC), but in some instances may be a contractor to another PC organisation. Irrespective of the role, Morgan Sindall Infrastructure must comply with the principles listed above when planning, managing, monitoring and coordinating the construction works by:
  - ◦ Avoiding risk wherever possible
  - ◦ Assessing risks that cannot be avoided and putting proportionate control measures in place
  - ◦ Ensuring everyone working on site has, or is in the process of gaining, the right skills, knowledge, training and experience
  - ◦ Providing the correct level of effective supervision, instruction and information, which will depend on the risks involved in the project and the competence of the individuals
  - ◦ Ensuring that everyone understands the risks and associated control measures
  - ◦ Holding two-way conversations when making decisions about health, safety and welfare matters
  - ◦ Prior to starting ensure that the Pre Construction Information (PCI) has been provided by the customer, is accurate and relevant
  - ◦ Quarterly review of appointed people, with appropriate deputy cover following absence
- → On design and build contracts, Morgan Sindall Infrastructure may also occupy the Principal Designer (PD) role.

F10 or notifiable project – A project that lasts more than 30 working days with more than 20 individuals working simultaneously on site, or a project that exceeds 500 individual days.

CDM regulations

CDM duty holders *(see Figure 1)*

Client

An organisation or individual for whom a construction project is carried out, who must make sure that their project is suitably managed, ensuring the health and safety of all who might be affected by the work, including members of the public.

→ Client must ensure:

- Resources and time are suitable
- Appropriate welfare facilities are provided by the PC
- PCI includes specific asbestos information and is issued to those who need it
- A PC is appointed in writing when more than one contractor is involved
- A PD is appointed in writing
- The Health and Safety Executive (HSE) is notified of the project, when applicable.
- Notify HSE of F10.

Principal Designer

A designer (organisation or individual) appointed by the client to plan, manage, monitor and coordinate the preconstruction phase.

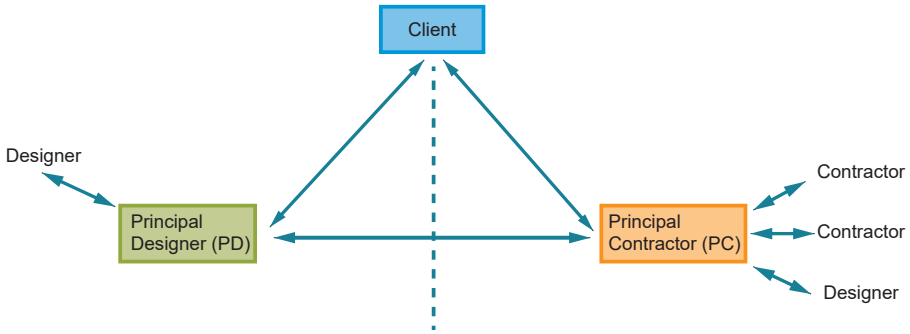
→ PD must:

- Identify, eliminate or control foreseeable risk
- Assist the client in the preparation of the PCI
- Issue the PCI to interested parties
- Ensure that designers fulfil their duties
- Liaise with the PC for the duration of the appointment
- Prepare the health and safety file and hand it over to the PC or client as appropriate.

Designer

An individual who prepares or modifies the design for a building, product or system relating to construction works, and must eliminate, reduce or control foreseeable risks that may arise during the construction works, or in the use and maintenance of the project once it is complete to achieve Reg 9 of the CDM regulations.

Figure 1. CDM duty holders



Principal Contractor

A contractor who is appointed by the client to plan, manage and monitor health and safety during the construction stage, including the production of the Construction Phase Health and Safety Plan (CPHSP).

→ PC must:

- Ensure the client is aware of the client duties under CDM 2015 before any work starts
- Liaise with the client and PD
- Organise cooperation between contractors and coordinate their work
- Provide a suitable site induction
- Take reasonable steps to prevent unauthorised access
- Consult with and engage individuals in matters relating to health and safety
- Provide suitable welfare facilities.

Contractor

An individual or organisation that does the actual construction work and must cooperate and coordinate with all parties to ensure that the site is a safe place to work.

→ A contractor must:

- Ensure activities are risk assessed
- Ensure communication is in place
- Plan, manage and monitor all work carried out by themselves and their colleagues, taking into account the risks to anyone who might be affected by it (including members of the public) and the measures needed to protect them
- Check that all individuals they employ or appoint have the skills, knowledge, training and experience to carry out the work, or are in the process of obtaining them
- Make sure that all individuals under their control have a suitable, site-specific induction, unless this has already been provided by the PC

- Provide an appropriate supervision, information and instructions to individuals under their control
- Ensure they do not start work on site unless reasonable steps have been taken to prevent unathourised access
- Ensure suitable welfare facilities are provided from the start for individuals under their control, and maintain them throughout the work.

→ In addition to the above responsibilities, contractors working on projects involving more than one contractor must:

- Coordinate their work with the work of others in the project team
- Comply with directions given by the PC
- Comply with parts of the construction phase plan (Portable Document Format (PDF)) relevant to their work
- Where a contractor is the only contractor working on a project, they must ensure a construction phase plan (PDF) is drawn up before setting up the site.

Workforce

Individuals who work for or under the control of contractors on a construction site.

→ Individuals must:

- Be consulted about matters that affect their health, safety and welfare
- Take care of their own health and safety, and of others who might be affected by their actions
- Report anything they see that is likely to endanger either their own or others' health and safety
- Cooperate with their employer, fellow colleagues, contractors and other duty holders.

Briefings

Undertaking regular effective briefings ensures that all individuals working on site are aware of all relevant information e.g. our standards, hazards and instructions associated with a specific task and provide an opportunity for all individuals to confirm their understanding and engage with peers about specific subject matter(s).

Our standards

Before undertaking any briefing

The designated briefer must ensure the briefing is:

→ **Planned** - giving consideration to the:

- Purpose – Why are we doing the briefing? What do the attendees need to do as result of the briefing (call to action)?
- Attendees (audience) – Who should attend? What is their level of understanding? How much time do they have?
- Location – Where should the briefing take place? What facilities are required? How well will the audience be able to hear the briefer?
- Time – When should it take place? What is the best time to undertake the briefing? How well does it suit the audience as well as the briefer? How long should the briefing be?
- Content – What is the information to be briefed? How will it be made appropriate to the attendees?
- Style – What is the approach to the briefing, e.g. content? Is the briefer enthusiastic about the subject matter and the most appropriate individual to undertake the briefing? What additional support might be required to ensure it is an effective briefing?

→ **Structured** – a well-structured briefing:

- Starts on time
- Contains
  - Beginning (introduction) – explains the purpose or aim of the briefing, 10 - 15 per cent of the briefing time
  - Middle (body) – explanation of the subject matter, contains specific detail, supporting data, 75 - 80 per cent of the briefing time
  - End (conclusion) – summary of the content and states the call to action(s), 5 - 10 per cent of the briefing time
- Is short and concise

→ **Rehearsed** - practicing the briefing, even if it is a familiar subject matter, will help to ensure the briefing is effective. Knowing the content of the briefing prior to delivery will help the briefer to engage with the attendees and be clear on the actions expected, where appropriate.

Delivering a briefing

→ The designated briefer is responsible for ensuring the briefing is:
- Still relevant
- Engaging
- Attended by the appropriate individuals

→ Non-attendees are recorded and subsequently briefed.

Record of attendance

→ A record of attendance must be recorded for all briefings and filed in the site filing system.

Below are the minimum briefings all project teams must undertake during the lifecycle of a project:

Type of briefing	Frequency	Purpose	Briefer	Attendees
Inductions	Weekly pr to suit operational needs.	To provide an overview of scope of works, project risks, controls and Safety, Health, Environment and Quality (SHEQ) standards and expectations.	Representative from site management team.	All site based individuals, including visitors.
Risk Assessment Method Statement (RAMS)	Before works commence, following any amendment, post incident where applicable.	To discuss and communicate the risks and associated control measures linked to the planned activity.	Representatives from site management team.	Supervisor. All members of working party.
Setting to work or coordination	Daily.	To ensure the supervisor of each working party is familiar with the task in hand and aware of any interfaces with others e.g. deliveries, customer and third parties.	Representatives from site management team.	All supervisors (minimum). All working party members (subject to size of project or site).
Task specific e.g. permits and Point of Work Risk Assessments (PoWRA)	Daily.	Communicate task specific risks and controls associated with the task in hand including key information from daily setting to work or coordination briefing.	Supervisor.	All working party members.
Toolbox Talks (TBT)	Weekly, post incident where applicable.	Reinforce standards and expectations on specific subject matters relative to the task or environment.	Representatives from site management team.	All site based individuals.
Cascades / All hands briefings	Monthly.	To share business news performance, new developments and updates on Safety, Health, Environment and Quality (SHEQ) topics.	Senior Morgan Sindall Infrastructure colleagues (local).	All local colleagues.
Seasonal e.g. return to work, summer and winter working	Annually.	To reinforce standards and expectations at more vulnerable times of the year e.g. clock change and New Year.	Senior Morgan Sindall Infrastructure colleague (local).	All site based individuals / local colleagues, if office based.
Findings from significant incidents	Post completion of incident investigation.	To discuss and communicate lessons learnt and changes to processes and procedures.	SHEQ team supported by operational lead.	All site based individuals.

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Overcoming barriers to communication

By appropriately engaging any individual who is delivering work on behalf of Morgan Sindall Infrastructure, it is possible to identify any potential barriers to communication and enables the most suitable assistance to be provided, where necessary.

Our standards

Examples of potential barriers

- → Reduced or loss of hearing
- → A learning difficulty or neurodiverse condition
- → Limited comprehension of the English language.

Prior notification

- → When notified in advance of any potential barriers, the project or site manager must consider the following:
  - ◦ Provision of:
    - – Dual or multilingual signage and site inductions
    - – A suitable buddy or translator. There must be a ratio of one translator per gang or six persons who must maintain direct communication at all times
    - – Pictorial method statements
    - – Visual alarms to accompany audible warning systems
  - ◦ Translating customer safety procedures and appointments
  - ◦ Appointing only competent English speaking individuals to safety critical roles
- → When arranging any training course, the individual's line manager must discuss the course with the individual prior to putting them forward. This must involve explaining what the individual will be required to do on the course and discussing and agreeing what assistance, if any, is required
- → The individual and their line manager must agree who will communicate the additional assistance required to the learning and development or Human Resources (HR) team for onward communication to the selected training company or awarding body
- → The assistance requested must detail the necessary level of assistance required for a theoretical and / or practical learning environment e.g. provision of revision material in the requested language format or assistance to aid with reading and writing during the theoretical course work or test, increasing the likelihood of successfully passing the training assessment.

Subcontractors

→ Prior to the arrival of any subcontractor on site, the project or site manager must discuss with the subcontractor if there are any known barriers to communication within the appointed team

→ Where necessary, the project or site manager and subcontractor must agree what support the subcontractor will provide to support the individual(s) e.g. identification of the English-speaking team member. This individual(s) details must be confirmed prior to induction to the inductor, to enable the individual carrying out the induction to ensure all information is communicated through the appointed individual.

Identifying potential barriers

→ Where it is identified that an individual may have a potential barrier to communication this must be treated confidentially and sensitively, and any discussion must be based on evidence of a potential barrier being observed

→ In the first instance, the individual's line manager must arrange a one to one with the individual in a confidential environment to discuss the observations and any potential support that is required. This outcome of the one to one must be forwarded to the learning and development or HR team.

Please contact Morgan Sindall Infrastructure diversity and inclusion manager if you have any queries or require further information.

Positive Interventions

A Positive Intervention allows you to raise an observation or suggestion on good practice, as well as identifying:

- Unsafe behaviours or actions
- Unsafe conditions
- Design shortfalls
- Positive behaviours and actions.

Unsafe behaviours, actions or conditions could compromise the safety, health, environment, security, or quality at site, and could lead to an incident.

Our standards

How you play your part

→ Actively identifying and raising Positive Interventions and encouraging others to do the same, helps keep everyone safe and healthy and can make a difference to behaviours and attitudes

→ To raise a Positive Intervention:

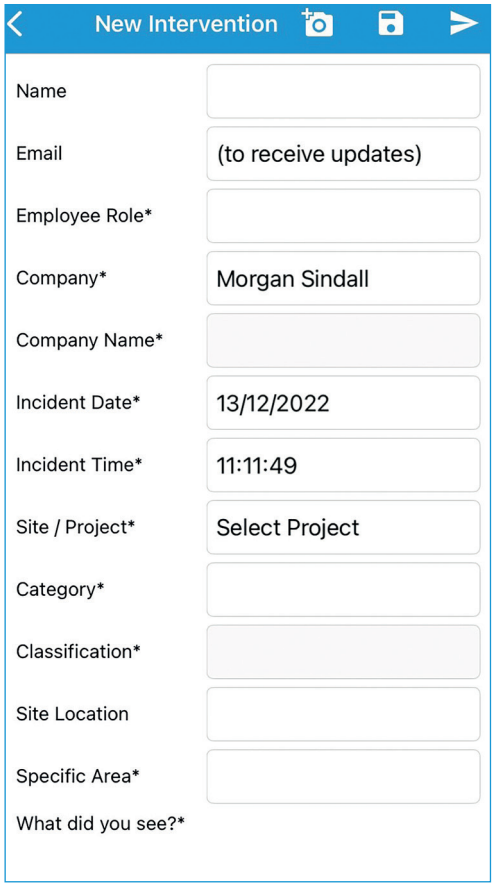
- *Use the Positive Intervention app on your Morgan Sindall Infrastructure company phone*
- *Use your project's Positive Intervention Quick Response (QR) code. The QR code will be shown on posters around site. Scan it with a smartphone camera and it will take you to the online form*
- *Fill out a Positive Intervention card and give it to your project Safety, Health, Environment and Quality (SHEQ) advisor or manager who will arrange for it to be entered onto the online system on your behalf*

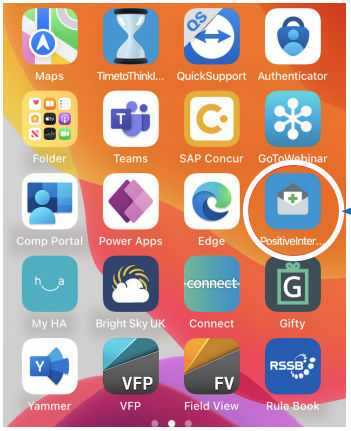
→ *For all three methods you will need to complete a simple form including a description of what you saw*

→ *For online methods, photographs can also be uploaded to support the Positive Intervention.*

Note: Customer security measures may prevent photographs being taken on some sites. Please confirm with your local SHEQ team before uploading any photographs.

- → *The following categories are available:*
  - *Environment*
  - Health
  - Design
  - Quality
  - Safety
  - Security
- → *Within each category there is a number of subcategories called classifications. For example, health classifications can include:*
  - *Manual handling or musculoskeletal*
  - Vibration
  - Mental health and wellbeing
  - Sunburn
- → *Choose the most applicable classification for your Positive Intervention*
- → *If you are unsure which classification is appropriate for your observation or suggestion, speak to your SHEQ advisor or manager for guidance.*





Positive Intervention Application

VOICE meetings

VOICE: Views of Operatives In the Construction Environment

The primary objectives of VOICE meetings are to raise any issues about site conditions, identify any gaps in existing arrangements, improve communication, and create a culture of trust and openness.

Our standards

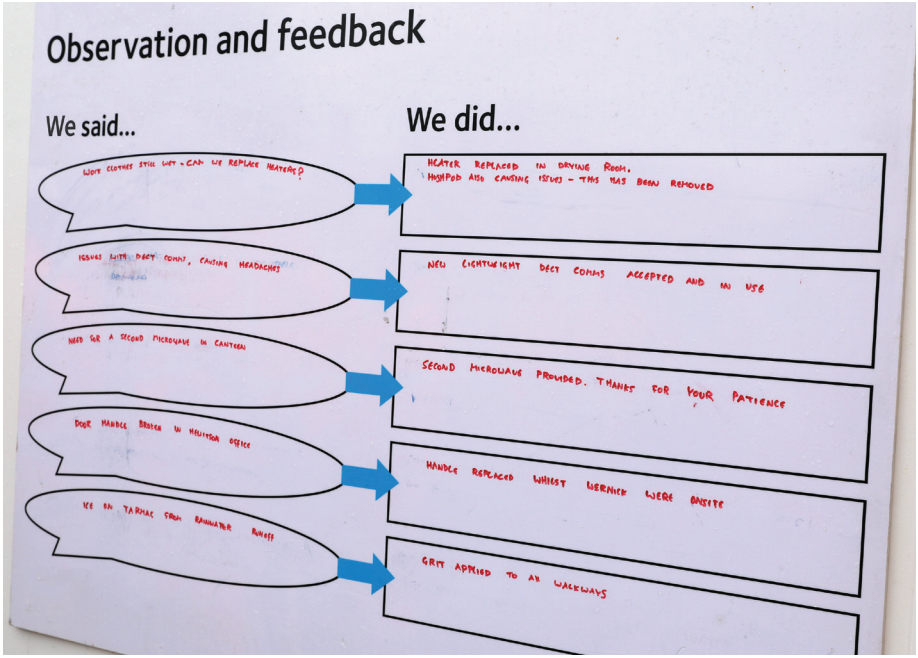
- → All large businesses have an legal obligation to consult and involve the workforce in all matters related to health and safety
- → At Morgan Sindall Infrastructure this is done through VOICE meetings and other worker engagement forums, where all individuals are expected to support and participate in these initiatives
- → Morgan Sindall Infrastructure colleagues and subcontractors working on site are asked to promote and encourage representatives from their teams to attend VOICE meetings. Meetings are led by a member of the Morgan Sindall Infrastructure project team, who will act as the link with site management to progress and close-out suggestions that are raised. The VOICE teams should agree on a date and time and arrange the meetings themselves
- → Meetings should be scheduled outside of designated break times, and held on site in a comfortable environment e.g. the site meeting room
- → VOICE meetings can be set up for:
  - Operatives
  - Engineers
  - Site management
- → VOICE meetings are a forum for site representatives to feed back to site management and to receive feedback in response. The meetings are a way to gain input from site individuals, particularly operatives working on the front line
- → Topics can include:
  - Safety, health, environment, quality (SHEQ)
  - Plant or tools
  - Security
  - Welfare
  - Staff or resourcing
  - Training

→ A member of the site management team will receive feedback from the meetings, arrange for minutes to be produced and follow up on necessary actions. They will also feedback and provide responses to close out any actions raised. It will be up to the representatives to feed back any outcomes to their colleagues

→ In addition to VOICE meetings, other worker engagement forums at site include:

- Briefings
- Positive Interventions
- Staff surveys
- On site engagement events
- Coordination and planning sessions
- Project Safety, Health and Environment (SHE) forums.

If you would like to get involved and represent your colleagues at a VOICE meeting, speak to your line manager or the on site SHEQ advisor or manager.



Duty holders

A duty holder is a named responsible individual whose role is to ensure any specific potential health and safety risk(s) are assessed, and that the correct procedures are put in place to reduce the specific risk(s) as is reasonably practicable.

Our standards

Planning

- → During the tender stage all specific duty holder positions must be identified based on the proposed scope of works. Figure 1 overleaf summaries the duty holder positions identified with our Integrated Management System (IMS) and indicates who is responsible for making the appointments
- → The project or site manager must ensure all relevant duty holders are appointed in a timely manner and recorded in the Project Execution Plan (PEP) documentation
- → A duty holder can be appointed to undertake more than one role within the business unit, contract or framework
- → A duty holder must be assessed by an appointer and deemed to have sufficient technical knowledge, training, experience (as detailed on the appointment letter) and time to carry out all specified duties
- → A duty holder must be appointed in writing following the assessment, using the appropriate appointment letter, which is available on the IMS
  - ◦ The personalised appointment letter will provide the duty holder with the following information:
    - The duties they are to undertake, and where necessary restrictions in duties
    - Competencies and requirements to fulfil the duty holder role(s)
  - ◦ The letter must be signed by the appointer and duty holder after reading the summary of duties
- → For Morgan Sindall Infrastructure duty holder appointments, the duty holder must send a signed copy of their letter(s) to their local Human Resources (HR) team for record keeping.

Figure 1: Duty holder positions and overview of role

Area	Role title	Appointed by	Overview
Asbestos	Duty holder (Asbestos)	Project or site manager	Identifies and manages asbestos in office or premises under the control of Morgan Sindall Infrastructure.
Asbestos	Person In Charge (PIC) (Asbestos response team)	Duty holder (Asbestos)	Supervises the asbestos response team when undertaking non-licensed work in soils and holds approved written plan of works.
Asbestos	Operative (Asbestos response team)	Duty holder (Asbestos)	Carries out removal of non-licensed asbestos in soil, as set by the PIC.
Confined spaces	Competent person (confined space)	Project or site manager	Manages confined space working on the project and authorises the confined space work entry permit.
Confined spaces	PIC (confined space)	Competent person (confined space)	Supervises the confined space working activity and holds the confined space work entry permit.
Control of Substances Hazardous to Health (COSHH)	COSHH editor	SHEQ manager	Maintains the COSHH system for contact or framework and updates information as required.
COSHH	COSHH coordinator	Project or site manager	Ensures COSHH items are stored, handled, maintained and disposed of correctly.
Display Screen Equipment (DSE)	Senior DSE assessor	SHEQ manager	Ensure all workstation risk assessments are reviewed and any issues are addressed.
DSE	DSE assessor	Senior DSE assessor	Provides information to local users on the risks associated with DSE work and local procedures.
Electrical safety	Electrical Duty Holder (EDH) (Corporate)	Infrastructure managing director	Responsible for ensuring electrical safety for electrical systems and equipment under the control of Morgan Sindall Infrastructure.
Electrical safety	EDH assessing officer	EDH (corporate)	Provides formal recommendations on authorisation levels for electrical appointments.
Electrical safety	EDH (sector)	EDH (corporate)	Responsible for ensuring electrical safety for electrical systems and equipment under the control of a sector within Morgan Sindall Infrastructure.
Electrical safety	Senior Authorised Person (SAP) (electrical safety)	EDH (sector or corporate)	Undertakes specific duties on electrical systems or equipment, as identified by the EDH assessing officer, including the receipt of, issue of and cancellation of safety documents.
Electrical safety	Authorised person (electrical safety)	EDH (sector or corporate) or SAP	Undertakes specific duties on electrical systems or equipment, including the receipt of safety documents.

Area	Role title	Appointed by	Overview
Environment	Environmental coordinator	Project or site manager	Acts as the environmental point of contact for the project, collates all environmental Key Performance Indicators (KPI) data, monitors compliance with the Environmental Management Plan (EMP), issues all permits to pump and liaises with the contract environmental advisor as necessary.
Environment	Waste coordinator	Project or site manager	Supports the project or site manager in monitoring waste management activities on site, undertakes duty of care checks, maintains the Site Waste Management Plan (SWMP) and liaises with the contract environmental advisor as necessary.
Fire safety	Fire safety coordinator	Project or site manager	Ensures that the site fire or safety plan are clearly understood and complied with by all those on the project site and authorises hot works permits.
Fire safety	Fire warden	Fire safety coordinator	Conducts weekly inspections of escape routes, emergency service access, fire-fighting facilities and work areas.
First aiders	First aider	Project or site manager	Provides first response to medical issues, preserves life, prevents further injury and promotes recovery.
First aiders	Mental Health First Aider (MHFA)	Line manager	Provides a point of contact and reassurance for an individual who is experiencing a mental health issue or emotional distress.
Legionella	Duty holder (Legionella)	Project or site manager	Ensures that a Legionella Management Plan (LMP) is prepared and implemented for the project.
Legionella	Responsible person (Legionella)	Duty holder (Legionella)	Carries out the legionella risk assessment and provides advice on prevention and control of exposure.
Lifting	Crane Appointed Person (AP)	Project or site manager (for non contract lift only)	Responsible for the planning and management of lifting operations and issues all permits to lift.
Lifting	Responsible person (lifting)	Project or site manager	Manages and monitors lifting operations on site that doesn't warrant a Morgan Sindall Infrastructure AP and issues all permits to lift.
Lifting	Crane coordinator	Crane AP (for non contract lift only)	Plans and directs the sequence of operations of multiple crane activities, ensuring that communication systems are established and unique to each piece of lifting equipment.
Lifting	Crane lifting operations supervisor	Crane AP (for non contract lift only)	Controls, directs and supervises the lifting operation, ensuring that it is carried out in accordance with the agreed Safe System of Work (SSoW).
Lifting	Slinger or signaller	Crane AP (for non contract lift only)	Responsible for attaching and detaching loads from lifting equipment and communicating via signals to the lifting equipment operator. Directs plant or vehicle movements.

Area	Role title	Appointed by	Overview
Mechanical safety	Mechanical Duty Holder (MDH) (corporate)	Infrastructure managing director	Responsible for ensuring mechanical safety for mechanical systems and equipment under the control of Morgan Sindall Infrastructure.
Mechanical safety	MDH assessing officer	MDH (corporate)	Provides formal recommendations on authorisation levels for mechanical appointments.
Mechanical safety	MDH (sector)	MDH (corporate)	Responsible for ensuring mechanical safety for mechanical systems and equipment under the control of a sector within Morgan Sindall Infrastructure.
Mechanical safety	SAP (mechanical safety)	MDH (sector or corporate)	Undertakes specific duties on mechanical systems or equipment, as identified by the MDH assessing officer, including the receipt of, issue of and cancellation of safety documents.
Mechanical safety	Authorised person (mechanical safety)	MDH (sector or corporate) or SAP (mechanical)	Undertakes specific duties on mechanical systems or equipment, including the receipt of safety documents.
Plant - general	Plant and vehicle marshal	Project or site manager	Directs site plant and vehicle movements on site and supervises loading or unloading and ground breaking activities as necessary.
Plant - general	Vehicle marshal	Project or site manager	Directs vehicle and site traffic movements, such as deliveries to the required location on site.
Plant - Mobile Elevated Working Platform (MEWP)	MEWP coordinator	Project or site manager	Responsible for authorising MEWP activities on site.
Plant - MEWP	MEWP supervisor (when more than three MEWPS working on site)	Project or site manager	Works with and liaises with the MEWP coordinator and supervises the use of the MEWPs, including checking the competency of the operators.
Plant - Telehandler	Telehandler coordinator (National Grid (NG))	Project or site manager	Responsible for authorising Telehandler activities on site.
Scaffolding	Scaffold coordinator	Project or site manager	Ensures that the weekly scaffold inspections are undertake and recorded on the register. May undertake weekly inspections of basic scaffold structures.
Services (buried)	Buried Services Coordinator (BSC)	Project or site manager	Controls a coordinated record of buried (below and above ground) and uncovered services on site, ensures all necessary information is available to project team, a SSoW is in place for all activities around buried services and is implemented and monitored and authorises all relevant permits.
Services (buried)	Buried Services Locator (BSL)	BSC	Deploys Cable Avoidance Tool (CAT) and Genny before and during ground breaking activities and marks up detected services.

Area	Role title	Appointed by	Overview
Services (overhead)	Overhead asset coordinator	Project or site manager	Controls a coordinate record of overhead assets on site, ensures all necessary information is available to project team, a SSoW is in place for all activities around overhead assets and is implemented and monitored and authorises all relevant authorisations to work in the vicinity of or pass under or working under overhead assets.
Temporary Works	Temporary Works Manager (TWM)	Business unit managing director	Responsible for managing all Temporary Works activities within a business unit.
Temporary Works	Temporary Works Coordinator (TWC)	TWM	Responsible for managing all Temporary Works activities on designated project.
Temporary Works	Temporary Works Supervisor (TWS)	TWC	Responsible for supervising all specified Temporary Works activities on designated project.
Traffic management	Traffic management coordinator	Project or site manager	Ensures that the site traffic management plan is clearly understood and complied with by all those on the project.

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Industry certification cards

All individuals who work on Morgan Sindall Infrastructure projects must be certified to a recognised record scheme for their particular trade or occupation, to demonstrate that they have the necessary training and qualifications.

Our standards

Process

- → Morgan Sindall Infrastructure, specify and promote card schemes carrying the Construction Skills Certification Scheme (CSCS) logo. A list of recognised card schemes is listed overleaf
- → The CSCS will require applicants applying for a card with a City and Guilds (C&G) qualification (issued from 1 April 2013 onwards) to submit their C&G e-certificate, which is a C&G certificate that must contain the certificate authentication code, as part of their application
- → Applicants and employers can verify their C&G qualification e-certificates by using the C&G online MyCertis tool
- → Mobile plant operators must hold a recognised competency certificate to the Construction Plant Competence Scheme (CPCS), or affiliated schemes accepted by Morgan Sindall Infrastructure for the category of plant they are operating. Where such certification is not available then a recognised competency certificate must be held
- → National Plant Operator Registration Scheme (NPORS) cards affiliated to CSCS will be accepted by Morgan Sindall Infrastructure for operating plant on our sites. The only exception to this is where a CPCS scheme card is not available for the specific category of plant. In this instance a derogation must be granted by the Safety, Health, Environment and Quality (SHEQ) manager and recorded in writing. CPCS must always take precedence
- → NPORS cards and categories must be fully checked and validated before allowing anyone to operate machinery, this can be done by using the NPORS card checking website https://online.npors.com/
- → Cards must have the NPORS and CSCS logos
- → Cards must be in date and hold the operators relevant plant category
- → A valid, in date and approved skill card relevant to the trade or occupation must be provided at the time of induction, without which access will be denied. The activity to be undertaken must be relevant to card held by those undertaking the activity

Figure 1. CSCS card types

Labourer

Apprentice

Experienced Technical, Supervisor or Manager

Experienced Worker

Trainee

Industry Placement

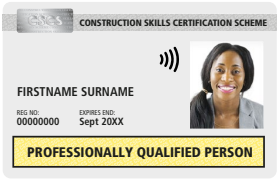
Blue Skilled Worker

Gold Skilled Worker

Supervisory

Manager

Academically Qualified Person



Professionally Qualified Person

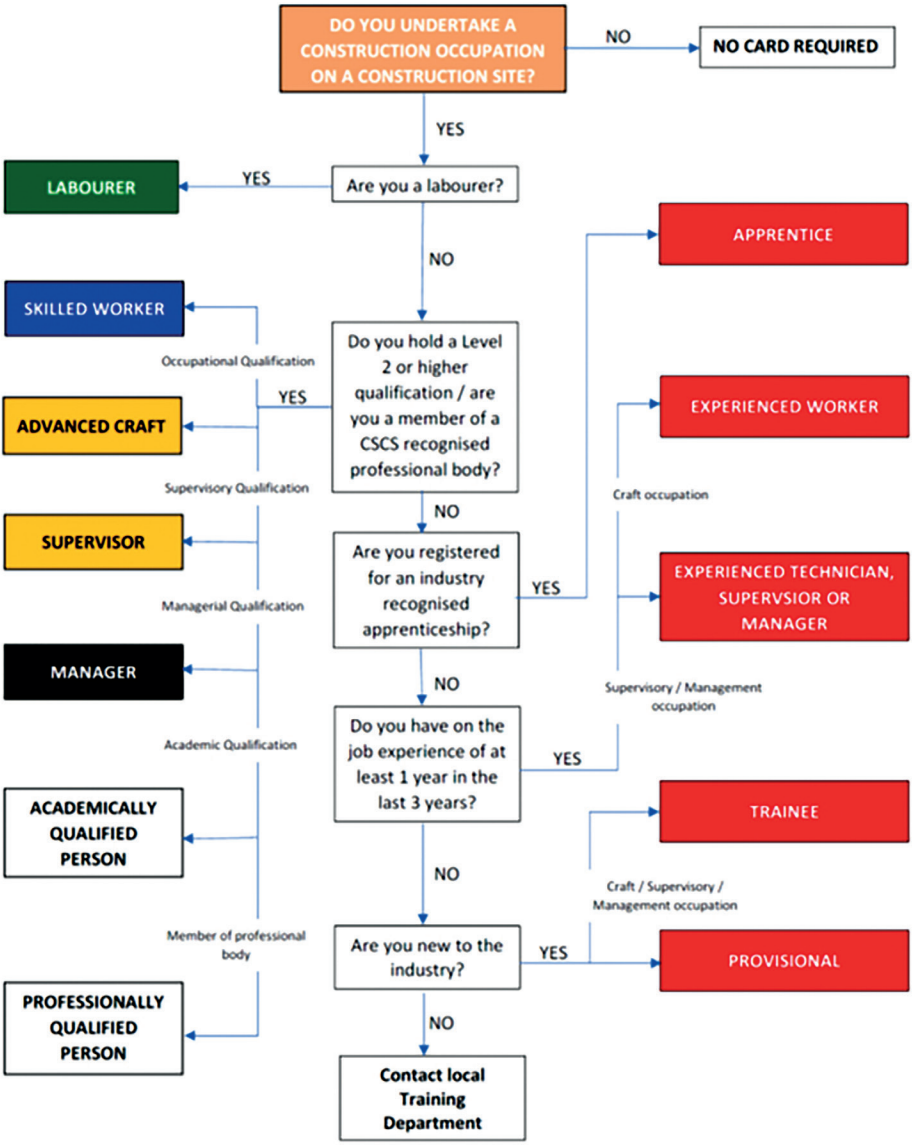
Provisional (temporary only)

- All cards must be checked to ensure that they are valid and not fraudulent. There are several ways to check a CSCS and CPCS card:
  - National Open College Network (NOCN) online checker https://www.nocnjobcards.org/CPCS/card-checker/
  - CSCS Smart Check app, videos on how to use the app can be found on the website https://www.cscs.uk.com/about/cscs-smart-check/
  - The phone number on the back of each card
  - Using the below QR code:

- The online card checker cannot be used for checking modules attended by the card holder as this information is protected under General Data Protection Regulation (GDPR) and can only be accessed by the cardholder themselves
- Individuals undertaking non-construction occupations or activities e.g. material deliveries, catering, security guards, visitors etc. do not need to carry a CSCS card, but must be able to demonstrate that they can carry out a task safely
- The non-construction activity may require a separate risk assessment and additional supervision
- Visitors do not require a CSCS card but must be escorted at all times by a competent individual who holds a CSCS card, has attended the full site induction and is familiar with the site layout and emergency arrangements
- Industry Accreditation, also known as Grandfather Rights, which used to allow workers to obtain CSCS cards on the strength of an employers' recommendation rather than the achievement of a recognised qualification has been withdrawn
- Any barriers to effective communication e.g. neurodiversity (autism, dyslexia, dyspraxia, Attention Deficit Hyperactivity Disorder (ADHD) etc.) must be discussed when arranging renewals, to allow any necessary support or arrangements to be put in place. (see Overcoming barriers to communication section).
- To operate a crane on a goods vehicle, one must hold an Associated Lorry Loader Manufacturers and Importers (ALLMI) certificate. An ALLMI certificate allows a driver to operate any crane on a goods vehicle, regardless of what type it is. There are two types of ALLMI Certificate: the traditional Foundation Certificate and the Modernised (Basic) Certificate.

Please contact your training lead for further information.

Figure 2. CSCS Card Guidance



Confined space working

A confined space is any substantially enclosed place in which there is a reasonably foreseeable specified risk.

A specified risk is a serious risk of injury to any individual at work arising from a fire or explosion, loss of consciousness due to an increase in body temperature, the presence of a gas, fumes or vapour or lack of oxygen, the drowning of an individual, or the asphyxiation of an individual from free flowing solids.

Our standards

Examples of confined spaces may include

- → Manholes, shafts or tunnels
- → Sewers or pipes
- → Storage tanks and silos
- → Excavations – these will need to be assessed on an individual basis with respect to 'specified risks'
- → Ductwork
- → Unventilated or poorly ventilated rooms e.g. cable basements in substations.

Note: Some places may not be initially classified as a confined space but could become one when work is undertaken, or during their construction, fabrication or subsequent modification, due to the introduction of a 'specified risk' e.g. welding, use of combustion engine powered tools etc.

The project or site manager must

- → Appoint a Competent Person (CP) to manage confined space working on the project. The CP role must be retained by Morgan Sindall Infrastructure and this individual must:
  - ◦ Have relevant experience of the nature of the works involved
  - ◦ Undertake a risk assessment taking into account the following to develop a Safe System of Work (SSoW):
    - Task
    - Working environment
    - Working materials and tools
    - Competency of those undertaking the task
    - Arrangements for emergency rescue.

- → If entry to the confined space is unavoidable the SSoW must identify the category and address the following:
  - A confined space work entry permit, identifying any mechanical or electrical isolations, which must be written and authorised
  - Suitability of the atmosphere; forced ventilation may be required
  - Access and egress arrangements
  - A suitable communications system
  - The need for intrinsically safe tools and lighting
  - The need for breathing apparatus
  - The need for rescue equipment
- → Appoint a Person In Charge (PIC). This individual:
  - Must have the relevant experience of the nature of the works involved
  - Must have the confined space work entry permit
  - May fulfil the role of Top Man and must remain at the point of work whilst the activity is being undertaken
  - Must be First Aid trained. When the PIC (Confined Spaces) fulfils the role of top man
  - Meet competencies detailed in relevant appointment letters
  - Must brief the working party including Top Man and entry team members and where necessary the appointed rescue team, on the content of the SSoW statement, including controls and emergency arrangements and the confined space work entry permit before works commence
- → Appoint a Top Man. This individual must:
  - Have the relevant experience of the nature of the works involved
  - Be first aid trained
  - Meet competencies detailed in relevant appointment letters
- → The entry team must:
  - Have the relevant experience of the nature of the works involved
  - Comprise a minimum of three people, one of whom will act as the top man, except for Class A (NC1 or NC2) confined spaces
  - Be medically fit to undertake the work
  - Meet competencies detailed in relevant appointment letters
  - Have a suitably trained gas monitor

→ The rescue team, where identified in the SSoW, must:
  - Hold City and Guilds (C&G) Level 2 Award in Working in Medium Risk Confined Space (Top Man (Entrant)): Water or Non-water
  - Hold C&G Level 2 Award in Working in High Risk Confined Space: Water
  - Hold C&G Level 3 Award in Emergency Rescue and Recovery of Casualties from Confined Space: Water.

NC1 - Low risk shallow entry with adequate natural or mechanical ventilation.

NC2 - Vertical direct unobstructed access with continuous attachment to a man riding hoist or similar.

NC3 - When it is not possible to have individuals currently attached to a safety line. Usually it will be a team entry that moves away from the entry point.

NC4 - Non standard entry involving complex operations which introduce additional risk.

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Demolition

Demolition, dismantling and structural alterations, both large and small scale, are high risk activities which require safe execution. They are complex, technical and require careful planning by contractors that are competent in the full range of demolition techniques.

Our standards

- All hazards and risks must be identified, assessed and effectively controlled following consultation with:
  - Safety, Health, Environment and Quality (SHEQ) team
  - Temporary Works department
  - Relevant subject matter experts
- Most demolition works may encounter asbestos so a refurbishment or demolition asbestos survey must be undertaken before work commences (see Asbestos section)
- A structural survey must be undertaken prior to demolition works. The complexity of the survey will depend on the scope of works and complexity of the design of the structure to be demolished
- For high risk, complex or unusual demolition, a competent contractor must be appointed and accredited to either the National Federation of Demolition Contractors (NFDC) or the Institute of Demolition Engineers (IDE)
- The use of acetylene on Morgan Sindall Infrastructure projects must only be with the permission from the project lead, following detailed review of the task risk assessment and consultation with the local Safety, Health and Environment (SHE) advisor. This should be detailed within a specific risk assessment and is not limited to demolition works
- Before undertaking demolition work, the following must be provided by the demolition contractor to the project or site manager:
  - Evidence of competence and experience of the organisation for the scope and nature of works to be undertaken. References must be sought from previous customers who the contractor has worked for
  - All operatives and supervisors undertaking or managing demolition must be fully trained under the recognised training scheme Certificate of Competence for Demolition Operatives (CCDO)
  - A demolition plan for carrying out demolition or partial demolition works, detailing the arrangements,

must be agreed in writing before works commence and must be included in the Construction Phase Health and Safety Plan (CPHSP)

- A written Safe System of Work (SSOW) must be provided following a thorough examination of all available drawings, structural information and survey reports in accordance with the requirements of British Standard (BS)6187:2011
- Where required, a notice of intention must be completed and issued to the relevant local authority, to carry out demolition under Section 80 of the Building Act
- Where required, evidence of 'prior approval application' under 'planning laws for demolition' under the Town and Country Planning General Permitted Development (GPD) Order must be provided

→ Where flammable liquids, gases or vapors have been used or released during the previous function of the structure or property, any equipment must be purged and tested for explosive gases before works commence

→ All relevant applications and approvals must be in place, including written confirmation that all associated services have been isolated and disconnected or purged. Disconnection certificates must be on site before demolition commences

→ The following must be included in the risk assessment and associated SSoW for all demolition operations, but not limited to:

- The sequence and method of demolition or dismantling, including any pre-weakening techniques to be used in conjunction with the Temporary Works designs

- Access and egress routes for pedestrians and vehicles and how these are to be maintained
- Means to secure and control access including the provision of exclusion zones
- Arrangements for the protection of the site individuals and the public beyond the site boundary from:
  - Falling materials
  - Dust
  - Fumes
  - Vibration or noise
- Procedures for dealing with unforeseen circumstances such as the discovery of a previously unidentified hazard e.g. asbestos, underground obstruction, etc.
- Personal Protective Equipment (PPE) requirements
- Temporary Works details including drawings and calculations
- Methods of dealing with and disposing of particularly hazardous substances, e.g. fuel, Polychlorinated Biphenyls (PCBs), lead, paint, etc.
- Provision and arrangements for the temporary storage and removal, reuse or disposal of demolition waste and hazardous waste
- Provision and arrangements for any environmental receptors within and beyond the site boundary
- Details of plant and machinery planned for use and copies of records of inspection, tests and examinations
- Size, location and protection of drop zones or openings
- Agreed emergency and rescue procedures

→ Where protective fans or platforms are constructed over pavements or roads, they must be constructed to a minimum standard of fully closed boarded, with two layers of boards with 1,000-gauge fire retardant polythene between and constructed in accordance with the agreed Temporary Works design

→ Effective controls for the prevention of materials falling from height e.g. brickguards, monarflex or other heavy-duty sheeting must be in place. Debris netting is not adequate to contain demolition rubble. Monarflex must be tested and certified to Loss Prevention Standard (LPS) 1215

→ Where an excavator is used, a safe working distance must be maintained and the maximum working height of the machine must be restricted to 75 per cent

→ Super reach 360^0 excavators must be operated by operatives with specialist endorsements.

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Drones or Unmanned Aircraft System

Drones or Small Unmanned Aircraft (SUA) are increasingly being used for professional applications such as surveillance and data-gathering and can be operated in a way that may pose a greater risk to the general public.

Our standards

There are several different terms used to describe drones. For ease, they will be referred to as Unmanned Aircraft System (UAS) throughout this standard.

UAS

→ The Civil Aviation Authority (CAA) define a UAS as an unmanned aircraft and the equipment to control it remotely. The UAS comprises individual 'system elements' consisting of the Unmanned Aircraft (UA) and any other system elements necessary to enable flight, such as a Command Unit (CU), communication link and launch and recovery element. There may be multiple UAs, CUs or launch and recovery elements within a UAS.

Small unmanned aircraft (SUA) - Any unmanned aircraft, other than a balloon or a kite, having a mass of not more than 20kg without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight.

Our standards

The use of UAS is prohibited on Morgan Sindall Infrastructure sites unless the following can be demonstrated:

→ The flight is authorised by the Morgan Sindall Infrastructure project or site manager and the above ground services coordinator

→ Works are to be undertaken by a Builder's Profile approved company that specialises in aerial work

→ The activity to be undertaken complies with the specific regulations for UAS as defined by the UK CAA https://www.caa.co.uk/drones/rules-and-categories-of-drone-flying/

- → The UAS shall be flown below 120m (400ft) and kept in Visual Line of Site (VLOS) at a distance no greater than 500m (1640ft)
- → The activity complies with any other related local rules e.g., customer restrictions and local byelaws
- → The activity satisfies the pre-requisites, pilot qualifications and commercial UAS insurance requirements below

Pre-requisites

The pilot and / or organisation must present the following information as evidence of legal compliance:

- → A CAA flyer Identification (ID) – this allows an individual to fly a UAS that weighs more than 250g
- → A CAA operator ID – this allows an individual or company to operate a UAS for commercial purposes
- → Evidence that the operator ID is labelled on every UAS the operator is responsible for in line with CAA requirements
- → A copy of the organisation's operations manual and, where required a copy of the Operational Safety Case (OSC) – for flights in the specific category.

Pilot qualification

For commercial flights in the open – A2 Category evidence of the following qualification is required:

- → A2 Certificate of Competency (A2 CofC).

For commercial flights in the specific category evidence of the following qualification is required:

- → General VLOS Certificate (GVC).

Commercial UAS insurance

- → Commercial UAS operators must possess third party liability cover with a minimum liability of £5 million. Evidence, in the form of a broker's letter specifying UAS cover, shall be required.

Permission to fly is required if:

- The aircraft is to be flown on a commercial basis i.e. conducting aerial work such as surveying or when a camera / surveillance is to be used
- The aircraft is to be flown within a congested area (city, town or settlement) or closer than 50m to people or property that are not under the control of the Small Unmanned Aircraft (SUA) operator.

Categories of UAS operations

There are three categories for UAS in the United Kingdom (UK):

→ Open (low risk)
→ Specific (greater risk)
→ Certified (high risk).

At the time of writing, UK regulations for the certified category are still in development and are not yet published.

Open category – A1, A2 and A3 subcategories

There are three subcategories within the open category based on the type of flying required and the UAS being used. Low-risk UAS operations do not need any special permission but must follow strict rules:

→ A1 (flying 'over' people)
→ A2 (flying 'close to' people)
→ A3 (flying 'far from' people).

UAS can be flown in the A3 category if they are not flown near people and are not flown in areas used for residential, commercial, industrial, or recreational purposes. This category includes UAS with a maximum take-off mass of up to 25kg.

The UAS supplier must provide the following:

→ The information from the pre-requisites, pilot qualifications and commercial UAS insurance sections listed above
→ UAS brand, name, and type as well as technical or performance specification
→ Project lead name and contact telephone number
→ Evidence of liaison with the relevant authorities, agencies, and landowners etc. for necessary permissions including obtaining permission to fly from the CAA, where required
→ Agreed scope of works
→ Detailed flight plan(s)
→ Risk Assessment Method Statement (RAMS)
→ Point of Work Risk Assessment (PoWRA) of the site and the area to be used during UAS operations, ensuring that all agreed control measures are in place; specifically controlling public access
→ Briefing for any colleagues or subcontractors who are required to support the UAS operation
→ Emergency procedures in the event of any incident leading to personal injury, damage to property or the loss of the UAS.

Morgan Sindall Infrastructure project teams must be responsible for the following, where applicable:

→ Security and safety (passes, permits or site induction and local arrangements)
→ Provision of a site induction before commencing any activity
→ Parking facilities and power supply
→ Additional individuals provided to enforce exclusion zones as necessary
→ Posting or communication of notices (especially if road or footpath closures are required).

UK UAS classification system

As of 1 January 2023, the UK will have new rules for UAS. These rules require all new UAS to meet certain standards and be classified into one of four categories: C0, C1, C2 or C3. The classification will be based on the weight and capabilities of the UAS and will determine how and where it can be flown.

The classes and their corresponding subcategories are as follows:

- → Class C0: May be flown in all subcategories
- → Class C1: May be flown in all subcategories
- → Class C2: May only be flown in subcategories A2 (with an A2 CofC) or A3
- → Class C3: May be flown in subcategory A3 only.

UK UAS law changes

From 1 January 2023, UAS with an European Union (EU) class mark will not be recognised in the UK, meaning they will need to be flown under transitional provisions. The transitional period has been extended to 1 January 2026. This means that current UAS with a class mark not recognised in the UK can be operated in accordance with transitional provisions for longer:

- → Until January 2023, if a UAS does not have a class marking, it can be flown in certain categories based on its weight
  - UAS under 250g are allowed to be flown in subcategory A1, as well as A2 and A3
  - UAS weighing less than 2kg can be flown in subcategory A2 and A3, but the operator must keep 50m from people and pass the A2 CofC
  - UAS weighing 2kg or more can only be flown in subcategory A3
  - UAS that were built privately and weigh 250g or less can still be flown in subcategory A1
  - All other UAS are only allowed to be used in subcategory A3.

First Person View (FPV) UAS

FPV flights are permitted within the open and specific categories, providing certain criteria are met. One of the main requirements is the FPV pilots must fly with an UA observer, who always keeps direct visual contact with the UAS. This is to ensure that the UAS remains in sight and can be safely flown. The UA observer must be located alongside the pilot so they can immediately communicate with the pilot.

It is important to note that FPV pilots are still subject to the standard regulations of the CAA and must follow the Drone code, which includes flying below 400ft, keeping the UAS in sight, and not flying in restricted airspace.

Follow-me mode

Follow-me mode can be used for flights in the open category, which is the category for most recreational and small commercial UAS flights. However, there is a maximum distance of 50m from the remote pilot that the UAS can fly in follow-me mode. This is to ensure that the UAS remains within the pilots line of sight and can be safely flown.

Obtaining the necessary permissions for your flight

When it comes to flying a UAS legally, obtaining the necessary permissions is crucial to ensure that your flight is legal, safe and does not cause any disturbance or damage to the environment or people. There are several types of permissions that you may need to consider before taking off in the UK:

- → Landowner permission
- → Local authority permission
- → Sites of Special Scientific Interest (SSSI) permission
- → Informing the local Police
- → Permission from the CAA
- → Notifying Network Rail (NR) if flying near the railway
- → Contacting local air traffic control if flying near an airport
- → Permission from nuclear facilities
- → Permission from prisons, military bases, sports stadiums, government buildings
- → Permission from national trust and the crown estate.

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Drugs, alcohol and medication

We want to provide a safe, healthy and professional working environment for everyone. Protecting everyone is our priority and we have set minimum requirements around drugs, alcohol and medication that applies to everyone across Morgan Sindall Infrastructure.

Our standards

If anyone is facing challenges around substance dependency, we want you to know there is support available. We would encourage you to talk to us so we can look at what help is available to you.

Who does this apply to and when?

→ All directly employed colleagues and all other colleagues engaged by Morgan Sindall Infrastructure including our supply chain, third party consultants and contractors

→ For all activities undertaken on Morgan Sindall Infrastructure premises or when representing the business.

Any breaches of our policy and standard will be investigated in line with our disciplinary policy and may lead to disciplinary action, up to and including dismissal.

Our supply chain must comply with the minimum standards we have set out.

Declarations

→ **Dependency declaration** – if you think you have an issue with drugs and / or alcohol misuse, we encourage you to talk to us before it becomes problematic at work. More information on how we will support anyone managing a dependency can be found in Drugs Alcohol and Medication Standard

→ **Declaration of medication** – you'll need to tell your manager as soon as possible if you're taking any medication (whether prescribed or over the counter) that might affect your ability to carry out your role safely or efficiently.

Our testing process

→ It's important that everyone is fit for work. Our testing process is part of ensuring we can provide a safe working environment for all. Testing may be undertaken by a third-party testing provider, or the tests may be administered internally by an appropriate and competent individual

→ If we test you for alcohol, you must be below our limit of **13mcg per 100ml** of breath alcohol concentration

→ If we test for drugs, it will be those listed in the Misuse of Drugs Act 1971, which might include substances that could pose a risk to safety, such as those covered in the Psychoactive Substances Act 2016

→ The frequency and type of testing will be set by each business unit and may change dependent on specific customer requirements but must meet our minimum requirements

→ **Pre-employment** – you may be asked to take a drug and / or alcohol test before you start working with us

→ **'For cause' testing** – we may test you if you're involved in any accident or incident at work that has caused or could have caused a risk to health or safety, or where we have reason to believe that you may be under the influence of drugs and / or alcohol

→ **Random** – you may be selected for a random drug and / or alcohol test. These tests may take place at any time and location, and we won't tell you in advance

→ **Enhanced testing** – if you've told us you've got an issue with drug and / or alcohol misuse or dependency and you're getting medical help, we might test you on an ongoing basis to make sure that you're safe to do your job role.

Managing test results

→ If you receive a **negative test result**, this will usually be the end of the process

→ If you have a **positive test result**, this could amount to gross misconduct

→ If you have a **positive or a non-negative result** it may be necessary to suspend you from work. If appropriate and reasonably practical, then we may consider alternative duties but only where there is no risk of harm.

Electrical safety

In accordance with the Electricity at Work Regulations only individuals with suitable knowledge and experience may undertake electrical works.

Additionally, individuals must be suitably supervised appropriate to the risk.

Our standards

- → All individuals working with electricity on a Morgan Sindall Infrastructure site must be appointed in writing in accordance with the electrical safety management process
- → Each sector or framework must have an assessed and appointed **Electrical Duty Holder (EDH)**
- → The EDH must appoint, where required, **Senior Authorised Person (Electrical) (SAP(E))** and / or **Authorised Person (Electrical) (AP(E))** in writing subject to a demonstration of understanding of the levels of authorisation and competencies
- → A robust Safe System of Work (SSoW) must be implemented, identifying the specific dangers of live electrical systems and methods of controlling electrical hazards, e.g. maintenance of safety clearance distances and relevant isolations
- → An assessment must be made of the competency of the site management and supervision
- → All appointed individuals must have a full understanding and experience of the usage of safety documents e.g. permits to work, limitations of access and sanction for test and ensure recipients of safety documents understand their responsibilities and are competent to challenge if unsure
- → Portable electrical apparatus and electric lighting used on the site will be supplied at 110V by means of mains isolation transformers with the secondary winding centre tapped to earth. Any cables carrying voltage greater than 110V, where permitted, must have armoured protection and be protected by a Residual Current Device (RCD)
- → Where a reduction in voltage below 110V is required, such as in a confined space or flammable atmosphere, this must be agreed within the agreed SSoW to determine the risk identify any need for intrinsically safe equipment
- → A maintenance scheme for electrical equipment and portable electrical appliances must be in place (including cables incorporating a visual inspection tagging system indicating the date of the next required test).

Low Voltage (LV) work (<1000V Alternating Current (AC) or <1500V Direct Current (DC))

- → Work on or near live conductors must be avoided
- → Adequate planning and programming must be allowed to enable works to be undertaken when the equipment has been isolated and proven dead
- → The following conditions must be met for **live** working to be permitted:
  - ◦ It is **unreasonable** in all circumstances for the conductor to be dead
  - ◦ It is reasonable in all circumstances for the individual to be at work on or near the conductor while it is live
  - ◦ Suitable precautions including, where necessary, the provision of specialist Personal Protective Equipment (PPE) have been taken to prevent injury
- → If one of the above conditions cannot be met, live working cannot be permitted and dead working must be undertaken.

Working on dead LV apparatus and conductors

- → When work is to be carried out on dead LV apparatus the conductors must be isolated from all sources of supply from the system
- → Where the isolating devices are lockable, safety locks must be applied
- → If components such as fuses and links are detachable they must be removed
- → Caution notices must be securely fixed at all points of isolation. Keys and removed components must be kept in a secure place
- → The conductors must be earthed where an earthing device or earthing leads are approved for use on the conductors concerned
- → If the work requires a point of isolation to be established on a High Voltage (HV) system, a safety document must be issued
- → If the work requires a HV system to be made dead, isolated and earthed, a permit to work must be issued
- → If the work is being done in conjunction with work on the HV system which has been made dead, isolated and earthed, then a separate safety document for the LV work must be issued, unless the LV work is included on the permit to work issued for the HV work.

HV work (>1000V AC or >1500V DC)

→ All individuals working on or in the proximity of HV equipment must:
  - Be suitably trained and authorised e.g. by the customer
  - Have completed the Morgan Sindall Infrastructure Basic Electrical Awareness training, or a suitable alternative approved by the EDH
  - The Health and Safety Executive (HSE) advice and / or Health and Safety Guidance (HSG)47 for HV cables must be consulted to understand and define 'proximity', for example, some advise the proximity to HV underground cables should be at least 1m, however, some service owners can specify up to 5m for an 11kV cable. Therefore, it is critical that proximity is not assumed and is defined properly

→ All individuals working on, or, in the proximity of HV equipment must be able to recognise and not interfere with demarcation zones that identify and segregate live equipment or provide a safe working zone.

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Introduction to environmental management

Manage environmental risk(s) by properly identifying and implementing appropriate control measures to ensure compliance with legal, customer and other environmental obligations.

Our standards

Before site mobilisation

The project management team must complete the following mandatory documents specific to the project in line with the findings from any pre-construction surveys:

- **Environmental Management Plan (EMP)** describes how the environmental risks associated with the project must be managed and the controls that must be in place to mitigate the effects
- **Register of environmental aspects and impacts** details the significant environmental risks and controls associated with the project. The input of designers at pre-handover meetings must be considered when developing the register
- **Consents and pre-notification checklist** records any specific permits or consents required, including responsibilities and conditions associated with each permit or consent
- **Site Waste Management Plan (SWMP)** if a customer requirement, use the provided SWMP template, e.g. SmartWaste.

During the works

- All of these mandatory documents must be:
  - Reviewed every six months by the project management team to reflect progress of the works and changes in environmental requirements
  - Amended accordingly due to changes in any of the below:
    - Scope
    - Progress in works
    - Legislative requirements
    - Customer requirements
    - Additional environmental risks identified
- The EMP should be made available to subcontractors and project individuals
- Inspections or audits must be undertaken to ensure control measures are being implemented and are effective
- Relevant environmental data must be uploaded onto the Safety, Health, Environment and Quality (SHEQ) tracker on a monthly basis.

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Archaeology

The scientific study of human history and prehistory through the excavation of sites and the analysis of human remains.

Historic assets, sites that are likely to contain archaeological and built heritage, have legal protection.

Our standards

Before works start

The project management team must discuss the following with the contract environmental advisor:

- → The appointment of an Archaeological Clarke of Works (ACoW) to undertake desktop surveys and provide advice, guidance and support with consent application submissions
- → Any project specific archaeological risks and control measures identified in the consent or Written Scheme of Investigation (WSI) must be recorded within the Environmental Management Plan (EMP) and register of environmental aspects and impacts
- → Careful consideration of the use of vibration and dewatering equipment to prevent potential damage to artefacts

An area of archaeological interest

- → Consideration for addressing water management issues e.g. excess siltation or increased risk of surface water run off when large areas have been exposed for archaeology.

During the works or on discovery

All site individuals must:

- → Stop work immediately and inform the project or site manager or the contract environmental advisor, who will then inform the police and county coroner if human remains are uncovered as it may become a crime scene
- → Ensure that a watching brief is undertaken by a competent archaeologist, where excavations or ground works are likely to disturb a known area of archaeology
- → Not remove any finds without authorisation, such as coins, pottery, or bones from the site as it is illegal
- → Be aware that any bones that are identified must not be handled as they can carry anthrax
- → Not move any archaeological features or artefacts as they must be considered significant and protected, unless advised otherwise by an archaeologist.

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Biodiversity net gain

Biodiversity refers to the variety of plant and animal life in the world. Biodiversity Net Gain (BNG) is an approach to development that leaves biodiversity in a better state than the baseline levels prior to construction.

Our standards

Where a project has an impact on biodiversity, BNG encourages developers to provide an increase in natural habitat and ecological features.

Under the Environment Act 2021, all planning permissions granted in England (with a few exemptions) will have to deliver at least 10 per cent BNG. This will be implemented from a date yet to be confirmed, but expected to be November 2023. In addition, for many projects, BNG will be a mandatory customer requirement.

Biodiversity accounting

- → Biodiversity accounting is used to calculate the baseline biodiversity value of a site and forecast its future biodiversity value following construction
- → A variety of design scenarios can be calculated to identify the best design options for increasing biodiversity
- → A tool developed by the Department for Environment, Food and Rural Affairs (DEFRA), the Biodiversity Metric, is used for biodiversity accounting in England. The metric can be used to assess the biodiversity unit value of a site or area of land, demonstrate BNGs or losses, and compare proposals for a site (creating or enhancing habitat on-site or off-site)
- → Where biodiversity accounting is not the responsibility of the designer and falls under Morgan Sindall Infrastructure's scope, projects will need to engage an external ecology consultancy to assist with biodiversity accounting calculations and advise on how to achieve BNG.

Timing

→ BNG and biodiversity accounting should be considered during the project design stage, to include ecology mitigation, planting, and landscaping that may be required to achieve net gain

→ Where possible, BNG should be delivered prior to the development. This is to ensure there is no detrimental impact to local biodiversity

→ This may not always be possible due to project funding or land access, for example, and BNG is commonly delivered during landscaping works at the end of construction

→ Government guidance and legislation on net gain is being updated frequently and projects should check current guidance at the time of development.

Good design principles

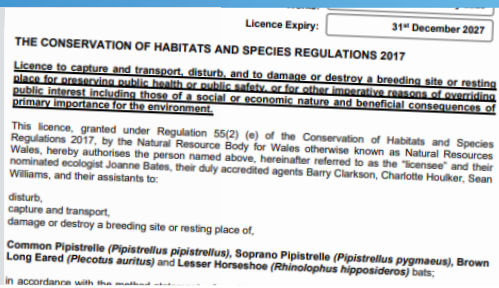
The Construction Industry Research and Information Association (CIRIA), Chartered Institute of Ecology and Environmental Management (CIEEM) and Institute of Environmental Management and Assessment (IEMA) have developed the first United Kingdom (UK) principles on good practice to achieve BNG. The key principles include:

→ Apply the mitigation hierarchy
- Avoid, mitigate or compensate for biodiversity losses:
  - Do everything possible to first avoid and then minimise impacts on biodiversity
  - Only as a last resort, compensate for losses that cannot be avoided
  - If compensating for losses within the development footprint is not possible, offset biodiversity losses by gains off-site

→ Avoid losing biodiversity that cannot be offset by gains elsewhere
- Avoid impact on statutory design sites, or irreplaceable biodiversity where possible – these impacts cannot be offset to achieve net loss or net gain.

Consents and permitting

Certain activities are subject to a range of licences, permits and consents issued by regulators. It is a legal requirement to make sure the required licence, consent and / or permit is obtained before the activity can take place.



Licence Expiry: 31st December 2027

THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017

Licence to capture and transport, disturb, and to damage or destroy a breeding site or resting place for preserving public health or public safety, or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

This licence, granted under Regulation 55(2) (e) of the Conservation of Habitats and Species Regulations 2017, by the Natural Resource Body for Wales otherwise known as Natural Resources Wales, hereby authorises the person named above, hereinafter referred to as the "licensee" and their nominated ecologist Joanne Bates, their duly accredited agents Barry Clarkson, Charlotte Houlker, Sean Williams, and their assistants to:

disturb,
capture and transport,
damage or destroy a breeding site or resting place of,

Common Pipistrelle *(Pipistrellus pipistrellus)*, Soprano Pipistrelle *(Pipistrellus pygmaeus)*, Brown Long Eared *(Plecotus auritus)* and Lesser Horseshoe *(Rhinolophus hipposideros)* bats;

in accordance with the method

Our standards

Types of activities that may require a consent, permit or exemption:

→ **Environmental permit: Flood Risk Activity Permit (FRAP)** - This is generally needed for any works in, under or over a main river or any works (including tree planting) within 8m of a non-tidal main river (or flood defence structure or culvert on a non-tidal main river) or any works (including tree planting) within 16m of a tidal main river (or flood defence structure or culvert on a tidal main river) and is obtained from the Environment Agency (EA) or Natural Resources Wales (NRW)

→ **Ordinary watercourse consent** - This is required for any construction activities including Temporary Works that will obstruct the flows of an ordinary watercourse. This could be:

- A new pipe (culvert)
- Bridge
- Dam
- Pond
- Outfall
- Other structure in the watercourse
- A change to the alignment of the banks of the watercourse.

These permits are obtained from the Lead Local Flood Authority (LLFA) or Internal Drainage Board (IDB).

→ **Abstraction licence** - This may be required for dewatering activities where the volume of water to be abstracted from an excavation exceeds 20m^3/day (see Water management section). The licence is obtained from the EA or NRW

→ **Environmental permit: discharge consent** - This is required when water is to be discharged to surface (e.g. river, stream, ditch) or groundwater, and is obtained from the EA or NRW

→ **EA: Regulatory Position Statement, temporary dewatering from excavations to surface water** - outlines conditions that if met mean you do not need a permit for temporary discharges of uncontaminated water from excavations to surface water

→ **Marine licence: Marine Management Organisation (MMO)**

- Required for any work near the sea or a tidal watercourse

- **European Protected Species (EPS) licence**
  - Any work which will damage the habitat of a EPS such as:
    - Otters
    - Dormice
    - Bats
    - Great crested newts
    - Badgers
- **EA waste exemptions**
  - These outline construction waste activities that are exempt from needing an environmental permit. Each exemption has limits and conditions to be met:
    - Using waste
    - Disposing of waste
    - Treating waste
    - Storing waste
- **Section 61 Control of Pollution Act consent**
  - For potentially noisy works in proximity of residential receptors
  - Obtained from the local authority.

Before works start

The project management team, with the support of the contract environmental advisor, must:

- Seek agreement from the commercial or managing director of the business unit, before accepting consent risk at tender stage
- Ensure an agreed consent management strategy is developed and recorded in the project risk register
- Ensure that timescales to gain consents are included in the programme accepted by the customer.

Prior to submitting a consents or permit application

The project or site manager, with the support of the contract environmental advisor, must:

- Allow sufficient time and budget for consent applications, some of which may require detailed design and specialist consultancy services
- Ensure that consent applications and approvals are not on the critical path for the programme. Any change that brings them onto the critical path must be approved by the business unit managing or commercial director PRIOR to agreement
- Ensure that the most senior individual on the project is named on the consent, as the individual responsible for compliance with the consent
- Consider splitting a project into 'advance works' and 'main works' to allow sufficient time to complete consents and set up so that the main works can continue without disruption
- Consents must not be applied for in the name of Morgan Sindall Group Plc
- Consents may be applied for in either "Morgan Sindall Construction & Infrastructure Limited" name or that of a Joint Venture (JV) partner, or where a JV is a legal entity, in the JV name
- JV consents must only be entered into under Morgan Sindall Infrastructure's name if there is an appropriate clause on the JV agreements explicitly detailing a joint and several liability

→ Ensure that where consent requires a declaration completing by a 'relevant person', usually a director listed at companies' house, then the details of the managing director for Morgan Sindall Infrastructure must be inserted

→ Ensure that once the consent application is completed, prior to submission it must be checked by the project or site manager using the consent application authorisation form, which must then be saved onto the Safety, Health, Environment and Quality (SHEQ) Tracker.

Consents tracking

The project or site manager, with the support of the contract environmental advisor, must:

→ Ensure that there is a robust means of tracking the progress of consents in relation to the programme

→ Log the details of the consent, once it has been granted, onto SHEQ Tracker so that a central database of consent issues and liabilities can be maintained

→ Communicate any conditions, planning conditions, third party constraints or documents contained within the application to the relevant design and project teams, once a consent has been granted

→ Ensure that any specific conditions, such as daily monitoring, recording volumes abstracted or discharged etc. detailed within the permit, consent or license are complied with.

Constraints	List of consents	Consenting bodies	Timescale
Wildlife consents	Bats, water voles, Great Crested Newts (GCN), otters, dormice, badgers	Natural England / Department for Environment, Food and Rural Affairs (DEFRA) / EA	EPS licences take up to 60 days. Badger licences - Natural England will review the information submitted. You'll get an email within 30 working days to tell you if you're registered to use this licence.
Watercourse	FRAP, MMO Licence, Land Drainage Consent Discharge Licence	EA / MMO / IDB	Two months from when it is duly made (allow a few weeks from submission). MMO takes longer.
Noise	Section 61	Local authorities	28 days.

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Contaminated land

Contaminated land contains substances that could prove to be harmful to people or the environment e.g. chemicals, hydrocarbons, asbestos or Unexploded Ordnance (UXO).

It may arise from previous or current activities, contaminants from elsewhere, naturally elevated concentrations or a combination of any of these factors.

Our standards

Before works start

The project management team, with support from the contract environmental advisor, must:

- → Review the project information to identify existing or potential contamination issues and, where necessary, record the risks on the project risk register or register of environmental aspects and impacts
- → Arrange for further site investigation in accordance with British Standard (BS) 10175 (investigation of potentially contaminated sites, code of practice) or develop a contaminated land risk assessment and remediation strategy such as dig and dump, remediate etc.
- → Seek specialist advice to interpret any further investigations
- → Please refer to the Water Management section.

Source – The area and type of contamination.

Pathway – The mechanisms through which contaminants may migrate to receptors. Typically, these include through ground water, surface waters, soil and atmosphere.

Receptor – A place, organism, or body that has the potential to be affected by the contamination. This includes humans, animals with access to the proposed land use or receptors, controlled water resources (aquifers and surface waters), plants, structures and services.

During the works

Where there are known contaminated land issues, the project or site manager, with support from the contract environmental advisor, must ensure:

- → A site specific methodology is produced, containing suitable control measures to prevent the spread of contamination and that these are communicated to all relevant individuals
- → All control measures are implemented and monitored periodically for effectiveness
- → Any agreed remediation plans are implemented
- → Mobile plant licences or permits for contaminated land issues are complied with
- → Any additional ground investigation is undertaken as required
- → A verification report is produced at the end of the remediation or treatment.

Where unexpected contaminated land issues occur, the project or site manager, with support from the contract environmental advisor, must ensure:

- → All works stop immediately
- → The area is made safe
- → The contract environmental advisor and / or Safety, Health and Environment (SHE) advisor is notified
- → Where applicable, the materials team is notified
- → The customer is notified
- → A strategy for addressing the issue is determined, and where applicable implement the steps above for known contaminated land issues, (see the Waste management section). It is important to ensure that contamination is not mobilised (i.e. source-pathway-receptor approach).

On completion

The project or site manager, with support from the contract environmental advisor, must submit any:

- → Desktop study reports
- → Intrusive site investigations and associated interpretive reports
- → Design statements or remediation plans
- → Verifications reports, following remediation or treatment.

Energy and carbon management

Construction companies have an important role to play in designing and delivering buildings and infrastructure that are more energy efficient and incorporate new energy technologies, as the built environment accounts for over half of the energy use and greenhouse gas emissions in the United Kingdom (UK).

Our standards

At design stage

An assessment must be completed using a carbon measurement and reduction tool. This needs to be completed either by a Morgan Sindall Infrastructure engineer or a design consultant. Morgan Sindall Infrastructure projects can use our in-house carbon measurement and reduction tool, CarboniCa, or customer mandated tools. Refer to Connect for further information.

Before works start

The project or site manager, with support from the contract environmental advisor, must:

- → Review the Plant Hire Desk sustainable solutions and services booklet to identify energy efficient technologies and the Morgan Sindall Infrastructure fuel free site standard
- → Assess all reasonable measures to reduce energy usage and carbon emissions throughout the project lifecycle and deploy energy efficient and emission reducing practices and techniques whenever possible
- → If mains electricity supply connection is unavailable, identify the temporary electricity supply for the site. All electricity connections must be sourced via the local procurement team who will work with consultants to establish connections and monitoring. Where the project is not to be directly connected to mains supply, then this should be reported to the local procurement team.

During the works

The project or site manager, with support from the contract environmental advisor, must:

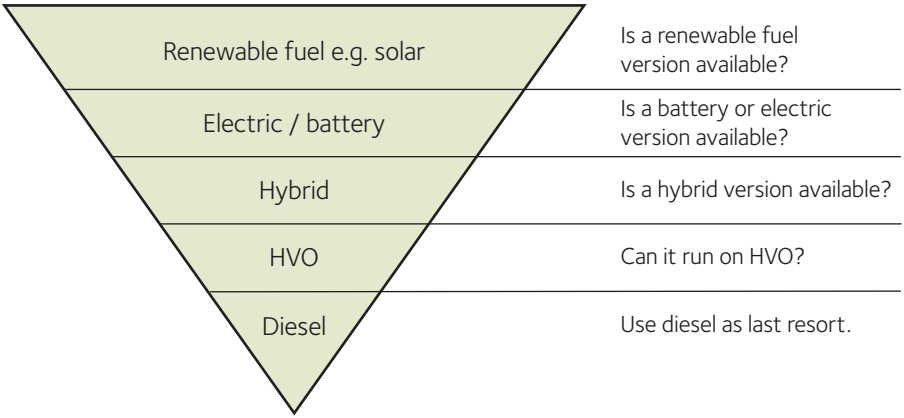
- → Deploy energy efficient and emission reducing practices and techniques
- → Consider alternative power generation and fuel options for items of plant, e.g. hybrid batter units, electric handtools etc.
- → Adopt low carbon site welfare and plant options
- → Ensure that all plant is suitably inspected and maintained and not allowed to idle when not in use
- → Record the following on the Safety, Health, Environment and Quality (SHEQ) Tracker:
  - Electricity (direct purchase) – kWh
  - Electricity (customer supply) – kWh

- Diesel consumption (power supply) – litres
- Diesel consumption (all other uses) – litres
- Gas consumption – kWh
- Water consumption – m^3.

Things to consider:

1. Get an electricity supply installed before work starts to run the welfare facilities, Electric Vehicle (EV) charging and any electric plant. This may take some time
2. Carbon calculators and reduction in design. An engineer either Morgan Sindall Infrastructure or a design company should use Carbonica or the customer's carbon calculator tool during the design stage to identify where carbon can be designed out
3. Cement placement Ground Granulated Blast-furnace Slag (GGBS) or Pulverised Fuel Ash (PFA)
   - Specify and use low carbon concrete and concrete with GGBS and PFA
4. Before work starts: pick environmentally friendly welfare – there might be a long lead time
5. Encourage subcontractors to use battery electric kit or Hydrotreated Vegetable Oil (HVO) and reiterate this several times
6. Make subcontractor aware of the fuel free sites hierarchy
7. During works - Electric or battery plant should be used whereever possible. Otherwise, use HVO rather than diesel where possible. Communicate with your site team to make this clear
8. Capture good practice case studies.

Morgan Sindall Infrastructure have publically declared a Net Zero by 2030 plan for our operational carbon emissions, as well as a Net Zero by 2045 plan for all carbon emissions.



[The Plant Hire Desk Sustainable Solutions and Services brochure]

CDP (Carbon Disclosure Project)
The CDP is an initiative undertaken by Morgan Sindall Group to make environmental reporting and risk management a business norm, and drive disclosure, insight and action towards a sustainable economy. Site teams must keep a log of any energy efficient or carbon reducing techniques that are used on site.

Science-based targets
Morgan Sindall Group has adopted science-based targets to provide a clearly defined pathway to future-proof growth by specifying how much and how quickly greenhouse gas emissions need to be reduced.

For more information, please contact your contract environmental advisor.

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Incident control, reporting and investigation

Environmental incidents occur from activities or operations which may have an adverse effect on the environment or human health, such as causing or leading to pollution of water, land or air.

Our standards

- → Types of activities that can have a negative environmental impact include, but are not restricted to:
  - Discharge to inland fresh waters or controlled waters
  - Use and storage of hazardous material e.g. chemicals, fuel and oil
  - Waste management
  - Ecological or archaeological protection
  - Air emissions
  - Traffic and statutory nuisance e.g. noise, dust, mud, light or odour
  - Dewatering and abstration
- → The contract environmental advisor must be informed to allow the incident to be categorised correctly, reported and investigated. (see Reporting of accidents and incidents section)
- → If the effects of the event cannot be controlled by the site team the contract environmental advisor must be informed immediately to allow them to coordinate outside assistance from specialists, external regulatory bodies and / or emergency services as necessary.

Ideal Response (Morgan Sindall Infrastructure emergency response specialist) 24-hour emergency helpline:

0808 239 9598.

As per our environmental incident investigation, reporting and control standard, the categories for environmental incidents are stated below:
Category one (Major)
Category two (Significant)
Category three (Minor)
Category four (Near Miss or Learning Event).

Watercourse

The following steps must be undertaken to prevent pollution once an incident has occurred:

1. Stop the relevant activity
2. Identify the type of substance spilled onto or into the watercourse and review any applicable Control of Substances Hazardous to Health (COSHH) risk assessment
3. Any individual dealing with the environmental incident must wear additional appropriate Personal Protective Equipment (PPE) as identified within the COSHH risk assessment before attempting to control it
4. All items in the vicinity of the incident with potential to cause ignition of the spillage must be extinguished
5. Where possible, create bunds on the banks of the watercourse, using sand, soil or other absorbent material to prevent or restrict the flow of pollutants into the water resource
6. If the spillage occurred in a ditch, the affected stretch must be dammed using sand bags or local material. If sand bags are unavailable, local materials covered by a plastic sheet must be used to create an impermeable dam. If the pollutant floats and time permits, then a drainage pipe must be installed at the base of the dam to allow unaffected water to continue to flow
7. The source of pollution must be identified and appropriate measures to prevent further spillage must be applied e.g. turning off open valves, sealing holes in containers etc.
8. If the spillage involves floating chemicals, booms must be established to restrict the affected area. For calm waters the standard white booms supplied in spill kits are suitable but must be zip tied together. For moving watercourses, larger specific booms must be deployed
9. Once the spillage has been contained pads or rolls must be applied to the affected area to remove any chemicals. Continue until the chemical is completely removed
10. Using the booms sweep the surface of the affected area to remove any residual chemicals
11. If the spillage involves sinking or soluble chemicals implement steps one to seven and all possible controls limiting the volume of chemicals entering the watercourse must be implemented. Contact your local environmental advisor for external support
12. Once all the contaminants have been removed from the surface of the watercourse, the booms and dams must be removed and the bed and banks of the watercourse reinstated to the former quality. At times, it will be beneficial to leave booms in place for several weeks to allow trapped residues from vegetation to be captured. Once the pollutant has been removed, the absorbent material must be removed in heavy-duty bags and disposed of as hazardous waste. (see Waste management section).

Land

The following steps must be undertaken to prevent pollution once an incident has occurred:

1. Stop the relevant activity
2. Identify the type of substance spilled onto the ground and review the applicable COSHH risk assessment
3. Any individual dealing with the environmental incident must wear additional appropriate PPE as identified with the COSHH risk assessment before attempting to control it
4. All items in the vicinity of the incident with potential to cause ignition of the spillage must be extinguished
5. Where sensitive receptors have been identified (e.g. surface waters and site drains) a barrier of sand or inert material must be placed around the receptor to protect from the effects of the spillage
6. Where the spillage occurs on sloping land, it must be contained by constructing a bund using sand, soil or other absorbent material of sufficient size and length to contain the whole flow. On moderate slopes an earth bund must be constructed by excavator, dozer or manual tools. If time permits, a plastic lining must be established across the containment area to stop further ground penetration
7. The source of pollution must be identified and appropriate measures to prevent further spillage must be applied e.g. turning off open valves, sealing holes in containers etc.
8. Once the spillage has been contained, the area must be demarcated and absorbent material (e.g. treated granules, oil absorbent rolls and sand etc.) must be placed over the surface of the affected area
9. Once the pollutant has been removed, the absorbent material must be removed in heavy-duty bags and disposed of as hazardous waste. If there is a large quantity of material this can be excavated and placed in an empty skip or on an impermeable membrane such as Visqueen and covered. The material can then be tested and disposed of in due course without the risk of additional contamination spread (see Waste management section)
10. The ground below the affected area must be thoroughly inspected by the contract environmental advisor for signs of any contamination e.g. change in appearance, odour or consistency.

If the contract environmental advisor is unsure whether any residual contaminants remain then soil testing must be undertaken. If contaminated then the substrate material must be classified and removed to an appropriate waste disposal location. (see Waste management section).

Air

The following steps must be undertaken to prevent pollution once an incident has occurred:

1. Stop the relevant activity
2. Identify the type of substance released into the atmosphere and review any applicable COSHH risk assessment
3. Where it is safe to do so and reasonably practicable, any individual dealing with the environmental incident must wear additional appropriate PPE as identified with the COSHH risk assessment before attempting to control it
4. Where it is safe to do so and reasonably practicable, all items in the vicinity of the incident with potential to cause ignition following the release must be extinguished
5. Where it is safe to do so and reasonably practicable, the source of pollution must be identified and appropriate measures to prevent further release must be applied e.g. turning off open valves, isolating plant etc.
6. In the event of a release of a significant hazardous substance, the customer or project specific Emergency Response Plan (ERP) must be enacted to ensure all identified stakeholders such as the EA, Scottish Environment Protection Agency (SEPA) or Natural Resources Wales (NRW), local community, customer etc. are informed and where necessary protected.


Incident control in water course

Incident control on land


Incident control in air

Invasive species and harmful weeds

Invasive species quickly outgrow native species and spread aggressively which has a damaging effect on British plants and reduces biodiversity. Japanese Knotweed, Himalayan Balsam and Giant Hogweed are some of the most common examples of invasive plant species.

Our standards

Before works start

The project management team must discuss the following with the contract environmental advisor:

- → Any control measures for protecting invasive species and harmful weeds that have been identified in pre-construction surveys must be recorded in the Environmental Management Plan (EMP) and the relevant Risk Assessment Method Statement (RAMS). These may need to be agreed with the appropriate agencies i.e. Environment Agency (EA), Natural Resources Wales (NRW), Scottish Environment Protection Agency (SEPA)
- → The means of demarcating and installing warning signs around sensitive areas
- → Enhancing the site induction and provision of periodic Toolbox Talks (TBTs) when invasive species and / or harmful weeds are identified to provide information on what to look out for, including images.

Wild Parsnip

During the works or on discovery

All site individuals must:

- → Stop work immediately, if works are undertaken within 7m of a suspected invasive species
- → Inform the project or site manager or the contract environmental advisor
- → Not excavate or move soil within 7m of suspected invasive species without instruction from the contract environmental advisor
- → Not stockpile material suspected of containing invasive plants within 10m of a watercourse, gully or drain
- → Notify the project or site manager or contract environmental advisor, if damage to the fencing enclosing invasive species is identified
- → Enter an identified area of invasive species during treatment
- → When working in a contaminated area cannot be avoided, ensure biosecurity measures have been deployed.

It is illegal to

- → Plant or cause the spread of invasive or harmful plants into the wild.

Treating of invasive species

- → Advice must be sought from a specialist invasive species contractor prior to any treatment programme.

Handling contact with invasive species and harmful weeds

- → Medical advice must be sought if contact is made with Giant Hogweed or Wild Parsnip sap, as it can cause severe irritation and blistering when exposed to sunlight, up to 24 hours after initial contact
- → Contact with the eyes can cause temporary blindness.

Refer to the Invasive species and injurious weeds standard for further information.

Giant Hogweed

Materials management

A Materials Management Plan (MMP) can allow for the reuse of contaminated or uncontaminated soil and other material in earthworks, whilst avoiding the lengthy and more costly process of securing an environmental permit to do so.

Our standards

Refer to the Integrated Management Systsem (IMS) for the Materials Re-Use and Handling guidance on the following scenarios:

- → Acquiring or providing recovered material (surplus soil, crushed concrete, hardcore, planings) from or to a third party
- → Procuring recovered material
- → Transferring material recovered on-site to a third party
- → Use and re-use of excavation materials on-site (material derived and used on-site)
- → Surplus excavations derived on-site are transferred to another site
- → Re-use of excavated material through physical treatment e.g. crushing and screening.

Reuse and recycle

A large proportion of waste is generated from excavated material and disposal of materials at the end of scheme, e.g. site compound stone. While this is inevitable on some schemes, there are still opportunities that should be investigated which will limit eventual disposal.

Reduction of imported virgin aggregate materials for construction activities and the use of recycled aggregates may yield large benefits.

Disposal

Waste that leaves our sites needs to be appropriately managed to avoid landfill, wherever possible. As well as the associated environmental impacts, there is additional tax to be paid for waste destined for landfill. By avoiding landfill disposal, not only will this have wider environmental benefits, but it will also have significant commercial benefits.

Procurement teams will need to lead heavily on managing disposal to meet diversion targets.

MMP

MMPs can allow for the reuse of contaminated or uncontaminated soil and other material in earthworks, whilst avoiding the lengthy and more costly process of securing an environmental permit to do so.

Off-site disposal of surplus materials such as an excavation can have significant costs and may impact project

viability. Arisings from site levelling and excavations for foundations, basements, roads and utility service trenches can amount to thousands of tonnes of material.

In the past, this material has been considered as waste by the definition set out in the Waste Framework Directive, meaning it must be handled in line with waste duty of care requirements and cannot legally be used again unless an environmental permit is issued. The Environment Agency (EA) advises timescales of up to four months from application to the issue of permits and the application costs are significant.

For these reasons, the Definition of Waste Code of Practice (DoWCoP) was developed to provide a simplified process for enabling the reuse of site won materials, either on the site of origin, or on another nominated site (movement between sites).

The DoWCoP requires that an MMP is produced and specifies what information must be included in the MMP. The MMP must demonstrate the material will not pose unacceptable risks to human health or the environment.

An MMP should be finalised at the design and planning stage of a project. It needs to be in place before anything is excavated.

All MMPs must be reviewed by a code of practice qualified individual and receive final sign-off by the regulator (EA, Natural Resources Wales (NRW) or Scottish Environment Protection Agency (SEPA)).

MMPs are prepared and delivered by specialist environmental consultants, so their early engagement in project design and planning is crucial to ensure the MMP can deliver project objectives. It is essential that appropriate members of the project delivery team are involved in this process alongside the project's environmental advisor, so requirements of the MMP can be understood, commercially accepted, and resourced throughout the project to completion.

MMPs must be given the same consideration and carry the same weight as any other environmental consent. Failure to keep the right records and undertake the correct sampling and verification could be considered a breach, and we may be forced to remove any material considered as illegally reused and dispose of it.

Nuisance

Many construction activities have the potential to cause a nuisance e.g. noise and vibration, light pollution, dust, emissions and odour etc. It is vital that such impacts are identified at the earliest opportunity and appropriate mitigation and control measures are implemented.

Our standards

Before works start

The project or site manager, with support from the contract environmental advisor, must:

- → Evaluate the project e.g. construction methodology, plant and equipment to be used and the proximity of sensitive receptors to assess the likely nuisance risks and outline suitable mitigation measures and record in the Environmental Management Plan (EMP)
- → Understand if the customer has any specific requirements
- → Consider what consents may be required and understand all relevant planning conditions (see Consents and permitting section)
- → Liaise with statutory bodies regarding consent requirements; prepare and submit applications
- → Discuss with the customer the arrangements for liaising with the local community, residents' groups etc.
- → Ensure baseline and continual monitoring (such as noise, vibration, air quality) is undertaken as required and in line with any Section 61 consent
  - ◦ Section 61 consents indicate that a contractor or developer has considered its impact on both the environment and local community and put mitigation in place to reduce the impacts to both
- → Consider design of site layouts e.g. selecting the quietest equipment available or positioning any noisy equipment or activities as far away as is practicable from sensitive receptors.

During the works

The project or site manager, with support from the contract environmental advisor, must:

- → Continue to liaise with statutory authorities as appropriate and ensure works are carried out in accordance with relevant consents and contractual environmental requirements
- → Ensure monitoring is undertaken against any baseline or consent conditions
- → Undertake inspections and audits as appropriate, to ensure agreed mitigation measures are in place and proving effective, and any identified actions are closed in a timely manner
- → Ensure any agreed mitigation measures are detailed in the Risk Assessment Method Statement (RAMS)
- → Ensure the local community is kept updated; providing progress updates, details of any activities out of consented hours etc. in accordance with the agreed arrangements.

The project or site manager must ensure:

- → Plant and equipment is shut down when not in use
- → Plant is started up sequentially rather than all together
- → Continuous noisy plant is housed in acoustic enclosures, where practicable.

On completion

The project or site manager, with support from the contract environmental advisor, must:

- → Ensure any monitoring equipment is removed
- → Ensure monitoring results are electronically archived within contract documentation
- → Store copies of consents on the Safety, Health, Environment and Quality (SHEQ) Tracker.

Protected sites and species

The protection of living things, such as trees, flowering plants, insects, birds and mammals, and their habitats is a legal requirement.

Our standards

Before works start

The project management team must discuss the following with the contract environmental advisor:

- → Any control measures for protecting habitats and species that have been identified in preconstruction surveys, ensuring they are recorded in the Environmental Management Plan (EMP) and register of environmental aspects and impacts
- → Where the site is in a designated protected area i.e. Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC) or Ramsar, a consultation must be carried out with the relevant statutory nature conservation bodies
- → All required permits, licences or registrations should be recorded on the Safety, Health, Environment and Quality (SHEQ) Tracker alongside a consent application authorisation form signed off by the project or site manager
- → The need for ecological surveys, which must be carried out by a competent individual at the appropriate time of year in line with the ecology survey calendar (see Figure 1)
- → The means of demarcating and installing warning signs around sensitive areas
- → Enhancing the site induction and provision of periodic Toolbox Talks (TBTs) when protected species are identified to provide information on what to look out for, including images.

During the works or on discovery

If protected species are encountered all site individuals must:

- → Stop work immediately and inform the project or site manager and contract environmental advisor
- → Not approach suspected protected species, especially animals as they may become distressed and bite
- → Do not attempt to move species as some protected species require a license to handle
- → Get advice from the contract environmental advisor on establishing safe buffer zones for working near the species
- → Undertake additional surveys as required i.e. after changes to the contract scope
- → Update the EMP and the register of environmental aspects and impacts with any new information based on the discovery of the protected species or habitat.

It is illegal to

- → Deliberately or recklessly kill, harass, injure, disturb or capture protected species
- → Damage or destroy the breeding sites or resting places of protected species
- → Deliberately or recklessly pick, collect, cut, uproot or destroy protected wild plants
- → Damage a protected area or site.

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Habitat and trees	Preliminary ecological appraisal - phase 1												
	Tree survey												
	Botanical survey - National Vegetation Classification												
Bats	Preliminary roost assessment of structures												
	Preliminary ground level roost assessment of trees												
	Presence / absence and roost characterisation												
	Hibernation roost survey												
Amphibian and reptiles	Great crested newt habitat assessment												
	Great crested newt presence - absence survey environmental Deoxyribonucleic Acid (eDNA)												
	Common species surveys e.g. snakes, lizards, slow worms												
Mammals	Badger												
	Water vole												
	Otter												
	Red squirrels												
	Wildcat												
	Pine marten												
	Dormouse												
Birds	Migrating birds												
	Birds (over wintering e.g. geese)												
	Breeding and nesting birds (unless specified below)												
	Golden eagle and white tailed eagle (breeding)												
	Winter roost surveys (hen harrier and red kite)												
	Barn owls												
	Crossbills (all species)												
Freshwater	River habitat assessment												
	Salmonid fish												
	Fresh water pearl mussels												
	Atlantic stream (white clawed) crayfish												
Other	Terrestrial invertebrates e.g. butterflies and ants												
	Bryophytes (mosses and liverworts)												
	Fungi												
	Lichens												

Key:

Optimal	
Sub-optimal	
Not possible	

Figure 1. Ecology survey calendar

The table shows the recommended survey periods for ecology surveys. Before considering work or surveys please contact the **environment team** as the requirement or timing of the surveys is often site and project specific. Surveys conducted outside the recommended periods may not be acceptable to regulators authorities and could result in project delays.

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Trees and hedgerows

Certain trees are subject to Tree Preservation Orders (TPOs).

Some countryside hedgerows are also protected, requiring permission from the Local Planning Authority (LPA) if they are to be removed.

Our standards

Before works start

The project management team must refer to the ecology and biodiversity standard and discuss the following with the contract environmental advisor:

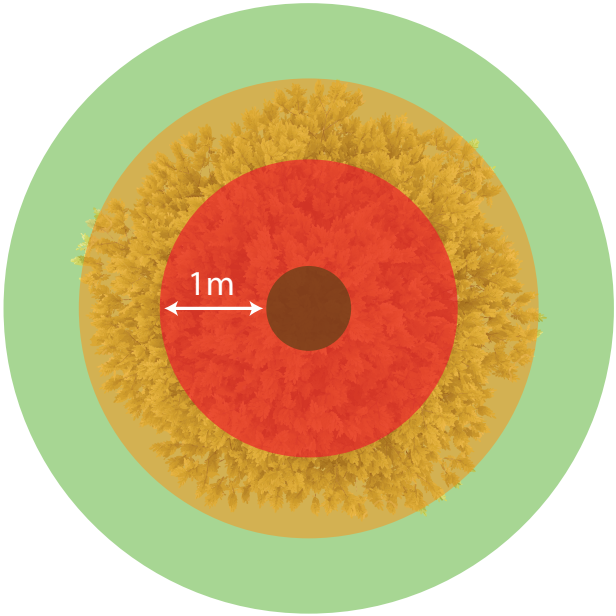
- → Control measures for protecting any trees and hedgerows identified in pre-construction surveys must be included in the project Environmental Management Plan (EMP) and the relevant Risk Assessment Method Statement (RAMS)
- → Appropriate permission must be sought before works commence involving felling, lopping or working beneath the canopy of a tree (LPA consent for trees with TPOs or within a conservation area) or removing a hedgerow (hedgerow removal notice)
- → If your scheme is in a statutory protected area, working on trees (regardless of TPO status) will require consultation with, and in most cases an assent from, Natural Resources Wales (NRW) or Natural England.

During the works or on discovery

All site individuals must be supervised by a competent arboriculturalist or ecologist during the nesting season, vegetation clearance, including cutting down, uprooting, topping or lopping of trees and hedgerows. Project teams must:

- → Not disturb nesting birds that are present in the trees and / or hedgerows to be removed, as this could result in a criminal prosecution for the individual involved including a fine and prison sentence of up to two years
- → Complete vegetation removal, in line with the specific project consents, as well as completing checks for potential nesting birds and bat roosts
- → Follow the Street Works UK (formerly National Joint Utilities Group) guidance, 'Guidelines for the planning, installation and maintenance of utility services in proximity to trees' (see Figure 1), when permission has been granted for works within the root protection area

Figure 1. Guidelines for the planning installation and maintenance of utility services in proximity to trees.



TRUNK OF TREE

PROHIBITED ZONE
1 metre from trunk

PRECAUTIONARY ZONE
4x tree circumference

PERMITTED ZONE
Outside of the precautionary zone

- → No excavation of any kind must take place within the 1m prohibited zone from a tree trunk, unless there has been a full consultation with the local authority tree officer
- → If excavations are required in the precautionary zone (four times the tree circumference or edge of tree canopy, whichever is the greater) this must only be undertaken by hand
- → Mechanical excavation plant is NOT allowed in the precautionary zone
- → Mechanical excavation is allowed in the permitted zone but caution must be applied when working near to the edge of the precautionary zone
- → Exposed roots must be protected in all circumstances
- → Materials, plant and spoil must not be stored in the prohibited or precautionary zones.

Waste management

The control of any substance or object which the producer discards, or intends to discard, or is required to discard, must be appropriately planned and controlled.

Our standards

Before work starts

The project management team must consult the Waste Management standard and Management and Disposal of Waste guidance and discuss the following with the contract environmental advisor:

- → Opportunities to avoid waste (use of the waste hierarchy)
- → The waste activities to be undertaken, including the characterisation, storage, use, treatment (e.g. crushing), transportation and disposal of waste
- → Identification of any waste that requires further analysis or testing to allow waste classification
- → The need for any permits or exemptions
- → Opportunities to reuse the waste e.g. Materials Management Plans (MMP)
- → The appointment of a project or site based waste coordinator
- → The creation and maintenance of a Site Waste Management Plan (SWMP) by the waste coordinator. This should detail all possible waste streams using the List of Wastes (LoW) or European Waste Catalogue (EWC) six digit codes for hazardous and non-hazardous wastes. In addition to the EWC codes, any waste streams that are to be disposed of directly to landfill must be characterised in accordance with Waste Acceptance Criteria (WAC). Characterisation involves chemical testing, which can take 10 days
- → The need to undertake duty of care checks, including:
  - Reviewing a current copy of the waste carrier licence for any company transporting waste, ensure registered as upper tier waste carrier
  - Reviewing a current copy of the environmental permit, or exemption, for the identified disposal location
  - Check licenses and permits on public register
  - Confirmation for the disposal location that they, under their permit terms, can accept the type and volume of waste planned to be disposed of.

As of 1 December 2022, all sites must be registered via the Morgan Sindall Group Waste Desk.

How to contact with the Waste Desk:

T: 01952 216270
E: wastedesk@morgansindall.com

During the works

All site individuals must:

- → Store waste in a secure place, a designated area and a minimum of 10m from any drain, water course or tree canopy
- → Ensure waste containers, skips and drums are suitable for the type of waste being stored and stop waste from escaping
- → Label containers clearly with the type of waste they contain, including EWC codes
- → Store liquid wastes and those with the potential to leak in a bunded area or on a bund pallet
- → Use enclosed skips or RoRo's, to stop waste blowing away and prevent theft
- → Undertake spot checks on waste movements to confirm waste is being disposed of correctly in accordance with due diligence checks e.g. following wagons from site to disposal locations
- → Identify hazardous or special (Scotland) waste and undertake these additional responsibilities:
  - Segregate into individual waste streams
  - Store in appropriate containers and secondary containment where required
  - Treat all Control of Substances Hazardous to Health (COSHH) product containers as hazardous or special waste
  - Ensure used spill kit material is treated as hazardous or special waste
  - In Wales, sites must be registered as a hazardous waste producer with Natural Resources Wales (NRW) before the disposal of hazardous waste can commence
- → Construction sites in Wales are required to sort their waste for recycling
  - The following materials must be separated prior to collection and collected separately:
    - Food (where premises produce over 5kg in seven consecutive days)
    - Paper and card (these can be mixed together for collection)
    - Glass
    - Metal, plastic and cartons (these can be mixed together for collection)
    - Unsold textiles (applies to manufacturers of textiles)
    - Unsold small Waste Electrical and Electronic Equipment (WEEE)
  - Additionally, there is a ban on:
    - Sending food waste to sewer (any amount) - this will be enforced by local authorities
    - Separately collected waste going to incineration and landfill
    - All wood waste going to landfill.

Waste disposal

- → A Waste Transfer Note (WTN) must be completed for each non-hazardous or inert waste movement
- → WTNs must contain specific information *(see Figure 1)*
- → WTNs must be kept for a minimum of two years
- → For repeated transfers, where the description of the waste and all the circumstances remain the same – e.g. carrier, transfer or, location of transfer - a 'Season Waste Transfer Note' can be used to cover all transfers up to 12 months
- → A consignment note is required for the disposal of hazardous or special (Scotland) waste, which contains details of the hazardous nature of the waste
- → Hazardous or special waste consignment notes must be kept for a minimum of three years
- → Waste must not be transferred to another individual's control without a legally compliant WTN or consignment note
- → All waste movements must be recorded in the SWMP
- → The waste coordinator must annually check the waste carriers licence and environmental permits or exemptions to ensure legal compliance
- → Morgan Sindall Infrastructure is registered to carry waste but this is not transferable to our subcontractors. Any subcontractor moving waste must be registered as an upper tier waste carrier.

Monthly waste return requirement

A monthly waste return providing details of the following:

- → Total quantity (mass-tonnes) of waste removed from site
- → Quantity (mass-tonnes) of earth (muck shift) or demolition waste
- → Type (description and list of waste code) (EWC or LoW) and quantity (mass-kg) of waste that is disposed of in landfill
- → Type (description and list of waste code) (EWC or LoW) and quantity (mass-tonnes) of waste that is recycled (e.g. paper 20 01 01; 0.4 tonnes, wood 17 07 07; 0.8 tonnes)
- → Type and description as above for waste otherwise incinerated, reused or reprocessed into 'non-waste'.

Waste reporting

→ The subcontractor must, prior to start on site, assist with the production and/or update of the SWMP

→ The subcontractor must provide a record of progress towards, and achievement of, applicable targets for wastage, waste reduction, and recovery, at least monthly, through to conclusion of the project in a legible form, ideally a Microsoft Excel (or similar) spreadsheet

→ The subcontractor must provide information, where applicable, on the percentage and value of recycled content and reused materials planned and actually used in the construction project

→ The subcontractor must meet the target performance levels agreed upon for waste reduction, recovery and recycling

→ Within two months of the end of the construction work, the subcontractor must submit, in writing, the reasons for any significant deviations between its actual waste figures and those originally estimated, i.e. conduct a documented review of its input into the SWMP

→ The contractor will endeavour to apply the waste hierarchy in all waste management activities, ahead of final disposal, and in line with waste regulations.

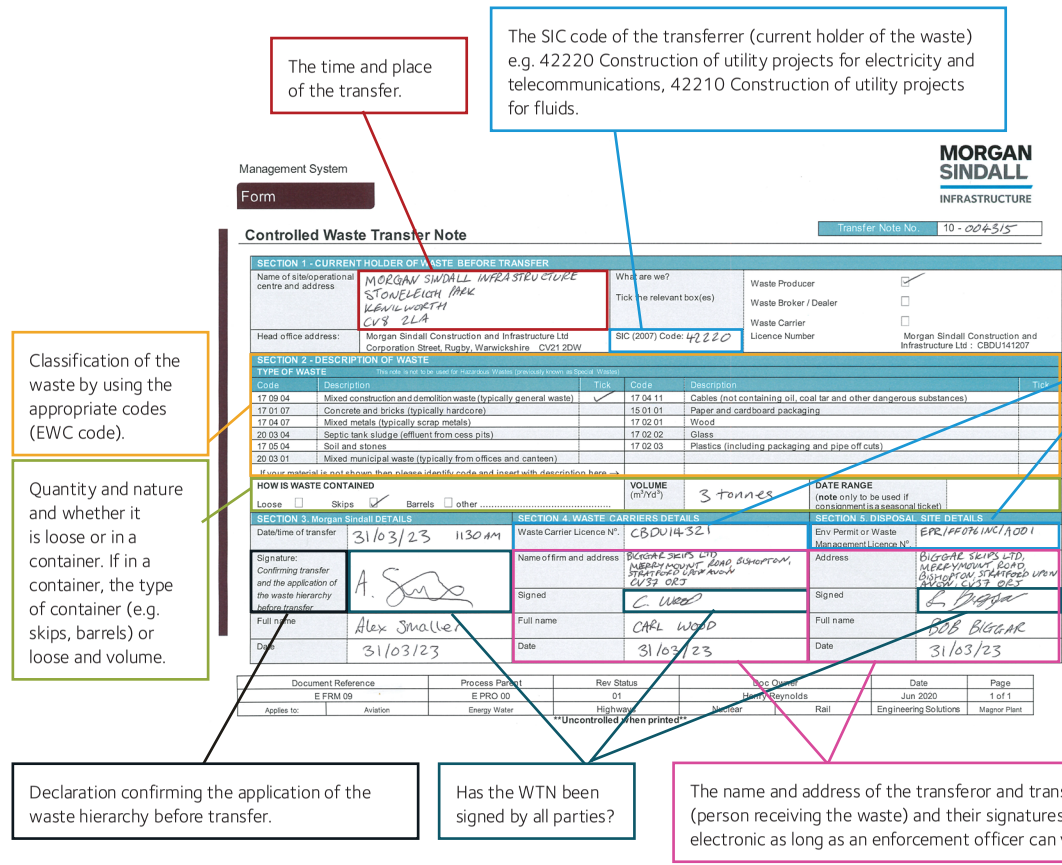
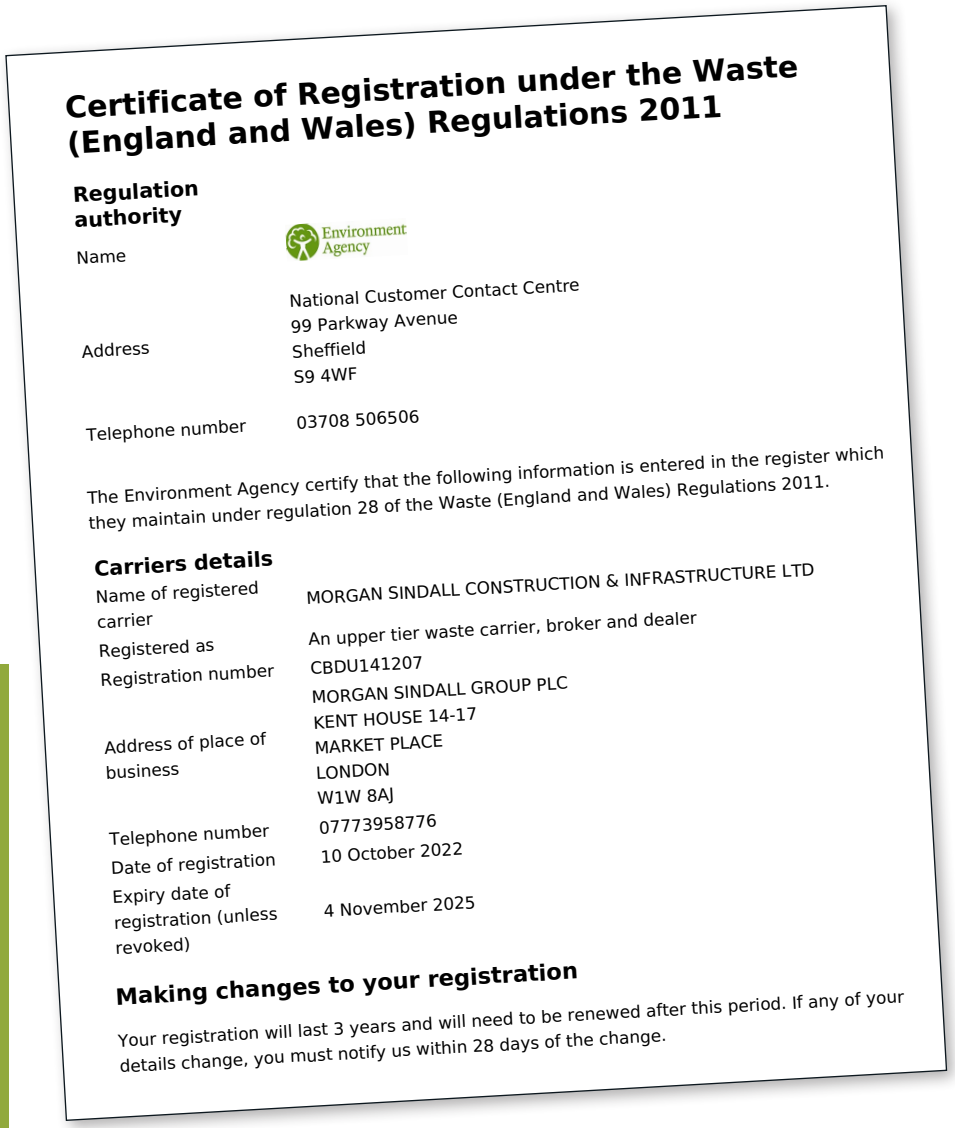


Figure 1. Annotated WTN

Figure 2. Waste carrier registration certificate



Certificate of Registration under the Waste (England and Wales) Regulations 2011

Regulation authority

Name: Environment Agency

Address: National Customer Contact Centre, 99 Parkway Avenue, Sheffield, S9 4WF

Telephone number: 03708 506506

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011.

Carriers details

Name of registered carrier	MORGAN SINDALL CONSTRUCTION & INFRASTRUCTURE LTD
Registered as	An upper tier waste carrier, broker and dealer
Registration number	CBDU141207
Address of place of business	MORGAN SINDALL GROUP PLC KENT HOUSE 14-17 MARKET PLACE LONDON W1W 8AJ
Telephone number	07773958776
Date of registration	10 October 2022
Expiry date of registration (unless revoked)	4 November 2025

Making changes to your registration

Your registration will last 3 years and will need to be renewed after this period. If any of your details change, you must notify us within 28 days of the change.

Water management

Surface waters such as rivers, lakes, lochs, reservoirs, ponds, streams, canals, ditches, dry ditches, estuaries, coastal waters and groundwater (i.e. all water below the ground held in soil or rock strata), have legal protection as controlled waters, and strict controls are in place for any works that may affect them.

Our standards

Before works start

The project management team must discuss the following with the contract environmental advisor:

- → When works are within 8m (16m tidal) of a drain, stream, watercourse, estuary or flood defence asset whether
  - The activity requires a consent or
  - An exemption needs to be registered
  - A permit is required.
- → A Controlled Activities Regulations (CAR) licence or registration for works affecting the water environment may be required (Scotland only)
- → A Construction run off permit for the site may be required
- → How such activities can impact on the flow, bank or flood risk characteristics of the watercourse
- → Contacting the different watercourse asset owners, such as:
  - The Environment Agency (EA) or Natural Resources Wales (NRW) or Scottish Environment Protection Agency (SEPA)
  - Internal Drainage Boards (IDB)
  - Lead Local Flood Authorities (LLFA)
  - Tidal watercourse Marine Management Organisations (MMO) or coast protection agency
- → The risks associated with dewatering activities and the potential need for associated Temporary Works
- → Consideration of employment of a hydrologist on long or linear sites with changing topography where steep inclines may increase the risk of surface water and flood water leaving site

- → Consideration to dewatering and silt management plans to ensure that these are considered before works start and not reactively during the works
- → The need for a permit if more than 20m³/day is to be extracted from any excavations (England only)
- → The Water Abstraction regulations state that dewatering from small scale excavations has a threshold of 100m³/day (The Water Abstraction and Impounding (Exemptions) Regulations 2017)
- → The need for a consent if discharge is to be made into controlled waters, either directly or indirectly via engineered drainage systems
- → Seeking permission from the landowner if small volumes of clean uncontaminated water is to be discharged to soakaways
- → Recording all water and flood risks in the Environmental Management Plan (EMP).

During the works

All site individuals must ensure:

- → The locations of site drainage, local watercourses and sensitive groundwater protection areas are clearly defined and communicated
- → Oils, chemicals and fuels are stored appropriately at a minimum distance of 10m from any water receptor to prevent any spills accidently entering drains or watercourses, or impacting groundwater
- → Drain protectors or mats are available on sensitive sites. It is best practice to colour code drain covers to identify drainage type
- → Vegetation is only stripped when required to minimise silt run off
- → Silt fences and earth bunds are considered to prevent contaminated run off reaching sensitive water receptors
- → Concrete washout skips are located on hardstanding, lined to be watertight and located at least 10m from any drain, watercourse or sensitive groundwater area
- → Concrete wash water receives specialist treatment to reduce pH (alkalinity). Concrete must be scraped off the equipment before it is washed to minimise wash water, and that sufficient provision has been made for this as works progress.

Dewatering

The project or site manager must ensure:

- All individuals understand where site water is to be moved or discharged to and whether a consent is required
- All necessary equipment required to mitigate pollution e.g. silt socks and Siltbusters etc. are in place to reduce risk of silt pollution. Settlement systems must be appropriate for the particle size of the solids being treated
- A task specific permit to pump is prepared, including:
  - Details of inspection
  - Equipment to be used
  - Location of dewatering and discharge
  - Risks e.g. watercourse and monitoring to be carried out
  - Details of the appropriate permission for the discharge
- Testing and inspection of the water to be discharged is undertaken and recorded to ensure that it is free from pollution (such as use of silt trap netting, silt, oil) and within a pH range of 6-9
- Advice is sought from the contract environmental advisor if the water is contaminated with hydrocarbons or other hazardous substances
- Regular inspections of the dewatering activity are undertaken, ensuring that the equipment is operating correctly and is compliant with the design. If a consent has been issued, additional testing and record keeping may be required
- Any dewatering activity of significant volumes or for an extended period of time is reviewed to ensure that it remains compliant.

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Fire risk management

The potential dangers from fire can be particularly severe on construction sites, where high risk activities such as hot work activities, are frequently combined with circumstances where fire can spread quickly, and escape routes may be compromised.

Our standards

Planning

→ The project or site manager must ensure:

- A fire risk assessment and specific fire plan, incorporating all fire prevention arrangements, are carried out by a competent individual and relevant parts are included in the site induction
- The requirements of the current edition of 'The joint code of practice on the protection from fire on construction sites and buildings undergoing refurbishment' are communicated to all parties, where applicable
- The following statutory fire precautions are in place:
  - A method for raising the alarm in case of a fire
  - A method for detecting fire or smoke
  - Provision of suitable and sufficient means for fighting fire
  - Suitable and sufficient means of escape to a point of safety (assembly point)
  - Suitable levels of illumination on escape routes (back up in case of loss of power)
  - Suitable signage in place to route individuals to emergency assembly point
  - Adequate means are in place to limit the spread of smoke and flames
- One or more competent individuals e.g. fire marshal or fire wardens are appointed to assist in the implementation of appropriate preventative and protective measures
- Information on the fire risks, the preventative and protective measures and emergency procedures have been communicated to the relevant individuals i.e. colleagues and any individual who is, or may lawfully

be on the premises, and notify the local fire service
    - Risks specific to dangerous substances have been eliminated or reduced
    - All appointed individuals receive adequate training in respect of their assigned duties.

Common control measures

→ Emergency routes must:
    - Be kept clear at all times
    - Lead to a place of safety via the most direct route
    - Be adequate for the size of premises and the maximum number of individuals who may be present on-site at any one time
→ Suitable security measures must be provided to minimise risks from arson.

Hot works

→ In the first instance, alternative methods to hot works must be adopted where possible
→ When there is no alternative to hot work then, if possible, the hot works must be undertaken in a dedicated area away from the area of work or storage of materials
→ Hot work permits must:
    - Only cover specific identified activities and locations
    - Be signed off at the end of each work period
    - Not be issued for protracted periods. Fresh permits should be issued where, for example, work extends from morning to afternoon
    - Not be 'blanket' permits covering activities over an extended period
→ All hot works must be controlled by a formal hot works process:
    - Before leaving site, Morgan Sindall Infrastructure management must check the following:
        - Any naked flames and other ignition sources have been extinguished
        - Fuel supply to plant and equipment is isolated
        - Where practical, electrical equipment is switched off

The following measures must be checked and maintained as follows:

Control measure	Check frequency	Maintenance frequency
Method of raising alarm	Weekly function check	Annual maintenance
Method of fighting fire	Weekly visual check	Annual maintenance
Method of escape	Daily visual check	Weekly recorded
Emergency lighting	Monthly visual check and recorded	Annual maintenance
Emergency response	Drills in accordance with Emergency Response Plan (ERP)	N/A
Liaison with local emergency services	At mobilisation or if there is a significant change in the work place	N/A

- Any hot works permits for the day are reviewed, closed out and cancelled
  - A continuous fire watch must be undertaken for 60 minutes after hot works are complete with further checks made regularly up to 120 minutes after completion
  - Additional checks may be needed for longer based on a risk assessment, for example, where hot work has been undertaken within or adjacent to a timber framed structure. This may be for up to three hours, or more, at intervals of no more than 20 minutes

→ All temporary accommodation or storage units should aim to be located with at least a 10m fire break between any existing or proposed permanent building or structure

→ Specific fire extinguishers are to be provided for hot works processes and not removed from the site fire points

→ Smoking or vaping is not permitted on any Morgan Sindall Infrastructure premises, except in designated smoking or vaping areas, which will be labelled, constructed from non-combustible materials and suitably equipped with disposal facilities for cigarette ends

→ The burning of rubbish or any waste material is not permitted on any Morgan Sindall Infrastructure project

→ Where possible, combustible materials must be removed from the place of work to minimise the risk of fire

→ Electric convection heaters must not be used to dry garments

→ Free standing halogen lights must not be used on Morgan Sindall Infrastructure projects

→ All highly flammable liquids or gases must be stored properly on site, with limitations on the quantities stored

→ The use of acetylene will only be permitted with the permission of the operations director, following the detailed undertaking of a specific risk assessment

→ Flammable gas cylinders must either be removed or securely stored at the end of each shift

→ When erecting multi storey buildings, protected staircases must be installed at the earliest opportunity

→ Temporary or permanent smoke and fire stop arrangements must be installed at the earliest opportunity as works progress.

Fire risk assessment

→ **Step 1** – identify the hazards, looking for all sources of:
- Ignition e.g. open flames, sparks, static electricity, friction, hot surfaces etc.
- Fuel e.g. flammable and combustible materials
- Oxygen e.g. oxygen cylinders and oxidising agents

→ **Step 2** – identify the individuals who might be harmed and how, including:
- Individuals in the immediate area
- Maintenance staff
- Individuals outside of working hours, e.g. cleaners, security staff
- Visitors or members of the public
- Vulnerable individuals or groups

→ **Step 3** – evaluate, remove, reduce and protect from risk. Preventative measures such as good housekeeping and effective control of ignition sources can remove or reduce the risk of fire breaking out. Protective measures such as provision of alarm systems, adequate means of escape and provision of fixed or portable firefighting equipment, can remove or reduce the risk of individuals being harmed because of a fire

→ **Step 4** – record, plan, inform, instruct and train. The risk assessment must be recorded in writing. Appropriate emergency plans must be developed, maintained and periodically tested. All relevant individuals must be informed and instructed on actions required to prevent fires and actions required in the event of a fire. Adequate training must be given to individuals, especially those who have specific duties e.g. fire marshals

→ **Step 5** – review the risk assessment when:
- It is suspected to be no longer valid
- After a significant or major incident
- If there is a significant change in the workplace
- Periodically, based on the nature of the business and identified fire risks.

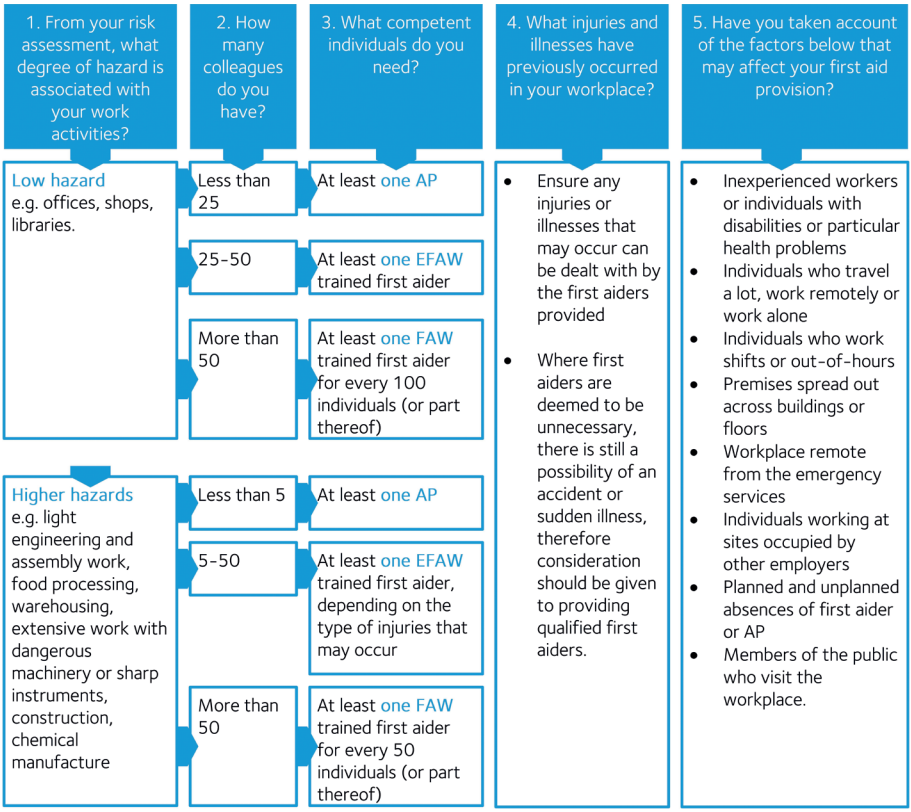
First aid provision

First aid provision must be adequate and appropriate to the circumstances. Facilities and trained individuals must be available during all working hours.

Our standards

- → An assessment must be undertaken to determine the hazard profile of the location e.g. low hazard or high hazard to ensure that the provision of first aiders is sufficient and available to enable first aid to be administered immediately
- → Where there are 25 or more individuals, even in low hazard environments, at least one individual must be first aid trained
- → Where there are smaller teams working remotely, at least one individual in the team must be first aid trained and available to give immediate assistance
- → All individuals who are identified as first aiders must have completed either the Emergency First Aid at Work (EFAW) one day course, or for those working in a high risk work environment, the First Aid at Work (FAW) three day course and hold a valid certificate
  - ◦ It is recommended that an EFAW Refresher course is completed annually
- → First aiders must be identified on-site by wearing recognised identification to denote being a first aider
- → **Appointed Person (AP)** - when working in a low risk environment e.g. an office, an individual must be nominated as an AP, who will take charge of the first aid arrangements, including looking after the equipment and facilities, and calling the emergency services when necessary
- → Arrangements must be made for the AP to be available to undertake these duties at all times when individuals are at work
- → **EFAW training** - enables a first aider to give emergency first aid to an individual who is injured or becomes ill whilst at work
- → **FAW training** - includes EFAW training and also equips the first aider to apply first aid to a range of specific injuries and illnesses
- → The first aid assessment may also identify additional training needs e.g. trauma training for high risk environments

- → Automated External Defibrillators (AED) must be easily accessible on sites, with long linear projects taking extra precautions
- → There is no mandatory list of items to be included in a first aid kit; many purchased first aid kits are pre-stocked and suitable for low risk working
- → When working in specific high risk hazardous circumstances, special consideration must be given to the contents of the first aid kit
- → Subcontractors will be required to make their own suitable and sufficient first aid arrangements for their colleagues where the number exceeds 20, or where the work is required outside of normal hours. This will be a condition of the out of hours permit
- → Other statutory welfare and first aid requirements specific to work activities, (i.e. asbestos, lead, etc.), shall be provided by the relevant subcontractor unless otherwise agreed with Morgan Sindall Infrastructure management.



Flammable liquid storage and refuelling

Flammable liquids are defined as a liquid with a flashpoint of 60°C or below. Flashpoint is defined as the lowest temperature that a liquid gives off vapour in sufficient quantity to form a combustible mixture with air. All flammable liquid storage must be in accordance with United Kingdom (UK) regulations.

Our standards

→ The following principles for controlling and minimising the risk of fire and explosion on site must be followed:
- **Ventilation** – there must be plenty of fresh air where containers are stored
- **Ignition** – all ignition sources must be removed from the storage area
- **Containment** – all flammable liquids must be stored in suitable containers
- **Exchange** – using less flammable liquids wherever possible
- **Separation** – flammable liquids must be stored well away from other processes and sources of ignition

→ A risk assessment must be undertaken to identify the potential risks associated with the storage and use of flammable liquids at work, addressing the following:
- Whether the flammable liquid can be substituted for a less flammable alterative
- The quantity to be stored on-site
- The means of handling the flammable liquids

→ Flammable liquid storage areas must be:
- Located a minimum distance away from any occupied building or ignition source:
  - 2m for up to 1,000l
  - 4m for up to 100,000l
- Shaded to prevent exposure to direct sunlight
- Secured to prevent unauthorised access, trespass and vandalism
- Solely dedicated to the storage of flammable liquids and not used for activities where spillages may occur
- Well ventilated, preferably outside, level and free draining.

Tanks and drums

- When storing flammable liquids in tanks or drums they must be clearly labelled and placed in a suitably bunded area at least 10m away from drainage systems or surface waters on impermeable, stable ground
- The volume of the bund must be 110 per cent of the volume of a single tank or drum, or when storing multiple tanks or drums, the volume of the bund must be 110 per cent of the largest vessel or 25 per cent of the total volume stored, whichever is greater
- A planned preventative inspection regime must be implemented for all plant including bowsers, Control of Substances Hazardous to Health (COSHH), stores, drip trays and bunds
- All valves, including fuel delivery trigger valves, must be locked off when not in use and the keys retained by a nominated individual responsible for the fuel storage facility. Hoses must be stored within the bund
- Mobile bowsers must be of a bunded design or parked in a suitably bunded area when not in use
- When storing flammable liquids in containers in flammable liquid vaults, the vaults must be rated for 30 minutes fire resistivity, and fitted with means of containing leaks from the containers
- Vaults must be suitably labelled to indicate the hazard
- All vaults must be kept closed and locked at all times when not in use
- All vaults must have safety closing mechanisms
- All vaults must be located outside and at least 2m away from other fuel sources and ignition sources
- Highly flammable liquids must not be stored in the same storage vaults as small tools and equipment especially with hot engines or exhausts
- Suitable non-spill funnels must be used for all refuelling operations; do not use drinks bottles. When not in use these should be stored in the flammable liquid storage vault
- Petrol must be stored in the following 10l containers:
  - Plastic storage cans or containers
  - Jerry cans must not be used to store petrol

- Diesel must be stored in the following 25l containers:
  - Jerry cans which must be marked diesel
  - Plastic storage cans or containers must not be used to store diesel
  - Flammable liquid storage within a vault must not exceed 50l.

Cylinders

- → Cylinders must be stored and transported vertically and secured to prevent them from toppling
- → Full cylinders and empty cylinders must be stored separately
- → Cylinders must be segregated based on the properties of the gas e.g. flammable, inert or oxidant etc. (see COSHH section)
- → Appropriate signage must be displayed, showing the properties of the gases stored
- → Liquid Petroleum Gas (LPG) cylinders must not be stored with other gas cylinders; they must be kept a minimum of 3m apart, unless separated by a 2m high fire wall.

Refuelling

- → Refuelling on-site occurs in two scenarios:
  - Operated plant is either refuelled at a designated refuelling station or on large longitudinal projects, at the workface, to reduce plant movement
  - Handheld power tools are either refuelled at a designated refuelling station or at the workface, away from hot works activity
- → All plant and equipment must remain switched off during refuelling operations
- → All individuals involved in refuelling operations must be briefed on the relevant COSHH assessments and wear enhanced Personal Protective Equipment (PPE) e.g. level two PPE as a minimum (see PPE section) and nitrile gloves, to offer better protection against oils and chemicals
- → Any spill, no matter how small, must be reported to the project or site manager immediately
- → Individuals undertaking refuelling must not work alone
- → When a refuelling station is to be established the following must be considered:
  - The fuel must be stored in a suitable secure container, within a bund to contain any spillages, away from known hazards e.g. watercourses and overhead assets
  - The secure container must be filled up to the mark specified by the manufacturer; do not fill to the brim

- Establishing a close proximity working zone (see People Plant Interface (PPI) section) with suitable lighting and warning signs e.g. no smoking and no mobile phones, assuming that the plant operator is responsible for refuelling their own plant, to prevent unauthorised access
- If a nominated individual is responsible for all refuelling operations, a Safe System of Work (SSoW) must be established to address the close proximity work activity (see PPI section), ensuring that no plant movements occur when the nominated individual is operating with the risk zone of the item of plant i.e. swing radius
- Provision of suitable spill kits and disposal points, first aid provision, including eye wash stations and fire protection equipment

→ When refuelling takes place at the workface, the following must be considered, in addition to those associated with a refuelling station:
  - The nominated individual responsible for refuelling must receive a Point of Work Risk Assessment (PoWRA), identifying any local hazards
  - A plant nappy must be used to contain any spills
  - The increased risk that is associated with the mixing of petrol and oil for two stroke engines e.g. handheld cut off saws
  - Fuel must only be transported in approved containers e.g. cans as described previously or bunded bowsers (see Plant section). A record of quantity and use must be recorded

→ Any highway tow bowser carrying dangerous goods with a capacity greater than 1,000l falls into scope of full ADR regulations and means the driver must hold an ADR qualification.

What is health and wellbeing?

We are committed to creating a thriving workplace where everyone feels supported, healthy and happy, by protecting the health and wellbeing of everyone connected to our business.

Our standards

Our framework provides a risk based, proactive and engaging approach to enhancing the health and wellbeing of everyone.

We will work with all our colleagues and supply chain partners to ensure those issues which may impact negatively on health and wellbeing are identified and addressed.

Our aim is to integrate health and wellbeing into day to day activities to enable us to create a healthy workplace and have a significant positive impact on an individuals health and wellbeing by effectively managing and eliminating exposure to physical and mental hazards.

Our four key areas of health and wellbeing:

Physical

→ Prevent occupational ill health and disease and be healthy by design

→ Provide safe and healthy working environments

→ Encourage physical activity and healthy lifestyle choices and behaviours.

Mental

→ Prevent mental ill health and build a culture of personal resilience

→ Ensure all line managers are competent to recognise and provide appropriate support

→ Provide mental health support, advice and resources.

Social

→ Create an inclusive environment

→ Promote building connections, skills and supportive relationships

→ Celebrate our colleagues' achievements and organise social activities and events.

Financial

→ Enable colleagues to feel in control of their finances and able to make informed decisions

→ Promote benefits and reward, and recognise achievements

→ Provide retirement and pension planning information, advice and support

→ Offer health screening and health surveillance.

- → Pre-employment medicals
- → Drugs, alcohol and medication screening
- → Lifestyle assessments
- → Healthy by design
- → Health risk assessments
- → Eye and hearing aid care
- → DSE assessments
- → Health promotion and campaigns
- → Online 24 or GP and healthcare benefits.
- → Psychological safety.

- → Line manager training and competency
- → General mental health guidance for line managers
- → Great conversations approach to career and performance development
- → Personal resilience training
- → Employee Assistance Programme (EAP) – Health Assured
- → Wellbeing app – My healthy advantage
- → Hub of hope
- → Awareness campaigns and events
- → Mental Health First Aiders (MHFA).

- → Inclusion strategy
- → Inclusion impact group
- → Enhancing communities and volunteering opportunities
- → Adaptable working
- → Raising Concerns support line: 0800 915 1571
- → Let's Talk Forums
- → Social events
- → Allstars Awards.

- → Nudge financial management
- → My Reward and Recognition
- → Long service awards
- → My discounts
- → My gym offers
- → My cycle to work
- → My holiday plus
- → Share save scheme
- → My retirement and pension.

Asbestos

Asbestos has many applications and can be found in various locations such as insulation, floor and ceiling tiles or fire protection.

The main types of asbestos are commonly referred to as white (chrysotile), brown (amosite) and blue (crocidolite) but they cannot be identified by colour alone.

Our standards

Preventing or minimising exposure

- → Individuals working on our site must not be exposed to asbestos fibres in any form, unless they work for a licensed contractor or have undergone the relevant training for Non-Licensable Works (NLW)
- → Under no circumstances are any Morgan Sindall Infrastructure individuals, or subcontractors, permitted to undertake works which involve the disturbance of asbestos without the relevant training
- → Non-licensed contractors are permitted to undertake works of a non-licensed nature providing it is not notifiable, following the development of a suitable plan of works
- → An **asbestos duty holder** must be appointed in writing to take responsibility for the identification of and subsequent management of asbestos
- → Before any construction, refurbishment or demolition works can be undertaken a refurbishment and demolition survey must be carried out and issued to the asbestos duty holder. This must form part of the Pre Construction Information (PCI) from the customer or Principal Designer (PD)

Non-licensable work – short duration, non-continuous activities on materials in good condition where only low fibre release is expected when the material is disturbed.

Notifiable non-licensable work – short duration, non-continuous activities on materials in poor condition where a high fibre release is expected when the material is disturbed.

Licensable work – long duration work (one individual working more than one hour per week) and where material is in poor condition or highly friable.

- → Morgan Sindall Infrastructure shall only appoint United Kingdon Accreditation Scheme (UKAS) accredited organisations to produce asbestos surveys, or undertake asbestos monitoring of any nature or materials
- → A management survey is not suitable for undertaking construction, refurbishment or demolition works
- → A clearance certificate must also be issued by the suitably qualified individual e.g. survey contractor to the asbestos duty holder to ensure that no individuals are at risk from asbestos fibres as a result of the survey
- → Morgan Sindall Infrastructure individuals must not undertake licensable or Notifiable Non-Licensable Work (NNLW); this must be undertaken by a competent contractor licensed by the Health and Safety Executive (HSE) and a registered member of Asbestos Removal Contractors Association (ARCA) or the Asbestos Control and Abatement Division (ACAD)
- → Asbestos awareness training must be provided to all individuals who could encounter asbestos during their daily activities
- → Where small quantities of asbestos in soil has been identified, a competent and appointed Morgan Sindall Infrastructure asbestos response team may be deployed to undertake this NLW in accordance with an agreed written plan of work statement
- → All licensable works must be notified to the HSE at least 14 days before works commence
- → The licensed asbestos removal contractor must provide a copy of their:
  - Insurances
  - Certification
  - Written plan of work statement
  - Operative's training certificates
  - Up to date medicals
  - Face fit certificates
  - Emergency plan before works commence
- → Work areas must be designated as asbestos zones and access must be restricted to authorised individuals only

- → Where works require a negative pressure enclosure to be established, a smoke test of the enclosure must be undertaken prior to entry and witnessed by a Morgan Sindall Infrastructure asbestos duty holder
- → A suitable number of viewing panels must be available within the enclosure, and the ventilation fans must be fitted with a visual and audible alarm in case of failure
- → Suitable and sufficient decontamination facilities and agreed transit routes must be in place
- → Suitable and sufficient arrangements must be put in place for the storing, transporting and disposal of asbestos contaminated waste
- → On completion of the works, clean air sampling by an independent UKAS accredited analyst, appointed by Morgan Sindall Infrastructure, must be undertaken and a certificate of re-occupation issued.

Dealing with or discovery

- → If work activities are suspected to involve working with asbestos or suspect material is discovered:
  - Work must stop immediately
  - The work area isolated
  - The project or site manager informed
  - Advice sought from the contract Safety, Health and Environment (SHE) advisor.

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Control of Substances Hazardous to Health

The Control of Substances Hazardous to Health (COSHH) regulations apply to a wide range of hazardous substances that may be harmful to an individual's health if they are ingested, inhaled, absorbed by or come into contact with the skin or other body membranes.

Lead, asbestos and radioactive substances are covered by specific regulations.

Our standards

- → The project or site manager must appoint a COSHH editor for the project and a site based coordinator based on the nature of the works being undertaken to support the COSHH assessment process
- → The project or site manager must apply the following hierarchy of control throughout the design development and delivery stage of the project, including the procurement phase:
  - **Elimination** – changing the method of work or modifying the process to eliminate the production of hazardous substances
  - **Substitution** – changing the product for one less hazardous
  - **Reduction** – using a different form of the product
  - **Control** – adequately control the exposure by all possible routes, using Local Exhaust Ventilation (LEV) or Personal Protective Equipment (PPE)
- → Safety Data Sheets (SDS) must be provided for all products and substances on sites to allow a COSHH assessment to be undertaken, where the product is identified as a risk to health
- → Once the product has been selected, the employer of the individuals who may be exposed to the substance must undertake a COSHH assessment addressing the following:
  - Storage
  - Use
  - Transportation
  - Disposal

- The project's COSHH editor, with assistance from the site based coordinator, must ensure that:
  - The COSHH management system is used to undertake the COSHH assessments, reflecting the proposed exposure scenario
  - A register of all hazardous substances in the workplace is maintained
  - COSHH assessments are produced and briefed to individuals who may be exposed; this could involve individuals not directly undertaking the activity
  - Audits and inspections are undertaken to monitor compliance and the effectiveness of the proposed control measures
  - COSHH assessments are reviewed regularly or when:
    - There is reason to suspect that it is no longer valid e.g. Classification, Labelling and Packaging (CLP) or Registration, Evaluation, Authorisation and Restriction of CHemicals (REACH) regulation changes
    - The exposure scenario has changed e.g. method of application
    - Results of workplace monitoring indicate it is necessary.

Storage of COSHH materials

→ All materials must be stored in suitable COSHH stores e.g. bunded and ventilated, in accordance with the SDS e.g. ambient temperature

→ Consideration must be given to the separation and segregation of hazardous substances:

	Flammable liquid 	Oxidiser 	Toxic 	Corrosive 
		Segregate from	Keep apart	Keep apart
	Segregate from		Keep apart	Keep apart
	Keep apart	Keep apart		Separation may not be necessary
	Keep apart	Keep apart	Separation may not be necessary	Separation may not be necessary

Segregate from - must be stored in separate facilities.

Keep apart – can be stored in the same cupboard or facility.

Separation may not be necessary – packaging is considered sufficient separation.

→ All containers must be suitably labelled. When substances are decanted into suitable smaller containers, safety labels must be transferred to the new vessel. However, the practice of decanting chemicals and substances into smaller containers is to be discouraged at all times

→ A register of the contents of the COSHH store must be maintained and available.

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Exposure to airborne material

Dust is one of the most common hazardous airborne substances. This can include wood dust, silica dust and others such as carbon monoxide and isocyanates. Some substances will attack the respiratory system whilst others can harm other parts of the body.

Our standards

Minimising or preventing exposure

- All substances under the Control of Substances Hazardous to Health (COSHH) regulations must be risk assessed and the hierarchy of control applied (see COSHH section)
- When using tools and equipment that generate dust:
  - A vacuum extraction system must be used that fits directly onto the tool itself with a closed seal, removing dust at the point of generation
  - The vacuum system must be rated medium or higher. Low rated systems or domestic vacuum cleaners must not be used
  - Alternatively, purpose built dust suppression systems must be used. Do not use bottles of water to wet the surface of the material to be cut as it is ineffective as the surface needs to be continually wetted
- Respiratory Protective Equipment (RPE) must be available on all sites where there is potential for exposure to airborne material
- In the case of breathing apparatus, it must always be ordered through the Magnor Plant hire desk. A logbook will be issued with the equipment which must be returned (completed) at the end of hire
- When RPE is selected for use (minimum Filtering Face Piece (FFP)3) the individual must consider the following:
  - Atmosphere or substance related factors e.g. the toxicity of the substance etc.
  - Level of protection required and the assigned protection factor (refer to Health and Safety Guidance (HSG)53)
  - Task and work-related factors e.g. work rate, duration, temperature, vision etc.

Inhalable dust - airborne material that is capable of entering the mouth and nose during breathing.

Respirable dust - airborne material that is capable of penetrating the lungs.

- Wearer related factors e.g. compatibility with other PPE, facial hair etc.
- Quality related factors e.g. meeting European Norm (EN) standards
- Nuisance dust masks (mask or gauze pad) do not conform to the European Standard EN149 and are not CE or UKCA marked. They are not classified as protective equipment and shall not be used on project or site

→ All RPE that relies on a tight fit of the face piece to the wearer's face must be face fit tested by a trained individual to ensure that the individual is wearing it correctly

→ Individuals using RPE must be clean shaven. Individuals who choose not to shave for personal or religious reasons must be provided with air fed RPE to provide protection from dust

→ Workplace Exposure Limits (WEL) must be managed to ensure over-exposure to airborne hazardous substances is prevented. WELs differ for inhalable and respirable dust and can be found in EH40: Workplace Exposure Limits

→ Occupational asthma, once diagnosed by a registered medical practitioner, is reportable to the Health and Safety Executive (HSE) under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) when associated with work related exposure to any chemical or biological irritant or sensitising agent

→ Where there is risk of contamination (primarily project offices or site offices) the vacuum cleaner must be fitted with a suitable High-Efficiency Particulate Air (HEPA) filter. (Refer to the Plant Hire Desk Sustainable Solutions and Services brochure)

→ Domestic vacuum cleaners must not be used in these buildings or on-site for general housekeeping

→ For established offices where there is minimal risk of contamination, domestic vacuum cleaners can be used subject to a risk assessment.

Dealing with exposure

→ In the event that an individual is accidentally exposed to the hazardous airborne substance, the COSHH risk assessment for the substance must be consulted and actioned accordingly

→ In the event that an individual has prolonged exposure to the hazardous airborne substance or shows symptoms of respiratory difficulty, an occupational health assessment of the individual must be undertaken and actioned accordingly.

Exposure to high pressure fluids

Injection pressures are generally 2,000 – 10,000psi (138 – 690 bar) and fluids injected include oil and hydraulic fluids, grease, paint, paint thinners, water and air.

Individuals who are at risk include those working around equipment (both hydraulic and pneumatic) under pressure. Fluid injection injuries are not common but can occur at pressures as low as 100psi (approximately seven bar) and only require minimal contact.

Our standards

Minimising or preventing exposure

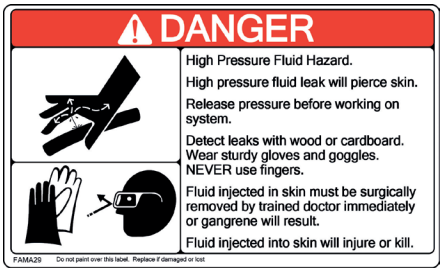
- → Individuals working with or on hydraulic systems must be provided with information on the risk of fluid injection, and what actions must be taken in the event of an incident. This includes plant operators that use grease guns as part of the daily Planned Preventative Maintenance (PPM) regime
- → Risk assessments must highlight the fluid injection hazard and detail controls for preventing injuries, e.g. specific Personal Protective Equipment (PPE) that enables protection against fluid injection injuries
- → Additional protection must be given to hydraulic equipment where it is likely to be damaged by wear and tear, or impact and abrasion against other materials
- → All hydraulic hoses, tube lines and fittings must be periodically inspected
- → All equipment must be depressurised before inspections are undertaken
- → Any deterioration must be carefully considered e.g. wear spots, damage to fittings and connections, stress wear due to constant flexing, Ultra Violet (UV) degradation and if in doubt, the hoses must be replaced
- → Hydraulic fluid injection can cause blood poisoning and bacterial infection, leading to surgery to remove fluids which may result in serious scarring or amputation in some instances.

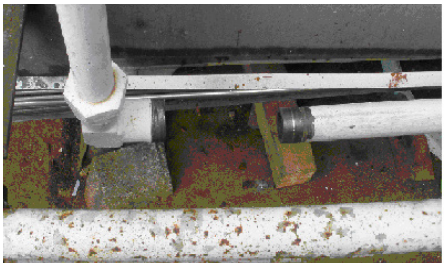
The velocity of fluid forced through a pinhole break in a hydraulic hose can be in excess of 250m/s (600 ft/s); equivalent to the muzzle velocity of a gun.

Increasing distances between the body and the source is the best form of control.

Dealing with exposure

- → The point of entry could look very small and may not bleed
- → The area of the injury will usually be on the working surface of the hand, but might be located anywhere on the body
- → Initially the injured party may not complain of pain but might experience numbness or increased pressure within the affected body part
- → Damage in the early stages is normally related to the physical injury and from the chemicals injected
- → Any injection injury will never self-heal and will require surgery
- → In the event that any individual has sustained, or may have sustained, a fluid injection injury:
  - The area must be made safe to prevent other individuals sustaining a fluid injection injury
  - Initial first aid treatment must be provided, including gentle cleaning of the injured area, immobilising and, where possible, elevating the affected area
  - The individual must attend Accident and Emergency (A&E) within six hours of the incident and inform the hospital it is a fluid injection injury, as it must be treated as a medical emergency
- → The Safety Data Sheet (SDS) for the injected material must be made available to a medical professional.





Exposure to ionising radiation

Ionising radiation is a form of energy emitted by radioactive materials in the form of alpha or beta particles, neutrons, x-rays or gamma rays. Exposure can lead to living tissue damage. Three factors can affect exposure - duration, distance and shielding.

Our standards

Minimising or preventing exposure

- → On 1 January 2018, the Ionising Radiations Regulations 2017 (IRR17) replaced IRR99
- → Depending on the ionising radiation work being carried out, employers may need to apply to the Health and Safety Executive (HSE) to:
  - Notify them of the work
  - Register the work
  - Get consent for the work
- → Whether you notify, register or get consent depends on the level of risk of the work being carried out
- → You must apply before you start new work involving ionising radiation
- → Materials or devices that can emit ionising radiation must not be brought onto site without prior written consent from Morgan Sindall Infrastructure
- → Once written consent is given, a suitable Safe System of Work (SSoW) must be in place before works commence, addressing the following:
  - Restriction of exposure
  - Maintenance and testing of control measures identified
  - Monitoring of dose limits
  - Establishment of designated work areas dependent on the nature of works being undertaken
  - Contingency plans for foreseeable accidents
- → Access to designated work areas must be restricted to competent individuals whilst work involving ionising radiation is underway

Ionising radiation - if the exposure time is halved, the dose is halved. Doubling the distance between the source and the body reduces the dose by a factor of four.
Non–ionising radiation - is the electromagnetic radiation that does not carry enough energy to ionise atoms.

- → A suitable SSoW for radiography e.g. weld inspections must be in place and briefed to the individuals undertaking the work
- → A suitable radiation protection supervisor must be appointed to monitor compliance with the SSoW
- → Up to date maintenance records for all radiography equipment must be available and checked before works commence
- → On a nuclear licensed site, the licensee will typically oversee all work with ionising radiation, including radiography undertaken by a specialist contractor.

Explosives and sources of ionising radiation

- The following shall not be brought on to the site without the prior written consent of Morgan Sindall Infrastructure site management: Explosives, Explosive devices including cartridge or gas operated tools, Materials or devices that can emit any ionising radiation
- The user and / or the organisation bringing the equipment to site, shall be responsible for obtaining all necessary licences or permits, and provide a method statement covering storage and use, together with any certificates of training for the individuals using the device or material.

Exposure to irritant substances

Industrial materials such as epoxy resins, enzymes, latex, sealants, solvents, bitumen and asphalt, petrol, diesel, oils and woods contain irritants that can cause the skin's natural barriers to be breached, resulting in an inflammatory skin condition known as dermatitis.

Our standards

Minimising or preventing exposure

→ All substances under the Control of Substances Hazardous to Health (COSHH) regulations must be risk assessed and the hierarchy of control applied (see COSHH section)

→ Personal Protective Equipment (PPE) must be worn in line with the minimum site standards

→ Additional PPE, as determined by COSHH assessment or risk assessment, must be worn to reduce contamination of workwear e.g. paper overalls

→ Appropriate gloves must be worn suitable for the task. Gloves must not be stored inside hard hats as they can contaminate the webbing and headband, increasing the risk of infection

→ Barrier and aftercare creams must be available to aid in protecting the skins natural defences

→ Safety Data Sheets (SDS) for barrier creams must be available to help avoid potential allergic reactions.

Dealing with exposure to irritant substances

→ Occupational dermatitis, once diagnosed by a registered medical practitioner, is reportable to Health and Safety Executive (HSE) under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) when associated with work related exposure to any chemical or biological irritant or sensitising agent.

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Exposure to Legionella

Legionnaires' disease is transmitted to humans though inhaling water spray contaminated with Legionella bacteria, which can be found in cooling towers, water systems for air conditioning and hot or cold water systems that release a spray. Typical symptoms are similar to flu with high temperatures, fever, chills, cough, muscle pain and headache. If left untreated it can progress to pneumonia and be fatal.

Our standards

Planning

- → The project or site manager must assess the risk of individuals coming into contact with Legionella
- → Occupation of existing premises or interface with existing plant and equipment where Legionella could be found must be considered
- → Temporary accommodation units must also be considered as a potential source depending on age, condition and use
- → Specific requirements and surveys may be needed together with appointments of key personnel to undertake certain duties
- → Where necessary, the project or site manager must appoint a duty holder who is responsible for ensuring that a Legionella risk assessment is carried out. This cannot be the project or site manager or the individual in control of the premises or systems in connection with work
- → The duty holder must ensure that the individual who carries out the risk assessment and provides advice on prevention and control of exposure is competent. This may be done in-house or from outside, e.g. an external consultant.

Legionella risk assessment

- → The risk assessment must identify and evaluate potential sources of risk, including:
  - The particular means of preventing exposure to Legionella bacteria
  - If prevention is not reasonably practicable, the particular means of controlling the risk from exposure to Legionella bacteria
- → For existing systems or when working in occupied properties, the previous use and history of the building may not be known, so there may be more potential for Legionella to be present
- → A Legionella risk assessment must be sought from the building owner or landlord initially or arranged by Morgan Sindall Infrastructure through a competent subcontractor

→ The following elements must be considered when preparing the risk assessment and developing a water hygiene management plan:
  - The temperature of the water
  - Whether the water is stagnant for periods of time
  - Whether there is a potential food source for the bacteria
  - Whether there is a point at which water may become airborne and inhalable

→ No further assessment or measures are needed when the assessment demonstrates the following:
  - There is no reasonably foreseeable risk
  - The risks are insignificant and unlikely to increase
  - The risks are properly managed

→ However, if the situation changes, the assessment must be reviewed and revised as necessary

→ If the assessment shows that there is a reasonably foreseeable risk and it is reasonably practicable to prevent exposure or control the risk from exposure, the duty holder must appoint a competent individual(s) to take day-to-day responsibility for controlling any identified risk from Legionella bacteria, known as the responsible individual

→ The responsible individual must have sufficient authority, competence and knowledge of the installation to ensure that all operational procedures are carried out effectively and in a timely way

→ Most commonly, temperature is the primary means of control by ensuring temperatures are either too high or too low for optimum growth. Where this is not possible alternative means of control must be considered, such as chemical dosing or Ultra Violet (UV) treatment

→ For low risk environments, such as the provision of showers in the site welfare, regular activation of the system will prevent the water remaining stagnant for periods of time

→ The project or site manager must liaise with the contract Safety, Health and Environment (SHE) advisor for specific guidance on the assessment, control and monitoring of water systems.

Exposure to noise

Noise is defined as any audible sound that is within the frequency range of the human ear.

Employers have a legal duty to protect all individuals at work from excessive noise.

Our standards

Minimising or preventing exposure

→ A noise risk assessment must be undertaken when noise exceeds the Lower Exposure Action Value (LEAV) e.g. if you are unable to hold a conversation without raised voices within 2m of each other

→ The noise risk assessment must identify:

- Individuals at risk of hearing damage
- Daily personal noise exposure of individuals likely to be exposed to or above the LEAV
- Where noise controls and hearing protection must be worn

→ A noise survey must form part of the noise risk assessment, where identified

→ The noise risk assessment must apply the hierarchy of control:

- Reduce the noise at source by:
  - **Elimination** – replacing noisy equipment with equipment that doesn't make any noise
  - **Relocation** – remove noise equipment from work areas
  - **Redesign** – using hydraulic processes to bend material instead of hammering
  - **Maintenance** – ensure loose rotating parts or worn bearings are replaced and regular Planned Preventative Maintenance (PPM) regimes are undertaken
- Decrease the noise transmission by using acoustic barriers or enclosures
- Control the noise exposure to the receiver by creating hearing protection zones with appropriate signage
- Where Personal Protective Equipment (PPE) is identified, the hearing protection chosen must be suitable for the working environment and compatible with other PPE being worn. If unsure, liaise with contract Safety, Health and Environment (SHE) advisor for further guidance

→ Hearing protection must offer suitable attenuation or noise reduction

→ All noise emitting equipment must have a noise assessment recorded at the LEAV and appropriate hearing protection identified.

Exceeding LEAV but not Upper Exposure Action Value (UEAV)

→ All individuals must be provided with:

- Relevant training and information
- Hearing protection but wearing does not need to be enforced
- Health surveillance for those identified by risk assessment e.g. individuals sensitive to noise or individuals with a history of previous high exposure.

Exceeding the UEAV

→ All individuals must be provided with:

- Designated hearing protection zone
- Hearing protection (wearing must be enforced)
- Health surveillance for all individuals who are regularly exposed to above the UEAV.

Exposure Limit Value (ELV)

→ All individuals must:

- Not be exposed to noise that exceeds ELV of 87dB(A) or 140dB(C)
- Stop work if the ELV is exceeded. An investigation must be undertaken to determine the root cause and the measures implemented to avoid a reoccurrence.

LEAV 80dB(A) and 135dB(C)
UEAV 85dB(A) and 137dB(C)
ELV 87dB(A) and 140dB(C)

A' Weighted Decibels (dB(A)) measures sound pressure across all frequencies.
C' Weighted Decibels (dB(C)) measures peak sound pressure. 3dB increase equates to a doubling of the sound intensity.

Daily exposure (dose) is determined by two factors; the level of noise and the duration of exposure.

Dealing with exposure noise that exceeds LEAV

→ If an individual displays symptoms of hearing loss or tinnitus they must be referred to occupational health support

→ Until a formal diagnosis takes place the individual's exposure to noisy activities must be managed

→ Subject to diagnosis by a medical professional an individual diagnosed with Category 1 hearing loss (acceptable hearing loss) will be allowed to resume work

→ Subject to diagnosis by a medical professional an individual diagnosed with Category 2 hearing loss (mild impairment) is allowed to resume work with specific action to be taken to prevent further deterioration

→ Subject to diagnosis by a medical professional, any individuals diagnosed with Category 3 (poor hearing loss) or Category 4 (rapid hearing loss) must not be exposed to any noise that exceeds the LEAV

→ Where exposure to noise is being amended on medical grounds formal discussions must take place between the individual and their line manager and, where necessary, their Human Resources (HR) representative.

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Exposure to sharps (needles)

Sharps are hypodermic needles, syringes or blades that could cause injury by cutting or pricking the skin.

Our standards

Minimising and preventing exposure to sharps

Sharps can be found anywhere. This can include:

- → In salt bins
- → Under bridges
- → Public toilet areas
- → Litter bins
- → Inside packets or containers
- → At the side of roads, railway lines or water courses
- → They can also be placed in areas with malicious intent to injure individuals like door handles.

You can minimise your risk by:

- → Being aware that sharps may be present in your working environment
- → Always wearing the correct Personal Protective Equipment (PPE), in particular boots and gloves
- → Pay extra attention if you can't see what you are doing with your hands.

If you see a sharp or signs of drug use in an area, report it.

Quarantine and spray paint the area, so that it can be found by those disposing of sharps, and also to highlight to others in the area, that there is a hazard. You must also raise a Positive Intervention.

Only trained and competent individuals are allowed to remove sharps, using equipment provided for the task. The sharp must then be disposed of in a bio-hazard container on-site, with further disposal off-site carried out by a licensed organisation.

Training around dealing with sharps can be arranged with your business unit training lead.

Dealing with exposure

If you are injured by a sharp:

- → Do not panic
- → Gently squeeze the area around the wound to encourage bleeding
- → Do not suck the wound but clean the wound under running water or using cleansing wipes
- → Cover the wound with a dry plaster or dressing
- → Keep the needle that caused the injury in a safe place, it may be needed by medical professionals
- → Seek medical advice, contact with a sharp can cause infection or spread disease
- → Notify the project or site manager and Safety, Health, Environment and Quality (SHEQ) advisor or manager.

Exposure to the sun

Ultra Violet Radiation (UVR) is found naturally in sunlight and can damage cells within an individual's body, potentially causing cancerous cells to develop. Over exposure to UVR can also affect an individual's decision making ability and understanding of risks.

Our standards

Minimising or preventing exposure

- All individuals must minimise their exposure to UVR
- All sites must actively promote sun safety as part of protecting people and our summer working campaign. This involves:
  - Delivering summer working Toolbox Talks (TBTs)
  - Making available Sun Protection Factor (SPF) 30+ sunscreen to all individuals who carry out their daily duties outside on behalf of Morgan Sindall Infrastructure
  - Communicating the Ultra Violet (UV) index to all relevant individuals and updating on a daily basis
  - Ensuring everyone has regular access to drinking water
  - Providing suitable UV tinted Light Eye Protection (LEP). The wearing of tinted LEP must be established as part of the Point of Work Risk Assessment (PoWRA)
  - Making available approved Legionnaire extensions for hard hats
  - Where possible, providing shade for individuals who regularly carry out their daily activities on site.

Dealing with exposure

- Heat stress - occurs when the body's means of controlling its internal temperature starts to fail
- Heat exhaustion - occurs when an individual experiences extreme tiredness (fatigue) as result of a decrease in blood pressure and blood volume. This can be caused by a loss of body fluids and salts after being exposed to heat, such as the sun, for a prolonged period of time
  - If an individual is thought to be suffering from heat exhaustion:
    - Quickly move the individual to a cool place
    - Provide water to drink
    - Remove excess clothing

- → Heat stroke - is more serious than heat exhaustion and occurs when the body's temperature becomes dangerously high due to excessive heat exposure. The body is no longer able to cool and starts to overheat
  - ◦ If an individual is thought to be suffering from heat stroke:
    - Dial 999 for an ambulance; suspected heat stroke must always be considered as an emergency
    - Immediately move the individual to a cool place
    - Increase the ventilation by opening windows or using a fan
    - Provide water to drink, but do not give them medication, such as aspirin or paracetamol
    - Immerse the skin with cool water (above 18°C) or cover them with cool damp towels or sheets.

Dehydration

- → Dehydration can seriously affect our ability to function safely and occurs when we lose more water than we are taking on
- → If left untreated, severe dehydration can be serious with the potential to cause fits, brain damage and death
- → Fluid loss happens during physical hard work, but even simple tasks can result in a significant loss of fluid within a short period of time
- → There are two early signs of dehydration, thirst and dark colour urine
- → If dehydration is ongoing (chronic), it can affect kidney function and cause kidney stones to develop, leading to liver, joint and muscle damage, cholesterol problems and constipation. If you are unsure, consult a dehydration urine colour chart.

Exposure to vibration

Extensive use of handheld powered tools can result in irreversible damage to wrists, hands and fingers e.g. Hand Arm Vibration Syndrome (HAVS) and Carpel Tunnel Syndrome (CTS).

Prolonged driving of plant over poor surfaces can result in musculoskeletal damage e.g. Whole Body Vibration (WBV).

Our standards

Minimising or preventing exposure

→ A risk assessment must be completed prior to any task being undertaken that exposes individuals to vibration

→ All individuals must give consideration to the risk group for the handheld tool to be used, based on the vibration magnitude and the resource levels available

Handheld tools risk groups
Low - 1-4 m/s^2
Medium - 5-8 m/s^2
High - 9+ m/s^2

→ If an individual is using a high and / or medium risk vibration tool, a robust monitoring system must be in place to monitor exposure and maintain records easily e.g. an electronic monitoring device

→ If an individual is using low risk vibration tools a monitoring system does not need to be in place as Exposure Action Values (EAV) will not be exceeded.

Managing Exposure Action Value (EAV)

→ An individual using a handheld tool must not exceed 100 Health and Safety Executive (HSE) points, but where this is not possible, suitable control measures must be in place, including:

- Selecting the tool appropriate for the task with the lowest vibration magnitude possible
- Ensuring the individual is wearing suitable gloves to keep hands warm and dry; these do not need to be anti-vibration gloves
- Checking the tool is well maintained and fit for purpose including attachments e.g. sharp drill bits and undamaged grinding discs
- Allowing the individual to take regular breaks
- Sharing the workload where possible.

Managing Exposure Limit Value (ELV)

- → An individual using a handheld tool must not exceed 400 HSE points
- → If the ELV is exceeded, an investigation must be undertaken to determine the root cause and measures implemented to avoid a reoccurrence
- → Dealing with exposure to HAVS or CTS
- → If an individual displays symptoms of HAVS or CTS, they must be referred to occupational health support
- → Until a formal diagnosis takes place the individual's exposure to vibration must be practically managed
- → Subject to diagnosis by a medical professional, including confirmation of stage, an individual diagnosed with:
  - Stage one or Stage two early HAVS must wear an electronic monitoring device for all vibration activities, which amends the EAV and ELV HSE points respectively, as per occupational health support recommendations
  - Stage two late or Stage three HAVS must not be exposed to any vibration activities
- → Where exposure to vibration is being amended on medical grounds formal discussions must take place between the individual and their line manager, and where necessary their Human Resources (HR) representative
- → HAVS and CTS, once diagnosed by a registered medical practitioner, is reportable to the Health and Safety Executive (HSE) under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR).

Manual handling

Manual handling, repetitive activities or poor posture whilst sitting or standing for long periods of time can cause Musculoskeletal Disorders (MSDs).

Our standards

→ The following activities present manual handling risks:
- Handling loads (lifting, carrying and pushing)
- Repetitive handling of loads
- Static and awkward postures (twisting, bending or stretching)
- Where the loads handled are heavy, bulky, difficult to grasp, unpredictable or awkward to handle e.g. sharp or slippery.

Minimising or preventing exposure

→ Before starting any potential manual handling operation individuals must:
- Avoid manual handling so far as is reasonably practicable
- Assess any hazardous manual handling tasks that cannot be avoided
- Reduce the risk of injury so far as is reasonably practicable

→ When manual handling cannot be avoided, a manual handling risk assessment must be in place using the TILE approach:
- Task
- Individual capability
- Load
- Environment

→ Injuries can be significantly reduced if an individual stops and thinks, using the TILE approach, before attempting to move a load

→ Using mechanical or automated assistance can reduce the risks involved.

Providing or using equipment to assist with manual handling

- → Where the risk assessment identifies that a risk of injury exists, alternative methods of handling the loads must be used e.g. mechanical lifting aids, using more than one individual to handle the load, specific training to enable the load to be handled safely
- → Where individuals have to handle loads that are assessed as a potential source of injury, the individuals must receive the following information:
  - The weight of the load
  - The heaviest side of any load where the centre of gravity is not positioned centrally
  - The arrangements for handling the load
- → Where Personal Protective Equipment (PPE) is provided e.g. gloves, these must offer suitable protection against cuts, scratches, punctures etc.
- → Individuals involved in using manual handling equipment must receive suitable information and training on the use of equipment
- → All equipment used to assist with manual handling must be regularly inspected and maintained.

Dealing with manual handling related injuries (MSDs and Work Related Upper Limb Disorders (WRULDs))

- → There is no specific health surveillance to prevent all MSDs or WRULDs however, early reporting of symptoms and diagnosis, proper treatment and suitable rehabilitation can help to reduce the impact
- → Line managers and supervisors must take an individual's complaints of signs or symptoms seriously, particularly from individuals who may be involved in high risk activities and processes.

Types of WRULDs

Upper Limb Disorders (ULDs) – a range of disorders of the hand, wrist, arm, shoulder and neck. It covers those conditions, with specific medical diagnosis (e.g. frozen shoulder, carpal tunnel syndrome), and other conditions such as Repetitive Strain Injury (RSI) where there is pain without specific symptoms. Symptoms may include pain, swelling and difficulty moving.

Lower Limb Disorder (LLD) – a range of disorders of the hips, legs, knees, ankles and feet. It covers those conditions with specific medical diagnoses e.g. osteoarthritis of the knee and hip, and other conditions where there is pain without specific symptoms. Symptoms may include pain, swelling and difficulty moving.

Mental health

Mental health covers all types of health related to the way we think, feel and behave.

We all have mental health, just as we all have physical health. We can experience good mental health or poor mental health, just like we can have good physical health or poor physical health.

Our standards

As part of our health and wellbeing strategy, our aims around mental health are to:

- → Prevent mental ill health and build a culture of personal resilience
- → Ensure line managers are competent to recognise and provide appropriate support
- → Provide mental health support, information and resources.

Training

We have a tiered approach to mental health training:

- → **Gold** – A mental health first aider qualification
- → **Silver** - The mental health awareness training for line managers
- → **Bronze** - A Toolbox Talk (TBT) or engagement session delivered to all individuals who have not received either the Gold or Silver training.

Additional training, including personal resilience, is available on the Academy or through your business unit training lead.

Line managers play a crucial role in supporting colleagues that experience distress or mental health concerns. We have created a general guidance document for line managers that aims to provide a clear understanding of the reasons for, and responses to, mental wellbeing for individuals and our business. This guidance is available on Connect: search for 'Mental health and wellbeing - general guidance for line managers'.

Resources

Support, guidance and advice on managing health and wellbeing concerns can be found within our Integrated Management System (IMS) as well as from the following places:

- → The Academy – our learning and development platform
- → Our Employee Assistance Programme (EAP)
- → Mental Health First Aiders (MHFA)
- → Our Wellbeing Connect pages
- → My Reward and Recognition.

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Working around rodents and farm animals

Leptospirosis is transmitted to humans through contact with soil and water contaminated with urine of rats, cattle, foxes and other wild animals. The disease enters the body through open cuts, scratches or via the mouth, throat and eyes. Typical symptoms include a persistent and severe headache, fever, chills, severe muscle aches and tenderness, similar to flu. If left untreated, it can be fatal.

Our standards

Preventing exposure

→ When working near watercourses or farmland, individuals must enforce the following:

- Use the correct Personal Protective Equipment (PPE) for the task and replace any damaged items immediately
- Wash hands thoroughly before eating, drinking or smoking
- Ensure cuts and grazes are cleaned and treated immediately
- Keep any damaged skin covered with a waterproof dressing
- Ensure any contaminated clothing is disposed of
- Minimise the risk of rats by keeping food waste in suitable containers
- Employ approved pest control measures to exterminate any rats
- Issue a Leptospirosis information card to those individuals identified at risk.

Dealing with exposure

→ Leptospirosis usually develops suddenly around seven to 14 days after exposure to the bacteria, however it is possible for symptoms to develop between two and 30 days after exposure

→ Mild symptoms may resolve themselves in five to seven days however individuals must visit their General Practitioner (GP) or Accident and Emergency (A&E) and inform them of the environment in which they work and the possibility that they may have contracted Leptospirosis

→ Severe symptoms typically develop one to three days after the mild symptoms have passed and include jaundice, swollen ankles, feet or hands, symptoms of meningitis and or coughing up blood, indicating the presence of Weil's Disease

Infection can occur outside of work e.g. individuals fishing in ponds, lakes and rivers, and carrying out watersports on slow moving water.

→ Leptospirosis, once formally diagnosed by a registered medical practitioner, is notifiable to the Health and Safety Executive (HSE) under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR).

HEALTH AND HYGIENE

MORGAN SINDALL INFRASTRUCTURE

1 Cover ALL cuts, abrasions and scratches with a waterproof plaster before starting work
2 Always wear suitable Personal Protective Equipment, which could include waterproof / abrasion resistant gloves, footwear, eye and respiratory protection
3 Always wash hands thoroughly before eating, drinking, smoking or touching your face
4 Be aware, infection can enter the body through breaks in the skin, through mucous membranes, through ingestion and breathing in hazardous contaminants
5 Ensure first aid treatment is sought for any wounds and follow the advice on this card.

Note: Early symptoms of Leptospirosis mimic Influenza - 'Flu' but can lead to other serious complications like jaundice. If you seek medical attention when you feel ill or have suffered injury, please reveal this card.

CARRY THIS CARD WITH YOU

MORGAN SINDALL INFRASTRUCTURE

The person carrying this card could come into contact with raw sewage, contaminated water or soil contaminated with rodent urine during the course of their work activities.

Morgan Sindall Infrastructure recommend that immunisation status is checked and that the following immunisations are up to date: POLIO TETANUS HEPATITIS A

Please contact your GP to arrange an immunisation check.

M36257

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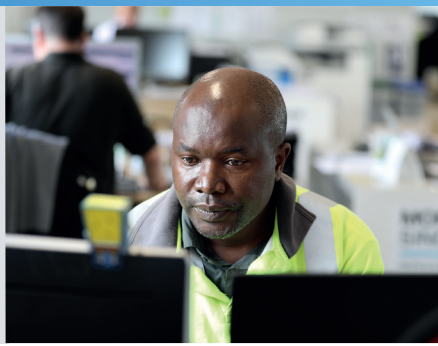
Working with display screen equipment

The incorrect use of Display Screen Equipment (DSE) can cause visual fatigue, Musculoskeletal Disorders (MSDs) and mental stress.

The amount of ill health associated with DSE usage can be significant.

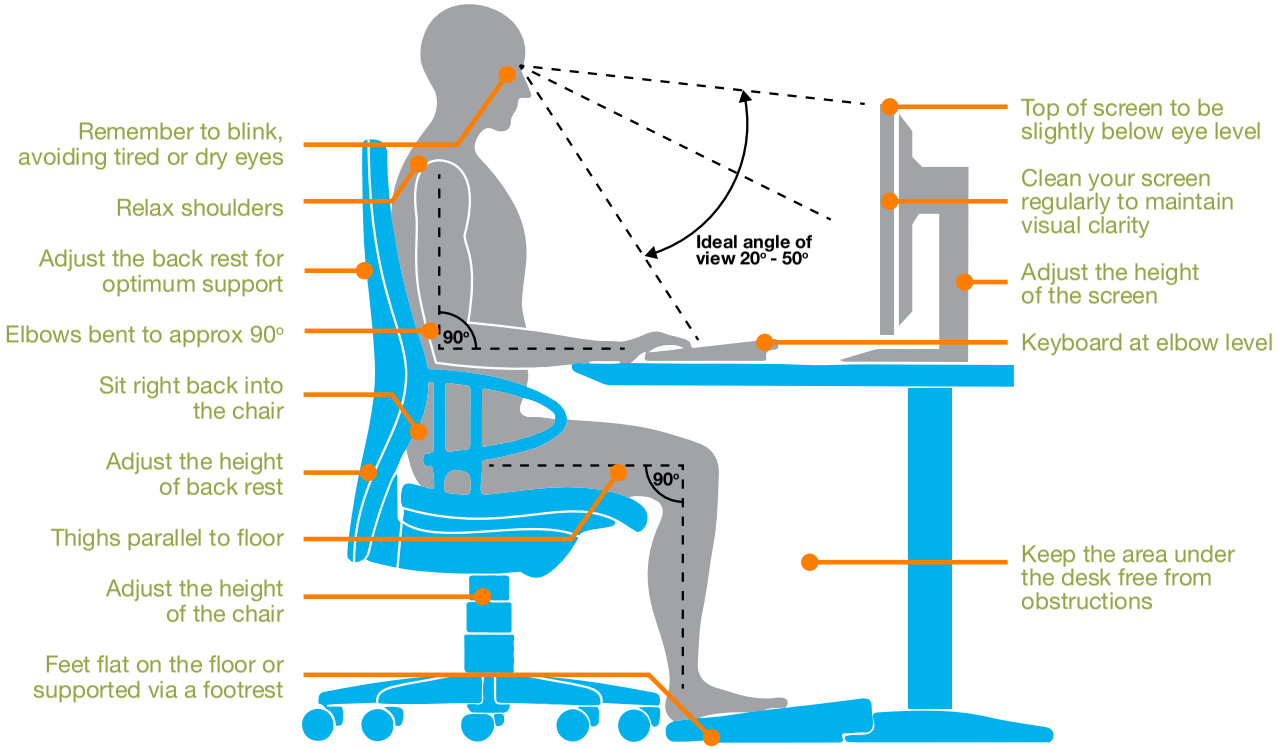


Our standards

Users of DSE

- A DSE user is defined as an individual who uses display screen equipment on a daily basis for more than two hours and can include some plant operators e.g. Tunnel Boring Machine (TBM) controllers
- All individuals who work with DSE as part of their role must undertake an online DSE assessment (see Figure 1) on their workstation every three years, to ensure that the equipment and environment meets the minimum standards and the workstation can be adjusted to suit the individual
- An assessment must be undertaken whenever individuals change location permanently
- A specific DSE risk assessment must be undertaken with the following individuals on a more frequent basis:
  - Pre or post natal individuals
  - Young or inexperienced individuals
  - Individuals with disabilities
- A DSE assessment can be arranged through the assessment software master administrator or contract or framework administrator
- Everyone working for Morgan Sindall Infrastructure using DSE are entitled to a free eye test every two years. A voucher for the eye test can be collected from your local business unit Human Resources (HR) team prior to the eye test
- Should the prescription from the eye test state that the employee needs spectacles for DSE or Visual Display Unit (VDU), then a voucher can be collected from your local business unit HR team, subject to terms and conditions
- Should you require reasonable adjustments to your DSE or more frequent eye tests due to disability, please speak to your local business unit HR or Safety, Health, Environment and Quality (SHEQ) team
- Issues identified must be reported to the individual's line manager and contract or framework DSE assessor.

Figure 1. DSE assessment



Working with lead

Lead is a soft, malleable metal. It is also classed as one of the heavy metals. Lead is used in building construction, lead-acid batteries, bullets and shots, weights, as part of solders, pewters, fusible alloys and as a radiation shield.

Our standards

When lead and items containing lead are processed, worked, or recovered from scrap or waste they can create lead dust, fume, or vapour. Your body absorbs lead when you:

- → Breathe in lead dust, fume, or vapour
- → Swallow any lead, e.g., if you eat, drink, smoke, or bite your nails without washing your hands and face.

Lead is commonly found in the construction industry during:

- → Soft strip – stripping of old lead paint from doors, windows etc.
- → Hot cutting in demolition and dismantling operations
- → Recovering lead from scrap and waste
- → Lead-acid battery manufacture and breaking and recycling
- → Working with metallic lead and alloys containing lead, e.g., soldering
- → Some painting of buildings
- → Blast removal and burning of old lead paint
- → High concentrations in soils.

Any lead you absorb at work will circulate in your blood. Your body gets rid of a small amount of lead each time you go to the toilet, but some will stay in your body, stored mainly in your bones. It can stay there for many years without making you ill.

If the level of lead in the body gets too high, it can cause:

- → Headaches
- → Tiredness
- → Irritability
- → Constipation
- → Nausea
- → Stomach pains
- → Anaemia
- → Loss of weight.

Continued uncontrolled exposure could cause more serious symptoms such as:

- → Kidney damage
- → Nerve and brain damage
- → Infertility.

If you could be exposed to lead, lead compounds, dust, fume, or vapour at work:

- → The customer must identify if lead is suspected within their building, premises, or site in the pre-construction information, if it is suspected as part of the existing buildings, plant, the ground, or equipment
- → Where lead is suspected, a sampling regime must be carried out by a competent individual or the supply chain to confirm its presence. This may include soil sampling if working on a brownfield site where the previous use indicates the possibility of heavy metals or lead use
- → If confirmed as present, then this must be recorded in SH PLN 01 Construction Phase Health and Safety Management Plan (CPHSP) - Project Execution Plan (PEP) Part 2 as a hazard to health
- → We must assess the risk to our workers health and decide whether the exposure is 'significant' (these are specified in the Control of Lead at Work (CLAW) Regulations), and identify what precautions are needed to protect our colleagues health
- → If the exposure is deemed to be significant then health surveillance is mandatory by an appointed Health and Safety Executive (HSE) doctor, and records must be maintained for 40 years on everyone's personal HR record. This will include urinary or blood sampling
- → We must put in place systems of work and other controls, such as fume and dust extraction, to prevent or control exposure to lead
- → We must provide washing and changing facilities, and places free from lead contamination where you can eat and drink
- → We must provide our lead workers with information about health risks from working with lead and the precautions they must take
- → We must train our colleagues in the use any control measures and protective equipment required to complete the task such as Respiratory Protective Equipment (RPE), Local Exhaust Ventilation (LEV) extraction equipment.

Please refer to occupational health hazards and risk guidance and the CLAW regulations for the workplace exposure limits.

Vulnerable individuals

- → If an individual is pregnant, the lead in their blood can pass into the blood of the baby they are carrying which could affect its development. The doctor will certify that you should not do work where your exposure to lead is significant. In the interests of your baby, you should tell your employer as soon as your pregnancy is confirmed
- → The law also gives greater protection to young individuals under 18, because they generally have less experience working with a substance as hazardous as lead. A young individual specific risk assessment must be carried out before the commencement of work to assess their capability and capacity to work with lead, taking into consideration any existing health conditions.

Practical tips for working with lead

- → Sample kits are available to check any suspected materials during the construction phase. It is good practice to have a regime of proactive sampling during the construction activities as the sampling regime may not have picked up all areas of lead containing materials
- → Paint stripping gels and products can be used to reduce the release of lead particulates in historical paints that need to be removed
- → Use paint stripping gels and products at the cutting points when carrying out cutting activities
- → Good hygiene is essential to prevent the ingestion of particulates
- → A decontamination unit provides a clean and dirty area with washing facilities to enable good hygiene practices
- → RPE needs to be suitable for the task, individuals need to be clean shaven and have a valid FaceFit test certificate with the specific model
- → Consider the working environment, environmental conditions such as wind if outside and others that may be exposed during the work. Exclusion zones must be established to prevent other individuals accessing the working area
- → If within jointly occupied premises, consider building closures or working outside of normal working hours
- → After work is complete a thorough clean-up of the immediate and local working areas will be required within occupied premises the use of hoovers with H class filters.

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Lifting operations

The Lifting Operations and Lifting Equipment Regulations (LOLER) cover a wide range of equipment including cranes, telehandlers, hoists, Mobile Elevated Working Platforms (MEWPs) etc. as well as lifting accessories e.g. chains, slings, eyebolts. It is vital to ensure that every lifting operation is planned, supervised and carried out by competent individuals.

Our standards

Types of lift

The category of lift is dependent on the hazards associated with both the load being lifted and the environment it is taking place.

- → **Basic** – where the weight of the load(s) can be simply established and there are no hazards or obstructions within the area of operation
- → **Standard** – where there are hazards or obstructions either within the working area of the lifting operation or on the access route to the working area, but no multiple crane lifts are required. The Appointed Person (AP) must consider whether it is appropriate for a Risk Assessment Method Statement (RAMS) to be produced for routine lifting operations, such as general site or depot handling and loading or unloading operations and repetitive operations such as piling
- → **Complex** - requires more than one crane to lift the load, or cranes using load enhancement equipment, attachments, lifting of individuals, or the lift is to take place at a location with exceptional hazards
- → **Contract lift** – where the project enters into a contract with a specialist contractor who will undertake the work on its behalf. Morgan Sindall Infrastructure must undertake a duty of care check to ensure that the specialist contractor is competent to undertake the works and retains the duty of issuing the permit to lift
- → **Crane hire lift** – where the project team plans the lift, selects the crane, specifies the slinging and signalling arrangements and directly supervises the lifting operation, with the crane operator working under Morgan Sindall Infrastructure's instructions.

Responsibilities of Appointed Persons (AP)

→ **Crane AP** – responsible for the planning and management of lifting operations and must be suitably trained and have the appropriate knowledge of cranes, lifting equipment and legislation along with the ability and time to carry out their duties. The AP must hold a valid Construction Plant Certification Scheme (CPCS) A61 certification

→ **Crane Lifting Operations Supervisor (CLOS)** – acts as a key member of the crane team, reports to the AP as leader of the team and controls, directs and supervises the lifting operation, ensuring that it is carried out in accordance with the AP's Safe System of Work (SSoW). The CLOS must hold a valid CPCS A62 certification

→ **Slinger or signaller** – responsible for the attaching and detaching of the load to and from the crane or lifting equipment and for the use of the correct lifting equipment in accordance with the planned SSoW. The slinger must hold a valid CPCS A40 certification. Responsible for relaying the signals from the slinger to the crane driver or lifting equipment operator, or directing the crane driver or lifting equipment operator directly. The signaller must hold a valid CPCS A40 certification

→ **Plant operator** – responsible for the operation of the lifting equipment who must hold a valid competency certificate e.g. CPCS or International Powered Access Federation (IPAF) or Associated Lorry Loader Manufacturers and Importers (ALLMI) and endorsements, where necessary, for the item of plant being operated

Figure. 1: Summarises appointments for the different categories of lift per type of lifting equipment

		Appointed Person	Crane Lifting Operations Supervisor	Slinger or Signaller	Plant Operator	Responsible Person
Crane	Basic	✗	✗	✗	✗	✗
	Standard	✓	✓	✓	✓	✓
	Complex	✓	✓	✓	✓	✓
Telehandler	Basic				✓	✓
	Standard	✓		✓	✓	✓
	Complex	✗	✗	✗	✗	✗
Excavator	Basic				✓	✓
	Standard	✓		✓	✓	✓
	Complex	✗	✗	✗	✗	✗
Lorry loader (off loading or unloading)	Basic				✓	✓
	Standard	✓		✓	✓	✓
	Complex	✓	✓	✓	✓	✓
Lorry loader (grab wagon)	Basic	✓			✓	✓
	Standard	✓		✓	✓	✓
	Complex	✗	✗	✗	✗	✗

- **Crane coordinator** – plans and directs the sequence of operations of cranes, ensuring that they don't collide with other cranes and equipment as well as ensuring that communication systems are established and unique to each piece of lifting equipment
- **Responsible person (lifting)** – manages and monitors lifting equipment activities on projects that don't warrant a Morgan Sindall Infrastructure AP, e.g. where a contract lift takes place and issues the permit to lift. The responsible person must hold either the CPCS A61 certification or attended the Morgan Sindall Infrastructure Crane Appreciation training course.

Implementation

- An outline plan (schedule of lifts) of known or potential lifting operations and positions must be established at the commencement of the project and form part of the Construction Phase Health and Safety Plan (CPHSP), updated as required
- Ground conditions in the proposed locations must be checked for integrity by the AP or responsible person (lifting) and the project appointed Temporary Works Coordinator (TWC), considering:
  - Ground bearing capacity
  - Maximum loads on any outrigger and size of outrigger pads
  - Proximity hazards e.g. buried services, cellars, voids and infrastructure
- The AP or responsible person (lifting) must develop a schedule of lifting operations and update this as the project progresses
- All operations must be planned and recorded in a lift plan, which must include the following:
  - The load to be lifted
  - The weight, shape and centre of gravity of the load and details of any designated lifting points
  - Where the load is currently positioned and where it will be positioned after the lifting operation
  - How often the equipment will be used to carry out the task
  - The environment in which the lifting equipment will be used, including hazards associated with the lifting operation as well as hazards specific to the site
  - The lifting equipment is suitable and fit for purpose
  - The individual available and their knowledge, training and experience
- Any required changes to the lifting operation must be approved by the AP and recorded in the lift plan prior to lifting activity being undertaken
- All cranes must be fitted with an anemometer
- The lift plan must include a detailed layout plan and when the crane moves location, the lift plan must be suitable for each position
- A SSoW to prevent unauthorised individuals entering the lifting area must be in place

- → Mobile phones must not be used as a means of communication between the crane operator and the slinger or signaller. Hands-free two-way radios must be used, with a suitable backup system in place e.g. replacement batteries
- → Constant communication must be maintained during the lifting operation so that the operator is immediately aware in the event of communication being lost, to enable the operator to stop the lift immediately until communication is restored.

Special arrangements

- → Only hooks with safety devices to prevent inadvertent disconnection of the load must be used
- → Where waste skips are to be lifted by cranes or lifting equipment, the skips must be designed and manufactured as lifting skips and a thorough examination and lifting certificate must be supplied
- → Single use fabric lifting bags must not be reused, once empty. Lifting with such equipment must be subject to a detailed risk assessment and spent bags are either to be returned to the original supplier or destroyed, rendering them unusable
- → Only euro pallets can be used for multiple use or lifts, once a visual inspection has determined that they are in good condition and fit for purpose. Damaged or single use pallets must be disposed of and removed from site
- → Pallet forks and nets must be used for palletised loads
- → Palletised materials delivered to site must be subject to an inspection prior to unloading, prior to storage and any subsequent reuse
- → Palletised materials must only be stored a maximum of two pallets high on flat, level ground
- → When constructing underground structures e.g. chambers or manholes or foundations, safety zones must be established within the excavation to provide an area for individuals involved in the construction activity to retreat to during lifting operations. If this is not possible, the individuals involved must egress from the excavation.

Tower cranes

- → Where tower cranes are used for the execution of the works, the initial test must be verified by an independent examination from a certification body. Further test and examination will be needed in line with control and safe use of cranes including telehandlers and lorry loaders process (see Plant section)
- → The tower crane must have measures to prevent unauthorised access by either a member of the workforce or trespassers e.g. protestors, at all times, including protection to the bottom of the mast e.g. lockable lowest trap door accessible by the operator only, security fans etc. Consideration must be given to protecting all levels where access is possible i.e. where structures or buildings are constructed around the crane mast.

Inspection and examinations

- All lifting equipment and accessories must be inspected, maintained and thoroughly examined
- Equipment such as pallet trucks, sack barrows and manhole cover lifters do not require a thorough examination under LOLER but must be subject to regular visual inspection as required under Provision and Use of Work Equipment Regulations (PUWER)
- A register of lifting accessories must be maintained on site and checks to make sure that only valid accessories are used
- All lifting accessories must be tagged with the current colour code of thorough examination.

Steel erection

- Where structural steel erection is undertaken, the following must be implemented:
  - Remote release lifting shackles for stanchions and columns must be used
  - Positive fixings must be made to beam sections with two leg chains. Single drop chains are only to be used as a last resort in conjunction with an anti-slip beam clamp
  - Man riding operations must not be undertaken without the express agreement of Morgan Sindall Infrastructure site management
  - Man riding skips must only be used on cranes (with relevant test certificates) equipped with a dead man's handle, power lowering, anti-spin ropes and where radio communication is in operation. Only purpose made man riding cages are permitted
  - In open topped man riders, operatives must be secured to the crane hook by full body harnesses and fall restraint lanyards
  - Appropriate physical barriers with suitable warning signage must be established for all areas below the working zone, where steel erection and connection work is being undertaken; hazard tape is not considered to be a physical barrier. This segregation must be maintained and managed throughout the works

- Chandelier lifting i.e. lifting of multiple steel members is not permitted on Morgan Sindall Infrastructure sites
- Delivery and unloading of steel work must be planned; risk of fall is to be minimised with suitably identified fall protection established relevant to the situation. If harnesses are used as part of the delivery solution the anchorage point must be suitable and fit for purpose
- Under no circumstances must:
  - Hands be added to loads travelling with suspended loads with wheeled equipment – except with risk assessment sign off from operations director.

Loading or unloading

Along with vehicle movements, the unloading and loading of materials and equipment can pose a significant risk to individuals working on construction sites, as these activities often involve individuals working in close proximity to plant and vehicles, as well as working at height.

Our standards

THIS SECTION MUST BE READ IN CONJUNCTION WITH THE TRAFFIC MANAGEMENT - PEOPLE PLANT INTERFACE (PPI) SECTION.

Planning

- → The project or site manager must identify suitable locations for loading or unloading and storage of materials and equipment
- → Where there is little or no on-site storage the project or site manager must consider off site areas for the storage of materials and equipment
- → Loading or unloading and storage areas must be:
  - Located away from main pedestrian walkways and pedestrian only areas
  - Properly prepared e.g. level and drained
  - Free from obstructions e.g. overhead assets.

Pre-delivery checks

- → The project or site manager must review the procurement schedule to classify the risk categories for all deliverable items
- → Any item identified as medium or high risk must be inspected prior to unloading e.g. load stability (document reference to be reviewed)
- → When lifting metal objects with telehandler or forklift, the risk assessment must identify the risk of 'steel on steel', especially where there is a camber, and suitable control measures
- → Site specific information e.g. off site and site access route restrictions, Personal Protective Equipment (PPE) requirements etc. must be shared with the supplier or haulier to allow a specific Safe System of Work (SSoW) to be developed prior to the delivery date, ensuring the most suitable delivery vehicle is selected
- → The pre-unloading check must also include the following:
  - Evidence that the supplier or haulier operator holds a valid driving licence and are appropriately trained

in the operation of any associated lifting equipment e.g. Construction Plant Certificate Scheme (CPCS) or Associated Lorry Loader Manufacturers and Importers (ALLMI)

- Evidence that all lifting equipment has a current certificate of thorough examination and complies with Morgan Sindall Infrastructure's standards (see Lifting operations section)
- When selecting a lorry loader, consideration must be given to the lifting capacity, radius, height and depth of lift and reach and stability; a lift plan must be prepared by an Appointed Person (AP) (see Lifting operations section). Consideration should also be given to stabiliser systems and use of spotters where there is risk of entrapment (see Plant Standards section)
- The project or site manager must ensure that the site is adequately signposted and health and safety requirements are clearly visible on approach to the main access point.

On site

→ All delivery or haulage drivers must report to the site office before any loading or unloading begins, unless this has been designated to a nominated individual on site e.g. plant and vehicle marshal for the case of multiple deliveries such as fill material or concrete

→ Prior to tipping, discharging or loading or unloading the driver must receive a task specific briefing on the SSoW

→ In the case of loads that are stacked, e.g. structural steelwork, checks must be made with the driver to assess if the load has moved, potentially causing instability, before the restraining straps are removed and the unloading operation begins. Consider the use of a Mobile Elevated Working Platform (MEWP) to access stacked loads, to avoid individuals working on the rear of the wagon with loads that may move unexpectedly

→ Loading or unloading operations must be monitored by the site management team or delegated to a competent individual to ensure that the SSoW is followed (see Lifting operations section)

→ Lorry loaders must comply with the standards (see Plant Standards section)

→ The delivery loading or unloading checklist must be completed for deliveries of plant, equipment, power tools, materials, welfare facilities etc.

Working at height

→ When accessing vehicles:

- The risk of fall must be eliminated or prevented e.g. pre-slung loads, to allow individuals to work from ground level
- Where it is not possible to eliminate or prevent the risk of a fall, the distance and the consequence of a fall must be reduced by using either a collective means of protection e.g. safe platform, or personal means of protection e.g. fall restraint or fall arrest device
- Only designated access points e.g. hand holds and steps must be used. The wheel or tyres must not be used as a makeshift step
- In wet or icy weather additional consideration must be given when standing on or accessing the lorry or trailer bed
- All individuals must be protected from objects falling from the load or loading device e.g. netting.

Plant delivery and collection

→ In conjunction with the SSoW the individual from the subcontractor or haulage company responsible for off loading or loading operated plant must:

- Be competent to undertake the task
- Hold the CPCS A49 (loader or securer – non Special Types General Order (STGO)) or CPCS A50 (loader or securer –SGTO) ticket, allowing the individual to drive and secure the item of operated plant without the need to operate the item of plant

→ **Note:** the individual might not necessarily hold a CPCS ticket for every item of plant.

STGO – split into three categories, with abbreviations fitted to the front of heavy haulage tractor units to indicate what weight category they are licenced to operate at.

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Lone working

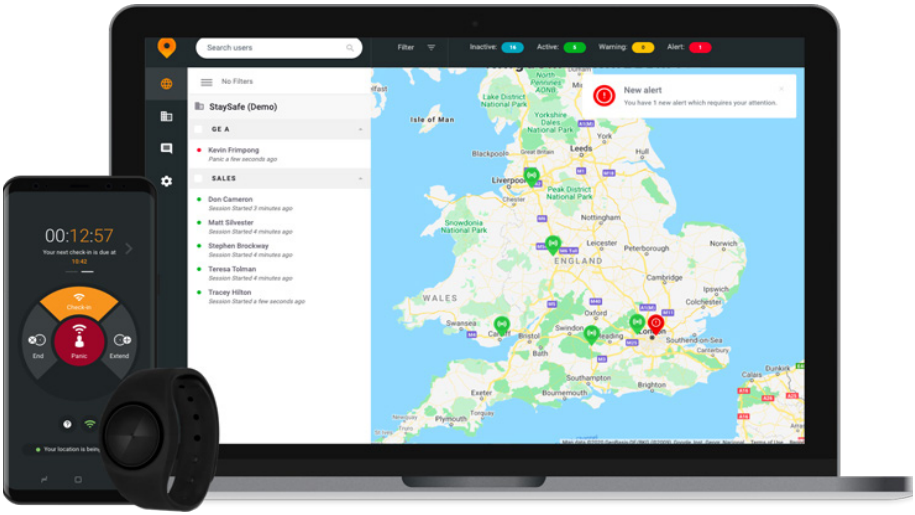
An individual who undertakes an activity in isolation from others without close or direct supervision, often during unsociable hours. These individuals are exposed to a greater risk because there is no one to assist them in the event of an accident, sudden illness or violent attack, which could incapacitate them and prevent them from communicating.

Our standards

- → Any lone working activity must be appropriately risk assessed and associated control measures implemented to monitor the lone worker e.g. considering the health and fitness of the individual
- → Work that is deemed high risk must not be undertaken by a lone worker e.g.:
  - ◦ Confined space working
  - ◦ Working at height
  - ◦ Live electrical work
  - ◦ Plant fitters and maintenance
  - ◦ Deliveries and collections involving lifting or plant
- → When undertaking lone working in normal working hours, one of the following means of regular two-way communication must be in place:
  - ◦ Lone working monitoring device or app (preferred method)
  - ◦ Agreed arrangement e.g. two-way radio or mobile phone or site visits by supervisor
- → When undertaking lone working outside of normal working hours, the regular two-way communication must occur more frequently
- → Where possible, the access must be defined and well lit
- → Work areas must be tidy and free from obstructions
- → When entering premises e.g. site or offices, ensure gates or doors are locked once inside
- → Method of responding to emergency situations must be communicated and agreed by all parties
- → The risk assessment must be reviewed in the event of a change in circumstance e.g. adverse weather conditions
- → Ensure that an induction, and a point of contact has been identified for all lone workers (colleagues and supply chain).

Examples of lone working include:

- Carrying out servicing and commissioning of plant and equipment in isolated or unoccupied places
- Working alone in offices, including site offices, especially outside of normal working hours e.g. cleaning
- Undertaking minor works or snagging works
- Switching operations or resetting apparatus
- Security guards
- Out of hours calls, non-intrusive work.



Lone working

Nuclear safety

A range of provisions made at all stages of the design, construction, operation and decommissioning of nuclear facilities to prevent the loss of control or release of nuclear materials that could adversely affect workers, the public and / or the environment. Nuclear safety is always the overriding factor on a nuclear licenced site.

Our standards

Training and competency

→ Prior to starting work, all individuals must attend the nuclear site operator's induction and project specific inductions to ensure that the site and project arrangements for nuclear safety are understood and followed

→ All managers and supervisors, including subcontract managers and supervisors, along with contract Safety, Health and Environment (SHE) advisors or quality engineers must attend Morgan Sindall Infrastructure training in the area of nuclear safety leadership to help them model the behaviours required of nuclear safety leaders

→ Any individual whose work could impact on nuclear and / or radiological safety must have their competency assessed, recorded and refreshed in accordance with the site operator's requirements for Suitably Qualified and Experienced Person (SQEP).

Physical controls for nuclear safety

→ The integrity of all the existing physical controls that have been put in place to ensure nuclear safety e.g. buildings, containment vessels, service supplies, safety mechanisms, safety features, safety related equipment etc. must be observed and maintained. Report any issues where the efficacy of the controls could be compromised

→ All quality requirements for work affecting the design, construction and commissioning of plant, systems and components that have an impact on nuclear safety must be rigorously followed and all required records must be maintained as stipulated.

Nuclear safety culture

Nuclear safety culture is the core values and behaviours resulting from a collective commitment by leaders and individuals to emphasise safety over competing goals, to ensure the protection of people and the environment. A positive nuclear safety culture is the foundation for sustaining nuclear safety. Key aspects of a positive nuclear safety culture are summarised below:

Leadership safety values and actions	Problem identification and resolution	Personal accountability
Leaders demonstrate a commitment to safety in their decisions and behaviours.	Issues potentially impacting safety promptly identified, fully evaluated and promptly addressed and corrected commensurate with their significance.	All individuals take personal responsibility for safety.
Work processes	**Continuous learning**	**Environment for raising concerns**
The process of planning and controlling work activities is implemented so that safety is maintained.	Opportunities to learn about ways to ensure safety are sought out and implemented.	A safety conscious work environment is maintained where individuals feel free to raise safety concerns without fear of retaliation, intimidation, harassment or discrimination.
Effective safety communications	**Respectful work environment**	**Questioning attitude**
Communications maintain a focus on safety.	Trust and respect permeate the organisation.	Individuals avoid complacency and continually challenge existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action.

Occupied premises

Additional precautions must be taken when working in occupied premises to protect the existing occupants and their visitors.

Our standards

→ In addition to Morgan Sindall Infrastructure's normal standards on site e.g. site induction, competency assessment etc. the following must be in place for working in occupied premises:

- Stakeholder meetings held prior to commencement of activities and throughout the duration of the works
- Any additional health and safety arrangements, as agreed with the occupier
- Any additional security clearances associated with the occupier or customer requirements e.g. Disclosure and Barring Service (DBS) checks
- Safe System of Work (SSoW) and permits communicated and issued to those involved and, where applicable, shared with the occupiers
- A fire and emergency plan to tie in with the occupier or customer requirements, including first aid requirements
- Unobstructed walkways and means of escape
- Higher risk buildings (more than 18m high or specific building types) require a building safety manager to be appointed to under a risk assessment and other compliance activities
- Identified reporting route for the discovery of any hazardous condition or substance e.g. asbestos, fire hazards, unexpected live service
- Adequate traffic management arrangements to complement occupier or customer requirements
- Stringent control measures for waste management and minimisation of dust, vibration and noise
- Security arrangements which protect the site, colleagues and members of the public and prevent unauthorised individuals accessing work area, tools or equipment.

Work in occupied premises may include the following:

- Statutory maintenance
- Emergency repairs to premises and equipment
- The refurbishment or extension of existing facilities
- The construction of new buildings.

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Openings

Openings often exist as a consequence of the sequence of operations. Often it is not obvious as to the hazard or potential depth beneath the opening, introducing specific work at height issues. Identification and protection of openings is key to keeping everyone safe.

Our standards

Planning

→ The project or site manager must identify through risk assessment any areas where openings may become a hazard and design out the need for openings to exist, where possible

→ The project or site manager must ensure that all temporary or permanent openings, whether into manholes, shafts, chambers, on roofs, on access scaffolds or in floors and incomplete reinforcement mats etc. are correctly protected at all times during construction activities.

Working around openings

→ Where openings have been identified, the project or site manager must:

- Carry out a specific risk assessment, including the risk to trespassers and third parties
- Decide on the appropriate means of protecting openings, depending on the size, and must ensure that the appropriate materials are available on site in good time
- Carefully plan how edge barriers and covers will be placed and removed with consideration given to installation of the protection away from the hazard e.g. fitting guard rails prior to lifting cover slabs into position above openings and shafts
- Ensure that all openings are identified with a clear warning sign; yellow triangle with black border, stating "Danger – hole below"
- Plan to only have a minimum number of holes open at any one time

→ Openings in floors must only be formed with the consent of the project or site manager

→ Opening protection must only be removed with the consent of the project or site manager

→ The placement and removal of temporary protection must be carefully planned and risk assessed. Alternative methods of protection may be required for work to proceed around inspection chambers (manholes) or openings e.g. scaffolding

→ All temporary covers and edge protection must be inspected at least once per week and after severe weather or other changes in working conditions. Formal inspections must be recorded however temporary protection must be inspected daily prior to work starting. A record must be kept of such inspections.

Special considerations

→ Personal fall prevention equipment such as suitable harness and restraint devices may be employed subject to formal approval from the contract Safety, Health and Environment (SHE) advisor, however personal fall restraint is Personal Protective Equipment (PPE) and should therefore only be considered as a last resort

→ All covers must be designed and conform to either the Morgan Sindall Infrastructure standard design specifications (for smaller low risk activities) or a Temporary Works design

→ The size and type of openings will determine the type of protection and shall apply to
- Holes
- Openings in floors
- Floor slabs
- Incomplete reinforcement mats
- Inspection chambers
- Lift shafts
- Stairwells
- Storage tanks or
- Any other type of opening where there is a risk to individuals and / or material falling etc.

→ Where there is a potential for covers to openings to be in locations where plant and vehicles are operating, wooden coverings are not acceptable and consideration must be given to plating openings with steel plates (or similar) of sufficient strength to safely support the maximum imposed loads. Plates must be secured within the openings with lugs to prevent any movement

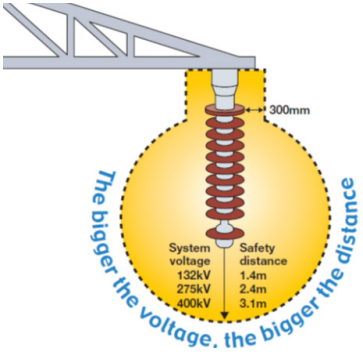
→ Extra consideration should be given to temporary works design when plant will be operating in close proximity to openings.

Overhead lines (working on)

The most significant risks associated with working on overhead lines are working at height and working in the proximity of high voltage conductors.

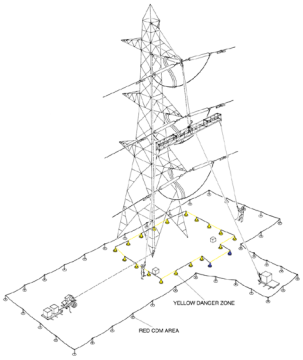
Our standards

- → Low Voltage (LV) working requires an understanding of three phase supplies and correct polarity
- → High Voltage (HV) and Extra High Voltage (EHV) working requires an understanding of earthing application and safety documentation
- → A robust Safe System of Work (SSoW), including a Risk Assessment Method Statement (RAMS), overhead line work guidance documents, permits and safety documentation, must be in place. All elements of the SSoW must complement and not contradict each other
- → All individuals working on overhead line structures must be competent by having the following as a minimum:
  - ◦ A full understanding of the levels of authorisation, including responsibilities and customer requirements
  - ◦ A full understanding of the overhead line work guidance documents
  - ◦ A full understanding of the relevant sections of the applicable electricity transmission or distribution safety rules
  - ◦ Basic electrical awareness training (HV and LV) transmission and distribution, achieved by completing the Morgan Sindall Infrastructure in-house training to understand the dangers of electricity, operating voltages associated with the electrical systems and impressed or induced voltage awareness.
- → All individuals working on overhead line structures must be permanently attached, using double lanyards



Safety distance - the minimum distance between a live conductor and any part of a individual or object and is dependent on the system voltage.

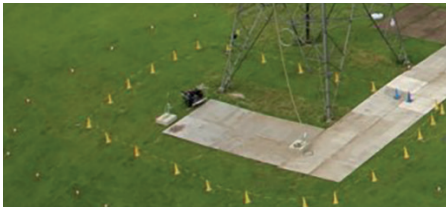
- All works must be undertaken in accordance with the SSoW and the customer's (asset owner) safety rules, ensuring that safety distances are maintained
- Emergency procedures, including rescues from height, must be in place before works commence and drills must be undertaken regularly
- Emergency drills must be tested annually as a minimum
- Rescue from height training must be refreshed after three years as a minimum
- A layout of the demarcated work area, including information on exclusion zones and designated access routes must be available at the point of work, briefed to the working party and controlled by the nominated individual



DEMARCATION WORK AREA AND DANGER ZONE

- No individuals must enter a danger zone without permission and a positive verbal confirmation from the nominated individual, who will confirm that all works and equipment or material movements have been halted

- **Demarcation area** – defined work area with controlled access for all working party indivduals



- **Danger zones** – defined area with no access when individuals are working at height above
- All hand tools must be tethered when in use and captive when not in use. Tethering pre-use checks must be completed prior to work starting. Tools that cannot be operated when tethered must be identified in the RAMS
- All equipment and materials to be used on the overhead line system must be secured, raised and lowered in a controlled manner; deliberate dropping of materials, equipment or other items is not allowed at any time
- Supervisors must be positioned to allow effective control and communication with all team individuals

Safety documents

→ A safety document must:
- Be issued to the competent or nominated individual i.e. an individual appointed in writing to receive and hold a safety document
- Be held in a safe place at the point of work, ensuring safety from the system
- Include a permit to work for all work on previously energised systems
- Include a limitations of access or Limited Access Certificate (LAC) for all work in the proximity of live systems.

→ The competent or nominated individual must ensure the following:
- The requirements of the safety document, including the exact circuit which has been made dead as detailed on time permit to work and its precise location are understood. If in doubt, ask the customer's Senior Authorised Person (SAP) i.e. document issuer
- The need for and application of earths (drain earths as per the safety document and field earths as necessary) have been identified and implemented
- Suitable and sufficient warning notices and flags are posted as required, depending on the nature of the work to be carried out; either under a permit to work or an LAC
- Only the work detailed in the safety document is carried out. If additional work is identified this must be acknowledged and agreed with the customer's SAP in advance of undertaking the work
- The SSoW is briefed to the working party including the following:
  - Actual work details and location(s) of work
  - Agreed access routes to undertake the tasks
  - Safety document details
  - All demarcation positions e.g. red pennants and green flags to indicate limits of safe access
  - Content of RAMS
  - Individual tasks required
  - Specialist equipment or tools that are to be used
  - Relevant sections of the emergency plan to reflect the works being undertaken
- The risk of lightning at the time the works are undertaken is assessed and recorded in the RAMS.

Access arrangements

→ Temporary access systems must be installed and used for all works on tower legs and cross arms exceeding one continuous day or where the RAMS requires

→ PPE (e.g. double lanyards) for accessing tower legs and cross arms must only be worn where access is required for one day or less

- → On a suspension tower, ladder access must be used for brown porcelain and polymeric insulators. Climbing access is permitted on all other insulator types subject to a risk assessment
- → Down leads in substations must only be accessed via Mobile Elevated Working Platforms (MEWPs).

Falling objects (under or over working)

- → Where simultaneous work on cross arms and conductors is unavoidable, lower operatives must retreat to a position of safety and a minimum safe distance of 2m horizontally, whilst work is carried out above
- → Individuals or teams are not permitted to work on multiple cross arms on one side of a tower as part of unrelated activities
- → Whilst transferring equipment between arms, lower operatives must retreat to a position of safety and a minimum of 2m horizontally away from the load and towards the tower body until the load is below head height
- → Multiple climbing to access the tower is permitted, as long as a minimum safety distance of 3m is maintained between climbers
- → The tower must not be accessed whilst work above is in progress and the danger zone rules apply
- → More than one individual working on the same leg at different levels is not permitted during step bolt work unless shield guards are in position
- → When undertaking spacer work, activities must be staggered to avoid working above or below
- → All spacers must be tethered where the RAMS identifies risk to third party operations, members of the public or private property
- → Spacer chair nets must be used at all times
- → Rolls of fibre wrap tape must be no more than 5m long to prevent them from unravelling and making contact with adjacent circuits, if the roll is dropped.

Personal Protective Equipment

Personal Protective Equipment (PPE) is all equipment that protects an individual at work against one or more potential health, safety and environmental risks and must be worn.

All risks must be eliminated but where this is not possible for a particular task then PPE must be worn as a last form of defence against the risk.

Our standards

- → All PPE must be selected and procured from the Morgan Sindall Infrastructure PPE Catalogue unless a derogation is in place with the Safety, Health, Environment and Quality (SHEQ) team and approval from the relevant director
- → All individuals working or visiting a Morgan Sindall Infrastructure site must wear the following PPE which complies with the standards stated below before entering a designated work area:
  - ◦ Approved safety helmet (European Norm (EN) 397) (see subsection on safety helmet colours for individual roles)
  - ◦ Light Eye Protection (LEP) or enhanced eye protection must comply with EN166 and EN169 (filters for welding and related techniques)
    - Type by risk assessment
    - LEP will not be suitable for all activities and operations, and impact rated protection must be worn when the risk assessment identifies that there is a risk of flying objects or particles penetrating LEP
    - Enhanced eye protection for the use of disc cutters, grinders and brush cutters must comply with BS EN 166 1B, please also refer to our Morgan Sindall Infrastructure Plant and Equipment Standard
    - Use of chain mail and chainsaw resistant clothing, full face visors etc. clothing, must comply with EN 381 or ISO 11393 (choice dependant on chainsaw speed)

- Operational colleagues working on live high-speed roads as defined in "Traffic Signs Manual Chapter 8" are required to wear hi-visibility clothing to EN 471 class 3. This comprises hi-visibility long-sleeved vest or jacket and trousers
- Rail - minimum requirements:
  - High visibility orange whole body clothing with reflective tape to comply with Railway Group Standard RIS-3279-TOM and BS EN ISO 471
  - Outer layer of upper body clothing must have the name or logo of the individuals Sentinel Sponsor or other name, or logo agreed with Network Rail (e.g., project, sponsor's parent company or trade association)
  - Foul weather clothing must be provided and must comply with the above as well as BS EN 343 class 3 for vapour resistance and water penetration
  - Flame retardant PPE to be used when working near buried and overhead services and for any task that requires a hot permit
- Energy and Water specific
  - All operational project or site colleagues are required to wear as a minimum Flame Retardant (FR) work wear and must comply with EN 11612 and EN470-1. This can consist of overalls, sweatshirts, polo shirts and trousers
  - Each contract may have different additional standards based on the risk and customer requirements for example on electric contracts there may be a need for electric arc and on gas contracts there may be a need for anti-static protection (and possibly both electric arc and anti-static). These requirements will be detailed within the Project Execution Plan (PEP) or contract management plan)
- Gloves must be carefully selected to be fit for purpose, considering use, comfort, dexterity, temperature protection and grip. The general requirements of any glove must include:
  - Fit for purpose*
  - Construction
  - Sizing
  - Storage requirements
  - Breakthrough properties

*Note, to help reduce the risk of fingers becoming trapped in machinery or tools, gloves have been developed with a perforated seam at the base of each digit. This enables sections of the glove to detach when pulled, allowing the hand to be removed from danger.

- For whatever glove is being used on site, both product and technical information must be available
- Cut resistance (EN 388:2016 / ISO 13997)
  - The minimum advisable rating for gloves in Morgan Sindall Infrastructure is cut C (equivalent) or above

Safety helmet

Eye protection

Hi-vis jacket

Safety gloves

Protective clothing

Safety boots

Ear protection

  - Consultation with the SHEQ team will provide further advice on type or selection. Where gloves are required to prevent a health risk, they will be selected as part of the Control of Substances Hazardous to Health Regulations (COSHH) assessment
- Protective clothing - type by risk assessment
- Lace-up boots with:
  - S3 or S5 midsole protection and ankle support (British Standard (BS) EN 20345:2011)
  - Toecap protection (BS EN 12568:2010)
  - Minimum impact protection energy of 200J (+/-4)
- Morgan Sindall Infrastructure requires that safety footwear complies with EN 345 and provides support to the ankle as well as protective toe cap and mid-sole. Rigger boots do not meet this requirement and are not to be used

→ The following additional PPE must be provided and worn, if identified in the Risk Assessment Method Statement (RAMS):

- Ear or hearing protection (see Exposure to noise section)
- Respiratory protection (see Exposure to airborne material section)
- Upgrade of footwear for working in wet environments
  - Wellington boots must only be used under risk assessment

where task demands their use, always with ankle support and never as general wear

- Upgrade of eye protection when undertaking cutting, grinding or welding operations
- Wearing of harnesses when working at height or in confined spaces
- Only full body harnesses are to be used. Where the use of harnesses is identified in a risk assessment, the following applied:
  - The user must receive training in the fitting, use, checking and maintenance of the harness. Records of training must be available
  - All harnesses must have an in-date certification of inspection
  - Harnesses must be issued to the individuals as PPE
- Wearing of full-face visors (EN166 1B93) when working around live services
- Personal lighting when working at night in isolated areas e.g. highways and railways

→ Consideration of appropriate PPE for example gloves, respirators, foot protection etc. must be made with reference to the Safety Data Sheet (SDS) and risk assessment

→ Where two different types of PPE must be worn for example eye protection and respiratory protection, the individual must check they are compatible and will not adversely affect the protection needed for the identified risks

→ The level of PPE worn must be suitable for the working environment.

In addition to the six mandated items of PPE, Morgan Sindall Infrastructure operates a three level hierarchy of protection to reflect the working environments in which the individual is working or visiting.

Level 1: Electrical environments, working in supervising or visiting - enhanced

→ Must be worn where there is either a potential risk of an individual coming into contact with electricity either through contact with live electrical systems or contact with buried electric services (either known or uncharted) or entering a Dangerous Substances and Explosives Atmospheres Regulations (DSEAR) zone one hazardous area

→ In this environment the standard long sleeved hi-vis vest or jacket and protective clothing must be enhanced to the following standards:

- Flame retardant (BS EN ISO 11612:200 (minimum standard: A1, B1, C1))
- Anti-static (BS EN 1149-5:2008)
- Arc Resistant (AR) (IEC 61482).

Level 2: Non-electrical environments or zone one hazardous areas, working in supervising or visiting - standard

→ Must be worn where there is no potential risk of an individual coming into contact with electricity or entering an AR zone one hazardous area

→ In this environment the standard long sleeved hi-vis vest or jacket and protective clothing must be:

- Flame retardant (BS EN ISO 11612: 200 (minimum standard: A1, B1, C1)).

Level 3: Undertaking simple activities on an active site or visiting - reduced

→ Must be worn where the individual is undertaking simple activities either as a worker e.g. non-intrusive surveys or visitor and there is no risk of coming into contact with electricity or entering a DSEAR zone one hazardous area

→ The standard long sleeved hi-vis vest or jacket and protective clothing must be worn as identified.

Subcontractors

→ All subcontractors are responsible for and must provide PPE to the appropriate BS or EN standard as identified by the contract, or the subcontractor's risk assessment

→ The type worn and our standards must be discussed at the precontract award meetings with confirmation at pre-start meetings that PPE is compliant and available to subcontractors.

Derogation from the standards detailed above must be agreed by the SHEQ team and approval from the relevant director, prior to implementation and recorded in the Project Execution Plan (PEP).

Safety helmet colours for individual roles

→ All roles or individuals must wear the approved safety helmet (EN 397) according to their role as identified below.

Rail specific
Project or site managers working with full Personal Track Safety (PTS) are permitted to wear a black safety helmet or hard hat but only when working in association with a worksite.
The use of head torches in connection with hard hats for all lineside / on or near the line work where appropriate area, cess, or walkway lighting cannot be provided.

Site individuals*
White hard hat
silver reflective strips

Young or inexperienced*
White hard hat
blue reflective strips

First aider
White hard hat
green reflective strips

Visitor
Grey hard hat
blue reflective strips

Supervisor or frontline
Black hard hat
silver reflective strips

Slinger or signaller
Orange hard hat
silver reflective strips

Plant marshal or plant and vehicle marshal
Yellow hard hat
silver reflective strips

Site individuals newly qualified or non PTS (rail specific)
Blue hard hat

*** Mandatory**
Adoption of other coloured helmets is at the discretion of the project or site management team and must be recorded in the PEP.

Piling (bored or driven)

A significant proportion of ground support and foundation engineering requires the installation of piling. This can cover a range of techniques such as bored or Continuous Flight Auger (CFA) which uses rotary equipment to form the pile, and driven which uses percussion or hammer equipment to drive units into the ground.

Our standards

Planning

- → Piling operations must only be undertaken by specialist contractors who are members of the Federation of Piling Specialists (FPS) and supervised by competent piling supervisors who have attended the Site Supervisor Safety Training Scheme (SSSTS) course and a FPS Supervisor two day Health and Safety Executive (HSE) awareness course
- → During the pre-contract and design phases the project or site manager must consider the following:
  - The type of piling technique to be used and the equipment to be employed, along with the relevant certification
  - The piling platform which must be designed in accordance with Morgan Sindall Infrastructure's Temporary Works process (see What is Temporary Works section) and Building Research Establishment (BRE)470 standard (Working platforms for tracked plant), taking into consideration the weight and size of the equipment to be used, the presence of any existing services or voids and the proximity to existing infrastructure
  - The proposed location and size of laydown areas necessary and access routes between laydown area and piling platform, avoiding gradients and cross falls
  - Suitable means of securing and handling of long loads associated with piling operations i.e. reinforcement cages, pile sections etc. A long load is classed as a load greater than three times the maximum width spacing that the fork carriage allows on a telehandler
  - The proximity of any existing infrastructure, their foundations, superstructure and their sensitivity to vibration
  - Temporary Works Coordinator (TWC) will be requested by the FPS piling contractor to provide a working platform certificate, prior to using the working platform. The design provided by the Temporary Works Designer (TWD) will be

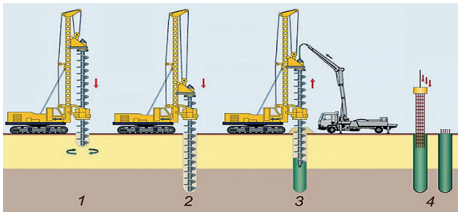
expected to perform to a set criteria indicated by them. California Bearing Rations (CBRs) and Plate Bearing Tests (PBTs) based on the piling equipment loadings, will be provide to test against the installed platform.

During the works

→ The project or site manager must ensure that a Safe System of Work (SSoW) is developed and briefed to all members of the working party addressing the following:

- Independent pre-start checks must be undertaken to ensure compliance or fit for purpose (service offered by Magnor Plant)
- Inspection of the piling platform on a daily basis and after any significant alteration
- Suitable arrangements for segregation of individuals from plant movements associated with both the piling rig and any slave plant items e.g. service cranes, dumpers for spoil removal etc.
- Suitable guarding from all moving parts and when undertaking CFA operations.
- Guarding to open shafts, especially before concrete is placed. Also consider guarding piled foundations where the concrete finishes flush with the finish ground level. Particularly large pile diameters will require edge protection to EN13374, whereas small bores may only require a small cover plat (TW design checked)
- Competency of the individuals involved in the piling operation and support activities
- Access and egress arrangements to specific areas of the equipment and loading or unloading of associated materials as piling operations often involve working at height
- Lifting operations are to be in accordance with Lifting Operations and Lifting Equipment Regulations (LOLER)
- Piling operations, involve a significant amount of lifting operations. An Appointed Person (AP) must approve the lifting plan submitted by the FPS contractor. Routine lifting must be carried out by a competent slinger or signaller e.g. Construction Plant Certification Scheme (CPCS) A40 or Construction Skills Certification Scheme (CSCS) endorsed with either piling operative industry accreditation A or B, or piling operative experienced worker
- A means of measuring wind speed to ensure that piling rig limits are not exceeded during operation

→ Completed paperwork must be present for all lifting accessories



- A procedure for cropping or cutting down piles based on the number of piles to be worked on:
  - Hydraulic means e.g. excavator mounted, pile cropper, hydraulic breaker etc.
  - Passive integrated pile breaking e.g. application of debonding agent or foam debonding sleeves over rebar to aid debonding (working in conjunction with the pile cropper). Additionally, ensure links are not in debonded areas
  - Active integrated pile breaking e.g. application of chemical agents.

Bored or CFA piling additional requirements

- A procedure for cleaning concrete lines
  - Cleaning with compressed air must only be done when no other procedure e.g. water, is practical and only under the supervision of a competent individual
  - Two trained individuals are required, one to administer the air and one to monitor the discharge point where a catch basket must be installed
  - All flexible hoses must be restrained, using an approved system, due to the potential for significant pipe whip effects
- A procedure for dealing with blockages of concrete lines
- A means for protecting flexible hoses, especially where plant may need to track in same area.

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General minimum requirements

This section sets out the minimum standards for construction machinery (plant), equipment and tools and should be read in conjunction with the rest of the Plant sections.

Our standards

General

- → All plant and equipment to be inspected prior to first use and the appropriate pre-start check sheet completed and daily recorded inspections thereafter
- → Pre-use inspection signed off (all hire companies to supply operator pre-use inspection checklist Planned Preventative Maintenance (PPM)).

Legal

- → Compliant with current United Kingdom (UK) legislation
- → Compliant with European Commission (EC) Machinery Directive 2006/42/EC, or United Kingdom Conformity Assessed (UKCA) certification, and supplied with a declaration of conformity.

Plant equipment

- → Evidence of pre-hire inspection
- → Operator instruction manual available with plant or equipment
- → Access handrails and steps to be colour coded
- → All safety decals in place and legible
- → Evidence of regular inspection plus 'next service and or inspection due' date or hours sticker
- → Seat belts must be fitted and operational
- → Tyres labelled each side with inflation pressure
- → Wheel nut indicators on all wheel nuts unless proved impractical
- → If used adjacent to live lanes, control measures must be put in place that in the event of operator error the machine will be prevented from striking passing traffic.

Environmental protection

- → Be considerate to our neighbours and select the most appropriate plant to undertake a task with the least disturbance. This may include the use of electric plant
- → Switch off plant when not in use
- → Do not damage environmental protection measures i.e. fencing, watercourses etc.
- → Ensure that environmental permissions to undertake the task are gained prior to undertaking an activity near to a sensitive receptor. This may include a permit to clear or permission from regulators
- → Implement and follow the fuel free sites guidance to reduce the use of diesel emissions.

Operator or driver (excluding non-working delivery drivers)

- → Attend full induction prior to starting work
- → Attend competency assessment prior to being put to work – be familiar with plant or equipment
- → Complete pre-use check sheet or e-inspection
- → Comply with pre-use and defect reporting
- → Evidence of having signed onto the appropriate Safe System of Work (SSoW) documentation for the task
- → Be briefed on the site-specific Plant, Vehicle and People Management Plan (PVPMP) and check for overhead obstructions and hazards
- → Always operate or use plant and equipment in accordance with manufacturer's instructions or recommendations
- → Engine must be turned off and keys removed from ignition before leaving the vehicle unattended
- → Operator to mount and dismount machine using fixed access arrangements and always facing the machine using three points of contact
- → Operator must stop work and isolate the machine in the event of personnel entering working area or zone
- → Report all unsafe conditions
- → Where vehicle or mobile plant used on site has to be driven on the public highway, the driver or operator must hold a current valid driving licence with the appropriate category for that vehicle or mobile plant

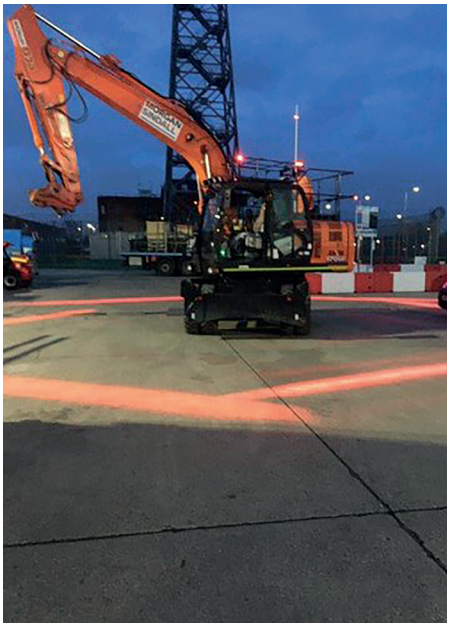
- → Full site-defined Personal Protective Equipment (PPE) required if outside cab – non loose-fitting PPE required in all cases to avoid catching on controls
- → Additional PPE to be worn as defined by risk assessment specific for the task to be undertaken.

Non-working delivery drivers on site outside cab

- → Full site-defined PPE.

Training and competency requirements

- → A current competence card (or equivalent training accepted by Morgan Sindall Infrastructure) is required for all plant machinery, vehicles or equipment being used.



Hazards or risks

- → Significant hazards or risks identified when operating the plant item or equipment and for those adjacent to plant items or equipment:
  - Access into cab or refuelling and maintenance
  - Clothes can get snagged on controls prior to release of servo isolator or safety handle
  - Danger of crushing in slew zone
  - Effect of weather on visibility and working or traffic surfaces
  - Fire
  - Hazardous substances such as fuels, oils, and greases
  - Limitations to all round visibility or restricting operator vision
  - Overhead obstructions – cables, bridges, power lines or telephone lines
  - Plant and personnel interface
  - Public interface – working alongside pedestrians, vehicles or plant crossings
  - Transportation including loading or unloading.

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Introduction to our plant standards

This section sets out the minimum standards for construction machinery (plant), equipment and tools, and the operator or driver for both Magnor Plant assets, those supplied through our central Plant Hire Desk, and supply chain, to achieve best practice.
Information contained in this section is relevant to the safe management, operation and use of all plant and equipment.

Our standards

The objective of the Plant and Equipment Minimum Standards is to provide a consistent standard of plant safety across all Morgan Sindall Infrastructure controlled projects.

The plant standards should be used in conjunction with project-specific vehicle and plant management plans, and are subject to ongoing improvements as new technologies develop.

This section is also supported by the Compact Plant Standard which gives further guidance regarding the use of compact plant on Morgan Sindall Infrastructure controlled projects. This covers the following items of plant:

- → Compaction rollers below 1000mm drum width
- → Mini excavators below 3t
- → Dumpers below 2t
- → Skid steer loaders
- → Ride on mowers, and
- → All Terrain Vehicles (ATVs).

Engine Emissions

- → As a minimum, all plant machinery should meet European Union (EU) Stage IV emissions, and all vehicles registered for road use covered by this Standard should meet EURO 5
- → Minimum requirements for London Central Activities Zone and Opportunity Areas (OAs) (including Canary Wharf) are as follows:
  - For construction machinery (Non-Road Mobile Machinery (NRMM)), EU Stage IV in the London Central Activities Zone and Opportunity Areas (including Canary Wharf) and Stage IIIB in the rest of London
  - EU Stages IIIB and IV have not yet been defined for machines with constant speed engines, such as generators. This means these machines will need to meet Stage IIIB
  - Currently, the requirements only apply to NRMM of net power between 37kW and 560kW
  - Stage IV has also not been directly defined for variable-speed engines smaller than 56kW. In most cases these engines will need to meet

Stage V if they are in the London Central Activities Zone and OAs

→ Some cities may introduce the EU Stage V engine emissions requirement in their air quality standards

→ Special consideration may need to be given for plant and equipment, operating in London, regarding the latest emission engine requirements

→ For more details regarding this legislation and clarification on what equipment falls into scope, please consult https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/nrmm

→ In respect of plant and equipment used by our supply chain partners: the minimum standards will form part of our expected criteria, and in some cases, transitional action plans will need to be agreed and put in place to achieve the Morgan Sindall Infrastructure minimum standards, in the first instance please contact Morgan Sindall Infrastructure Director of Plant

→ All mobile plant needs to incorporate the 'Thumbs Up' livery. Toolbox Talks (TBTs) or guidance needs to be completed at all sites, demonstrating that the concept and best practice relating to 'Thumbs Up' is embedded at all site locations

→ For road vehicles, content of the Traffic Signs Manual Chapter 8 Part 2, to be adopted, as follows:

  ◦ Roof-mounted beacons – in accordance with Chapter 8, Clause O5.3, that includes:

- Any vehicle stopping on the highway for work purposes or inspections shall be equipped with either a roof-mounted flashing amber warning light bar (comprising at least two independent light sources) or two independent roof-mounted flashing amber warning beacons, visible through 360°
- Roof-mounted flashing amber warning beacons must comply with the requirements of the Road Vehicle Lighting Regulations and should also comply with the United Nations Economic Commission for Europe (UNECE) Regulation 65 on special warning lamps
- If the main roof-mounted beacon is likely to be obscured from the rear by parts of the vehicle or any equipment carried on the vehicle, additional beacons should be fitted toward the rear of the vehicle, where they will remain visible
- The roof-mounted beacons shall be in use when entering, leaving or moving within site, when travelling in traffic at less than the general traffic speed, and when stationary on the hard shoulder
- When stationary within the confines of a fully installed traffic management arrangement, the roof-mounted beacons shall

be switched off, unless they form part of the guarding of the works, e.g. work on minor roads, or are required for mobile works

- Vehicles engaged in work activities shall display a flashing amber warning beacon at all time when operating

◦ Vehicle conspicuity

- Road vehicles fitted with hi-visibility markings in accordance with the Chapter 8, Clause O5.2

◦ Highway maintenance sign

- The sign 'HIGHWAY MAINTENANCE' to diagram 7404, with 140mm capital letter height, fitted externally on the rear of each vehicle, in accordance with Chapter 8, clause O5.5.3.

Plant and Equipment Minimum Standards contents

→ Tools
→ Generators
→ Petrol generators <10 kVA
→ Diesel generators <20 kVA
→ Diesel generators >20 kVA
→ Towable equipment
→ Excavators
→ 180° excavator or Backhoe loader
→ Mini excavator (including machines 8t and below)
→ Tracked 360° excavator (all machines above 8t)
→ Wheeled 360° excavator (all machines above 8t)
→ Plant accessories and attachments
→ Dumpers
→ Dual view dumpers, 6t and above or forward and side tipping dumper 3t
→ Articulate dump truck
→ Tracked dumpers (3t to 15t)
→ Cranes and lifting devices
→ Crawler cranes (hydraulic cranes only permitted, not mechanical)
→ Mobile cranes (hydraulic cranes only permitted, not mechanical)
→ Telehandler
→ Rotary telehandler
→ Lorry loader crane
→ Mobile Elevating Work Platform (MEWP) general
→ MEWP – Spider lift type only
→ Road sweeper or collector
→ Compressors or air systems
→ Rollers
→ Ride on compaction roller

- → Tracked dozer
- → Wheeled loading shovel
- → Agricultural tractors
- → Mixer truck
- → Vacuum or Suction excavator (lorry mounted 26t and 32t machines) comes with either hydraulic or counterbalanced suction arm
- → Concrete pump
- → Concrete extrusion machine
- → Mobile crushing plant
- → Volumetric mixer
- → Side-by-side All-Terrain Vehicle (ATVs)
- → Site tow bowser
- → Highway tow bowser
- → Large Diameter Piling (LDP) piling rig
- → Mini rotary piling rig
- → Continuous Flight Auger (CFA) piling rig
- → Driven piling rig
- → Piling rig vibro
- → Appendix 1 – Plant safe zones
- → Appendix 2 – Material handling attachments for MEWPs
- → Appendix 3 – Secondary guarding device
- → Appendix 4 – Effective fleet management
- → Appendix 5 – A listing of competence cards or evidence of demonstratable training
- → Appendix 6 – Plant and Equipment Minimum Standards - poster

Internal - employee
Infrastructure Plant and Equipment Minimum Standards - Integrated Management System (IMS)

External - supply chain
Infrastructure Plant and Equipment Minimum Standards - Morgan Sindall Infrastructure website

Supervision of plant movements

The term banksman has been used to define a multitude of roles within the industry, from gateman to individuals overseeing plant movements to assisting lifting operations.

Managing People Plant Interface (PPI) is important to ensure that individuals working in close proximity to plant and vehicles are competent and have a clear understanding of their roles and responsibilities.

Our standards

- There are four recognised types of marshals:
  - Vehicle marshal
  - Plant and vehicle marshal
  - Plant and vehicle marshal when operating in small remote teams
  - Slinger or signaller

→ Each marshal must be nominated by the project or site manager and appointed in writing as a site specific appointment

→ Each marshal must wear Personal Protective Equipment (PPE) to suit the work environment (see PPE section) and indicate job role e.g. coloured safety helmet or tabard.

The duties of each role are summarised overleaf.

Role and duty matrix

- ✓1 New Roads and Street Works Act (NRSWA) trained operative only
- ✓2 Only basic lifts and selective standard lifts (i.e. no underslung loads), where the environmental complexity has changed the categorisation (see Lifting operations section)
- ✓3 Typically covers the loading and unloading of restricted sized trailer mounted plant e.g. mini excavators or rollers from trailers
- ✓4 Where necessary

Duties	Roles: Vehicle marshal	Plant and vehicle marshal	Plant and vehicle marshal for small remote teams	Slinger or signaller
Observing and guiding vehicle (non-plant) operations, including reversing and manoeuvring	✓	✓	✓	✓
Site traffic control	✓	✓	✓1	✓
Observing and guiding plant operations, including reversing and manoeuvring	✗	✓	✓	✓
Observing and guiding plant operations with slung loads, including reversing and manoeuvring	✗	✗	✗	✓
Loading and unloading operations	✗	✓2	✓3	✓
Safe operation of digging with excavation plant and protection of others	✗	✓	✓	✓4
Crane operations	✗	✗	✗	✓
Attachment of specialist lifting equipment	✗	✗	✗	✓

Vehicle marshal

Competencies

- Must fully understand the site traffic management plan and arrangements
- Must be competent to direct vehicles and site traffic movements
- Must be risk aware
- Can supervise delivery activities or similar activities.

Our standards

Qualifications

→ External or internal half day training course.

The vehicle marshal must:

→ Inform a vehicle driver of any on site restrictions and requirements

→ Ensure the safe movement of vehicles e.g. delivery vehicles within a defined area

→ Ensure reversing areas are planned out and clearly marked

→ Ensure pedestrians and non-activity related individuals are kept away from reversing vehicles

→ Clearly agree and confirm what signals must be used with the driver before any guided manoeuvring begins

→ Be aware of, on a daily basis, all planned or significant non site based vehicle activities

→ Wear correct Personal Protective Equipment (PPE) to indicate job role e.g. coloured safety helmet or tabard.

The vehicle marshal must not:

→ Be involved in any lifting operations.

Plant and vehicle marshal

Competencies

- Must be competent to direct plant and vehicles on site and safe digging practices
- Must have good communication skills and risk awareness
- Can supervise selective loading and unloading operations – basic lifts and selective standard lifts where the environmental complexity has changed the categorisation (see Lifting operations section)
- Understand the Morgan Sindall Infrastructure standard for the safe working around mobile plant.

Our standards

Qualifications

→ Construction Plant Certificate Scheme (CPCS) (A73) training course

→ External two day qualification or red to blue card National Vocational Qualification (NVQ) competence

→ Health and Safety Guidance (HSG) (47), or equivalent, including Cable Avoidance Tool (CAT) and Genny training, and excavation awareness.

The plant and vehicle marshal must fulfil the same duties as a vehicle marshal and must also:

→ Ensure the safe operation of plant and protection of others e.g. colleagues, general public in the vicinity of operating plant

→ Clearly agree and confirm what signals must be used with the driver or operator before any guided manoeuvring begins

→ Be aware of, on a daily basis, all planned, significant loading, unloading and / or vehicle activities, including excavation operations

→ Understand and sign onto the Risk Assessment Method Statement (RAMS) for the identified task before commencing the activity

→ Be aware of any risks and control measures involved and required.

The plant and vehicle marshal must not:

→ Be involved in any standard lifts involving underslung loads or complex lifts.

Plant and vehicle marshal for small remote teams

Competencies

- Must be competent to direct plant e.g. excavators less than 10t and dumpers less than 10t and vehicle movements on site and safe digging practices
- Must have good communication skills and risk awareness
- Can supervise selective loading and unloading operations
- Understand the Morgan Sindall Infrastructure standard for the safe working around mobile plant.

Our standards

Qualifications

→ New Roads and Street Works Act (NRSWA) operative for public highway excavation

→ Trailer mounted plant training.

The plant and vehicle marshal for small and remote teams must fulfil the same duties as a vehicle marshal and also:

→ Inform the vehicle driver or plant operator of any on site restrictions and requirements

→ Ensure the safe movement of vehicles and plant within a defined area

→ Ensure reversing areas, where applicable, are planned out and clearly marked

→ Ensure pedestrians and non-activity related individuals are kept well clear of reversing vehicles

→ Clearly agree and confirm what signals must be used with the operator before any guided manoeuvring begins

→ Ensure the safe operation of plant, compliance with the contract safe digging procedures, and the protection of others in the vicinity of operating plant

→ Be aware of all planned activities, including excavations and loading

→ Understand and sign onto the Risk Assessment Method Statement (RAMS) for the identified task before commencing the activity

→ Be aware of any risks and the control measures involved and required.

The plant and vehicle marshal must not:

→ Be involved in any lifting operations.

Slinger or signaller

Competencies

- Must be competent to direct plant and vehicles on site
- Must have good communication skills and risk awareness
- Can supervise loading and unloading operations, including all lifting operations (see Lifting operations section)
- Knowledge of safe digging practices (optional).

Our standards

Qualifications

→ Construction Plant Certification Scheme (CPCS) (A40) (All duties) training course

→ External two to four day qualification or red to blue card National Vocational Qualification (NVQ) competence

→ Appropriate knowledge of cranes, lifting operations and legislation

→ Health and Safety Guidance (HSG) (47), or equivalent, including Cable Avoidance Tool (CAT) and Genny training, and excavation awareness, where applicable.

The slinger or signaller must:

→ Comply with the lift plan and Risk Assessment Method Statement (RAMS) for all categories of lifting operations

→ Initiate and direct the safe movement of the plant or crane and to sling loads and guide lifting operations, including 'hands free' lifting, where appropriate

→ Ensure any physical controls e.g. barriers are in place and non-essential individuals are kept out of the immediate working area of the operation

→ Ensure individuals do not walk under suspended loads and loads are not transported over individuals' heads

→ Stop crane operations if it is considered there is an imminent risk to the safety of individuals or property, including individuals not involved with the operations. Report all issues back to Appointed Person (AP) and project or site manager

→ Use the recognised code of signals

→ Ensure there is a designated area to set down the load and the area is safe and secure

→ Be aware of all planned significant loading or unloading activities, vehicle movements and, where applicable, excavation activities, on a daily basis

→ Ensure all lifting equipment is suitable and sufficient and has been inspected in accordance with the company equipment and inspection process.

Magnor Plant

Magnor Plant is our in-house team of experts, dedicated to helping large and small-scale projects, as well as longer-term frameworks, with the design and supply of innovative, specialist plant and fleet solutions.

Our standards

Magnor Plant enables our teams to efficiently deliver each of Morgan Sindall Infrastructure's projects by improving timescales, cutting carbon, saving costs, minimising risks, and enhancing safety.

Magnor Plant provides bespoke equipment design and offers a range of specialist services, including the hire and maintenance of defibrillators and equipment that measures, monitors, and enhances individuals' safety.

The Magnor Plant team manages the internal fleet services for Morgan Sindall Infrastructure, leading efforts to reduce carbon by expanding the company's electric vehicle fleet of cars and commercial vans.

Plant overview and capabilities:

General plant

Magnor Plant offers a wide range of general plant for hire. All rates are benchmarked against the external market to ensure the best commercial value for our projects.

Mobile eco welfare units

Powered by solar and lithium battery technology with generator back up, the mobile eco-welfare units are environmentally friendly, and provide spacious and adaptable interiors, ideal for flexible onsite applications.

Logistics hub, workshop and fabrication facilities

Our Magnor Plant facility, located at Swynnerton, provides a dedicated technical team, specialist plant workshops, and fabrication facilities to refurbish, build and test complex plants.

With 15 acres of secure, open or covered plant storage areas, the facilities are ideal for general storage, short or long-term mobilisations, or trials. All areas are easily accessed with specialist cranes and forklifts which can safely lift and manoeuvre most types of material and plant.

Specialist plant

Magnor Plant works collaboratively with both site teams and manufacturers to innovate and design specialist equipment to improve site productivity and safety on all our projects.

Long-term projects and frameworks

By operating across sectors, Magnor Plant can provide a flexible approach which drives safety, productivity and cost effectiveness, and delivers commercial benefits, including cash retention.

Safety equipment

Magnor Plant has a range of specialist safety equipment for hire, including defibrillators, Hand Arm Vibration (HAV) wear, and safety stations.

Using the latest technology, all hires are fully supported by management software, operational accessories, and technical support to help ensure the health and safety compliance and efficiency on site.

Transport overview and capabilities:

Fleet and commercial vehicles

- → Magnor Plant offers a full range of vehicles. Certain small, medium, large and welfare vans can be supplied as Plug-In Hybrid Electric Vehicles (PHEV) and full Battery Electric Vehicles (BEV)
- → Support and guidance on all aspects of onsite charging requirements are also available
- → We can provide a wide range of economical and environmentally friendly commercial vehicles that conform to the highest safety standards.

Fleet compliance roadmap

We have a collection of resources providing details and guidance relating to the management of drivers, company cars and commercial vehicles, including:

- → Guidance and policy documents
- → Memberships and accreditations
- → Fleet insurance details
- → Useful contact details
- → Driver training
- → Toolbox Talk (TBT) materials.

Legislation and compliance

Magnor Plant manages all aspects of legislation and compliance, which include:

- → Certificate of Professional Competence (CPC) qualified transport managers
- → O licence management and audits
- → European Union (EU) and Working Time Directive (WTD) drivers hours legislation monitoring
- → Motor Insurance Database (MID)
- → Driver licence verification
- → Penalty charge notice and fines management
- → Full compliance with the Safer Lorry Scheme.

Driver inductions and training

The Magnor Plant team manages every aspect of transport for all new site inductions:

- → Operating centre applications
- → Vehicles and plant mobilisation and demobilisation
- → Driver induction presentations
- → Full vehicle handovers.

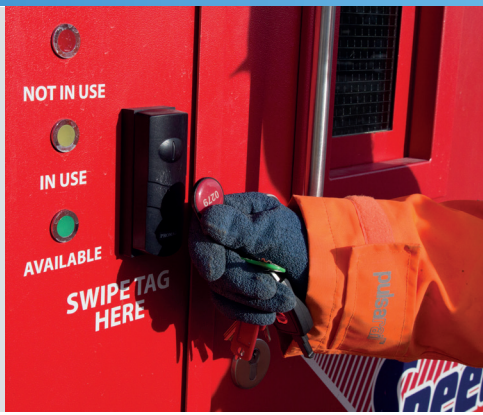
How to get in touch with the team:

MORGAN SINDALL
MAGNOR PLANT

E: magnorhire@morgansindall.com
T: 01785 760022

Plant Hire Desk

The Morgan Sindall Plant Desk is a family of like-minded companies committed to providing the best levels of safety, service and quality to all Morgan Sindall Group projects. Our collaborative approach has strengthened our ability to enhance safety performance, reduce transactional costs, offer customers a competitive solution, and provides visibility for continuous improvement.



Our standards

The Morgan Sindall Plant Hire Desk team understands the specific needs of our projects and can handle all plant hire requests with a single point of contact. The desk offers:

- → A one-stop hub for all plant hire needs
- → Weekly, combined plant-hire reporting for plant family members
- → One point of contact for all your queries and enquiries
- → Compliance and training
- → Knowledgeable expert connections within the plant family for support
- → Managed loss and damages, 'back on' hires, and ad hoc reporting
- → Health and safety alerts shared amongst our suppliers
- → Service logs – for all your positive, negative, safety and environmental reporting.

How to get in touch with the team:

Morgan Sindall Plant Hire Desk

E: planthiredesk@morgansindall.com
T: 0345 6011 015

Contact the Plant Hire Desk for:

- → Consumable sales
- → Powered access
- → Lifting
- → Tools
- → Survey
- → Training
- → Testing and inspection
- → Safety
- → Fuel services.

PLANT HIRE DESK

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Plant Hire Desk

Accommodation Desk

Your single source for onsite accommodation, providing everything you need from self-powered welfare units, cabins and modular solutions, to the latest innovative solutions the market has to offer.

Sustainability and carbon reduction are key drivers for the Accommodation Desk.

Our standards

Our Accommodation Desk works with the industry's leading suppliers to offer an unrivalled service.

How to engage the Accommodation Desk

Contact the desk with your enquiry or requirement using the email or phone number below:

E: accommodation@morgansindall.com
T: 0345 004 099

You will need to provide the following information:

- → Type and quantity of units required
- → Delivery dates
- → Approximate hire period
- → Site address with postcode
- → Any site restrictions
- → Are site specific Risk Assessment Method Statement (RAMS) required?
- → Is temporary power or security needed?

The Accommodation Desk will aim to have standard unit quotes back within 24 hours. For more complex or modular quotes, a quotation time will be given on enquiry.

ACCOMMODATION DESK

The Accommodation Desk understands the demands of the industry. It offers the widest range of services and products to maximise productivity on and off-site efficiently and, above all, safely.

With many years of experience in all sectors of the construction industry, our dedicated desk will be your one point of call for all hire, sale and service needs.

Benefits of the Accommodation Desk

The Accommodation Desk team understands specific needs and acts as one point of contact that can handle all accommodation hire requests. The benefits include:

- → A one-stop-shop to provide complete solutions to any enquiry
- → The team will search all applicable suppliers, ensuring the best possible solutions are found and provided within your timescales
- → For larger projects, the desk offers a comparison between suppliers, highlighting the differences and key benefits each supplier brings

- → For any snagging or breakdowns, you can report these through the desk, who will ensure Service Level Agreements (SLAs) are met, ensuring a swift resolution
- → The Accommodation Desk's mission is to provide industry-leading kit, pushing the boundaries of sustainability and reducing emissions
- → Compliance to our Morgan Sindall Infrastructure minimum standards.

Cabins

Providing you with the latest eco anti-vandal products, the Eco Site accommodation range offers secure facilities such as offices, toilets, showers, kitchens, canteens, locker rooms, drying rooms, first-aid rooms and gatehouses. Features include:

- → High-security steel exterior
- → Steel window shutters and heavy duty door locks
- → Internal fittings included on delivery
- → Units that can be linked and stacked for any required expansion.

Furniture can be provided and all units comply with our minimum standards.

Modular solutions

Offering an outstanding selection of modular solutions from on-site accommodation, temporary buildings and classrooms, to building regulation compliant setups, the Accommodation Desk can cater for any enquiry.

With a wide choice of building designs, bays can be stacked and linked to build complexes up to four stories high.

The variable wall, window and door positions allow large, open office spaces to be created. Welfare facilities include canteens, changing rooms, toilets and showers.

Welfare units

The Accommodation Desk can source a range of self-powered welfare units, ranging from normal eco, hybrid and hydrogen models. These are available in both mobile and static sizes, offering a complete solution for any project.

They also offer a carbon calculator which highlights the differences between units, allowing you to select the most sustainable option.

Suppliers

Our welfare providers are market-leading, offering industry-first technology and the highest quality specifications.

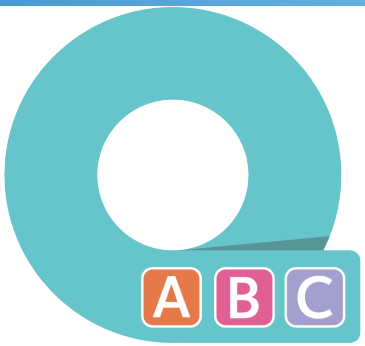
Other services

To complement the Accommodation Desk's main offering of welfare units, cabins and modular solutions, there are a host of other services available:

- → Temporary foundations
- → Waste and water services
- → Temporary power (standard, hybrid and solar)
- → Site Security
- → Furniture
- → Service logs (maintains high standards and shares positive news).

What is quality?

Quality means consistently providing products and services that meet and, where appropriate, exceed customer and applicable statutory and regulatory requirements and expectations.



Our standards

All individuals are expected to use the principles of ABC (Assurance, Business Improvement and Control) to ensure effective governance and quality management is implemented.

- → **Assurance** – provides peace of mind to all stakeholders, e.g. customers, shareholders and senior management that their needs and expectations have been met. Audits and inspections from external certification bodies, are used to demonstrate compliance and provide the appropriate assurances to all stakeholders
- → **Business improvement** – enables the business to be efficient and effective by embedding lessons learnt, managing the risks involved by continually challenging the status quo and ensuring appropriate innovations are adopted
- → **Control** - provides that the physical work is compliant with the requirements by inspecting, measuring and testing, as defined in the Inspection and Test Plans (ITPs).

"Quality is everyone's responsibility."

To support this, all individuals must:

- → Be provided with the correct tools, plant, equipment, materials, services and information
- → Be fully trained and competent to carry out their work
- → Ensure risks are identified and potential issues avoided through the use of appropriate training, knowledge and available experience
- → Support investigations into incidents to establish the root cause and appropriate corrective actions are implemented to prevent reoccurrence
- → Comply with the Integrated Management System (IMS) processes
- → Challenge; is there a better way of doing something?

We empower everybody on the project to stop work if they feel the Quality will be compromised.

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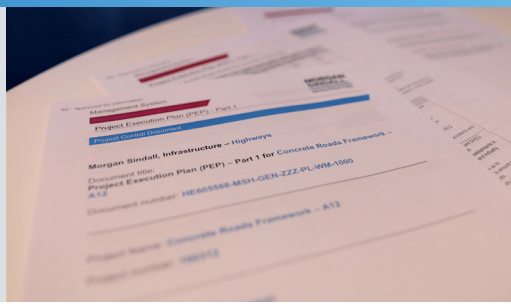
Project Execution Plan

The Project Execution Plan (PEP) and its parts are the primary management plans for delivering successful Morgan Sindall Infrastructure projects. Every project has these documents in place before the commencement of the works.



Our standards

Hierarchy of plans

→ The PEP
- The PEP is mandated for every project, it contains all common information such as project description, project objectives, responsibilities, and references to the other primary plans

→ Primary plans
- There are four supporting primary plans required for all Morgan Sindall Infrastructure projects. These plans detail the specific information for managing, Health and Safety, Environment, Quality and Design

→ Secondary plans and tertiary plans
- These plans support the primary plans by providing additional detail on specific works activities fundamental to the successful delivery of the project, e.g. fire safety plan, noise management plan and handover plan

→ All project plans must
- Be approved by the project or site manager before the issue
- Be communicated to all relevant individuals
- Be reviewed regularly to reflect any changes, be updated, re-approved and communicated
- Be controlled documents, with the current versions available at all times.

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Quality control

Quality control involves inspecting, checking and testing. It is carried out during the manufacturing and construction phases of the works. It ensures that the work is completed right first time and recorded.

Our standards

- → Works must not commence without an approved Inspection and Test Plan (ITP) in place. It must be used to control quality during the works
- → An ITP must define:
  - Operations required to complete the project, programme or activity
  - Responsibilities of everyone involved and ownership
  - Acceptance or controlling documentation, e.g. standards or specifications
  - Critical control points (monitoring, inspections and test activities)
  - Level of stakeholder involvement through agreed intervention points (see overleaf)
  - The relevant forms, procedures and quality requirements are briefed to the workforce during the Risk Assessment Method Statement (RAMS) and daily safety briefings, along with the relevant documentation, the pass or fail criteria, or parameters for each activity
- → Quality requirements need to be discussed with the supply chain in the pre-contract and pre-start briefings
- → Controlling documents, e.g. drawings specifications etc., must be referred to during the work and be the up to date version
- → All inspections will be recorded in the forms provided in the ITP to demonstrate compliance
- → All relevant parties must be notified, in accordance with the agreed timescales of any intervention points
- → Any issues or nonconformities must be immediately reported via the procedure identified in the ITP
- → ITPs must be revised in line with any scope or design changes.

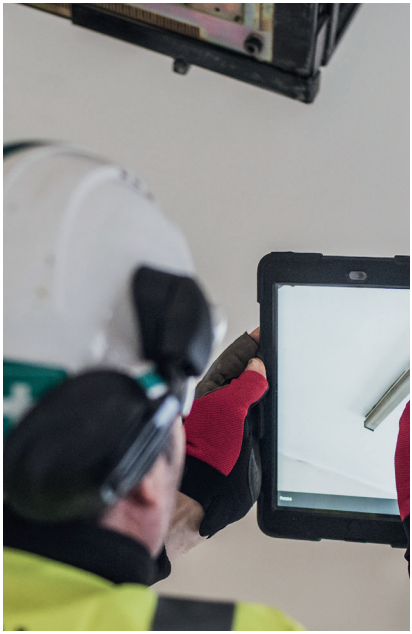
Definition of intervention points

→ **Hold (H)** - a stage in the construction process beyond which work must not proceed without the documented approval of designated individuals or customer representatives

→ **Witness (W)** - a stage in the construction process for which advance notice of the activity is required to facilitate witnesses by designated individuals or customer representatives. The activity may still proceed

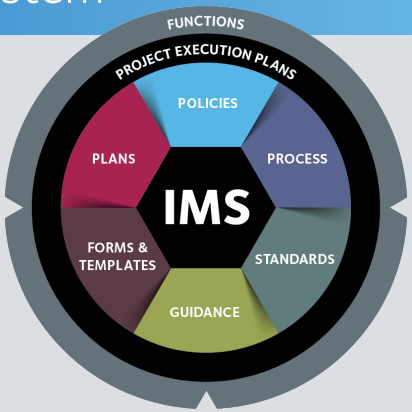
→ **Approve or accept (A)** - a stage in the construction process which requires the approval or acceptance of designated individuals or customer representatives

→ **Record or review (R)** - a point at which the operations results or records are reviewed by the designated organisation to verify that the acceptance criteria have been met.



Integrated Management System

The Integrated Management System (IMS) applies to all business activities of Morgan Sindall Infrastructure without exception and is designed to meet the requirements of the Quality Management Systems standard (International Standards Organisation (ISO) 9001). It also incorporates our Environment (ISO 14001) and Occupational Health and Safety Management (ISO 45001) system, as well as other specialist standards.



Our standards

Hierarchy of documentation

→ Policies:
- Morgan Sindall Infrastructure's policies define the intentions and the direction of the business to provide the framework for setting the objectives and standards
- These policies are owned, reviewed and approved by Morgan Sindall Infrastructure's managing director

→ Processes:
- These define linked activities that produce a specific outcome. A process contains the specific order of work activities, inputs, responsibilities, references and outputs

→ Standards:
- Set out the minimum standards for our business activities and to ensure compliance with regulations and legal and other requirements

→ Guidance:
- Provide additional supporting information on good practice to a policy, process or standard, or on a specific requirement

→ Forms and templates:
- These are pre-developed documents which provide consistency in recording and reporting information.

Joint Ventures (JV) and Alliances:
- May use parts of the management systems from each partner organisation to meet the customers' requirements
- However, the hierarchy of the documentation still applies.

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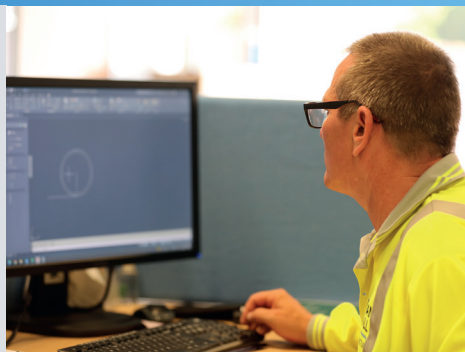
Control of information

Ensuring that information used to manage the business is always up-to-date and available.

Project information and records are generated by the business processes and activities, providing evidence of the work completed and compliance with the relevant standards, specifications, legislation and any other requirements.



Our standards

- → A Common Data Environment (CDE) must be established to store and share information before the start of every project
- → Any hard copy information must be collated and stored in a secure environment to prevent damage or loss
- → Information must be easily accessible and retrievable by permitted individuals throughout the project and after completion
- → Information must be collated at the defined stages of the project and not left until the end
- → The project or site manager must plan for handing over the project information on time and in accordance with the customer's requirements.

Archiving

The project or site manager is responsible for archiving information upon completion and in accordance with each business unit's requirements.

Examples of project information include:

- → Contracts
- → Drawings, specifications, schedules
- → Subcontract and purchase orders
- → Meeting minutes
- → Photographs
- → Programmes
- → Inspection and Test Plans (ITPs) and check sheets
- → Safety, Health, Environment and Quality (SHEQ) inspections
- → Permits and consents
- → Emails
- → Risk Assessment Method Statement (RAMS) and briefing attendance records
- → Induction records
- → Register of environmental aspects and impacts
- → Delivery or consignment notes
- → Certificates and test reports.

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Site quality inspections

Site quality inspections check compliance with specified requirements, including legislation, customer and the Integrated Management System (IMS).

Our standards

- → Site quality inspections must be undertaken in accordance with the approved Inspection and Test Plan (ITP), e.g. inspection activities, frequency and nominated individual
- → A pre-defined checklist must be used, based on the workplace activities taking place at the time of the inspection
- → Appropriate individual(s), e.g. project teams, gangs, members of the working party, subcontractor teams must be available to support the inspection
- → All relevant information must be made available during an inspection.
- → The nominated individual must record the inspection results, using the checksheets referenced in the ITP. Where the inspection results do not meet specification, the hold point is not released, and the workforce does not proceed to the next phase without correction
- → Inspection findings must be addressed in accordance with the agreed timescales
- → Actions must be completed and closed out to the satisfaction of the inspector.

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Records

The business generates records, processes and activities, providing evidence of the work completed and compliance with the relevant standards, specifications, legislation and any other requirements.

Our standards

- → A filing system to hold all of the contract or project records must be set up at the start of the project
- → Records must be stored in a suitable environment (ideally electronically) to minimise the risk of loss, damage and deterioration
- → Records must be easily accessible and retrievable by permitted individuals throughout the contract or project and once the project has been completed
- → Records must be completed in accordance with all parts of the Project Execution Plan (PEP) (see Control of documentation section)
- → Records must be completed at the defined stages of the project (inline with the relevant Inspection and Test Plan (ITP)) and not left until the end
- → Examples of records include:
  - Proformas and check sheets
  - Progress photograph(s)
  - As built or as laid drawings
  - Purchase orders
  - Material test certificates and delivery notes
  - Minutes of meeting with stakeholders, e.g. customer or site
  - Programmes e.g. tender programme, as built programme
  - Memos and emails.

Archiving

- → Unless there are any specific customers, contract or project requirements, archiving of records must be undertaken throughout the duration of the project and in accordance with the contract or business unit requirements
- → Project-specific confidential paper documents not required to be archived must be shredded prior to disposal, in line with General Data Protection Regulation (GDPR) requirements
- → No external archiving arrangements are to be made without approval from the business unit commercial director.

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Audits

Audits are a systematic, independent examination of systems, policies, processes, procedures, documents and records, based on a level of sampling, interviewing, examination and testing to ensure that the business is operating effectively and complying with specified requirements.

Our standards

Planning

→ Audits will be carried out in accordance with an audit programme. The scope must take into account the importance of the processes, changes to the contract or function and previous audit results

→ The auditee must seek clarification from the auditor if the scope is unclear.

Undertaking

→ Relevant individuals must be available to support the audit

→ All relevant information, records and documentation must be made available in a timely manner

→ If they cannot be provided on the day of the audit, an agreement must be made to provide these

→ If the finding(s) are considered to be inaccurate, the auditee must discuss them with the auditor.

Reporting

→ Prior to the formal report being issued to the auditees and relevant members of the management team, a draft audit report may be submitted to the auditee for comment

→ The auditee must review the finding(s) of the final report and submit proposals to address them, including timescales

→ A final report must be issued by the auditor within timescales agreed with the auditee.

→ Audit finding(s) must be classified according to the level of risk and may result in a nonconformity (major or minor), or opportunity for improvement. Areas of good or best practice will also be reported, where applicable.

Dealing with audit finding(s)

→ All audit finding(s) in the final report must be responded to in a timely manner. Action close out will be subject to regular monitoring to ensure effective and timely completion

→ Auditees must identify the cause(s) of any nonconformity and take appropriate correction and corrective action to prevent reoccurrence.

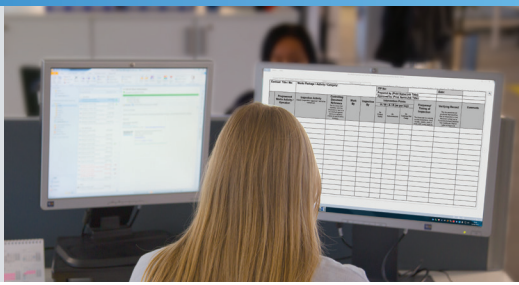
Types of audits

→ **Internal** - internal audit (also known as a Risk Management (RM1) audit) carried out at planned intervals and will cover contract, function and / or specific subject areas, e.g. Temporary Works. It is generally carried out by members of the Safety, Health, Environment and Quality (SHEQ) team although support may be provided by a relevant subject matter expert, where required

→ **External** - external audit carried out by the customer, or carried out by Morgan Sindall Infrastructure on a contractor or supplier to Morgan Sindall Infrastructure. The certification body or regulator can also carry out external audits.

Dealing with nonconformities

A nonconformity is a deviation from a requirement, specification or a standard.



Our standards

Identifying a nonconformity

→ Work must stop if the nonconformity impacts any of the following:
  - Quality of the construction or installation
  - Health and safety of anyone (directly) impacted by the works
  - The environment
  - Project programme

→ The nonconforming product(s) or material(s) must be clearly identified and quarantined or contained to prevent it from being incorporated into works.

Nonconformities can arise from:

- Material, plant or equipment supplied that does not meet the specification
- Work that is not completed to specification
- Company or customer processes or procedures that are not followed
- Material plant or equipment acceptance testing.

Dealing with a nonconformity

→ Nonconformities must be reported immediately, using a Nonconformance Report (NCR) form or by the method prescribed on the contract

→ An investigation and associated Root Cause Analysis (RCA) may be required to address the nonconformity and prevent it from reoccurring based on the severity of the issue. RCA helps to ensure that the underlying causes are identified and addressed
  - Where non-conformance has the potential to affect subsequent activities, these activities cannot start without resolution of the original issue
  - NCRs are used to drive continuous improvement by identifying the causes and mitigating against repeat instances of the same issues.

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UK Conformity Assessed Marking (CE Marking)

The United Kingdom Conformity Assessed (UKCA) marking is the new UK product marking that is used for goods being placed onto the market in Great Britain. It covers the majority of goods which were previously covered by the CE marking.

Our standards

Construction Products Regulation

→ Although there have been minor amendments to the legislation, legal requirements remain unchanged

→ We must continue to ensure that materials we produce either directly, or through our supply chain, meet theses requirements and that sufficient documented evidence is provided.

Changes being made:

- Government plans were to have UKCA compulsory by 1 January 2023. The date for implementation has been pushed back to 31 December 2024, meaning the CE marking remains the legal requirements for all construction products that fall under the remit of the Construction Products Regulations 2011.

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Calibration of equipment (measuring and testing)

Calibration of measuring and testing equipment provides assurance that the equipment provides an accurate and controlled result, e.g. survey equipment, Genny and Cable Avoidance Tool (CAT), concrete cubes, manometers, lasers, etc.

Our standards

→ All measuring and testing equipment used must be:

- Uniquely identified to allow traceability to a valid certificate
- Entered onto a calibration register
- Clearly identified by a calibration label to show its calibration status
- Calibrated or verified at specified intervals before the calibration date expires, or prior to use
- Calibrated against standards traceable back to national standards. Where no standards exist, the basis used for calibration must be known and recorded
- Safeguarded from any adjustments that would invalidate any results
- Stored in accordance with the manufacturer's instructions to protect it from damage and deterioration
- Removed from service and quarantined on expiry of calibration status.

Out of calibration

→ If 'out of calibration' equipment is identified, action must be taken to:

- Identify the works where the equipment has been used
- Validate the accuracy of measurements or tests that may be in doubt.

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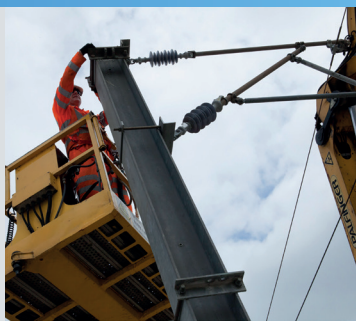
Electrification: OLE/DC 25000/750 trams

Electricity is one of the principal risks and considerations when working in a railway environment and can be present in either overhead lines or in third or fourth live or conductor rails. This risk requires careful planning and a robust Safe System of Work (SSOW) to adequately mitigate its potentially fatal effects.



Our standards

- All work should be carried out in association with NR/L3/ELP/29987 Working on or about 25Kv Alternating Current (AC) Electrified Lines and NR-L3-ELP-27720 Test before Touch for Overhead Line Equipment (OLE)
- Power or electricity will be provided to trains in two principal forms, via either:
  - OLE
  - Third or fourth rail
- OLE carries AC at 25kV and has the potential to arc
- Third or fourth rail carries Direct Current (DC) at 750V. Individuals coming into contact with DC voltage will stick to the conductor
- Cables attached to these structures (OLE and third or fourth rail) must be considered to be live as well.

Safe working distances

- All activities within the vicinity of energised OLE must be at least 2.75m away from the nearest live element, including elements of the supporting structure
- When working within the vicinity of third or fourth rail systems the associated safe hierarchy (see overleaf) must be applied, based on distances from the nearest live rail
- For all works in the vicinity of either OLE, third or fourth rail systems, a Works Package Plan (WPP) and a Task Brief Sheet (TBS) must be in place, including suitable and sufficient controls that consider Personal Protective Equipment (PPE), substances, working at height etc.
- Morgan Sindall Infrastructure does not permit working on or underneath live OLE, and insists that de-energisation is assured ahead of all activities, and that the test before the touch procedure is adhered to
- For all isolations, the appropriate specialist planning process must be adhered to for both Network Rail (NR) and Transport for London (TfL) or London Underground (LU) projects

Risk Level	Description	Risk Controls
Level 1	The risk of an individual, any tool, plant or equipment making contact with the conductor rail(s) cannot be reduced to a tolerable level.	Isolation and the issue of a conductor rail permit is mandatory.
Level 2	Work that could encroach within 300mm on either side of the conductor rail(s) or any space above or below the conductor rail shall be considered as working live.	Fit conductor rail shields to prevent accidental contact with the live conductor rail.
Level 3	Work not as close as 300mm of the conductor rail(s).	Conductor rail shields are not required. However, if a risk remains that an individual, any tool, plant or equipment could encroach within 300mm on either side of the conductor rail, then the risk control for level 2 must be applied.

→ Only approved insulated tools must be used when working in an electrified railway environment, including depots and station premises.

Emergency response or switch off

→ For all works in the vicinity of an electrified railway environment, contact details for the Electrical Control Operator (ECO) for NR or Designated Duty Manager (DDM) or Marine Management Organisation (MMO) for TfL must be included in the WPP and TBS

→ For any incidents on NR or LU infrastructure that requires an emergency switch off, the following procedure must be complied with:

- When contact is made with the ECO, the following must be stated – "This is an emergency call"
- Check that it is the ECO on the phone
- Inform the ECO:
  - Why the electricity is to be switched off
  - Whether an individual is in danger of the live conductor rail
  - Whether short circuiting boards have been applied
  - Whether the emergency services are waiting to give assistance

- Contact must be maintained with the ECO until one of the following has been confirmed:
  - The electricity has been switched off, or
  - Other arrangements have been made
- Depending on the circumstances and emergency action that's required, the ECO may appoint a Person In Charge of the Electrical Emergency (PICEE)
- Note: An emergency switch off of the DC conductor rail does not mean that train running has been stopped.

→ For any incidents on TfL or LU infrastructure that requires an emergency switch off the following procedure must be complied with:

- Contact the controller or the DDM or MMO to provide the following information:
  - Name
  - Department or employer
  - Location and section of track where switch off is required
  - Reason for switching traction current off
- Contact must be maintained with the controller DDM or MMO until a confirmation has been given, stating that the traction current has been switched off.

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Incident investigation and reporting

The investigation of accidents and incidents must include a process for identifying all the contributing factors of the accident or incident. The depth of detail of these investigations shall be appropriate to the actual or potential seriousness of the event. Corrective or preventative action will be implemented to prevent the recurrence of similar events.

Our standards

TO BE READ IN CONJUNCTION WITH REPORTING OF ACCIDENTS AND INCIDENTS SECTION. OUR RAIL BUSINESS UNIT HAS ITS OWN ACCIDENT AND INCIDENT INVESTIGATION AND REPORTING STANDARD.

Process

In the event of an incident:

- → The site must be made safe in line with the project-specific emergency preparedness plan
- → The on site response to the incident must be coordinated by the appointed emergency plan coordinator
- → The type of accident or incident must be determined, e.g. personal injury, environmental, Network Rail (NR) operational close call, NR Lifesaving rule breach
- → The customer, principal contractor and Morgan Sindall Infrastructure project or site manager must be informed
- → The on-call or relevant customer control or Safety, Health and Environment (SHE) team must be notified within two hours of the incident
- → An investigation immediate action checklist must be completed
- → A flash report must be produced and circulated
- → Details and relevant documentation of the incident must be uploaded onto Safety, Health, Environment and Quality (SHEQ) Tracker

Examples of NR operational close calls

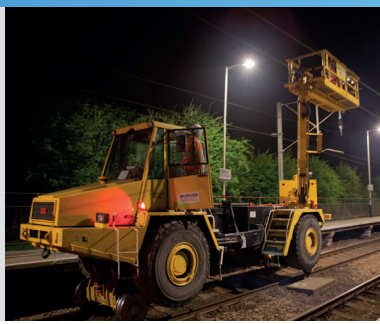
- Staff working in a Live section
- Line left unsafe following work activity
- Failure of permit to work system
- Unsecured construction site leading to trespass on infrastructure
- Failure of Any Line Open (ALO) process
- Bridge strike.

Further examples can be found in NR document NR/L3/OHS/0046.

- → Where necessary, the SHE team must notify the Health and Safety Executive (HSE), completing an online F2508
- → A preliminary report form must be completed and an event review undertaken with the customer or principal contractor within 24 hours
- → For an NR operational close call, NR2072 form must be completed and issued within 24 hours
- → The final report must be issued within seven days
- → Where the incident is defined as a major incident, a first alert will need to be produced. Speak to your SHE team for guidance in this scenario
- → An internal lessons learnt bulletin must be produced and issued within 20 days of the event
- → All lessons learnt must be distributed across the entirety of the Morgan Sindall Infrastructure email distribution list
- → All lessons learnt must be stored on the Knowledge Hub
- → If a higher level of investigation is required (level two or above), as is usually the case for operational close calls or lost time or major injuries, then a customer or principal contractor event review must be arranged with a designated competent individual assigned and the remit or the terms of reference of the investigation agreed.

Plant: Construction and Road Rail

Construction activities in a railway environment are a mix between civils plant and the use of a road or rail plant that can run on both road surfaces and rail. In all instances, the selection and use of such plant items require planning, supervision, and operation by those holding the relevant specialist competency.



Our standards

Planning

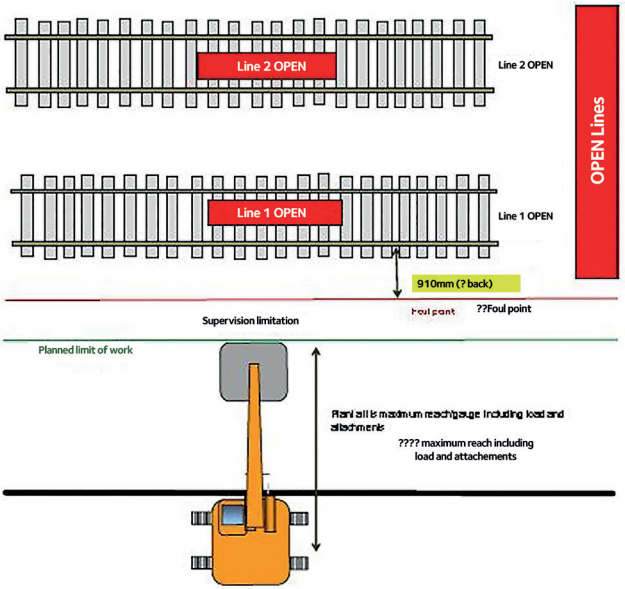
- → Any construction plant operating adjacent to the operational railway can affect the safe running of the operational railway and must be risk assessed e.g. the use of a mobile crane adjacent to a railway with Overhead Line Equipment (OLE)
- → Factors that must be considered include:
  - Compound collapse radius
  - Vertical and horizontal constraints
  - Proximity to OLE (<2.75m)
  - Loads dimensions
  - Capacity Safe Work Load (SWL) of crane and lifting appliances
  - Isolation of orange and green lights which may impact train drivers
- → These considerations must be addressed as part of the project's Any Line Open (ALO) plan, as well as the lift plan for any lifting activities which must be implemented by the ALO coordinator who is a competent person appointed in writing by the specialist services operations manager. This appointment will be referenced in the Project Execution Plan (PEP)
- → For all On Track Plant (OTP) operations under the Morgan Sindall Infrastructure Plant Operations Scheme (POS) licence, a POS representative must be used and referenced to demonstrate the required level of competence and understanding to manage and coordinate associated activity
- → POS requirements apply for OTP, and civils plant where OTP is in operation on Network Rail (NR) managed infrastructure
- → Where civil plant-only is in operation, the management of plant operations fall under the Principal Contractor Licensing (PCL) requirements
- → The Morgan Sindall Infrastructure rail assurance manager must be consulted for guidance on the use of OTP at the earliest opportunity i.e. T-14 (T minus) weeks as part of the planning process.

Supervision

- A nominated POS representative must ensure the safe and effective coordination of all on-track plant activity during the shift
- The POS representative must check the following:
  - Thorough examination or Provision and Use of Work Equipment Regulations (PUWER) certificates
  - Operator and controller competence
  - Inspection of the Rail Access Point (RAP) for suitability
- Machine Controllers (MC) are competent individuals (formal Sentinel competency) who must assist the POS representative and plant operator(s) in ensuring the safe use of plant and ensure the intended route is clear i.e. points are correctly set for the route.

Operation

- All plant must be operated by the Machine Operator (MO) who will hold the required competency (formal Sentinel competency)
- The MO must be under the instruction of the MC at all times
- Speed limits, defined by the nature of the working area must be complied with at all times
- Communication between the MO and MC must be maintained by use of Duplex systems. The use of Duplex also applies to the use of plant in work areas that are not on or near the line or lineside.



Working in and around the railway environment

Activities which are conducted in a railway environment either adjacent, above, on or beneath must be planned. To ensure that the risk to those conducting the work is minimised, and there is no impact on the safe running of the trains and passenger safety.

Our standards

All activities must be planned and delivered in accordance with Morgan Sindall Infrastructure and our customer's standards.

Network Rail (NR): Working lineside

→ Working lineside is defined as:
- Working on NR land within the railway boundary, typically defined by a physical barrier such as a fence, level crossing, wall etc. and more than 3m away from the running line unless there is a permanent fence or structure
- Working on the station platform and more than 1.25m from the platform edge
- Working in a visible location to the driver of an approaching train

→ All individuals must wear the correct high visibility Personal Protective Equipment (PPE)

→ If provided, an authorised access point must be used to access the operational railway

→ Authorised walkways must be used, if provided

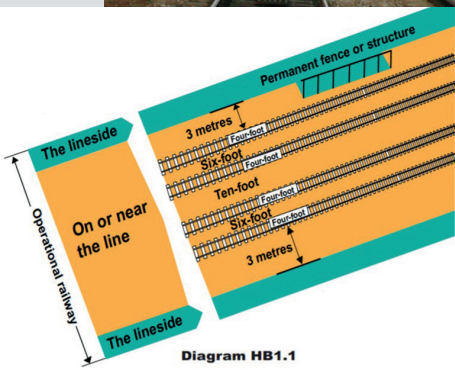


Diagram HB1.1

→ If the driver of an approaching train sounds the horn, all individuals of the working party must raise their hand as a sign of acknowledgement

→ All individuals working lineside must hold a valid certificate of competence in Personal Track Safety (PTS) as a minimum

→ All lineside working must be physically demarcated to define the work area

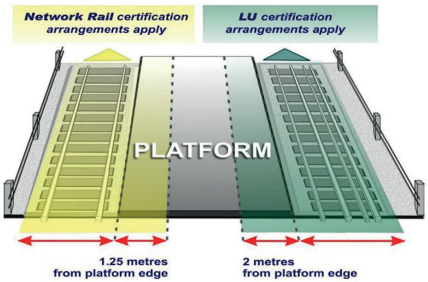
→ A Works Package Plan (WPP) and Task Briefing Sheet (TBS), forming the Safe System of Work (SSoW) for the planned works must be in place and available at the location of the works.

NR: Working on or near the line

- → Working on or near the line is defined as:
  - Working less than 3m from the nearest running line, and there is no physical barrier between the work activity and the running line
  - Working on the running line itself
  - Carrying out engineering or technical works less than 1.25m from the platform edge
- → All individuals must wear the correct high visibility PPE
- → If provided, an authorised access point must be used to access the operational railway
- → Authorised walkways must be used, if provided
- → If the driver of an approaching train sounds the horn, all individuals of the working party must raise their hand as a sign of acknowledgement
- → All individuals working on or near the line must hold a valid certificate in PTS as a minimum
- → The supervisor controlling the working party must hold a valid Controller of Site Safety (COSS) or safe work leader certificate
- → The only occasion when it is possible to go on or near the line without a COSS or Safe Work Leader is when an individual is walking alone. An individual must never work alone unless they hold a valid COSS, safe work leader or Individual Working Alone (IWA) certificate
- → The individual who holds the safe work planner ticket must produce a Safe Work Plan (SWP) in accordance with the customer standard NR\L2\OHS\019, as part of the SSoW
- → Consideration must be given to how the activity will be protected from the operational railway, conforming to the hierarchy as defined in customer standard NR\L2\OHS\019 i.e. safeguarded, fenced, separated etc.
- → All use of warning systems need to be discussed and agreed with the Morgan Sindall Infrastructure specialist services operations manager
- → Lookouts or Lookout Operated Warning Systems (LOWS) is not permitted for use on Morgan Sindall Infrastructure Rail sites
- → For all activities requiring a close of the railway, the Morgan Sindall Infrastructure's Rail interface manager must be consulted.

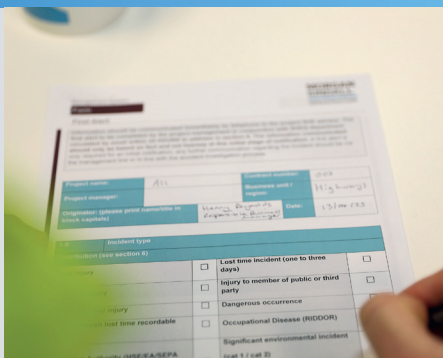
Transport for London (TfL) or London Underground (LU)

All works conducted within 2m of the platform edge is subject to LU certification arrangements.



Reporting of accidents and incidents

Morgan Sindall Infrastructure has both a legal and moral duty to investigate all Safety, Health or Environmental (SHE) accidents, incidents, diseases, dangerous occurrences and learning events that occur to determine the root cause of the event and identify opportunities to learn and improve our processes and procedures.



Our standards

- → All health, safety and environmental incidents must be reported in a timely manner to the project or site manager and the contract SHE or environmental advisor
- → All accidents and incidents must be properly investigated to determine what has happened by undertaking a Root Cause Analysis (RCA) to identify any actions needed to improve performance and prevent reoccurrence
- → The project or site manager must ensure that a written report is produced in conjunction with the Safety, Health, Environment and Quality (SHEQ) team and all actions arising from an investigation are fully closed out
- → The project or site manager must liaise with the SHEQ team to determine whether a full investigation is to be undertaken
- → Terms of reference must be agreed in writing with all key stakeholders, including the customer, before a full investigation is commenced
- → Where a full investigation is not required, the relevant information must be uploaded onto SHEQ Tracker
- → Where a full investigation is required, the Accident or Incident Information Report (AIIR) must be completed, with all necessary supporting documents, and uploaded onto SHEQ Tracker as well as any required customer systems
- → The Morgan Sindall Infrastructure SHEQ director may decide to escalate the incident to Privileged and Confidential Status (PCS). The subsequent investigation must be led by the SHEQ manager, or SHEQ director and copies of the Accident Incident Investigation Analysis Report (AIIAR) must only be distributed by the company solicitors. The investigating lead must not issue the report to other individuals
- → A completed or interim AIIR form must be issued within seven days from the date of the incident
- → An AIIAR must be completed for full investigations

- → A completed or interim AIIAR form must be issued within 14 days from the date of the incident
- → The Health and Safety Executive (HSE) must be notified at the earliest opportunity but no later than the following incident deadlines:
  - Fatality or specified injury within 10 days of the injury
  - More than seven days lost time injury within 15 days of the injury
  - Dangerous occurrence within 10 days of the event
  - Disease, as soon as the infected person receives a medical diagnosis
- → For all injury or dangerous occurrence which requires reporting under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), subcontractors shall provide a copy of the statutory notification F2508 and a copy of their investigation report to Morgan Sindall Infrastructure
- → In the instance that the incident involves a subcontractor or a customer, discussions must take place with the relevant organisation to agree on who will lead the investigation. If the subcontractor takes the lead, Morgan Sindall Infrastructure must undertake an internal investigation, taking into account the findings from the third party investigation, in accordance with the standards above
- → Where a full investigation is required, every effort must be made to preserve the scene and any appropriate equipment and plant. Alternatively, reconstructions can be undertaken, subject to a risk assessment
- → Information to be obtained through an investigation:
  - Witness statements of individuals directly involved, indirectly involved and those who provided information relating to the incident
  - Evidence of Safe System of Work (SSoW) including a copy of the latest revision of the Risk Assessment Method Statement (RAMS), relevant permits, Point of Work Risk Assessment (PoWRA) etc.
  - Evidence of suitable information, instruction, training and supervision e.g. induction attendance, RAMS briefing, daily setting to work briefings, supervisor diaries, training records etc.
  - Relevant photographs of the scene
  - Attendance records
  - Any other relevant information e.g. laboratory test results and interpretative reports, etc.

→ Subject to the SHEQ manager's discretion, in conjunction with the SHEQ director, a peer review must be undertaken for serious incidents, to review the overall circumstances of the incident, review the outcome and recommendations made by the initial investigation, and either support these and / or make further recommendations. A peer review must be undertaken by an independent panel within a few weeks of the initial investigation

→ Where a report has been requested by our customers, our insurers or an enforcing authority, the AIIAR form must only be issued after it has been agreed by the business unit SHEQ manager concerned and issued appropriately.

If a cause for impairment is identified due to drugs, alcohol or medication, then occupational health testing should be sought.

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Risk management

The identification of potential issues before they happen, understanding how they may occur and what the impact would be, and then developing and implementing suitable mitigations.

Our standards

- → Morgan Sindall Infrastructure manages risk with the Risk Management Standard
- → Every business unit contract or project must understand the objectives and the context in which it is operating e.g. customer, rules, regulations, Morgan Sindall Infrastructure expectations etc.
- → Every business unit contract or project must have a risk register held on an approved platform, listing the risks to achieving the objectives
- → Every risk must be quantified for likelihood and impact on a five by five matrix
- → Each risk must either be:
  - **Treated** – identify mitigations to be implemented
  - **Tolerated** – accept the risk at the current level
  - **Terminated** – don't undertake the activity
  - **Transferred** – allocate the risk to someone else, e.g. customer, subcontractor, insurance
- → Risk mitigations must be identified and captured as mitigating actions and associated with relevant risks, creating a risk mitigation action plan
- → Risk and actions must be communicated to the appropriate manager
- → Actions must be completed in line with the risk mitigation action plan
- → Risk registers and risk mitigation action plans must be reviewed and updated monthly as a minimum
- → Amber and red risks must be escalated in accordance with the Risk Management Standard and any additional contract specific arrangements
- → Support for the development of the risk register and the risk mitigation action plan is available from the contract risk champions and business unit risk manager.

If an event will happen, it is not a risk, it is a certainty:

- A risk has a cause and effect or impact
- A 'thing' is not a risk, but it might be the cause or be impacted upon
- For example a tree is a 'thing'; the tree falling into our excavation is a risk; the tree dying due to our works is an impact; a tree may cause the requirement for permits and the associated risks.

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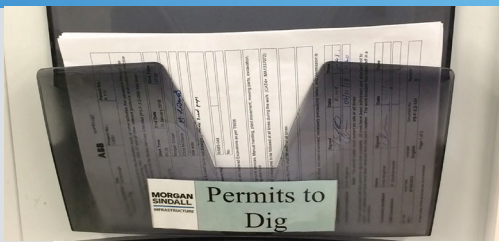
Permits to work

Certain defined activities must be controlled by a written permit to work to ensure that a Safe System of Work (SSoW) is implemented in accordance with current legislation.



Our standards

- → The permits must be issued either by the customer or Morgan Sindall Infrastructure
- → Morgan Sindall Infrastructure's permit system must be the default system unless agreed otherwise by a Morgan Sindall Infrastructure operations director
- → Permits to work must be issued for the following:
  - ◦ Hot works
  - ◦ Confined space working
  - ◦ Groundbreaking activities
  - ◦ Accessing energised electrical equipment
  - ◦ Accessing energised mechanical equipment
  - ◦ Lifting operations
  - ◦ Pumping or dewatering activities
  - ◦ Controlling access to specific areas
  - ◦ Any other dangerous circumstances identified on a project-specific basis e.g. striking of Temporary Works
- → The project or site manager must appoint the permit issuer or approver in writing, subject to competency
- → At least two of the following signatures must be on each permit:
  - ◦ Permit author
  - ◦ Permit approver or issuer
  - ◦ Permit holder
- → The individual issuing the permit must ensure that the permit holder is competent to implement the controls identified in the permit
- → The permit to work must be issued at the point of work to ensure the working area is as expected by the permit author
- → The permit holder must only hold one permit at a time and must remain at the point of work whilst the permit is active
- → Whilst the permit is active, the content of the permit must be briefed to all members of the working party, with a record of those briefed retained
- → Competent Morgan Sindall Infrastructure individuals must receive all permits from our customers on behalf of our subcontractors
- → Permit issuer must issue permits for all subcontractor activities unless previously agreed by a Morgan Sindall Infrastructure operations director
- → All permits must be formally cancelled and closed by the permit issuer at the end of the permit period or permitted activity
- → Any cancelled and closed permits must be filed and retained for the duration of the project.

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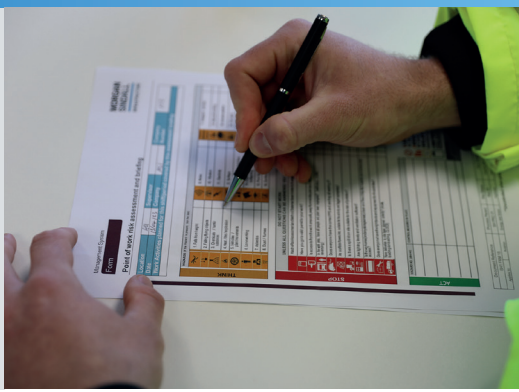
Point of work risk assessment

A risk assessment is undertaken immediately before a task starts to identify any real-time hazards or risks that may have materialised since the Risk Assessment Method Statement (RAMS) was written, or that are pertinent to the particular task that is to be undertaken.



Our standards

- → The supervisor, e.g. ganger in charge of a small working party must undertake a Point of Work Risk Assessment (PoWRA) daily at the start of each shift or new activity
- → The PoWRA does not replace the RAMS, Work Packages Plan (WPP) or activity sheets. The PoWRA is used to support the overall management of safety on a day-to-day basis, complementing the RAMS documents
- → The PoWRA is designed to highlight immediate risks when setting individuals to work, manage change and identify areas for improvement, before work starts and must address all significant site-specific hazards, e.g. emergency arrangements, weather related, third-party coordination, as discussed with the supervisors' briefing meeting, such as deliveries or interfaces with other contractors or customer representatives, and identify suitable control measures
- → The PoWRA must ensure that all task specific Personal Protective Equipment (PPE) has been identified and issued as necessary, e.g. enhanced eye or face protection, Respiratory Protective Equipment (RPE) etc.
- → If the POWRA identifies a new hazard or risk, depending on the significance of the identified change, the PoWRA can be used to address this for simple issues such as housekeeping, changes to access arrangements, but for more complex or significant issues, the works must not commence, the project or site manager must be informed and the associated RAMS must be reviewed and updated
- → The PoWRA must be documented, recorded and briefed by a competent individual to all individuals affected by the works, including visitors
- → If the intended work subjected to a PoWRA at the beginning of the shift changes during the shift, the supervisor must repeat the PoWRA for the new work or location.

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Point of work risk assessment

Risk assessments method statements

Risk Assessment Method Statements (RAMS), including Work Package Plans (WPP), Task Briefing Sheets (TBS) and activity plans, provide a method of evaluating the level of risk associated with a project or task and addresses the appropriate control measures that must be taken to reduce the risk of hazards to a level which is as low as reasonably practicable.

Our standards

Risk assessment

→ A risk assessment forms part of a Safe Systems of Work (SSoW)

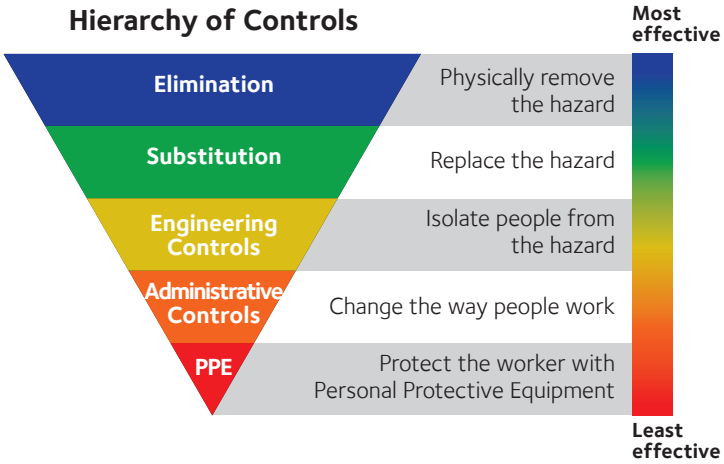
→ Risk assessments must be:

- Carried out by appropriately trained and competent individuals
- Suitable and sufficient. This must be done by following the five steps below:
  1. Identify the hazards with significant risks
  2. Decide who might be harmed and how
  3. Evaluate the risks and decide on control measures
  4. Record the findings and implement them
  5. Review the assessment and update if necessary
- Generated by applying the principles of prevention:
  - Elimination or substitution with safer alternative
  - Reduction in exposure
  - Isolation of hazards through guarding or shielding
  - Control through other means
  - Personal Protective Equipment (PPE) as last resort
  - Discipline – enforcement of above controls
- Developed by all individuals involved in the work activity, or suitable representatives to ensure that all hazards from which risk could arise are identified

Hazard – Something with the potential to cause harm, ill health, injury or damage. This can include substances, workplaces, machines, tools, etc. and includes the potential to harm or damage the environment including the potential of causing a statutory nuisance.

Risk – Is the likelihood that the potential harm from a particular hazard is realised.

Hierarchy of Controls



- Communicated by a competent individual to all individuals undertaking the work activity and additionally, where necessary, those not directly involved in the work activity. A record of attendance and understanding must be recorded (See briefings section)
- Clear and address change management, e.g. changes in circumstances, conditions, personnel, and organisation. Any changes to RAMS must be approved by the appropriate individual. Any one of these can have a direct or indirect effect on the activity being assessed and must follow the same hierarchy of risk minimisation and control
- Carried out for vulnerable individuals, e.g. young and inexperienced individuals and for pre and postnatal individuals, in conjunction with the Human Resources (HR) and Safety, Health, Environment and Quality (SHEQ) departments (see Vulnerable individuals sections)
- Reviewed regularly to ensure that the control measures are appropriate and effective. It is advised that risk assessments are reviewed annually or when the following occur:
  - Where there has been an incident
  - Where there is a need to change or use different items of plant throughout the work activity
  - Change in personnel
  - Inexperienced personnel
  - Deteriorating weather conditions

→ The contract Safety, Health and Environment (SHE) advisor must be consulted when developing specialist assessments, e.g. fire, confined spaces etc.

- → The use of generic risk assessments must be controlled and, in most cases, should only act as a guide to specific risk assessment evaluation. It may be possible on some contracts where repetitive work is carried out to have over-arching risk assessments that are generic with specific additional hazards and controls identified in the control paperwork, e.g. task statements
- → Point of Work Risk Assessments (PoWRA) must be carried out to complement the work activity RAMS (see PoWRA section)
- → Risk assessments and associated method statements must be submitted for approval no later than 21 days prior to the work activity being undertaken unless customer's requirements stipulate otherwise.

Method statement, WPPs, TBSs or activity plans

- → This document is the key document to control defined activities but must relate to and support the specific risk assessment. It must demonstrate the thought process and logic that has been developed to identify the controls
- → This document and risk assessment must be explained, by the appropriate supervisor to the workforce prior to the commencement of the work activity
- → This document must be produced for all significant elements of the work.

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Security – classified working

In the interest of national security and for the protection of the United Kingdom's (UK's) Critical National Infrastructure, certain locations, customers and projects for example; nuclear site licensed sites, Ministry of Defence (MOD) establishments and other government organisations will have specific security requirements that must be understood and complied with.

Our standards

→ The specific security requirement may vary between organisations or locations but will include aspects of:

- Physical security
- Personnel security
- Information security
- Cyber security.

Physical security

→ Security policies and procedures must be put in place to comply with the requirements of specific pieces of legislation such as:

- The Official Secrets Act 1911 & 1989
- Nuclear Industries Security Regulations 2003
- Anti-terrorism Crime and Security Act 2001
- His Majesty's Government (HMG) (GovS007)

→ Secure sites and locations will have specific requirements that:

- Dictate what and how work can be carried out in relation to or in the vicinity of site security features such as fences, buildings and security systems
- Prohibit certain items from being brought onto the site without the appropriate authorisation
- Stipulate additional security features that must be installed in contractor's accommodation and offices, including both on and off site locations, such as:
  - Type of construction materials used for the buildings access control
  - Provision of alarms and Closed Circuit Television (CCTV) systems
  - Secure rooms for holding Security Classified Information (SCI) associated with the project.

Personnel security

→ All individuals, including the supply chain, working on such secure projects must undergo a level of security vetting to gain access to the site, secure locations and SCI

→ The level of security vetting required may vary from site to site but must include the following:

- **Baseline Personnel Security Standard (BPSS)** – the lowest level of vetting required. BPSS clearances are not transferable between organisations but allows access to SCI at OFFICIAL, OFFICIAL – SENSITIVE (OS) and occasional SECRET status. BPSS clearance can be obtained within two to six weeks
- **Security Clearance (SC)** – a national clearance that is held on a central database and is transferable between organisations under certain conditions. An SC status is a higher level of clearance than a BPSS and is the minimum requirement for access to MOD sites and specific High Security Areas (HSA). This clearance also authorizes access to SCI at OFFICIAL, OFFICIAL – SENSITIVE, SECRET and occasional TOP SECRET. SC clearance can be obtained in eight to 16 weeks
- **Developed Vetting (DV)** – a very intrusive level of security vetting and is the highest level of national security vetting available; it is only required for the most sensitive of projects, access to TOP SECRET information or where it is a requirement of entry into a specific area

→ Certain sites may impose further restrictions on individuals, e.g. for access to MOD sites and SCI, individuals (including the supply chain) must be British nationals only.

Information security

→ The security of information is one of the greatest risks to secure contracts; great care must be taken to ensure information is given the required level of protection to prevent loss, theft or unauthorised release into the public domain

→ Information is classified and marked in accordance with Government Security Classifications (GSC); the GSC markings are as follows;

- OFFICIAL
- OFFICIAL – SENSITIVE
- SECRET
- TOP SECRET

→ Once a security classification is appended to any information it invokes certain handling conditions on the information which must be complied with throughout its lifecycle, including its destruction

→ **List 'N' accreditation** - required for locations used for the storage and handling of OFFICIAL - SENSITIVE information and any Information Technology (IT) systems used for the electronic handling of such information must also be accredited by the relevant authority

- **List 'X' accreditation** - required for locations used for the storage and handling of SECRET information and any IT system used for the electronic handling of such information must also, be accredited by the relevant authority
- To protect information Morgan Sindall Infrastructure invoke both the 'Need to know' and 'Secure desk' policies:
  - **Need to know policy** – information must only be supplied to an individual on a need to know basis, and access to any such information must be limited to the information they need to fulfil their function, i.e. they are only provided with the information they need to do their job
  - **Secure desk policy** – when not in use, all SCI must be locked away in the cabinets provided. When in use, SCI can be left out for short periods of absence (no more than 10 minutes) but must be locked away at the end of the working day. Computers must be locked down to the log-on screen during any periods of absence
  - **Security Aspects Letter (SAL)** – for contracts handling information classified as OFFICIAL – SENSITIVE or above, a SAL must be issued by the customer, or the main contractor for flow down SALs to the supply chain where OFFICIAL – SENSITIVE information requires dissemination and storage. A List N facility will also be required to enable facilitation of this level of information specifying any additional security requirements that need to be complied with, to remain compliant with relevant security project requirements
- Due diligence audits and assurance checks will be conducted on a regular basis to support the SAL and ongoing security processes and procedures. These must be included in any security policies and procedures and cascaded to all individuals.

Cyber security

→ The national threat level in relation to cyber attacks are severe – you must take all reasonable steps to ensure information is protected.

→ You must:

- Ensure your passwords for work IT systems remain secure and unique
- Never share your password with anyone – no one has a right to ask or demand your password
- New passwords – when issued any new IT equipment change your allocated password immediately
- If you think your password has been compromised – change it and report it
- Be wary of phishing attacks – is it a genuine email? Does it look right?
- Report any concerns immediately
- Beware of Wireless Fidelity (WIFI) enabled devices such as Alexa, Google Home etc. – these devices are programmed to gather information covertly
- Such devices should not be used in the workplace, be very careful about conversations held in earshot of such devices when away from the office.

Additional information

→ During the planning stage of a classified project, the project or site manager must understand the requirements and controls

→ Project-specific security procedures must be developed, issued and implemented to ensure compliance with these requirements

→ All individuals, including the supply chain, working on security classified project, or having access to SCI must attend a site induction and specific security training to fully understand the process and procedures, including any additional requirements detailed in the SAL

→ The project or site manager must instil good security behaviours and promote a strong security culture throughout all individuals working on the project

→ The use of peer-to-peer observations (positive interventions with an associated discussion) must be used to reinforce security behaviours

→ All security breaches must be reported to the main contracting company security manager to record and investigate the root cause and implement the required course of action in accordance with the SAL and customer requirements

→ There may be specific requirements on the use of Personal Electronic Devices (PEDs) for image capture. Speak with your local Safety, Health, Environment and Quality (SHEQ) team to clarify project requirements.

Site establishment

Legislation, such as Construction (Design and Management) (CDM) regulations and workplace (health, safety and welfare) regulations, set out the requirements regarding site facilities and apply to all Morgan Sindall Infrastructure sites.

Our standards

At planning stage

- → The project or site manager must consider the availability, location and maintenance regime of the welfare facilities at the:
  - Precontract stage
  - Contract award stage
  - Pre-mobilisation stage
- → The nature of the works to be undertaken and the associated risks, the duration of the works, the number of individuals and any site constraints e.g. overhead assets must be considered
- → Where the work site is a long way from the main facilities, the use of private premises, such as cafes, are not suitable as permanent alternatives.

Site accommodation

- → All temporary site accommodation units must be delivered with a copy of the pre-delivery inspection form
- → All mobile units must be:
  - Type approved for use on the public highway
  - Emptied of excessive equipment prior to towing to prevent overloading situations
  - Marked with evidence of "next service and / or inspection due" date
- → All temporary site accommodation units must be sited on even ground
- → All external pipes must be lagged and trace heated to prevent pipes from freezing in adverse weather conditions
- → When temporary buildings are to be stacked the following applies:
  - The floor and roof construction, including support, must achieve a minimum of 30 minutes of fire resistance
  - Temporary buildings must be kept at least 10m away from permanent buildings
  - Where temporary buildings are located less than 6m away from permanent buildings, internal and external walls and ceiling finishes must comply with Class 1 of fire tests on building materials and structures (British Standard (BS)476-7) to reduce surface spread of flames

- Walls, doors, windows and the roof must achieve 30 minutes of fire resistance
- Escape stairs must be fire protected at ground floor level. External stairs must be made of steel construction and the wall immediately adjacent must achieve 30 minutes of fire resistance
- Any windows with a wall adjacent to external stairs must not be able to be opened
- The foundations must be designed in accordance with Morgan Sindall Infrastructure's Temporary Works process (see What is Temporary Works section) and cabins that are to be in place for more than six months must be checked for wind and weather loading
- Temporary Works approval must be sought for when cabins are stacked

→ Landing areas should be at least 1.2m to allow an individual to stand on the step with an outward opening door

→ Close gauge mesh or boarding must be installed on the underside of the cabin to prevent waste building up, creating a fire hazard or encouraging rodent infestation

→ All wall-mounted heaters must be fitted with thermostats and time clocks

→ Temporary site electrical distribution systems, new installations, e.g. site accommodation, and extensions or alterations to existing systems must be tested on completion and tested quarterly

→ Smoke detectors must be fitted every 30m² and must be linked in modular buildings

→ There must be a minimum of one CO^2 and one foam or water fire extinguisher fitted on wall brackets per standard cabin. Foam extinguishers are susceptible to freezing. They must only be stored outside if they are insulated or an anti-freeze additive has been incorporated

→ The main door must be lockable and robustly fitted with a heavy-duty door closer

→ A fastener to allow the door to be kept open must also be fitted

→ The project or site manager must ensure that the facilities provided are appropriate, maintained and clean

→ All lifting operations associated with the installation of the site facilities must be accompanied by a Safe System of Work (SSoW) and lift plan (see Lifting operations section)

→ Temporary site offices must have sufficient free space to allow individuals easy access to and from workstations, to move within the room with ease and not restrict their movements while performing their work. In most workplaces, 11m³ of space per individual must be taken as a minimum; this does not consider ceiling heights in excess of 3m. The minimum space does not apply to attendants' shelters, machine control cabs or similar small structures, where space is necessarily limited, and rooms being used for lectures, meetings and similar purposes.

Toilets and washing facilities

→ Every location must have adequate washing facilities. Additional provisions maybe necessary depending on the nature of the works being undertaken

→ Where required, one shower must be provided per 50 individuals

→ A sufficient number of toilets must be provided as per the table below. Female toilets must be provided with a separate access and must include sanitary waste bins or provision. This does not need to include often expensive bin emptying services, with 'Binny – Disposable Sanitary Bins' offering a cost-effective solution'

No. of individuals	No. of toilets	No. of wash basins
1-5	1	1
6-22	2	2
23-33	3	3
34-75	4	4
76-100	5	5
Every extra 25 individuals	1 extra	1 extra

→ We will support the right of any trans colleague or any colleague who identifies as any other gender identity, for example, gender fluid or non-binary, amongst others, to use the facilities appropriate to the gender with which they identify. As with any other colleagues, trans, gender-fluid, non-binary or otherwise self-identifying colleagues must not be asked to use an accessible toilet unless they have a disability or long-term health condition, which means they are more comfortable using those facilities. However, it should be noted that additional privacy may be requested by these colleagues, and in such instances, we will provide facilities that offer that comfort and privacy - even if this requires the provision of an entirely new set of facilities of a temporary or permanent nature. For more information, please speak to the Inclusion Manager.

Legal provision for office workers mixed use or females only

→ All individuals may use the same toilet and wash basin when they are in a separate and lockable room

→ Adequate toilet facilities, including hot running water, must be available from the first day on site and cleaned on a daily basis, with provisions replaced as necessary

→ At least 50 per cent of the wash basins must be large enough such that a full forearm can be immersed.

Legal provision for office workers toilets used by males only

No. of individuals	No. of toilets	No. of urinals*	No. of wash basins
1-11	1	1	1
12-22	2	2	2
23-33	3	3	3
34-44	3	3	4
45-55	4	4	5
56-66	4	4	6
67-77	4	4	7
78-88	5	5	8
89-99	5	5	9
Every extra 30	1 extra	1 extra	1 extra

*1 urinal is equivalent to 600mm of trough urinal.

- → Cleanser and skincare dispensers must be provided to eliminate risk or spread infection, e.g. DEB products
- → The provision of disabled facilities must be formally assessed.

Canteens and messrooms

- → For canteens or messrooms, a minimum allowance of 1.0m² – 1.5m² per operative must be provided
- → Traditional folding bench and folding table layouts must not be used in messrooms
- → Zip boilers directly linked to the plumbing system must be installed
- → A fire blanket and either a dry powder or CO^2 fire extinguisher must be provided in any kitchen or food preparation area
- → Where food is prepared for sale to individuals, the premises must be registered with the environmental services department of the local authority. Where a catering contractor operates the kitchen, they must apply for the registration
- → Formal certification of external caterers are essential and must be checked.
- → Drying rooms and changing rooms
- → Every site must have provisions for storing clothing not worn on site and protective site clothing, which must be stored separately if there is a risk of cross-contamination
- → Every individual must be offered their own locker or mesh cage
- → Male and female must have separate changing facilities
- → Around 1m² must be allowed per individual
- → 300mm wide fixed timber slated bench seating must be provided in the cabin.

First aid facilities

- → See First aid section.

Transient work sites

→ Where transient facilities are required on very short-duration work or on a constantly moving linear project, every effort must be made to provide mobile units to the standards above

→ Single portable toilets may only be used in agreement with the contract Safety, Health and Environment (SHE) advisor

→ Where there is a facility for individuals to eat, hot and cold water for washing and a means of heating water for drinks must be provided.

Stores and lock ups

→ A heavy-duty wood floor must be installed, with internal racking as necessary

→ A heavy-duty anti-tamper door lock shroud or a mortice door lock with an internal mechanism must be fitted

→ Door stay mechanisms must be fitted

→ Must not be used as a workspace unless adequate ventilation and lighting is fitted.

Waste skips

→ Segregated waste skips must be provided on a level hardstanding, labelled with the correct European Waste Catalogue (EWC) codes

→ All skips must be covered to prevent waste becoming airborne (See Waste management section).

Refuelling

→ See Flammable liquid storage and refuelling section.

Other areas to consider

→ Laydown areas

→ Site security

→ Services provision, e.g. temporary versus permanent

→ Use of occupied premises (see Occupied premises section).

ACCOMMODATION DESK

How to engage the Accommodation Desk

Contact the desk with your enquiry or requirement using the email or phone number below:

E: accommodation@morgansindall.com
T: 0345 004 099

06 JAN'23

Site Accommodation – Quality and Environmental Minimum Standards

MORGAN SINDALL GROUP

ACCOMMODATION DESK

Meets criteria needed to achieve Considerate Constructors Good Practice Standard

Wernick HIRE · Portakabin · algeco · CPP · Premier MODULAR EXCELLENCE · WH WELFAREHIRE · Advanté · GARICK

TO PLACE AN ORDER:
accommodation@morgansindall.com
0345 600 4099

MANDATORY	OFFICES	MEETING ROOMS	CANTEENS	CHANGING ROOMS	SECURITY UNITS	STEEL STORES	TOILET UNITS	WELFARE UNITS (Static & Mobile)	FIRE RATED UNITS
Morgan Sindall Livery	●	●	●	●	●	●	●		●
Double Glazed Windows	●	●	●	●	●		●		
LED Lights	●	●	●	●			●	●	●
PIR Sensors	●	●	●	●			●	●	●
Timed Heaters	●	●	●	●	●		●	●	●
Doors Closers	●	●	●	●	●		●	●	●
Dual Flush Cisterns									
Notice Board	●	●	●						
Hat & Coat Hooks	●	●	●	●					
Non-concussive Taps							●		
Door Restraints						●			
Electrical Certification	●	●	●	●	●		●	●	●
Fire Certification to exceed BS476 requirements*									●
Hydro Boilers			●						
Wash basin sufficient size for washing forearms and hands							●		
Hand Driers							●		
Increased Levels of Insulation to Walls, Floor & Ceiling	●	●	●	●	●		●	●	
Energy Performance Certification	●	●	●	●	●		●		
Sanitary Dispensers (female side only at present)							●		
Emergency external access							●		

HAVE YOU REMEMBERED?

- Do you need temporary foundations?
- Do you need fire rated buildings (6m from existing buildings)
- Do you need a crane or HIAB?
- Do you need a visit from an AP for Site Specific Lift Plan & Risk Assessment Method Statement
- Power requirements (contact the Plant Desk)
- Plumbing / Waste Connections
- Furniture
- Signage / Branding
- Fire Detection

HAVE YOU CONSIDERED YOUR CCS SCORE?

- Secure Lockers
- Showers (Male & Female)
- Female Changing Rooms
- Smoking Shelter
- Vaping Shelter
- Building CCS Branded
- Rainwater Harvesting
- Using Suppliers Registered On Scheme
- Access Control

* Additionally, meet the recommendations in the Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation.

Note: All units supplied to Heathrow Airport are to be Fire Rated.

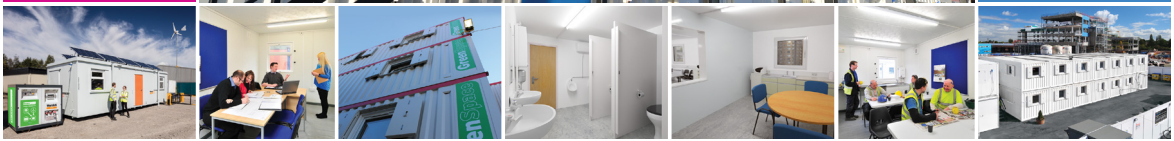
Available additions for Modular Buildings

MORGAN SINDALL GROUP

ACCOMMODATION DESK

- Air Conditioning
- Fire Alarms (Hard Wired or Wireless)
- Rain water Harvesting
- Renewable Power solutions
- Emergency Lighting
- Bespoke Signage

- Production Kitchen/ servery
- Multi-Cultural Toilets
- Prayer Room
- Reflection Room
- Wi-Fi Facilities
- Dehumidifiers



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Site supervision

Effective supervision plays a key role in helping Morgan Sindall Infrastructure to create an accident and incident free environment. Morgan Sindall Infrastructure supervisors are responsible for the health and safety of those who work under them, irrespective of whether they are direct colleagues, agency workers or subcontractors.

Our standards

Planning

→ All works must be categorised with respect to risk and working environment (see table below) to determine the supervision requirements for a specific work activity, be it planned or unplanned:

Risk Category	Examples
High	Deep excavations (greater than 2metres) Lifting operations Confined space work Working at height Demolition Live electrical works Live pipe connection works in zone 1 hazardous zone
Medium	Existing MCC Modifications Excavations (less than 2m) Formwork, reinforced concrete works Pipefitting Drainage Ground investigation Offloading materials / cabins using a Hiab
Low	Landscaping Topographical survey Site establishment Maintenance of footpaths

→ Morgan Sindall Infrastructure must always maintain a level of supervision on site whilst work activities are being undertaken irrespective of the category. For lone working requirements see Lone working section

→ All supervisors working on Morgan Sindall Infrastructure sites, either directly employed or employed through the supply chain must hold the following:

- A valid in-date certificate for either:
  - Site Supervision Safety Training Scheme (SSSTS) or
  - Site Management Safety Training Scheme (SMSTS), and
- A relevant trade Construction Skills Certification Scheme (CSCS) supervisor's card

→ Suitable and sufficient supervisor ratios are required as a result of a risk assessment. Project factors, such as the number and location of work fronts must be taken into account. As a guide, a minimum consideration is one supervisor to 10 operatives. Where there are barriers to communication (see Overcoming barrier to communication section), the ratio would be increased, one to six is suggested with one translator. It is imperative that a risk assessment is used to determine a suitable and sufficient ratio.

During the works

→ The supervision must:

- Have a full understanding of the works being carried out and how the works can affect others or put them at risk
- Be fully conversant with the content of the Risk Assessment Method Statement (RAMS) and ensure, so far as is reasonably practicable, that all risks have been assessed and measures are taken to eliminate, reduce and control them are specified and practical
- Check that all individuals assigned to the project have been through the site safety induction and have been competence assessed before setting them to work
- Ensure that all RAMS and other control documents, e.g. permits that form the Safe System of Work (SSoW) is communicated to and signed by all members of the working party to confirm understanding (see Briefings section)
- Ensure that appropriate Personal Protective Equipment (PPE) is available and worn as required (see PPE section)
- Make sure that the correct plant and equipment is available before starting a task, and that the plant and equipment has been checked and tested. Unsafe plant and equipment must be quarantined (see Plant section)
- Ensure that only competent authorised individuals operate plant and equipment and have received the necessary familiarisation training (see Plant section)
- Escalate any changes required to the documentation to the Morgan Sindall Infrastructure site management team
- Provide information daily during specific briefings; setting to work briefings, Point of Work Risk Assessments (PoWRAs) etc. (see Briefings section)
- Organise work to be carried out in accordance with the SSoW
- Report accidents and incidents immediately (see Reporting of accidents and incidents section).

Safety, Health, Environment and Quality (SHEQ) professionals

→ Morgan Sindall Infrastructure employs SHEQ professionals to advise and assist the business and projects on all aspects of SHEQ

→ Where a subcontractor's number of individuals working across Morgan Sindall Infrastructure projects exceeds 30, it is a requirement that it employs a project professional SHEQ advisor, to monitor its work or services to an agreed frequency and standard, the minimum frequency for a project visits should not exceed every four working weeks

→ Reports on the findings and observations are to be provided to Morgan Sindall Infrastructure before leaving site.

What is Temporary Works?

The engineered solution used to support or protect either an existing structure, or the permanent works during construction e.g. temporary propping of structural steelwork, or to support the vertical sides or side slopes of excavation during construction operations on site, e.g. shoring, or to provide access, e.g. scaffolding.

Our standards

- → A Temporary Works schedule must be completed at the tender stage and handed over to the project team as part of the tender handover process
- → A competent Temporary Works Coordinator (TWC) must be appointed in writing for each project by the Temporary Works Manager (TWM) for the business unit
- → The TWC must:
  - Maintain and periodically review the Temporary Works schedule, initially developed at precontract stage to reflect the current known Temporary Works design requirements for the duration of the project
  - Review the Temporary Works design briefs for completeness and submit them to the Temporary Works Designer (TWD). Note, the TWC is responsible for ensuring that the designer's competency has been assessed in advance. This competency assessment is in addition to the company being registered on Builder's Profile
  - Review the suitability of the Temporary Works design solutions and distribute the information to all interested parties
  - Ensure that the construction of any Temporary Works does not commence until an approved Risk Assessment Method Statement (RAMS) has been issued to and understood by all those involved in the implementation and dismantling of the Temporary Works
  - Issue a permit to load, once satisfied that the Temporary Works have been installed in accordance with the design
  - Identify any requirements for periodic inspections, monitoring and maintenance of Temporary Works loaded for longer than one week and agree on the arrangements for these with the project or site manager
  - Issue a permit to unload to allow the Temporary Works to be dismantled once the permanent works have been completed

- Communicate in writing any changes to the design assumptions or philosophy to the TWD

→ Where required, a competent Temporary Works Supervisor (TWS) must be appointed in writing for each project by the TWC. The TWS role may be undertaken by a representative from a subcontractor, e.g. scaffolding

→ The TWS must:

- Be in possession of a package of current and approved construction information, including a RAMS, before the construction and use of an item of Temporary Works
- Supervise and check the installation or erection of the Temporary Works, ensuring that site work does not progress beyond each hold point identified on the Temporary Works design
- Supervise the use and maintenance of the Temporary Works, ensuring that any maintenance and inspections identified are undertaken at the required time
- Ensure any modifications to the Temporary Works or differences from the envisaged conditions e.g. use or environmental are drawn to the attention of the TWC and the TWD

→ Some items of Temporary Works such as working platforms, excavations and cofferdams have a statutory requirement to be inspected. These inspections must be arranged and recorded by the project or site manager, and are in addition to any inspections organised by the TWC

→ The TWC must review the inspection reports and implement any necessary action due to instability, unexpected change of groundwater conditions, or departure from the depth of excavation or batter slopes shown on the drawings. If there is such an occurrence, the TWC must inform the TWD and arrange an urgent additional inspection by a competent individual to assess the implications of the changes, and record and review the inspection report and implement any necessary action.

Categories of Temporary Works

→ Each item of Temporary Works must be allocated one of four categories (see Figure 1 overleaf) to determine the independence of the design check, which in turn may also assist the TWC in determining the level of site control to be adopted during the implementation

→ All Temporary Works must be classified as Significant unless they are simple in nature and have negligible risks associated with them

→ Examples of Temporary Works that typically would be classified as Not Significant include:

- Minor formwork, including ground slab edge formwork and minor wall formwork
- Simple access scaffolds without complex layouts with simple foundation arrangements
- Minor battered excavations without attendant risks.

Figure. 1: Temporary Works catergories

Category	Not significant	Significant	Scope	Comment	Independence of checker
0	**x**	**x**	**Standard solutions only**, to ensure the site conditions do not conflict with the scope or limitations of the chosen standard solution.	Applied to the use of standard solutions and not the original design, which will require both structural calculation and checking to category 1, 2 or 3 as appropriate.	The check may be carried out by another member of the site or design team.
1		**x**	**Simple designs** include: formwork, falsework (where top restraint is not assumed), needling and propping to brickwork, openings in single story construction.	Undertaken using simple methods of analysis and be in accordance with the relevant standards, supplier's technical literature or other reference publications.	The check may be carried out by another member of the design team.
2		**x**	**More complex or involved designs** for excavations, foundations, structural steelwork connections, reinforced concrete.	Checks would include designs where a considerable degree of interpretation of loading or soils information is required before the design of the foundation or excavation support or slope.	The check should be carried out by an individual not involved in the design and not consulted by the designer.
3		**x**	**Complex or innovative designs**, which results in complex sequences of moving and / or construction of either the Temporary Works or permanent works.	Checks include unusual designs or where significant departures from standards, novel methods of analysis or considerable exercise of engineering judgments are involved.	The check should be carried out by another organisation.

Temporary Works training

Temporary Works training is available in a variety of aspects relating to Technical Works by our Morgan Sindall Engineering Solutions (MSES) team.

→ One day TWC refresher course
→ Temporary Works awareness course
→ Three day TWC course
→ One day TWS course.

Cable or pipe winching operations

Cable or pipe winching falls under Lifting Operations and Lifting Equipment Regulations (LOLER) so it is vital that all winching operations are planned, supervised and carried out by competent individuals trained to use the specific equipment.

Our standards

TO BE READ IN CONJUNCTION WITH THE LIFTING OPERATIONS SECTION.

- → Cable or pipe winching operations are classed as Temporary Works and the project or site manager must ensure that a Safe System of Work (SSoW) is developed and briefed to all members of the working party
- → The maximum pulling tension, based on calculations by the cable design engineer or customer standards, must not be exceeded without written approval from the cable manufacturer or customer
- → Always start with the minimum tension and increase slowly; the winch must not be set to a pulling tension that is not necessary
- → Appropriate anchorage for the trailer mounted winch must be determined through Temporary Works checks, and related to the maximum pulling tension and prevent sliding on hard and soft surfaces
- → Where practicable, the winch should be left attached to the towing vehicle and the handbrake applied
- → The rear prop legs must also be deployed to avoid transferring any pulling tension into the tow bar. If the rear prop legs are insufficient, additional kentledge, determined by Temporary Works checks, must be used and fixed to the winch by the front restraining eyes, in conjunction with the rear prop legs
- → Prior to use, the length of steel wire bond or rope to be used during the operation must be visually checked and recorded, including a safety factor of an additional 5m, if the full extent of the cable is not used
- → Where a Kevlar bond is to be used, a brand new bond must be fitted to the winch, prior to delivery
- → Damaged or kinked cables must not be used
- → All lifting equipment and winching attachments must be inspected, maintained and thoroughly examined in accordance with LOLER

- → All shackles used during winching operations must be clearly marked with the correct Safe Work Load (SWL) and compatible with the planned pulling tensions. A correct load rated swivel must be fitted in line at all times during the winching operation
- → Ducts must be clear of obstructions, and where possible, horizontal and vertical deviations should be minimised. Ducts must be brushed and cleaned before pulling operations commence
- → The configuration of the duct run, along with the direction of joints must be considered when deciding where to place the winch and the cable or pipe drum
- → The winch and associated cable or pipe drum must be barriered off to prevent unauthorised access during the winching operation. It must not be located in a position which interferes with traffic management and pedestrian walkways, both on site and in the public highway
- → Mechanical aids, such as rollers and guides and lubrication must be used, where possible, to minimise the risks associated with manual handling
- → Where cables or pipes are to pass through a duct, the rollers and guides must be arranged so that the cable or pipe enters the duct in a straight line and doesn't bear against the duct wall or leading edge
- → Suitable gloves, with enhanced puncture resistance, must be worn when handing steel wire rope
- → Hands must not be placed in or near any moving part or component
- → All safety guards and other safety devices must be in place before starting any part of the winching operation and remain in place for the duration of the operation
- → Multiway radio communications must be maintained between the cable or pipe drum, the winch and any exposed sections of the duct run
- → Operatives must not step over a winch cable that is under load or tension
- → Operatives must not step on a steel wire rope that is laid on the floor.

Types of cable pull

The category of cable pull is dependent on the hazards associated with the alignment of the cable route and whether more than one cable winch will be required to complete the cable pull:

→ **Basic** – where there is little change in alignment of the cable route either vertically or horizontally, there is clear line of sight between the cable drum and the winch position and there is no need to disconnect the nose swivel as only one winch is to be used

→ **Intermediate** – where there is a risk of cable run away, there isn't clear line of sight between the cable drum and each winch position and more than one winch is required to complete the cable pull

→ **Complex** – where there is a risk of cable run away, there is significant changes in alignment of the cable route, there isn't clear line of site between the cable drum each winch position and more than two cable winches are required to complete the cable pull.

The category of cable pull must be determined by risk assessment and signed off by site management team for basic pulls, site management team and cable technical manager for intermediate pulls and site management team, cable technical manager and cable pull pilot for complex pulls:

→ For intermediate and complex cable pulls, a cable pulling script or checklist must be produced and issued to a non-working supervisor who must be identified and available for each discrete work location.

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Excavations

Individuals working in excavations are at risk of injury from excavations collapsing and trapping them, materials falling from the sides into an excavation, and people and plant falling into excavations.

Our standards

Planning

- → Before undertaking excavation works, the project or site manager must ensure the work area has been assessed and the statutory authorities have been contacted to obtain information of all known services within the site or working area. Service investigations to Publicly Available Specifications (PAS) 128 level B (Genny and Cable Avoidance Tool (CAT) or Ground Penetrating Radar) must be undertaken as a minimum
- → If the area is particularly hazardous, the project or site manager must ensure the Safe System of Work (SSoW), including a Risk Assessment Method Statement (RAMS), permit to break ground and where applicable, Temporary Works design is developed and implemented
- → The SSoW must include measures for avoiding buried services (see Buried services section)
- → All excavations must be risk assessed for support regardless of depth and recorded in the Temporary Works schedule, categorized as a 0, 1, 2 or 3 as required (see What is Temporary Works section)
- → Any excavation greater than 1m in depth that requires access by individuals, must be systematically shored up, stepped or battered back as works progress, taking due account of the safety of the individuals installing the excavation support
- → Where an excavation is topped with concrete or another hard material, the 1m rule applies to the material below the hard material before support is required
- → Where excavation support is identified due to the nature of the planned works or the ground conditions differ from that expected, the project or site manager must liaise with the project Temporary Works Coordinator (TWC) before the works continue (see What is Temporary Works section) to determine the best form of excavation support, such as:
  - Battered excavations
  - Stepped excavations
  - Proprietary shoring system such as sheet piles, contiguous piling etc.

Access arrangements

- → Access arrangements into the excavation are classed as Temporary Work and must be designed in accordance with the Temporary Works process
- → Access arrangements must be selected based on the following:
  - The depth of the excavation
  - The purpose of the access; the need to transport individuals, material and plant from one level to another
  - The amount of available space surrounding the excavation, taking into account the access only
  - The excavation shoring solution implemented
- → Figure 1 below details safe gradient for various means of access, ramps, stairs or ladders, not the proposed slope angle of the ground. How these two angles relate must be considered in the development of the excavation support design solution

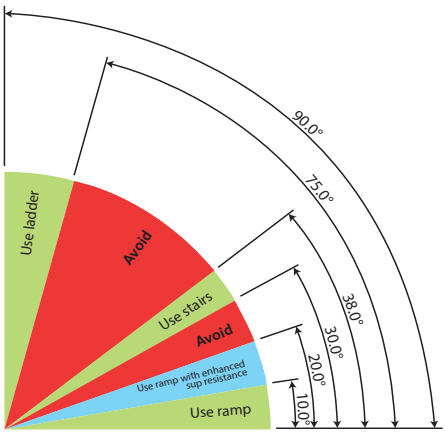

Figure 1. Excavation access parameters

- → Ramps and stairs with gradients in the Avoid sections in Figure 1, must not be used unless a site specific RAMS has been carried out and a checked design produced with any residual risks clearly identified
- → The use of ladders must be risk assessed (see Working at height section).

Void and hole protection

- → Openings in buildings (e.g. floors, floor slabs, lift shafts, walls) – the size and type of openings will determine the type of protection and shall apply to holes or openings, in floors, floor slabs, inspection chambers, lift shafts, stairwells, storage tanks or any other type of opening where there is a risk to an individual and / or material falling (see Openings section)
  - Openings in floors shall only be formed with the consent of Morgan Sindall Infrastructure site management
  - Opening coverings shall not be removed without the consent of Morgan Sindall Infrastructure site management.

Ramps

- For ramps, the following angles of the slope are recommended, but the gradient of the ramp should be made as low as possible:
  - Walking: 10° maximum (1 in 5.7)
  - Construction plant or haul roads: 5.7° (1 in 10)
- The need for any kerbs or hand railing for haul roads and ramps must be considered
- Where steeper gradients are necessary the Temporary Works Designer (TWD) must be consulted
- The surface of a ramp must have adequate grip for its intended use
- In the case of external ramps precautions should be taken to prevent icing and include surface drainage
- Wherever possible, the ramp surface must contrast visually with landings so that there is a clear indication of the change in gradient
- In the case of walkway ramps between 10° and 20° enhanced slip resistance must be provided, e.g. slip resistant strips or small timber sections to the ramp surfacing, providing an alternative coarse textured finish that will provide the necessary slip resistance
- Ramps between the gradient of 10º and 20º should be used as a means of pedestrian access only, have suitable handrails and not be used for carrying or distributing materials
- The TWD must be consulted for a suitable design if ramps with enhanced slip resistance are required
- Stairways between gradients of 20º and 30º must not be used as there is a tendency to ascend and descend more than one step at a time
- The maximum angle of pitch for escape stairways is 38º
- Stairways between gradients of 38º and 65º must not be used as there is a greater risk of tripping and falling
- Proprietary embankment stairs must be considered as they can be hired complete with hand railing and can be linked to edge protection at the top of the slope
- Where the ground slope is outside the recommended 30º to 38º a design risk assessment must be undertaken to establish if proprietary embankment stairs can be used for access, or if a stair access tower built on a formation at the bottom of the slope with a walkway to it from the top of the slope will be needed
- Consideration can be given to the use of timber stairs with stoned up treads cut into the slope particularly on smaller projects. A faster deterioration can be expected than for steel stairs and a suitable hand rail arrangement must be devised. Proprietary kit type equipment is available for hand railing if required.

Ladders

- Ladders can be used for access (see Scaffolding section) but offer substandard use between gradients of 65º and 75º.

Excavation inspection

- Excavations and access arrangements must be inspected for any signs of deterioration to the support system or ground conditions:
  - Daily before each shift starts
  - After heavy rain or damage
  - Before restarting work following periods when the area has stood unused
- The thorough examination of all excavations by the appointed individual must be conducted weekly and findings recorded in the site inspection register
- Where a section of excavation is to be handed over to another contractor over whom Morgan Sindall Infrastructure has no control, then the work area handover form must be used to formalise the control of, and responsibility for the excavation.

Excavation demarcation and protection

- Demarcation must be provided around all open excavations with suitable barriers, signage and lighting to prevent unauthorised access to the excavation

- All excavations in excess of 1m deep, both in the highway and within the site boundary must be protected by a secure physical barrier (e.g. with heras fencing) with additional leading edge protection to British Standard (BS) European Norm (EN) 13374 and BS 5975 (e.g. K guard), to prevent unauthorised access
- In highway environments the external fencing must be designed to reduce the risk of potential member of public incursions, as well as the effect from wind and passing vehicles e.g. proprietary equipment designed to take impact or offer vehicle roll-on-roll-off stability to control an errant vehicle
- Arisings, materials and construction traffic must be kept back from the excavation edge at a minimum distance equal to the depth of the excavation, unless suitable shoring systems have been designed and installed to cater for the surcharge load
- Subject to the need, stop blocks must be installed when plant is working in close proximity to the open excavation
- Dewatering of excavations must be planned (see Water management section)
- When constructing underground structures, safety zones must be established within the excavation to provide an area for individuals involved in the construction activity to retreat to during lifting operations. If this is not possible, the individuals involved must egress from the excavation.

Overhead assets (working near)

Overhead assets include, but are not limited to overbridges and sign gantries as well as any cable, conductor or pipe supported overhead, providing telecommunications, electricity, gas, water, drainage or other service.

Our standards

→ Overhead conductors, or power lines, carry electricity at voltages ranging from 230V (Low Voltage (LV)) to 400kV (extra High Voltage (HV)). The height of the conductors varies according to the voltage carried but electrical equipment such as pole mounted transformers may be even lower

275kV - 400kV	132kV	11kV - 33kV
Min height of conductor 7m for 275kV 7.3m for 400kV	Min height of conductor 6.7m	Min height of conductor 5.2m

→ The conductors are often uninsulated (bare) and touching anything that is in contact with live electrical equipment, or encroaching with safety distances can be fatal

→ All overhead power lines must be assumed to be live unless the asset owner has confirmed that it is dead

→ The Risk Assessment Method Statement (RAMS) must reference the activity specific location drawing provided by the Overhead Assets Coordinator (OAC)

→ The RAMS must be referenced on the authorisations to work in close proximity to live overhead services and pass under or work under overhead assets. The authorisations must be included as part of the Safe System of Work (SSoW), along with any other task specific permits e.g. permit to break ground, hot works permit, permit to lift etc. and briefed to all members of the working party via the Point of Work Risk Assessment (PoWRA) or driver delivery briefings

→ When calculating the Maximum Working Height (MWH) i.e. the asset height above ground less the required vertical safety distance, always round the MWH down to the nearest 500mm; never round up

→ Authorisations to work in close proximity to live overhead services and authorisations to pass under or work under overhead assets must be approved and issued by Morgan Sindall Infrastructure

→ In some instances, a safety document may need to be issued by the asset owner's Senior Authorised Person (SAP) (see Overhead lines (working on) section).

The business unit managing director or operations director must

- Employ a Service Protection Manager (SPM), where the scope of work justifies the appointment.

The project or site manager must

- Appoint an OAC to ensure that all necessary information regarding overhead assets is available to the project team and a SSoW is implemented and monitored
- Ensure a SSoW is in place, including the relevant authorisations and any other associated permits to work, prior to undertaking works in close proximity to or passing under or working under overhead assets
- Undertake a specific site investigation, in conjunction with the Safety, Health, Environment and Quality (SHEQ) team, in the event of service damage (See Reporting of accidents and incidents).

The OAC or SPM must

- Seek and retain copies of all relevant overhead service or asset drawings, including customer drawings where applicable. For overhead conductors, details of the voltage and height above ground must be obtained from the asset owner
- Undertake a desk top study and field study on site to validate records provided and measure actual heights above the ground. For overhead conductors a suitable non-contact conductor measuring device e.g. SupaRule must be used
- Determine the mandatory safety distances (horizontal and vertical) that needs to be maintained, reflecting whether the works are to be undertaken in close proximity to or involve passing under or working under the overhead assets
- Agree with key stakeholders (e.g. customer, asset owner etc.) the methodology for undertaking the planned works
- Approve and issue the authorisation to work in close proximity to overhead services or authorisation to pass under or work under overhead assets
- Request an isolation of the overhead service from the asset owner, if the safety distances cannot be achieved and the construction methodology cannot be altered.

Working in the proximity of live overhead services

- Where work will be undertaken near to overhead assets, but there will be no work or passage of plant or equipment under the asset, a safety zone must be demarcated at ground level as follows:
  - A minimum horizontal distance of 10m from the nearest overhead conductor
  - Where a minimum of 10m cannot be achieved the asset owner must be consulted
  - Must not be used to store plant or materials and material deliveries must be carried out as far as possible from overhead assets
  - Demarcation barriers must be visible at night
  - Where plant operations are in the vicinity of the safety zone, additional high level demarcation must be erected to warn the plant operators e.g. plastic flags or bunting approximately 3m to 6m above ground level.

Passing under or working under non-electrical overhead assets

- Where plant or equipment is capable of infringing the safety distance, whilst passing beneath a non-electrical overhead asset, a safe passageway must be established
- A survey of the overhead asset must be undertaken to accurately determine the minimum clearance above ground, using a suitable measuring device at the position of the proposed crossing point. This dimension can then be used to determine the maximum height clearance for the goalposts
- The number of passageways must be kept to a minimum with the route defined by temporary fences, barriers or cones
- The length of the passageway must extend 6m beyond each of the outer overhead conductors
- Goalposts made from rigid non-conductive material e.g. timber or plastic pipe must be erected at each end of the passageway. The crossbar must be made from similar material or, if the width of the goalpost is too great, tensioned rope with plastic bunting must be used

- → The surface of the passageway must be flat and maintained to prevent undue tilting or bouncing of equipment as it passes beneath the overhead assets
- → Warning notices stating the maximum height to the crossbar must be placed on the uprights of the goalposts at a suitable height for plant operators and on the approaches to the passageway, instructing plant operators to lower jibs, booms, tipper bodies etc. and to keep below the indicated height whilst using the passageway
- → The goalposts must be maintained and visible in poor weather conditions and low light.

Passing under live overhead services

- → When work requires plant and equipment to pass beneath the live overhead services, the asset owner must be consulted before works commence to understand their specific rules, safety distances and requirements
- → Where plant or equipment is capable of infringing the safety distance, whilst passing beneath the live overhead service, a passageway through the demarcation barriers must be established as above
- → A survey of the live overhead service must be undertaken to accurately determine the minimum height above ground level, using a suitable non-contact measuring device e.g. SupaRule, at the position of the proposed crossing point. This dimension can then be used to determine the maximum height clearance for the goalposts. For overhead conductors, allowance must be made for the sag of the conductor between supporting towers.

Working under live overhead services

- → When work is required to be undertaken beneath the live overhead service, the asset owner must be consulted before works commence to understand their specific rules, safety distances and requirements
- → A survey of the live overhead service must be undertaken to accurately determine the minimum overhead service height above ground level, using a suitable non-contact measuring device e.g. SupaRule
- → The authorisation to pass under or work under overhead assets determines the MWH available by deducting the required safety distance (dependent on the voltage and activity being undertaken, in the case of overhead conductors) from the minimum overhead asset height
- → Where the calculated MWH is deemed sufficient for the planned activities:
  - Suitable control measures must be deployed to prevent the infringement of the safety distance e.g. suitable plant selection, application of jib, boom or slew restrictors, positioning of plant and equipment so that no part can infringe the safety distance, even when fully extended etc.
  - Consideration must also be given to prevent individuals inadvertently infringing the safety distance when temporarily working at height e.g. accessing the rear of delivery vehicles, or by lifting objects above their heads
  - Under no circumstances must any part of plant or equipment such as ladders, poles and hand tools be able to infringe the safety distance. All long objects must be carried horizontally and close to the ground
- → Where the calculated MWH is insufficient for the planned activities e.g. piling:
  - The asset owner must be consulted and the option of isolating the live overhead service must be considered
  - Where an isolation is not practicable, the methodology for the activity must be amended
- → Allowances must be made for uncertainty in measuring the distances and for the possibility of unexpected movement of the equipment due, for example, to wind conditions
- → All individuals involved in the work activity, including any contractors, suppliers, hauliers etc, must understand the risks and must be provided with instructions about the risk prevention measures and relevant sections of the emergency response plan, via the PoWRA briefing or delivery driver briefing
- → The works must be directly supervised by someone who is familiar with the risks and can make sure that the required safety precautions are observed
- → Ideally, work should not take place close to or under an overhead asset during darkness or poor visibility conditions. Dazzle from portable or vehicle lighting can obscure rather

than show up overhead conductors

- → Where construction work is required in the vicinity of HV (132kV and above) overhead conductors, consideration must be given to the presence of impressed or induced voltage
- → Whilst there is the potential for electrical injuries there is also the possibility of secondary type injuries (e.g. falls from height) that may occur
- → Items of construction plant may require the application of a field equipment earth to remove the danger of impressed voltage
- → For further information and guidance to control the danger of impressed or induced voltages the SPM, OAC or the Electrical Duty Holder (EDH) must be consulted
- → In addition to the above, when a safety document has been issued by the asset owner, this must be issued to the nominated individual and held in a safe place at the point of work, ensuring safety from the system
- → The safety document will include limitations of access or Limited Access Certificate (LAC) for all work in the proximity of live systems
- → The nominated individual must ensure:
  - The contents of the safety document are understood. If in doubt, ask the customer SAP or document issuer
  - The need for, and application of earths (drain earths as per the safety document and field earths as necessary) have been identified and implemented
  - Only the work detailed in the safety document is carried out. If additional work is identified this must be acknowledged and agreed with the customer SAP in advance of undertaking the work
  - The lightning risk at the time the works are to be undertaken is recorded in the PoWRA
  - There is a full understanding of:
    - The levels of authorisation including responsibilities and customer requirements
    - The relevant sections of the applicable electricity transmission or distribution safety rules
  - All individuals working on or in the proximity of HV equipment must be suitably trained and authorised e.g. by the customer. The minimum training will include completing the Morgan Sindall Infrastructure basic electrical awareness training course
- → All works must be undertaken in accordance with the SSoW and the customer's (asset owner) safety rules, ensuring that safety distances are maintained.

Scaffolders – competency

There are many different scaffold competency cards permitting the holder to undertake specific duties but also restricting the holder from other activities based on their level of experience.

Our standards

All scaffold work involving tube and fitting or systems scaffold (proprietary systems) must be undertaken by individuals holding a valid competency Construction Skills Certification Scheme (CSCS) or Construction Industry Scaffolders Registration Scheme (CISRS) card endorsed accordingly.

Note: Prefabricated Access Suppliers and Manufacturers Association (PASMA) card holders must not undertake any scaffold works involving tube and fitting systems or scaffold systems.

CSCS card holder

Permitted to

→ Handle scaffold materials in preparation at ground level i.e. moving materials.

Must not

→ Erect, dismantle or adjust any scaffold structure.

CISRS Scaffold labourer

Permitted to

→ Handle scaffold materials in preparation for use at ground level or from a complete section of scaffolding that is fully boarded and fitted with double handrails and toeboards.

Must not

→ Erect, dismantle or adjust any scaffold structure.

CISRS Trainee scaffolder

Permitted to

→ Erect, dismantle or adjust any scaffold structure under the direct supervision of a basic or advanced scaffolder.

Must not

→ Work unsupervised.

CISRS Scaffolder (basic)

Permitted to

→ Erect, dismantle or adjustment of any scaffold structure.

→ Work on any designed or nonstandard scaffold structure under the supervision of an advanced scaffolder.

Must not

→ Work on proprietary system scaffold without the appropriate endorsement i.e. System Scaffold Product Training Scheme (SSPTS), if the card holder is a basic scaffolder trained on tube and fitting scaffold.

Note: A working party of six or more basic scaffolders must have at least one advanced scaffolder supervising the working party. Only one trainee scaffolder is permitted per advanced scaffolder.

Scaffolder (advanced)

Permitted to

→ Supervise and lead scaffold teams carrying out advanced scaffolding operations

→ Inspect advanced scaffolds prior to handover.

Must not

→ Work on proprietary system scaffold without the appropriate endorsement i.e. SSPTS, if the card holder is an advanced scaffolder trained on tube and fitting scaffold.

Scaffold inspector

→ All completed scaffold structures must be inspected by an independent individual who holds the appropriate CISRS card:
- CISRS basic scaffold inspector – basic, simple structures
- CISRS advanced scaffold inspector – basic, simple and designed or non-standard structures

→ Note: Scaffold erectors must not carry out inspections of their own structures

→ Note: Scaffold inspectors must have the appropriate SSPTS endorsement on the card for inspecting recognised system scaffolds.

PASMA Mobile access towers

→ All scaffolding work involving prefabricated access systems e.g. mobile aluminium towers must be undertaken by individuals holding a valid competency PASMA card, endorsed accordingly.

→ **Note:** CISRS card holders must not undertake any scaffolding work involving prefabricated access systems.

PASMA Towers for users

Permitted to

→ Assemble, dismantle, alter, move and inspect prefabricated access systems and complete tower inspection records.

Must not

→ Assemble, dismantle or relocate low level prefabricated access units under 2.5m.

→ Construct prefabricated access towers over 8m outdoors or 12m indoors.

PASMA Low level access

Permitted to

→ Assemble, dismantle and relocate low level prefabricated access units under 2.5m high

→ Inspect completed low level units and complete tower inspection records.

Must not

→ Assemble, dismantle, or relocate access units over 2.5m high

→ Inspect mobile access towers.

PASMA Management of mobile access towers

Permitted to

→ Oversee the work of individuals on site, ensuring that work is planned and organised, and those that are involved in carrying out the works are competent and trained and that towers are inspected and maintained.

PASMA Towers on stairs

Permitted to

→ Assemble, dismantle, alter, use and inspect stepped towers specifically designed for use on staircases.

Must not

→ Construct freestanding prefabricated access towers over 8m outdoors and 12m indoors.

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Scaffolding

All scaffolding, whether it is tube and fitting scaffold, systems scaffold (proprietary systems) or mobile access towers, are Temporary Works that provide collective protection to prevent falls from height (see Working at height section).

All scaffolding works must be undertaken by competent individuals (see Scaffolders: competency section).

Our standards

- All scaffolding must comply with legislation and must be constructed to meet the standards specified in British Standard (BS) 12811-1:2003 (Temporary Works equipment – scaffolds) where systems scaffolds are concerned; and TG20:21, guide to good practice for scaffolding with tube and fittings, for tube and fitting scaffolding
- All scaffold companies employed on Morgan Sindall Infrastructure sites must work in accordance with the National Access and Scaffolding Confederation (NASC) guidance note SG4:22 – Preventing falls in scaffolding operations
- All scaffolding must conform to the basic conditions and specifications detailed in TG20:21 and must:
  - Be designed
  - Have associated structural calculations
  - Have suitable design drawings available to those erecting and dismantling it, if greater than two lifts high
  - Be erected in strict accordance with the design (refer to Scaffold Guidance for more information)
- With the exception of low level, simple scaffolding, all scaffolding must be treated as significant items of Temporary Works and must be designed and undergo design checks as per the Temporary Works process and must be added to the Temporary Works register (see What is Temporary Works section)
- For basic scaffolds, a fully completed TG20:21 scaffold compliance sheet must be completed

- At the Safety, Health, Environment and Quality (SHEQ) prestart meeting held for each contractor, where scaffold is identified, a competent individual must be appointed to undertake scaffold inspection as required by The Work at Height Regulations, at the frequency stated, and provide a written report or make an entry in the working platforms register held by Morgan Sindall Infrastructure on site. Inspection of scaffolds must only be undertaken by an individual with appropriate training and certification to a recognised scheme e.g. Construction Industry Scaffolders Registration Scheme (CISRS) scaffold inspection
- Where a subcontractor is the supplier and the erector of a basic scaffold, the subcontractor must fulfil both the design and check functions and sign the TG20:21 compliance check sheet; the designer and the checker must be competent individuals and different members of the team
- At the discretion of the Temporary Works Coordinator (TWC) and based on a risk assessment of the environment and installation risk, the TG20:21 compliance sheet and site specific drawing must be submitted to an independent organisation for independent checking
- For designed scaffolds i.e. outside the scope of TG20:21 basic scaffolds, such as tube and fitting staircases longer than 1.5m, the scaffold erector must provide specific calculations and suitable drawings, which must be submitted to an independent organisation for checking by the TWC
- Scaffolds which are exposed to the following are also classified as designed scaffolds:
  - **Vibration,** such as those found in the rail, water and tunnelling sector
  - **Long term duration** i.e. in excess of three months
  - **High risk customer operational environments**, such as those found in electrical, rail, aviation, tunnelling and nuclear sector
- The project or site manager must ensure the following inspection regime of all scaffolds is undertaken by competent individuals and recorded in the site scaffold register or on the relevant SCAFF tag:
  - Before being taken into use for the first time
  - After any substantial addition, dismantling or other alteration
  - After any event likely to have affected its strength or stability
  - At regular intervals not exceeding seven days since the last inspection
  - Checked on every occasion before it is put into use
- Scaffolders must create a scaffolders safe zone, when erecting or dismantling scaffolding, to reduce the reliance on personal fall protection equipment

- Scaffolders must clip onto the first suitable anchor point when:
  - Working at height of 4m and above
  - Not working within a protected area (three boards, 675mm wide and a single guardrail as a minimum)
  - Moving their working platform e.g. when raising or lowering boards
  - Climbing up or down the scaffold structure or working directly from or off the scaffold structure
- Scaffolding must not be erected upon an unprepared foundation. If based on soil or loose material the foundation must be well compacted, and in all cases must have timber soleplates, extending under at least two standards so that there are no gaps between timber and ground, and steel base plates used under all standards and resting on sole plates
- Scaffolding must be adequately tied to the structure. Where ties are made by setting anchors into the fabric of a structure, pull out tests on a minimum of 10 per cent of the ties must be carried out, achieving a tensile and compressive force of 6.1kN or 12.2kN depending on whether one or two couplers are used at each tie point
- Be aware that independent scaffolds are designed not to be tied to structures (i.e. for glazed façade where tie points cannot be connected
- On sheeted scaffolding, design calculations must be required for tie spacing, type of tie and numbers. The material used must meet Loss Prevention Standard (LPS) 1215 standard
- Guardrails must be fitted at all working platforms; minimum height must be 950mm. Where there is a risk of falling from the inner face of the scaffold this must be protected in a similar fashion
- The space between toeboards and guardrails must not exceed 470mm and an intermediate guardrail must always be provided
- Toeboards must be at least 150mm high
- Ladders used for access to scaffolding must protrude 1.05m above the landing platform
- Ladders must be inspected before each use and subject to a weekly recorded inspection. If any defects are identified the ladder must be quarantined immediately
- Ladders that rise more than 9m must have an intermediate platform with compliant handrails and toeboards, ensuring that no single run exceeds 4.5m
- In shafts, a proprietary staircase access system e.g. HAKI must be installed. Where this is not possible the project or site manager must agree a suitable solution with the contract Safety, Health and Environment (SHE) advisor
- Access points must be protected by a spring or gravity gate, or if integral, a hinged flap
- Loading bays must be fitted with a suitable loading front up and over protection system to provide continuous fall protection
- Safe Work Load (SWL) must be displayed on each loading bay or tower

- Access to scaffolds must be boarded (ladders) and barriered (staircases) to prevent unauthorised access outside of working hours
- Tube and fitting towers, must be constructed to TG20:21 and erected so that the height to base ratio is not greater than the following for each condition:
  - Stationary internal tower: 4 to 1
  - Stationary external tower: 3.5 to 1
  - Mobile internal tower: 3.5 to 1
  - Mobile external tower: 3 to 1
- The maximum recommended height for mobile towers is 9.6m unless the tower is tied to the structure, allowing the maximum height to be 12m; the maximum height for a free standing tower. Towers greater than 12m must be specifically designed
- Based on risk or use, guarding of protective nature must be installed to prevent items dropping from height
- All free standing and mobile towers must have base dimensions greater than 1.2m
- Tube and fitting towers must only be used for lightweight duties (1.5kN/m²) unless specifically designed for heavier duties
- Prefabricated towers must be erected in accordance with manufacturer's instructions and the following must be taken into account:
  - Bracing requirements will be as detailed in the manufacturer's handbook
  - Platforms are supplied as pre-made units, single scaffold boards must not be used
  - The use of single width platform units is not permitted except in a situation where physical obstructions prevent the use of double width platforms
  - Guardrails and toeboards must be fitted on all four sides of the tower, as for tube and fitting towers
  - Access onto the working platform must be by the correct ladder system for the particular tower and this must be fitted within the tower unit
  - Trap doors are provided within the platform units. The towers must never be climbed by using the ledgers as if they were ladders
  - Traditional ladders must never be fitted against the outside of the towers as this could result in the tower overturning

- → The minimum height to base ratio for freestanding mobile towers is:
  - Internal use: 3.5 to 1
  - External use: 3 to 1
- → Light loads must only be raised within the base area of the tower to prevent overturning
- → In many instances when using towers inside buildings it is impossible to fit the guardrails because of overhead assets, i.e. pipes work, ducting etc.
- → In such conditions, the project or site manager must ensure that an alternative method of fall protection is provided.

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Shoring

During excavation works there may be a requirement to install a shoring system, based on the ground conditions, the depth, purpose and duration of the excavation.

Installing these systems correctly will significantly reduce the risk of injury to individuals working in the excavation.

Our standards

THIS SECTION MUST BE READ IN CONJUNCTION WITH WHAT IS TEMPORARY WORKS, EXCAVATIONS, BURIED SERVICES AND WORKING AT HEIGHT SECTIONS.

- → Many different types of shoring systems are available:
  - Timber shuttering
  - Trench sheets and adjustable props
  - Hydraulic waling and frames
  - Hydraulic shoring
  - Vertical shoring
  - Trench boxes
  - Drag boxes
- → Prior to works commencing the Temporary Works Coordinator (TWC) must ensure that all relevant documentation is completed, including the Temporary Works control sheet
- → The design and installation of any shoring system must be approved by the appointed Temporary Works Designer (TWD) and TWC, respectively
- → The project or site manager must ensure that a Safe System of Work (SSoW), including a Temporary Works control sheet and where necessary a lifting plan, must be compiled and briefed to all individuals
- → All systems must be sought from an approved supplier and compatible with the installation equipment e.g. positions of lifting holes in relation to excavator mounted vibrators
- → The installation of any shoring system must be undertaken by competent individuals with appropriate Construction Skills Certification Scheme (CSCS) cards relevant to roles e.g. Appointed Person (AP), slinger or signaller etc.
- → Where an approved subcontractor is appointed to install or remove a shoring system, all members of the working party, including the supervisor, must be suitably experienced, qualified and trained on the relevant system
- → Any changes to the shoring system, including changes in design e.g. to cater for obstructions, equipment etc. strut sizes, or methodology must be undertaken with written approval from the TWC

- Shoring systems may be installed before the excavation work commences and completed progressively or, for shallow excavations, may be installed once the excavation sides have been trimmed
- Any excavation requiring personnel access must be shored, if it is not possible to step or batter the sides of the excavation.

Shoring equipment

- When designing the Temporary Works consideration must be given to the length of time that the shoring is to be in place, including the consideration of the presence of ground water. Shoring installed for more than six weeks must be designed against the 'undrained condition of the ground' irrespective of ground water levels at the time of installation
- All shoring equipment must be fit for purpose and inspected prior to being installed
- All lifting or handling equipment associated with installing the shoring system must be fit for purpose, inspected prior to any lifting operation and compatible
- When using a quick release shackle to lift trench sheets and sheet piles, the release or guide rope must be shorter than the object being lifted and coiled to prevent it snagging or catching and inadvertently activating the shackle
- All specialist equipment e.g. excavator mounted vibrators must be transported in specialist jigs and frames, provided by the hirer; pallets must not be used

- All equipment that is deemed unsuitable or is non-compliant must be quarantined and removed from site.

Edge protection

- All excavations must have adequate edge protection, which must be interlocked and securely fixed or restrained, unless risk assessed
- Plastic or crowd barriers must not be used for edge protection but may be used as demarcation
- Where proprietary shoring systems are installed using sheet piles or trench sheets, these must stand at least 1m above ground level
- If the 1m rule cannot be achieved, then a compatible proprietary edge protection system e.g. Edge Safe or Trench Safe or K-Guard must be used which is compliant to British Standard (BS) European Norm (EN) 13374 and BS 5975
- All edge protection must comply with the Working at Height Regulations (see Working at height section).

Access and egress (see Excavations section)

→ All access and egress arrangements must be suitable and sufficient (see Excavations and Working at height sections)

→ Where identified by risk assessment, an emergency extraction procedure must be in place

→ The project or site manager is responsible for assessing the requirement for the installation of a gas monitor or detector where oxygen levels may be low or contaminated (see Confined space working section).

Surcharging

→ Unless the shoring system has been designed to cater for the surcharge load:

- Spoil and materials must be stored no closer than at a distance that is equal to the depth of the excavation
- Vehicles must not permitted to pass near the edge of the excavation.

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People Plant Interface

The movements of any plant or vehicle are a significant risk to individuals working on site. These risks can be prevented by effective planning and management throughout the design and construction process.

Our standards

Planning

→ A risk assessment must be undertaken considering all plant and vehicle activities, including vehicle arrivals, departures, loading, unloading and arrangements for protecting vulnerable road users along with addressing customer or local authority specific requirements

→ The output of this assessment will form the project specific traffic management plan, which must be reviewed at regular intervals throughout the life of the project and shared with key stakeholders e.g. customer, subcontractors etc.

→ Further assessments must be undertaken when individuals are working in the vicinity of any vehicles, plant and moving machinery or equipment

→ As the majority of construction traffic accidents result from inadequate segregation of pedestrians and vehicles, the project or site manager must:

- Establish clearly designated segregated pedestrian routes that:
  - Are wide enough to accommodate the predicted pedestrian traffic flows
  - Allow easy access to the work areas
  - Are free from obstructions and tripping hazards
  - Are adequately secured to prevent individuals taking shortcuts or inadvertently straying into vehicle and plant working areas
  - Incorporate designated crossing points e.g. hoop to hoop
- Establish clearly designated segregated vehicle routes that:
  - Minimise the need for reversing operations e.g. one-way systems
  - Are adequate for the number, type and size of predicted vehicle movements
  - Are adequately drained and profiled to allow for safe vehicle movements
  - Avoid hazards e.g. excavations, existing structures etc.
- Establish exclusion zones and implement the hierarchy of control for all construction activities involving plant and vehicles.

Controlled Segregation Zone (CSZ)

- → Standard plant operations with no interaction required from any third parties whilst the plant or machinery are operational
- → A segregated task with agreed segregation equipment
- → Access is only permitted to those who are required to operate the plant or machinery
- → The specified task and subsequent control measures must be identified via the specific risk assessment
- → Examples of standard plant and machinery operations:
  - Excavators undertaking bulk excavations
  - Mobile Elevated Working Platforms (MEWPs) which don't require operative intervention whilst the MEWP is energised from ground level
  - Vacuum excavation work
  - Plant movements along site haul roads
  - Loading of wagons with spoil
  - Landscaping of earth mounds, banks or bunds
  - Trimming of road formation with the use of Global Positioning System (GPS)
  - Lifting operations once the load has been slung
  - Loading a crusher or screener with an excavator or front-loading shovel.

Close Proximity Working (CPW) zone

- → Sometimes People Plant Interfaces (PPIs) cannot be avoided due to the location or nature of the works being undertaken and the need for operatives to work in close proximity to live plant or machinery has been identified in the risk assessment
- → Examples of CPW operations:
  - Laying drainage pipes
  - Waste removal where waste is stored in containers or dumpy bags
  - Concrete delivery and placement
  - Kerb laying via mechanical means
  - Installation of manholes or precast sections
  - Fence hanging or removal
  - MEWP working which requires an operative at ground level to assist the MEWP operator whilst the MEWP is energised
  - Delivery and escorting duties
  - Vehicle marshalling duties, where unavoidable
  - Refuelling of plant.

Management of segregation zone CSZ

- → Types of segregation equipment which can be used for standard plant and machinery operations:
  - J-Safe guardrail systems *
  - Armco barriers
  - Rhino barriers
  - Scaffolding
  - Heras fencing *
  - Pedestrian barriers (interlocked, or free standing where suitable)
  - Road cones spanned with attachable retractable barrier tape
  - Road cones spanned with red and white piping
  - Suitable project approved segregation equipment
  - Pedestrian marshals **
- → Mandatory signage prohibiting access must be displayed at the access to the work area and, if possible, the access should be locked whilst works are being carried out
- → A pedestrian marshal can perform certain tasks with the plant or machinery as long as it is not energised at the time e.g. passing tools or materials to plant or machinery operator, assisting in moving segregation equipment once the plant or machinery has been isolated or the task completed
- → If the plant or machinery is energised, the pedestrian marshal must be situated outside the segregation zone at all times
- → Examples where a pedestrian marshal must be utilised:
  - High volume of non-task associated operatives or pedestrians are present
  - A pedestrian walkway is situated next to the task segregation area
  - Multiple segregation areas are present in an area
  - A plant or machinery working radius compromises the designated segregation zone
  - If an individual requires entry into the segregation area, using the 'Thumbs Up' approach, the plant or machinery must be de-energised (isolated or switched off by the operator) and cannot be re-energised until all individuals have left the segregation area.

*Some of these systems may require a Temporary Works design. Consult with the Temporary Works Coordinator (TWC) to ensure that the right type of equipment is used and a suitable Safe System of Work (SSoW) Temporary Works design is in place prior to installation.
**A pedestrian marshal's role is to stop pedestrians or colleagues getting too close to operated plant from outside of the segregated area, by using hand and verbal signals.

CPW zones

- → Types of segregation equipment which can be used for standard plant and machinery operations:
  - J-Safe guardrail systems *
  - Armco barriers
  - Rhino barriers
  - Scaffolding

- Heras fencing *
- Pedestrian barriers (interlocked, or free standing where suitable)
- Road cones spanned with attachable retractable barrier tape
- Road cones spanned with red and white piping
- Suitable project approved segregation equipment.

→ CPW must always be carried out in accordance with five golden rules:

- Close proximity operatives must be trained – all CPW operatives must attend and pass the Morgan Sindall Infrastructure PPI training course and any other training course specific to the role that they are required to carry out e.g. slinger or signaller
- A written SSoW must be agreed and in place – the SSoW must include, but not be limited to Risk Assessment Method Statement (RAMS), CPW assessment and evidence of pre-job brief. The written SSoW and sequencing for a CPW task must be agreed by the project or site manager and briefed and understood by the CPW team for each specific task
- The task requires interaction from an operative – the project or site manager has assessed the task and identified that the task requires interaction from operatives which cannot be completed from outside the segregation zone. To gain access to the area the operative must adopt the 'Thumbs Up' approach
- Segregation zone must be in place – segregation equipment must be in place to keep unauthorised individuals away from the CPW zone. Mandatory signage prohibiting access must be displayed at the access point
- Only CPW operatives are allowed in the segregation zone – directors, managers, supervisors, engineers, operatives, visitors are all prohibited from entering the CPW zone during a live work activity

→ A CPW assessment must be completed prior to the works commencing

→ The CPW supervisor must review and accept the assessment prior to the specified task commencing

→ The CPW assessment template must act as the briefing aid and signage at the place of work. The CPW supervisor must brief out the assessment

→ All close proximity operatives must sign the CPW assessment for acceptance and agreement to work to the stipulated controls during the entirety of the task

→ The CPW assessment must cover as a minimum the following:

- Project and work area
- Specific task and date range including risk assessment reference
- Close proximity team members
- Project / site manager's authorisation for CPW
- Supervisor's authorisation for CPW
- Specific task sequencing
- Plant or machinery to be used
- Segregation equipment.

Working on public highways and footways

Work carried out on public highways and footpaths must be in compliance with the New Roads and Street Works Act 1991 (NRSWA) requirements.

Safety at Street Works and Road Works – A code of practice (The Red Book) provide guidance on the signing, lighting and guarding requirements.

Street works must be made safe at all times, when work is being carried out and when sites are unattended.

Our standards

- → Individuals, supervisors, managers, planners and designers must ensure that all street and roadworks are safe for both individuals and members of the public
- → Road users (including cyclists and equestrians) and pedestrians (including vulnerable groups such as visually and / or mobility impaired and pushchair users) must not be put at risk and must be aware of the extent and nature of any obstruction well before they reach the works
- → A pre-site visit must be undertaken, wherever possible, to assess the location and identify site specific risks, allowing the most suitable solution to be selected.
- → Risk Assessment Method Statement (RAMS) and Point of Work Risk Assessment (PoWRA) must be undertaken for all work sites and activities. Consideration must also be given to risks that may affect the site when it is left unattended
- → At least one individual within the working party must hold a valid NRSWA card with the relevant unit 01 for setting out signing, lighting and guarding
- → Managers who supervise street works must hold a valid NRSWA street works manager card
- → All street works must be compliant with The Red Book:
  - Equipment must be kept clean and tidy and fit for purpose; damaged equipment must be returned to the depot and quarantined
  - Barriers must be Morgan Sindall Infrastructure branded and secured according to the manufacturer's guidance
  - Heras fence must be installed around deep excavations and when in the vicinity of high risk areas e.g. schools where extra signage is deemed necessary, the Temporary Works Coordinator (TWC) must be

consulted for advice and guidance. See Excavations section for further highway requirements

- Signs must be fit for purpose and sandbagged in position
- Where there are no drop kerbs in the vicinity of the walkway, kerb ramps must be installed. These must be safely secured so that they don't move when used
- Trenchlink must be used as the preferred option for covering trenches and excavations with road plates only being used as a last resort
- Unobstructed access for the public and highway vehicles must be maintained
- Road danger lamps must be no higher than 1.5m above the road or 1.2m where the speed limit is 50mph or more. Steady lights must be used on any road with or without street lights. Flashing lights must only be used when all of the following conditions are met:
  - The speed limit is 40mph or less
  - The road danger lamps are within 50m of a street light, and the street light is illuminated
- Before the team leave site, all signing, lighting and guarding must be in place as originally set out and appropriate measures must be taken to reflect any changes in weather conditions. Photographic evidence of the condition of the signing, lighting and guarding must be recorded each time the site is left unattended
- All signing, lighting or guarding materials or equipment must be removed from the site once the works have been completed. Any materials or equipment left on site after the works have been completed can cause a potential incident but will also incur a Section 74 fine, once the notice period of permit has been closed or not extended
- Footway closure signs must only be used if agreed with the local highway authority. Where footways are closed, alternative arrangements must be in place to enable members of the public to pass around the works in a safe manner
- Footway closure signs must be displayed away from the barriered work areas and preferably in the vicinity of a drop kerb. Where this is not possible a kerb ramp must be installed, or a temporary, even hard surfaced, walkway provided
- All road markings in the carriageway must be repainted even if it is temporary
- The area must be swept, and any grass verges affected by the works must be re-seeded before the site is closed.

Pre and postnatal

Being pregnant, or having recently given birth, does not prevent an individual from working or developing a career. In some workplaces there are risks that may affect the health and safety of the individual and that of their child and as such there is specific legislation that requires employers to protect these individuals.

Our standards

- → Written information must be provided to their manager or supervisor detailing their condition, whether pregnant, having given birth within the previous six months or in the process of breastfeeding
- → The manager or supervisor must conduct a suitable written risk assessment, discuss it with the individual concerned and provide a copy to the Human Resources (HR) department
- → The risk assessment must address the following:
  - Any risk from infectious or contagious diseases
  - Any risks from biological or chemical agents
  - The hours of work
  - The nature of the work, i.e. lifting, stretching, bending, seating arrangements and other factors that could be reasonably expected to adversely affect the individual's or baby's health and safety
  - Access arrangements to the normal place of work
  - Work with Display Screen Equipment (DSE)
  - Substances or products to be used or handled e.g. mercury, lead or radiation especially when breastfeeding
  - Lone working, if applicable
  - Occupational stress
  - Suitable rest and welfare facilities free from the effects of tobacco smoke etc. Toilets are not suitable for this
- → A contract Safety, Health and Environment (SHE) advisor can provide support to the manager or supervisor in producing and completing the risk assessment
- → Even if no significant risks have been identified, the risk assessment must be reviewed regularly as circumstances may change, particularly at different stages of the pregnancy
- → HR must be informed of any modifications or changes made to the individual's job, working pattern etc. to minimise the health and safety risk.

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Young or inexperienced individuals

An individual is more likely to have an incident in the first six months at a new or unfamiliar workplace than they are during the rest of their working life.

This risk increases further when the individual is young or inexperienced, which includes apprentices, trainees and operatives new to the industry or the sector they are working in.

Our standards

- → A risk assessment must be undertaken by Morgan Sindall Infrastructure or the relevant employer of the young or inexperienced individual before works commence, taking into account:
  - The individual's psychological or physical maturity
  - The individual's experience and awareness of the potential hazards associated with working on a Morgan Sindall Infrastructure site
  - The risk assessment must:
    - Be briefed to the young or inexperienced individual, who must sign to confirm their understanding
    - Be countersigned by the dedicated supervisor or mentor responsible for the young or inexperienced individual
    - Specify those activities that the young or inexperienced individual will be prohibited from undertaking, due to the degree of risk associated with that activity
    - The young or inexperienced individual must sign in on a daily basis, using the young or inexperienced workers log book which will be held with the project or site manager
    - The young or inexperienced individual must be appropriately supervised at all times
- → All young or inexperienced individuals must be provided with a white safety helmet with blue reflective strips (see Personal Protective Equipment (PPE) section) in accordance with our PPE standards, to highlight that the wearer may require additional guidance and support
- → Young or inexperienced individuals just visiting site will require the visitor's induction and must be accompanied at all times whilst on site

→ Young individuals must not be engaged in any of the following activities:

- The operation of construction vehicular plant
- The operation of lifting equipment
- Slinging or signalling duties in relation to a lifting operation
- The use of power tools, unless under the direct and constant supervision of a competent individual
- The use of power operated wood working machinery, unless under the direct and constant supervision of a competent individual
- Work beyond their physical or psychological capacity.

- **Young individual** - who is below the age of 18. No individual under the age of 16 is allowed onto a Morgan Sindall Infrastructure site without the written permission of Morgan Sindall Infrastructure management
- **Inexperienced individual** - who cannot provide evidence of having worked in the construction industry or related sector for at least the previous 12 months or more. Those carrying trainee or apprentice Construction Skills Certification Scheme (CSCS) cards will also be considered as being inexperienced
- **Apprentice or trainee** - who is learning a trade from a skilled individual, having agreed to work for a fixed period. An apprentice will be deemed to be an inexperienced individual for the duration of the apprenticeship.

Welding

Welding is the fabrication or sculptural process that joins materials, usually metals or thermoplastics, by causing fusion, which is distinct from lower temperature metal-joining techniques such as brazing and soldering that melt the base metal.

Our standards

Types of welding activities and associated hazards

(Note: Welding fume can be produced from the following welding or cutting operations)

- **Metal Inert Gas (MIG)** welding an electric arc forms between a consumable electrode and the workplace metal
- **Manual Metal Arc (MMA)** welding or stick welding - a consumable electrode covered in flux lays the weld
- **Tungsten Inert Gas (TIG)** welding - a non-consumable tungsten electrode produces the weld
- **Oxy-gas brazing** - involves the melting of a base metal and a filler metal, if used, by means of the flame produced at the tip of a welding torch, typically oxy-acetylene
- **Oxy-gas cutting** - uses an oxy-combustible flame and pure oxygen as the metal cutting jet and is used chiefly in the metal structures demolition industry
- **Arc-air gouging** - involves the melting of the base metal by the heat of a carbon arc, from a consumable carbon or graphite electrode, and the molten metal is then removed by a blast of air
- **Manual plasma cutting** - uses a plasma torch that is handheld to cut different types of metals and are typically used for light metal applications that involve trimming extra material etc.
- **Butt-fusion** – involves heating two different pieces of thermoplastic simultaneously and pressing them together which then cool and form a permanent bond
- **Electrofusion** – involves installing a fitting with implanted metal coils around two ends of pipes, through which a current is passed melting a small amount of the pipe to form a joint.

Planning

The project or site manager must ensure all welding activities are properly planned, appropriately supervised and undertaken by competent individuals, who have the correct level of training to undertake the work required.

The project or site manager must consider the following:

- → Working conditions (indoors or outdoors)
- → Local risks at site
- → Confined space working (see Confined space working section)
- → Access and egress from the place of work
- → Screening arrangements to protect all individuals not directly involved in the activity
- → Control measure for exposure to welding fume reflecting the duration, frequency and type of welding. An online tool available through the British Occupational Health Society (BOHS) website (www.breathefreely.org.uk) provides guidance on welding fume control for common welding tasks.

Prior to undertaking

The project or site manager must ensure:

- → All hazards and risks are identified, assessed and effectively controlled
- → A detailed Safe System of Work (SSoW) is in place and briefed to individuals prior to any welding operation being undertaken
- → A suitable environment for outdoor welding is established to reduce the impact of inclement weather during and after the welding
- → That Respiratory Protective Equipment (RPE) is available on all sites where there is a potential for exposure to airborne material (see Exposure to airborne material section)
- → A hot works permit (see Permits to Work section) is issued to the individual undertaking the work ensuring all flammable material is removed or screened during the activity
- → The welder(s) is / are competent to complete the specific welding activity they are to undertake
- → The welder(s) wear the appropriate Personal Protective Equipment (PPE) or RPE for the welding activity (see PPE section). Welding helmets are designed to give clear vision so the mask of the air fed respirator shouldn't require lifting to inspect the works
- → Maintenance records for any engineering controls e.g. Local Exhaust Ventilation (LEV) are accurate, documented and available on site for inspection

- → An agreed Inspection and Test Plan (ITP) is in place, reflecting the welding activity being undertaken. This should involve any specific requirements for certification of welders and any coding, testing regime and record retention
- → Accurate records of issued PPE or RPE are kept and available on site for inspection, in line with our information archiving policy. See the Morgan Sindall Group Document Retention Policy for more information
- → Health surveillance arrangements are in place.

Minimising or preventing exposure

- → Exposure to all metallic welding fumes can cause lung cancer and possibly kidney cancer in humans. Metallic welding fume is classed as a human carcinogen
- → As welding fume is subject to the Control of Substances Hazardous to Health (COSHH) regulation, the project or site manager must apply the hierarchy of control (see COSHH section):
  - Using alternative cold joining techniques
  - Welding in a way that produces less fume
  - Use of LEV e.g. on torch extraction, extracted work areas, movable LEV etc. where the risk assessment identifies the welding activity is to be undertaken indoors or within a confined space
  - Provision of suitable RPE e.g. Filtering Face Piece (FFP)3 masks for work up to one hour and air fed masks for longer duration, which must be worn when the engineering system does not adequately control residual fume exposure during the activities
  - Provision of suitable PPE e.g. face shields, visors etc.
  - Maintaining control measures and good general ventilation e.g. LEV must be thoroughly tested and examined a minimum of every 14 months
  - Ensuring welders understand the risks and how to use controls
- → The Health and Safety Executive (HSE) has produced the welding series guidance sheets to provide good practice for controlling the exposure to welding fume and allied processes, covering management guidance and task specific guidance based on the type of welding being undertaken.

The HSE will no longer accept any welding being undertaken without any suitable exposure control measures in place, as there is no known level of safe exposure.

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Working at height

Anywhere there are no precautions in place meaning that an individual or object could fall and cause personal injury e.g. working on a ladder or a working platform, working adjacent to a fragile surface, an opening in the floor or a hole in the ground.

Our standards

Planning

→ The project or site manager must ensure that all working at height activities are properly planned, appropriately supervised, undertaken by competent individuals and conducted in accordance with the hierarchy of control:

- Avoid working at height, by designing out the need or undertaking as much of the work from ground level
- Prevent falls from height by using an existing place of work that is already safe
- Prevent falls from height using collective work equipment that is fitted with guardrails e.g. Mobile Elevated Working Platforms (MEWPs) (see Plant standards), tower or independent scaffolds (see Scaffolding section) etc.
- Prevent falls from height by using Personal Protective Equipment (PPE) so that it is impossible for the individual to get to a fall position e.g. fixed length lanyards
- Mitigate the consequence of a fall using collective work equipment e.g. nets for structural steelwork erection and soft landing systems
- Mitigate the consequence of a fall using personal work equipment e.g. a personal fall arrest system with the anchorage point above the head

→ When choosing equipment for working at height the project or site manager must consider the following:

- Collective protection must be given priority over personal protection, after considering whether the equipment prevents or minimises the risk of falling
- Working conditions or local risks at site
- Access to and egress from the place of work
- Distance and the consequence of a potential fall
- Duration and frequency of the use of the equipment

- Ease and speed of rescue or evacuation if necessary
- Additional risks from the equipment itself (installation, use, removal etc.)
- Ensure ground conditions are suitable for the equipment and task to be undertaken when planning the works

- A rescue plan must be put in place for all working at height activities to ensure casualties can be recovered in a timely manner and practiced regularly to assess the suitability of the arrangements
- A rescue plan must consider:
  - The safety of the individuals undertaking the rescue
  - The types of rescue and anchor points identified to be used for the rescue equipment
  - Suitability of the equipment and technical considerations
  - Accessibility of the site
  - Emergency services details
  - Method to rescue the casualty or medical implications of suspension
  - First aid requirements
  - Nominated first aiders
  - Training and practicing in rescue techniques
  - General procedure for casualty recovery
  - Inspections and checks on rescue equipment.

Note - The above list is not exhaustive.

→ Exclusion zones must be established at ground level for all working at height activities to prevent unauthorised access and prevent the risk of dropped objects striking an individual

- Working above or below another activity is prohibited and must be avoided unless a specific Safe System of Work (SSoW) is in place
- Tools must be tethered when in use and held captive when not unless the work area is enclosed.

Ladders and step ladders

- Ladders and step ladders must not be used for working at height activities unless used for a short duration only, or a risk assessment has demonstrated that other systems, such as podium steps or scaffold access towers, are not practicable
- The following must be in place for ladders or step ladders to be used as a working platform:
  - A specific risk assessment which eliminates all other means of working at height
  - A specific permit to work has been issued by the project or site manager to the individual undertaking the work
  - All step ladders and ladders must be of industrial specification i.e. class 1
  - Standards for using ladders as a means of access are described in the Scaffolding section
- All ladders and step ladders must be secured when not in use to prevent unauthorised use
- Step ladders must only be used as a last resort and in exceptional circumstances the following must apply:
  - Step ladders must be limited to lightweight duties only where no sideways loading will be exerted e.g. second fix operations and where the use of a scaffold access tower or podium steps is not reasonably practicable
  - Step ladders must be checked to ensure that they are in good condition; damaged step ladders must be quarantined immediately
  - Every care must be taken to ensure that the proposed work location for step ladders is suitable and where it is not the project or site manager must insist on an alternative method of work
- Operatives must only use step ladders for work that can be easily reached from the third step down from the top of the ladder.

Ladder inspections

- The individuals using the ladders must ensure:
  - A visual inspection of the ladders is undertaken by a competent individual in line with the manufacturer's instructions
  - Pre-use checks are undertaken prior to use.

Podiums

- Podium steps must be:
  - Fitted with a gate, preferably self closing
  - Anti-surf in design with a minimum of two wheels
- Outriggers must be fitted in accordance with manufacturer's recommendations.

Trestle type scaffolds

→ Trestle type scaffolds must not be used as working platforms or as a means of access unless they incorporate a proprietary edge protection system and access arrangements, which satisfy the requirements of the Work at Height Regulation.

Hop-ups

→ Hop-ups must only be used if they are designed and manufactured for that purpose and are not more than 500mm in height

→ Platform dimensions must be no less than 600mm x 600mm, in all cases a specific risk assessment shall be carried out prior to use.

Personal stilts

→ Personal stilts must only be used following a detailed risk assessment, floor areas must be clear of trip hazards, floor surfaces must be dry, reducing the risk of slips whilst wearing stilts.

MEWPs, net riggers, steel erectors or associated trades

→ As required by Build UK, individuals using MEWPs and employed as net riggers, steel erectors or associated trades, must be in possession of International Powered Access Federation (IPAF) Powered Access Licence Plus (PAL+)

→ Individuals should, whilst working in the basket of a boom type MEWP, wear a full body harness (to British Standard (BS) European Norm (EN) 361) and restraint lanyard (to BS 354) which shall be attached to the manufacturer's anchor point within the basket

→ Operators must be in possession of a valid certificate of training, e.g. IPAF or Construction Plant Certification Scheme (CPCS), familarisation training will not be accepted.

Safety netting

→ Safety netting is the preferred method of preventing injuries due to falls from height during roof work, where the structure allows

→ Should an alternative method be considered, it must be justified using a risk assessment

→ Safety netting must only be erected by approved companies and appropriately trained operatives

→ Training records for statutory safety net inspection must be held on site.

Working over, on or near water

Working over, on or near rivers, lakes, reservoirs or canals etc. presents the risk of possible drowning. Whilst individuals may be able to swim, the shock of falling into cold water, fully clothed, can be fatal. Special arrangements must be implemented to reduce the risks to individuals at work.

Our standards

- → A detailed Safe System of Work (SSoW), incorporating an emergency procedure, must be developed for the project
- → Rigid guardrails, including toeboards, must be provided to prevent individuals from tripping, falling or being swept into the water
- → Warning notices must be visible at all edges and boundaries where an individual might fall into water
- → Lifebuoys and rescue lines must be provided at strategic locations and identified with signs
- → Daily checks must be made to ensure that the rescue equipment and signs are in position and have not been mislaid.

An emergency procedure must be in place and shall consist of:

- → A set routine for raising the alarm
- → Provision of rescue facilities
- → A set routine for transporting individuals to hospital
- → All individuals at risk of falling into water wearing life jackets, which must be subject to monthly inspections.

Standards for life jackets

- → Automatic life jackets that activate under 100mm of water must be worn with the type dependant on risk, available from Morgan Sindall Infrastructure Personal Protective Equipment (PPE) Catalogue:
  - ◦ Baltic 1590 Lifejacket 150N
  - ◦ Baltic 2891 Lifejacket Automatic 275N
  - ◦ Baltic 2871 Lifejacket Legend Auto Harness 305N
- → The wearer would need to wear the lifejacket in conjunction with a fall-arrest harness if working near water with a fall from height risk as the D-ring on the lifejacket is not rated for fall arrest.

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Charging of electric vehicles

There is no formal guidance documents regarding Electric Vehicle (EV) charging leads. We must however use due dilligence when it comes to ensuring duty of care for Morgan Sindall Infrastructure colleagues who have access to and use on regular basis, these items of 'Electrical Apparatus' implementing the following.

Our standards

Morgan Sindall Infrastructure best practice

- → EV charging leads must be checked visually on a regular basis, as with all 'electrical apparatus' used within the workplace in a temporary capacity
- → Provision and Use of Work Equipment Regulations (PUWER) applies
  - Before use, EV charging leads must be visually checked for any defects. If deemed in a 'satisfactory' condition, it may be implemented
  - Once the application is no longer required, the EV charging lead is removed and stored in a manner to which no damage from external influence can occur
  - If the EV charging lead is found to be in an 'unsatisfactory' condition, it must be withdrawn from service and reported immediately, with requisition for a replacement
- → If the Morgan Sindall Infrastructure colleague uses their own vehicle rather than a company car, much the same as MOT and insurance, the driver must adhere to Morgan Sindall Infrastructure company car policy and will be required to offer the EV charging lead to be tested as its regular service intervals.

Inspection

- → Although EV charging cables are not covered under the current (5th Edition) Code of Practice for In-Service Inspection and Testing of Electrical Equipment, it is recommended that EV charging cables are inspected and tested as a minimum at each vehicle service by trained and competent individual.

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Entry to site

All individuals, including visitors, on arrival to site or a designated control point, must report to Morgan Sindall Infrastructure site management and register attendance.

Our standards

Arriving on site

- → The gateman at the entrance to site, will check details and provide further instruction on where to go
- → Individual(s) working on site may park vehicles in Morgan Sindall Infrastructure car parks or on the site with permission
  - ◦ Direction will be given as to the parking areas to be used
  - ◦ Morgan Sindall Infrastructure reserves the right to check the contents of vehicles both on entry to and exit from the car park or site and if necessary to make a search of such vehicles and their occupants
- → All individuals, including visitors and the supply chain, must comply with the project's security measures, including:
  - ◦ Any personal security checks, such as security vetting, to gain access to the site. This may include baseline personnel security standard, security clearance, or developed vetting
- → You may be asked to take a drug and/or alcohol test before you start working with us or on our projects (please see section on Drugs, alcohol and medication)
- → Colleagues, contractors, and visitors must only enter parts of the site they are authorised to.

Induction

→ All individuals will attend an appropriate induction or orientation at a time notified by Morgan Sindall Infrastructure. Failure to attend the prescribed time may result in referral to a later appointment, at the individuals or subcontractor's cost

→ An approved skill card (please see section on Industry certification cards) relevant to the trade or occupation will need to be provided at the time of induction, without which access will be denied

→ Visitors, having attended a specific visitor's induction or orientation, must be accompanied at all times by a competent individual who has undertaken a full induction and is familiar with the site layout.

Leaving site

→ All individuals, including visitors, must sign out when leaving the site. This may include the use of biometric systems.

Mechanical safety

Mechanical safety covers a very broad area across our projects in Morgan Sindall Infrastructure, and our general construction and installation safety processes and procedures cover the majority of site works that we routinely undertake.

Our standards

Our specific focus in the management of mechanical safety is to ensure that the mechanical systems and equipment that form part of our project scope are designed, procured, examined, installed, tested, commissioned, and set to work with confidence of supporting documentation to demonstrate that it is safe to operate once energised and placed into service.

There is no single piece of legislation or best practice that covers the range of mechanical systems and equipment and environments that our projects cover and so we need to ensure both individual compliance and conformity to all legislation and best practice available and specific to our project scope.

We have identified a number of high hazard topic areas that routinely need to be suitably considered, understood, documented, and managed across our project portfolios to ensure that we have suitable knowledge and experience embedded within our project or site teams to control these high hazard scope areas appropriate to the risks identified.

- → All individuals responsible for the control of works in the design, procurement, examination, installation, testing, commissioning, setting to work, and operation of mechanical systems and equipment on a Morgan Sindall Infrastructure site must be appointed in writing in accordance with the mechanical safety management process
- → Each sector and/or framework must have an assessed and appointed Mechanical Duty Holder (MDH)
- → The MDH will undertake a risk assessment of the major mechanical hazards associated with the project and agree with the project or site manager the levels of authorisation and competence required to ensure safe management of those hazards during the project lifecycle
- → The project or site manager shall nominate or request a suitable candidate to be assessed and appointed as Senior Authorised Person (Mechanical) (SAP(M)) for the project or part of the project as required from the risk assessment undertaken

- → The MDH will assess and appoint, where required, (SAP(M)) in writing subject to a demonstration of understanding of the levels of authorisation and competencies
- → The project or site manager shall ensure the Project Execution Plan (PEP) and/or a Safe System of Work (SSoW) is implemented, identifying the specific mechanical hazards and measures required to control the design, procurement, examination, installation, testing, commissioning, setting to work, and operation of mechanical systems and equipment on the project
- → The project or site manager shall assess and ensure the competency of the site management and supervision
- → All appointed individuals must have a full understanding and experience of the usage of relevant legislation and best practice for each mechanical system to be controlled and the application of safety processes and documents required to control these through the project lifecycle.

As a minimum, all mechanical systems placed into service shall comply with relevant legislation and Codes of Practice relevant to each element of a system and/or integrated systems as follows:

- → Pressure systems shall meet the requirements of the Pressure Systems Safety Regulations (PSSR), with guidance in application from the Approved Code of Practice L122 Safety of Pressure Systems.
- → Simple pressure vessels shall meet the requirements of the Pressure Equipment Directive
- → Machinery shall meet the requirements of the Supply of Machinery (Safety) Regulations
- → For commissioning activities following first energisation the Provision and Use of Work Equipment Regulations (PUWER) shall apply
- → Dangerous substances and explosive atmospheres shall meet the requirements of the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) and the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations
- → Permanent lifting equipment shall meet the requirements of The Machinery (Safety) Regulations and The Lifting Operations and Lifting Equipment Regulations (LOLER)
- → Piped systems shall be designed, where possible, and operated in accordance with:
  - ◦ Health and Safety Executive (HSE) guidance note HSG253 for The Safe Isolation of Plant and Equipment
  - ◦ HSE guidance note GS4 for Safety Requirements for Pressure Testing
  - ◦ HSE 39 Compressed Air Safety
  - ◦ HSE leaflet INDG436 for the Safe Management of Industrial Steam and Hot Water Boilers
- → All other high-hazard installations identified by the project team shall be raised to the MDH and suitable control measures agreed and implemented.

Pre-agreement to safe work procedures

A Safety, Health, Environment and Quality (SHEQ) prestart meeting will be held for each subcontractor prior to commencing work on any Morgan Sindall Infrastructure project. This may be repeated if the contractor undertakes phased works which require absence from the site for an extended period of time.

Our standards

- → Risk assessments and, where identified, Safe Systems of Work (SSoW) will be produced for all work activities on Morgan Sindall Infrastructure projects. Work will only commence after these documents, if applicable, are agreed as acceptable by Morgan Sindall Infrastructure management and briefed to those undertaking the task or activity. Where there is a significant change in the work procedure that is likely to result in a deviation from the agreed SSoW, work must stop until the risk assessment etc. are revised, agreed, and re-briefed to all individuals
- → Risk assessment, SSoW and Work Package Plans (WPP), must be assessed in line with the Morgan Sindall Infrastructure tracking and content sheet, which must be completed in full before the works commence. Where a subcontractor sub-lets work, it shall still ensure an adequate and suitable risk assessment is produced
- → Where this indicates a requirement for written controls, a SSoW or method statement shall be produced by the sub-subcontractor. This will require approval for the employer (the sub-let contractor), the subcontractor and acknowledgement by Morgan Sindall Infrastructure
- → Subcontractors must provide their risk assessment and other control documents at least five working days prior to their commencement on site
- → Where Morgan Sindall Infrastructure or one of its subcontractors assumes a design responsibility, safe and healthy design must be applied. This includes risk management techniques during the design process, to eliminate or minimise risk which could arise during construction, maintenance and repair of the structure and its associated parts. A process must be established in respect of any residual risks to keep them under regular review

- → Subcontractors must cooperate, where applicable, in the overall design process with Morgan Sindall Infrastructure, the principal designer and any other designers who have an interface or input into the project. They must agree with Morgan Sindall Infrastructure as to the provision of common facilities, plant, equipment, etc.
- → Morgan Sindall Infrastructure and subcontractors must identify, in conjunction with the principal designer, their input into the health and safety file and establish, or comply with, procedures for its production and compilation
- → Cooperation is an essential element of Construction Design and Management (CDM) and contractors must cooperate with each other and with Morgan Sindall Infrastructure. In particular, cooperation measures will include:
  - Complying with these standards and any other conditions defined within the contract and the Morgan Sindall Infrastructure management plans
  - Identifying hazards and assessing the risk they pose from their work and communicating this to others
  - Consulting with Morgan Sindall Infrastructure about risks arising from the works of Morgan Sindall Infrastructure or contractors to ensure the proper coordination of control measures
  - Ensuring the standards applied to plant, equipment, systems of work and the workplace under its control comply with these standards, and are adequate at all times
  - Providing information to all individuals and affected third parties on the risks associated with their work and the preventative and protective measures being taken to ensure their health and safety and the protection of the environment.

Sustainable timber sourcing

It is Morgan Sindall Infrastructure's policy to only use sustainably and responsibly sourced certified timber and wood-based products, on all sites, in line with legislation, the UK Government's Timber Procurement Policy and the Morgan Sindall Group's Timber Policy.

Our standards

- → Subcontractors and suppliers are expected to operate in accordance with this policy, by providing evidence on the quantity, type, source, and certification status of any timber and / or timber products brought onto site. Chain of custody schemes recognised as meeting the above include:
  - Programme for the Endorsement of Forest Certification (PEFC)
  - Forest Stewardship Council (FSC)
  - Grown in Britain (GiB)
- → Where chain of custody evidence, such as PEFC, FSC or GiB is not provided, then Morgan Sindall Infrastructure has the right to refuse delivery of the relevant timber on to site
- → Where timber is found on site, without the necessary accompanying chain of custody evidence, this will be investigated by Morgan Sindall Infrastructure and a robust corrective plan put in place. This applies to timber purchased by our subcontractors and customers supplied timber and timber products.

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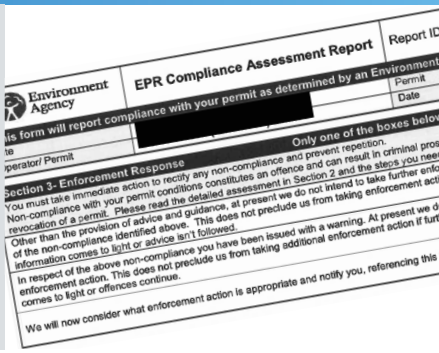
Management of enforcing authority visits

As per the Health and Safety at Work Act, enforcing authorities such as the Health and Safety Executive (HSE), Office of Nuclear Regulation (ONR) and the Environment Agency (EA) (this is not an exhaustive list) have the right to visit any Morgan Sindall Infrastructure premises at any reasonable time without prior notice.


Environment Agency
EPR Compliance Assessment Report
Report ID
Permit
Date
Only one of the boxes below
Section 3- Enforcement Response
You must take immediate action to rectify any non-compliance and prevent repetition.
Non-compliance with your permit conditions constitutes an offence and can result in criminal pros
revocation of a permit. Please read the detailed assessment in Section 2 and the steps you nee
Other than the provision of advice and guidance, at present we do not intend to take further enfo
of the non-compliance identified above. This does not preclude us from taking enforcement acti
information comes to light or advice isn't followed.
In respect of the above non-compliance you have been issued with a warning. At present we d
enforcement action. This does not preclude us from taking additional enforcement action if furt
comes to light or offences continue.
We will now consider what enforcement action is appropriate and notify you, referencing this

Our standards

- → While enforcing authorities have the legal right to enter our premises, it is important that we take the necessary steps to manage the visit as effectively as possible
- → All such visits must be reported as early as possible (ideally before the physical inspection takes place) to the Safety, Health, Environment and Quality (SHEQ) manager
  - ◦ All standard procedures for visitors to the premises must be followed
  - ◦ Identify a nominated individual to be appointed to manage the visit
  - ◦ Subcontractors must notify Morgan Sindall Infrastructure of any enforcing authority activity that they have been subject to.

No formal action to be taken:

- → A full debrief must be completed by the nominated individual to the SHEQ manager
- → The visit must be recorded using the report on enforcing authority visit to site (no enforcement notice issue) and uploaded under the 'Compliance' section within SHEQ Tracker.

Formal action to be taken:

- → Where formal action is to be taken, e.g., enforcement notice , a full debrief must be completed by the nominated individual to the SHEQ manager and a full investigation completed and recorded on the Accident or Incident Information Report (AIIR)
- → The visit details must be uploaded under the 'Compliance' section within SHEQ Tracker.

Initial first steps, when managing an enforcing authority visit

→ Do

- Find out who you are speaking with
- Find out the nature and purpose of the visit
- Allow unhindered access but accompany wherever possible
- Make a record of all areas visited (including photos) / documents provided / items seized / areas inspected
- Provide a debrief to the SHEQ manager
- If in doubt, consult with your head of SHEQ or SHEQ and people director

→ Do not

- Hand over any documents or answer probing questions
- Be obstructive or interfere with the scene
- Refuse entry to site
- Allow unaccompanied access
- Discuss matters outside your knowledge or remit
- Provide original documents – only give copies as requested and not privileged documents
- Destroy any information or documents.

Vehicle and delivery drivers

The following requirements apply to all vehicle drivers, including those delivering and picking up materials, plant or personnel to Morgan Sindall Infrastructure sites.

Our standards

- → All drivers must report to and sign in at the site offices on arrival
- → All vehicles shall be subject to inspection to ensure they are safe to be operated. All vehicles must be maintained in accordance with the manufacturer's maintenance schedules. Records / any appropriate certificates of examination, etc. should be made available for inspection
- → No individual should ride on vehicles without a proper seat fitted. Rollover Protective Structure (ROPS) must be fitted to vehicles without cabs and seat belts worn at all times
- → No driver shall tow unless licenced to do so with the appropriate driving licence entitlement
- → The site speed limit specified for the project must not be exceeded
- → Do not reverse vehicles that do not have all round visibility without using a vehicle marshal
- → Park where instructed. Do not obstruct roads, footpaths, access points or loading areas, reverse parking should be a minimum consideration in all project and office car parking locations
- → The driver must comply with the Morgan Sindall Infrastructure Personal Protective Equipment (PPE) minimum standards, when outside the cab, (head, foot, hand and eye protection and wear high-visibility clothing. Other PPE may be required as dictated by Morgan Sindall Infrastructure)
- → Keys are not to be left in unattended vehicles. Engines must not be left running when the vehicle is unattended
- → Operatives should drive according to weather conditions, using lights as required
- → Stay in the cab during loading or unloading unless instructed otherwise
- → Beware of plant operating around your vehicle
- → Specific operating of any vehicle's component parts such as the closing and opening of tailgates is the

responsibility of the driver. Do not ask or expect any other individual to do this for you

- → Work in accordance with any risk assessments or systems of work that are applicable to the work
- → Mobile phones or hands free device shall not be used or programmed whilst driving or whilst involved in any activity associated with the vehicle, even with hands-free equipment
- → Any spillage of vehicle fluids must be reported to the Morgan Sindall Infrastructure management so that the appropriate clean up procedures can be instigated
- → No children or pets are permitted in cabs or vehicles
- → Articulated tippers must not be used under any circumstances for delivery of materials to Morgan Sindall Infrastructure sites.

Work Related Road Risk

Work Related Road Risk (WRRR) is an ever-growing issue in the construction industry, and Morgan Sindall Infrastructure considers the management of such issues to be fundamental in maintaining a safe and healthy environment outside of the boundaries of our construction projects.

Our standards

- → As part of Morgan Sindall Infrastructure's commitment to extending safety management outside of the project boundary, all subcontractors and suppliers who work on behalf of Morgan Sindall Infrastructure are to be fully conversant with the Construction Logistics and Cyclist Safety (CLOCS) standard
- → Fleet operators shall ensure that any vehicle routes to sites or premises specified by Morgan Sindall Infrastructure are adhered to unless directed otherwise. Fleet operators shall properly communicate any routing and access requirements provided by Morgan Sindall Infrastructure to all drivers accessing a site
- → Fleet operators shall ensure that all drivers (including those exempt or not in scope of Driver Certificate of Professional Competence) undergo approved progressive training and continued professional development specifically covering the safety of vulnerable road users. Fleet operators shall ensure that a system is in place to ensure all drivers hold a valid licence for the category of vehicle they are tasked to drive and any risks associated with endorsements or restriction codes are effectively managed
- → All requirements of this section (WRRR) would also apply to any sub-let packages, for example, where materials are delivered to a Morgan Sindall Infrastructure project on behalf of a subcontractor
- → Morgan Sindall Infrastructure has in place a monitoring system to check compliance with Freight Operator Recognition Scheme (FORS). Morgan Sindall Infrastructure reserves the right to carry out vehicle and driver audits when they attend any Morgan Sindall Infrastructure project. The purpose of this is to ensure compliance with the above, and to issue non-conformances as necessary. Non-conformance, depending on severity may result in vehicles being refused entry to a project. Repeated issues of non-conformances may result in formal contractual action being taken.

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Glossary

AC	Alternating Current
ACAD	Asbestos Control and Abatement Division
ACoW	Archaeological Clarke of Works
ADHD	Attention Deficit Hyperactivity Disorder
AED	Automated External Defibrillator
A&E	Accident and Emergency
AIIAR	Accident Incident Investigation Analysis Report
AIIR	Accident Incident Investigation Report
ALLMI	Associated Lorry Loader Manufacturers and Importers
ALO	Any Line Open
AP	Appointed Person
AP(E)	Authorised Person (Electrical)
AR	Arc Resistant
ARCA	Asbestos Removal Contractors Association
ATL	Articulated Tipper Lorries
ATV	All Terrain Vehicle
BEV	Battery Electric Vehicles
BNG	Biodiversity Net Gain
BOHS	British Occupational Health Society
BPSS	Baseline Personnel Security Standards
BRE	Building Research Establishment
BS	British Standard
BSC	Buried Services Coordinator
BSL	Buried Services Locator
C&G	City and Guilds
CAA	Civil Aviation Authority
CAR	Controlled Activities Regulations
CAT	Cable Avoidance Tool
CBR	California Bearing Ratio
CCDO	Certificate of Competence for Demolition Operatives
CCTV	Closed Circuit Television
CDE	Common Data Environment
CDM	Construction (Design and Management)
CDP	Carbon Disclosure Project
CE	Conformité Européene (European Conformity)
CFA	Continuous Flight Auger
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association

CISRS	Construction Industry Scaffolders Registration Scheme
CLAW	Control of Lead at Work
CLOCS	Construction Logistics and Cyclist Safety
CLOS	Crane Lifting Operations Supervisor
CLP	Classification, Labelling and Packaging
CNI	Critical National Infrastructure
CofC	Certificate of Competence
COSHH	Control of Substances Hazardous to Health Regulations
COSS	Controller of Site Safety
CP	Competent Person
CPA	Construction Plant Association
CPC	Certificate of Professional Competence
CPCS	Construction Plant Certification Scheme
CPHSP	Construction Phase Health and Safety Plan
CSCS	Construction Skills Certification Scheme
CPW	Close Proximity Working
CTS	Carpel Tunnel Syndrome
CU	Command Unit
DBS	Disclosure and Barring Service
DC	Direct Current
DDM	Designated Duty Manager
DEFRA	Department for Environment, Food and Rural Affairs
DoWCoP	Definition of Waste Code of Practice
DSE	Display Screen Equipment
DSEAR	Dangerous Substances and Explosive Atmospheres Regulations
DV	Developed Vetting
EA	Environment Agency
EAP	Employee Assistance Programme
EAV	Exposure Action Value
EC	European Commission
ECO	Electrical Control Operator
EDH	Electrical Duty Holder
EFAW	Emergency First Aid at Work
EHV	Extra High Voltage
ELV	Exposure Limit Value
EMP	Environmental Management Plan
EN	European Norm / Standard
EPOC	Environmental Permitting Operators Certificate

Glossary

EPS	European Protected Species
ERP	Emergency Response Plan
EU	European Union
EV	Electric Vehicle
EWC	European Waste Catalogue
FAW	First Aider at Work
FFI	Fee For Intervention
FFP	Filtering Face Piece
FOPS	Falling Objects Protection System
FORS	Fleet Operator Recognition Scheme
FPS	Federation of Piling Specialists
FPV	First Person View
FR	Flame Retardant
FRAP	Flood Risk Activity Permit
FSC	Forest Stewardship Council
GDPR	General Data Protection Regulation
GEIS	General Information Sheet issued by the Health and Safety Executive
GGBS	Ground Granulated Blast-furnace Slag
GiB	Grown in Britain
GP	General Practitioner
GPD	General Permitted Development
GPS	Global Positioning System
GSC	Government Security Classifications
GVC	General VLOS Certificate
HAVS	Hand Arm Vibration Syndrome
HEPA	High-Efficiency Particulate Air
HGV	Heavy Goods Vehicle
HMG	His Majesty's Government
HPI	High Potential Incident
HR	Human Resources
HSA	High Security Areas
HSE	Health and Safety Executive
HSG	Health and Safety Guidance issued by the Health and Safety Executive
HV	High Voltage
HVO	Hydrotreated Vegetable Oil
HWCN	Hazardous Waste Consignment Note
ID	Identification
IDB	Internal Drainage Board

IDE	Institute of Demolition Engineers
IEMA	Institute of Environmental Management and Assessment
IMS	Integrated Management System
IT	Information Technology
IPAF	International Powered Access Federation
IRR	Ionising Radiation Regulations
ISO	International Standards Organisation
ITP	Inspection and Test Plan
IWA	Individual Working Alone
JV	Joint Venture
KPI	Key Performance Indicators
LAC	Limited Access Certificate
LDP	Large Diameter Piling
LEAV	Lower Exposure Action Value
LEP	Light Eye Protection
LEV	Local Exhaust Ventilation
LGV	Large Goods Vehicle
LLD	Lower Limb Disorder
LLFA	Lead Local Flood Authority
LMP	Legionella Management Plan
LOLER	Lifting Operations and Lifting Equipment Regulations
LoW	List of Wastes
LOWS	Lookout Operated Warning Systems
LPA	Local Planning Authority
LPG	Liquid Petroleum Gas
LPS	Loss Prevention Standard
LTI	Lost Time Injury
LU	London Underground
LV	Low Voltage
MC	Machine Controller
MDH	Mechanical Duty Holder
MEWP	Mobile Elevated Working Platform
MIG	Metal Inert Gas
MHFA	Mental Health First Aid
MMA	Manual Metal Arc
MMO	Marine Management Organisation
MMP	Materials Management Plan
MO	Machine Operator

Glossary

MOD	Ministry of Defence
MSD	Musculoskeletal Disorder
MSDS	Material Safety Data Sheet
MWH	Maximum Working Height
NASC	National Access and Scaffold Federation
NCR	Non-Conformance Report
NFDC	National Federation of Demolition Confederation
NG	National Grid
NLW	Non-Licensable work
NNLW	Notifiable Non-Licensable work
NOCN	National Open College Network
NPORS	National Plant Operator Registration Scheme
NR	Network Rail
NRMM	Non-Road Mobile Machinery
NRSWA	New Roads and Street Works Act
NRW	Natural Resources Wales
NVQ	National Vocational Qualification
OA	Opportunity Areas
OAC	Overhead Assets Coordinator
OLE	Overhead Line Equipment
ONR	Office of Nuclear Regulation
OSC	Operational Safety Case
PAL+	Powered Access Licence Plus
PAS	Publically Available Specifications
PASMA	Prefabricated Access Suppliers and Manufacturers Association
PBT	Plate Bearing Test
PC	Principal Contractor
PCBs	Polychlorinated Biphenyls
PCI	Pre Construction Information
PCL	Principal Contractor Licensing
PCS	Privileged and Confidential Status
PD	Principal Designer
PDF	Portable Document Format
PDR	Performance Development Review
PED	Personal Electronic Device
PEFC	Programme for the Endorsement of Forest Certification
PEP	Project Execution Plan

PFA	Pulverised Fuel Ash
PHEV	Plug-in Hybrid Electric Vehicles
PIC	Person in Charge
PICEE	Person In Charge of Electrical Emergency
POS	Plant Operations Scheme
PoWRA	Point of Work Risk Assessment
PPE	Personal Protective Equipment
PPM	Planned Preventative Maintenance
PSSR	Presure Systems Safety Regulation
PTS	Personal Track Safety
PUWER	Provision and Use of Work Equipment Regulations
PVPMP	Plant, Vehicle, and People Management Plan
RAP	Rail Access Point
RAMS	Risk Assessment Method Statement
RCA	Root Cause Analysis
RCD	Residual Current Device
REACH	Registration, Evaluation, Authorisation and Restrictions of CHemicals
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
ROPS	Rollover Protection Structure
RPE	Respiratory Personal Equipment
RSI	Repetitive Strain Injury
SAC	Special Area of Conservation
SAL	Secondary Aspects Letter
SAP	Senior Authorised Person
SAP(M)	Senior Authorised Person (Mechanical)
SC	Security Clearance
SCI	Security Classified Information
SEPA	Scottish Environment Protection Agency
SHE	Safety, Health and Environment
SHEQ	Safety, Health, Environment and Quality
SLA	Service Level Agreement
SMSTS	Site Management Safety Training Scheme
SPA	Special Protection Area
SPF	Sun Protection Factor
SPM	Service Protection Manager
SQEP	Suitably Qualified and Experienced Person
SSoW	Safe System of Work

Glossary

SSPTS	System Scaffold Product Training Scheme
SSSI	Sites of Special Scientific Interest
SSSTS	Site Supervisor Safety Training Scheme
STC	Safety Technical Competency
STGO	Special Types General Order
SUA	Small Unmanned Aircraft
SWL	Safe Work Load
SWMP	Site Waste Management Plan
TBM	Tunnel Boring Machine
TBS	Task Brief Sheet
TBT	Toolbox Talk
TfL	Transport for London
TIG	Tungsten Inert Gas
TPO	Tree Preservation Order
TWC	Temporary Works Coordinator
TWD	Temporary Works Designer
TWM	Temporary Works Manager
TWS	Temporary Works Supervisor
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
UEAV	Upper Exposure Action Value
UKAS	United Kingdom Accreditation Service
UKCA	United Kingdom Conformity Assessed
ULD	Upper Limb Disorder
UNECE	United Nations Economic Commission for Europe
UV	Ultra Violet
UVR	Ultra Violet Radiation
UXO	Unexploded Ordnance
VDU	Visual Display Unit
VLOS	Visual Line of Site
VOSA	Vehicle and Operator Services Agency
WAC	Waste Acceptance Criteria
WBV	Whole Body Vibration
WEEE	Waste Electrical and Electronic Equipment
WEL	Workplace Exposure Limit
WIFI	Wireless Infidelity
WPP	Works Package Plan

WRULD	Work Related Upper Limb Disorder
WSI	Written Scheme of Investigation
WTD	Working Time Directive
WTN	Waste Transfer Note