Zero incidents
Zero harm
Zero compromise
Keeping you healthy and safe, every day at work.

Health and Safety Information

HSI
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Health and Safety: engaging with contractors and suppliers

Thames Water

Procedure Index –

Introduction

1.1 Scope and purpose of this document

Thames Water engages the services of a number of contractors and suppliers to work on our behalf. The work carried out is varied and, as such, is managed in different ways. Everything we do in our business deals with different types of health and safety risk.

The purpose of this document is as follows:

- To set out Thames Water's health and safety expectations and requirements for contractors, suppliers and stakeholders working for or on behalf of, Thames Water.
- To encourage our suppliers to develop a set of standard processes and initiatives in Health and Safety
- To ensure our collective vision of 'zero incidents, zero harm, zero compromise' is understood and being worked towards by both Thames Water and our suppliers

For the purpose of this document, the term 'supplier(s)' includes suppliers, contractors, designers, CDM principal designer and any other organisation that provide goods or services to Thames Water.

The requirements set out here apply to all design, construction, and maintenance and operational works carried out for, or on behalf of Thames Water. To support delivery of our aims, all suppliers must:

- comply with all applicable statutory requirements including planning consents
- comply with the contents of this document
- take account of other standards and publications such as British, European and International Standards, where they apply
- seek out other voluntary codes, guidance and publications from industry bodies that may continuously improve health and safety performance
- participate in Thames Water led Health and Safety campaigns aimed at improving standards
- proactively develop and implement safety initiatives that will improve health and safety performance and be willing to share with other Thames Water suppliers
- ensure that sub-suppliers are provided with access to this document and that they commit to complying with it.

1.2 Thames Water Health and Safety aims

Thames Water is committed to achieving our vision of 'zero Incidents, zero harm, zero compromise' and as such we have developed seven health and safety aims which support us in delivering this vision.

Our aims are:

- Leadership: Everyone takes an active role in communicating, promoting and championing a world class performance for and on behalf of Thames Water and keeps themselves and others safe and healthy
- Competence: Everyone has the skills to do their job in a safe and healthy way, has been adequately trained and briefed about how to carry out their job safely in accordance with the minimum standards set out by the organisation
- Health & Wellbeing: Everyone is committed to creating a working environment that protects people's health and enhances their wellbeing
- Supply community: Everyone has a safe and healthy place to work in and ensure the highest standards of stewardship for Thames Waters' infrastructure

- Culture: Everyone is committed to creating a positive and proactive safety culture, which encourages everybody to accept responsibility for their own and their colleague's wellbeing
- Communication: Everyone has the information and empowerment to look after their own health and safety through effective and regular communication
- Performance & improvement: Everyone has the opportunity to be fully engaged and contribute to the development of a world class Safety, Health & Wellbeing performance.

Contractors and suppliers need to engage with both Thames Water and each other to ensure we are able to achieve these aims.

1.3 Objectives

Contractors should develop their own objectives which support the delivery of our aims. Thames Water will work collaboratively with contractors to achieve them. Contractors must monitor the delivery of their objectives and be able to evidence progress against the aims.

Suppliers are responsible for adequately resourcing their work including arrangements for self-monitoring, auditing and reporting. Suppliers are also responsible for communicating these requirements to their sub-suppliers, through their supply chain and monitoring compliance.

Thames Water will monitor and audit the health and safety performance of suppliers.

Failure to correctly report and/or to meet the required health and safety performance will result in appropriate action. This will be taken in accordance with the terms of the applicable contracts.

Where suppliers are unable to meet the required standards instructions for cessation of work or termination of the contract shall be determined in accordance with the terms of the applicable contracts.

1.4 Documentation structure

This document forms part of a series of documents and guidance to develop and continuously improve our health and safety standards for contractor activities:

Engaging with contractors and suppliers - a strategic document, which supports our aim of being actively engaged with our contractors on health and safety. It sets out our expectations and some key areas of health and safety management which we must all focus on so that together, we can achieve our vision of 'zero incidents, zero harm, zero compromise'.

Essential and visual standards – subject-specific documents which underpin the above, written with the purpose of driving best practice, whilst detailing the standards that we expect to be achieved on our sites. They provide information and guidance on good health and safety practice and have been written to raise awareness of common issues. Essential standards can assist with inspections and be used to confirm that both contractors and Thames Water are following accepted health and safety practice in relation to a particular health and safety activity.

Available from the health and safety hub *http://www.healthandsafetyhub.co.uk/*

Site-specific arrangements – documents which outline the standards that we expect to be achieved specific to individual sites.

1.5 Construction (Design and Management) Regulations (CDM)

The CDM Regulations apply to all construction work carried out by Thames Water. Generally, Thames Water is the client and as such will appoint a CDM principal designer and principal contractor. Both

appointments must work with Thames Water staff to help them undertake the client duties.

The principal contractor must manage the construction phase and ensure the health and safety of both everybody carrying out construction work alongside those who may be affected by the work.

Design organisations are required to cooperate in the sharing of best practice and raising the standards of health and safety in design, including participation 'Safety in Design forum' and ongoing development of, and compliance with, Thames Water's Safety, Health and Environment "RAG" list.

Thames Water, assisted by Principal Designers, are required to interrogate Thames Water information systems and to work collaboratively with operational personnel in order to retrieve existing information that may be relevant to the planned works in the form of pre-construction information. Where relevant information is not available, the Principal Designer will arrange for relevant surveys and studies to be carried out to obtain such information.

Designers are encouraged to engage early with the contractor and operational teams and to visit site to understand the constructability and usability of their design solutions.

Designers will include safety, health and environment boxes on drawings to highlight significant or unusual design risks and convey health as well as safety information.

1.6 Notifications

CDM projects – CDM clients must under their duties notify the Health and Safety Executive of projects where the construction work is expected to last longer than 30 working days and have more than 20 workers working simultaneously at any point in the project; or Exceed 500 person days.

Asbestos – Prior to construction an Asbestos Survey is required and where identified an Asbestos Management plan is expected to have been developed. Where Asbestos is found during Construction the person in control of the project must be immediately notified and work ceased. No further work should be carried out until the Asbestos has been safely disposed of.

Injuries, diseases and dangerous occurrences - all incidents which are reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) must be reported to the enforcing authority, as required by the regulations, by the relevant person.

NB: it is the duty of the contractor/supplier to report all dangerous incidents to the enforcing authority.

All incidents must be reported to the main contractor/supplier or where relevant the principal contractor, who will inform Thames Water (see appendix 1). The supplier must inform Thames Water directly if there is no principal contractor in place.

1.7 Approvals, authorisations and licences

Thames Water authorisations and permits – the supplier must ensure that requests for authorisations and permits are made in good time and accompanied by a risk assessment and safe system of work (where required).

Discharge - suppliers must obtain approval from Thames Water prior to depositing any substance into any drain/sewer/process plant. Any unintentional discharges must be notified to Thames Water as soon as possible.

Atmospheric Contamination of Drinking Water

Any material used at a clean water asset which may produce gasses or fumes, regardless of the supply status of the asset must be assessed by the Water Quality Team Prior to use.

Physical contamination of drinking water
All tools, equipment, vehicles and clothing employed upon clean water assets must be hygienic and in compliance with National Water Hygiene standards.

Protection of supply
Any modification that has hydraulic linkage to drinking water must have written authorization from the Water Regulations Team, this includes drainage systems, online monitors and control systems as well as all direct work.

1.8 Assurance

The health and safety performance of principal designers, designers, contractors and suppliers will be monitored by a combination of regular activities and reporting by the suppliers and by monitoring and auditing by Thames Water and/or external parties where appropriate.

2 Organisation and management requirements

2.1 Health & Safety commitment

In establishing ourselves as a leading organisation, Thames Water is committed to improving performance through avoiding injuries, investigating incidents and putting learning into practice. We are also passionate about achieving excellence in assessing and minimising all health and safety risks. We expect our suppliers to provide the necessary support to meet this objective. Suppliers are expected to respond promptly, when invited, to discuss any reportable event, adverse trends or other evidence of a breach of this document.

A positive health and safety culture is recognised as making a vital contribution to help achieve excellent performance. As such, we seek supplier commitment to appropriate measures such as the encouragement of near miss reporting, climate surveys, behavioural safety management programmes, recognition and other methods to implement and maintain a positive health and safety culture.

We expect suppliers' management personnel to demonstrate exceptional levels of health and safety leadership. This includes:

- **Setting standards** – being accountable for setting high standards of health and safety behaviour within their organisation. As a minimum, we expect managers to lead by example including compliance with the health and safety rules and recommendations.

- **Clarity in roles and responsibilities** – ensuring that their teams and people are aware of their roles and responsibilities.

- **Taking action** – challenging poor health and safety practice and taking personal action when they see a breach of health and safety regulations or standards. They are also expected to ensure that others within their area of business act in a similar way.

- **Awareness** – maintaining an awareness of current health and safety rules, issues and performance. This includes individual project/programme performance as well as the wider company health and safety issues.

- **Contribution** – personally contributing to (not just attending) health and safety events and meetings. This will include health and safety audits and site inspections, incident reviews and health and safety forums. In addition, they are expected to communicate incident learning, innovations and good ideas.

Maturity Models

The maturity model is designed to help organisations or part of an organisation to determine their safety, health and wellbeing maturity level. Thames Water have developed a guidance document to assist you when completing the model template, which can be found on the Health and Safety Hub > Key Documents *http://www.healthandsafetyhub.co.uk/keydocs.html*

As a Client, Thames Water encourages its Contractors to carry out an assessment of their Health, Safety and Wellbeing maturity level and to establish an improvement plan, which shall be jointly reviewed periodically. In the event of the Contractors poor Health, Safety, Wellbeing compliance or performance, as deemed by Thames Water, the Contractor shall be required to complete an assessment and improvement plan, which shall be agreed by Thames Water.

2.2 Client duties

As a client, Thames Water accepts that it has one of the biggest influences and controls over the way a project is run and accepts accountability for the impact that our approach has on the health and safety of those working on, or affected by, our undertaking.

Thames Water is committed to appointing competent and adequately resourced suppliers and to ensuring that appropriate management arrangements are in place to allow construction work to take place safely and without risks to health.

2.3 Communication

Effective communication is key to ensuring that activities are well planned and co-ordinated. All parties must ensure that the arrangements in place for communication are suitable. Relevant information on key issues such as progress, risks and precautions, lessons learned and campaigns must be appropriately cascaded, in particular:

- Suppliers directly engaged by Thames Water must communicate with the relevant Thames Water staff.

- Every supplier who receives a communication directly from Thames Water on health and safety matters must ensure that relevant personnel and sub-suppliers are also in receipt of the information.

- Design teams, of both temporary and permanent design, must communicate and co-operate with the relevant Principal Designer where appointed.

3 Pre-qualification guidance

Suppliers provide an essential contribution to the success of Thames Water in meeting our aims and vision of zero incidents, zero harm, zero compromise. The work carried out by suppliers is regarded as part of Thames Water's conduct of the business and as such, suppliers must be properly selected, managed and monitored.

3.1 Pre-qualification

Potential suppliers must satisfy Thames Water that they have the competencies, systems and resources to safely undertake the work they are allocated. Suppliers that meet the criteria below must therefore prior to undertaking works and or contract award undergo as a minimum an assessment by Thames Waters appointed third party Achilles against the scheme requirements of UVDB Verify.

"All suppliers that conduct work on our sites in a physical capacity, working on our behalf or providing consultancy that requires elements of design to our assets require an Achilles assessment."

4 Design

4.1 Designer role and responsibilities

Designers have a key role to play in the reduction of risks that arise during the life of a project and their decisions can fundamentally affect the health and safety of construction work. Through employing good design practices, designers can make a significant contribution to identifying and eliminating hazards or reducing the risks associated with hazards, where elimination is not possible.

4.2 Existing information

Where known, Thames Water will provide information, relating to site conditions and other pertinent factors, to relevant parties, so that any associated hazards and risks can be addressed. This information may be provided prior to or during the issue of a primary authorisation. For construction work this exchange of information must include the relevant health and safety file.

4.3 Health and Safety in Design

Design teams must conduct themselves with due regard to relevant regulations and guidance such that:

- it is understood that designers can make a significant contribution to risk reduction by carefully considering hazards that would be present during construction, operation and maintenance
- processes are in place to facilitate and encourage co-operation with other members of the project team
- a robust design review process must be in place to identify hazards that may create a risk to personnel. 3D modelling is encouraged as it enables everyone to relate to what is being constructed and its operability.
- any significant risks that may affect personnel involved in construction, operation and maintenance of the structure, are recorded on a risk register and that reasonable efforts are made to eliminate, reduce and/or mitigate such hazards
- any changes to design either prior to construction work commencing on site or during the construction phase must be communicated to the principal designer and be subject to a formal review, which shall consider the H&S impact of such change
- any significant residual risks that may affect personnel involved in the construction of the structure must be communicated to the relevant parties so that they can be taken into account when developing safe systems of work.
- the design team must identify and provide information which is relevant to the compilation of a H&S file

5 Risk management

5.1 General H&S hazards

The supplier's attention is drawn to the need for exercising caution on site against hazards, some of which are common to the construction industry in general and others which are specific to the water industry and, in particular, Thames Water.

In addition to the general hazards identified in appendix 2, site-specific hazards will be identified and made available during the planning phase of work.

The supplier must develop best practice approaches to the hazards and risks identified, and wherever possible provide useful information to Thames Water on good practice and lessons learned to enhance and share the learning experience.

5.2 Supply chain process

The supplier is responsible for ensuring that the H&S competence of sub-suppliers is assessed during their procurement process and only those capable of meeting the standard are appointed. When appointing sub-suppliers, documented checks must be made to ensure that the sub-supplier plans to devote appropriate resource to the work. During this process and after appointment, it is the responsibility of the supplier to ensure that sub-suppliers are aware of and understand the requirements of this document as it applies to them. They must also manage the relationship to achieve compliance and monitor and report performance.

5.3 Construction health and safety plans

Supplier arrangements for complying with Thames Water's health and safety requirements must be included within the principal contractor's construction phase plans and associated safe systems of work. Construction phase plans must be submitted to Thames Water and/or the principal designer in advance of the planned commencement of the work.

Thames Water will:

- evaluate the submitted plans, seeking advice where appropriate and if necessary, request amendments to meet the required standard
- undertake periodic monitoring of site activities to gain assurance that the H&S plans are being complied with

5.4 Integrated plans

It is recognised that some supplier management systems may generate plans, which integrate environmental elements with, for example, quality or health and safety. Integrated plans are welcome but will only be acceptable where the relevant parts can be readily identified, for example by its inclusion as a discrete section of a larger document.

5.5 Risk assessment

A suitable and sufficient site-specific risk assessment must be made for all work being carried out and shall identify, as a minimum:

- significant hazards, including those associated with equipment processes, tasks, procedures and the physical aspects of the plant, premises and surrounding environment

- those people at risk from the activity, in particular young workers, lone workers, visitors, neighbours and members of the public

- what3words address of site (to ensure emergency services can locate site if needed).

- existing control measures in place and any additional measures required (using the hierarchy of elimination, substitution etc.) and include contingency arrangements as appropriate

- provision to review the risk assessment on a regular basis.

- Communication of the risk assessment to all involved within the task in, order that it is fully understood confirmed by the signatures of attendees

- Maintaining accurate records of risk assessments which are readily retrievable

5.6 Safe systems of work

Suppliers must ensure that arrangements are in place to facilitate the development of suitable safe systems of work. Such arrangements must include:

- preparation of safe systems of work that identify and control the key issues (using the hierarchy of elimination substitution etc.), relating to the work that may affect site personnel, other persons or the environment (see appendix 3)

- communication of the safe system of work and other relevant information to suppliers' personnel, sub-suppliers and others who may require this information for their own safety

- provision to review the safe systems or work where required, such as due to a change in site condition of programme and communication of any such changes to the workforce and others who may be affected by the work.

- For planned works on complex activities a Point of Work Risk assessment is required for all of the activities being carried out

The supplier must ensure that the contents of the safe system of work are written in clear language which is simple to understand and includes sketches where appropriate. Safe systems of work should be briefed at the workplace location wherever possible, to all persons involved in the activity. Briefings must be communicated in a clear and concise manner so as to be understood by all and signatures of attendees obtained.

Suppliers must ensure suitable arrangements are in place to monitor the adequacy of the briefings and undertake regular checks to ensure operatives have understood the briefings.

5.7 Employee consultation

Thames Water is committed to encouraging positive engagement with the workforce on all health and safety matters. We recognise that in addition to meeting health and safety legal obligations, effective consultation and engagement is a fundamental mechanism for achieving health and safety excellence.

Each supplier is encouraged to engage with their site personnel and develop effective mechanisms for involving site personnel in the development and implementation of effective health and safety policies, procedures and safe systems of work. Arrangements for ensuring worker engagement may include:

- personnel understanding that they are allowed to stop work if they feel at risk
- details of the mechanism for raising health and safety concerns
- all personnel addressing others in a civil manner
- timely dissemination of safety alerts
- opportunities for worker involvement when producing safe systems of work and risk assessments
- personnel being encouraged to participate and comment on 'toolbox talks' and other briefings
- taking reported H&S issues seriously and not being negative or critical

5.8 Monitoring and reporting

The supplier must ensure that all work sites and areas are subject to routine inspection by competent persons. Such inspections must be carried out during each work period/shift and address matters such as set up, housekeeping and work practices and suitable records must be kept.

In addition, suppliers must ensure suitable arrangements are in place for effective monitoring of site activities by all levels of management. Arrangements must include ensuring that inspections are carried out at a frequency which is suitable for the nature of the work provide clear instructions/guidance to managers on what to look for and how to deal with actions arising.

In addition to all incidents, and hours worked being reported using Safeguard, principal contractors, designers and other suppliers may be asked to submit regular scorecards on their health and safety performance.

5.9 Audit and assurance

Thames Water may, from time to time request to undertake periodic audits on the supplier's undertaking. Suppliers must co-operate with Thames Water personnel to support such inspections or in response to significant incidents or other reasons.

The supplier must also cooperate with inspections by other properly authorised persons including HSE, EHOs and the EA.

5.10 Emergency arrangements

All offices, projects and establishments must have adequate emergency arrangements which are both known to and readily available to those that may require them. This will usually be in the form of the Fire and Emergency Plan developed by the main or principal contractor. Such plan must include:

- an escalation process (including provision for out of hours response) and be regularly tested to ensure its adequacy.
- the what3words address of site (to ensure emergency services can locate site if needed).

When developing such arrangements consideration will need to be given to any Thames Water site-specific emergency arrangements that may exist.

6 Health and Safety site management

6.1 Definition of 'Thames Water Site' (TW site)

A TW site is any area or location, above or below ground, containing plant, buildings or infrastructure owned by Thames Water, whether or not it is contained within a permanent or temporary boundary fence.

6.2 Access to site

Access to TW sites is subject to:

- local security standards. The Thames Water Site Manager will specify security standards including access controls, notification procedures and perimeter security requirements
- being in possession of a valid Thames Water Safety Passport where required.

6.3 Primary Authorisations

Most work whether on a Thames Water site or public place will be undertaken under one of the following primary authorisations:

- TOCOP (Transfer of Controller of Premises)
- TWOSA (Thames Water Operational Safety Authorisation)

These forms are available in pads and must not be recreated and transmitted electronically.
The purpose of these primary authorisations is to provide a two-way transfer of key information relating to existing hazards and the work being carried out.
They are not intended for use when travelling across the premises to the place of work – although access arrangements must be agreed with the site manager. They are also not intended for suppliers that are meeting with Thames Water Site Managers or their representative to discuss/agree prospective works, as long as they are accompanied by someone with sufficient knowledge of the site and its hazards.

6.3.1 Transfer of Control of Premises (TOCOP)

See Appendix 4 for full details. The TOCOP form confirms that a site/area has been passed over to a supplier. This form is not a permit to work, nor does it in anyway prescribe safety controls. It does, however, confirm that the site/area is now the responsibility of the main or principal contractor. The form must be signed by both the Thames Water Site Manager and the supplier, in order to confirm both transfer and return of control of premises. Requests for a TOCOP must be accompanied by a site plan indicating the area to be transferred. A copy of the completed TOCOP must be clearly displayed on the site along with signs informing people that the area is subject to a TOCOP.

6.3.2 Thames Water Operational Safety Authorisation (TWOSA)

The TWOSA enables a formal exchange of essential health & safety information, where suppliers/visiting workers are required to work alongside Thames Water. It is not a permit-to-work (secondary permit/authorisation), which may still be required in certain high risk or complex circumstances. A TWOSA will be issued where TW retains control of the premises. Requests for a TWOSA must be accompanied by a written safe system of work. A copy of the completed TWOSA must be clearly displayed at the site.

6.4 Work control documents – secondary authorisation

Where the supplier is undertaking work on Thames Water premises or critical areas of the network e.g., rising mains or trunk mains, access to defined areas of high risk or plant shall be controlled

through the issue of a secondary authorisation. These documents (which include a permit to work) strictly define the limitations on working and will, when necessary, identify a safe system of working e.g., plant release certificate, general permits, diversion notice, hot works, authorisation for the use of hired mobile cranes.

6.5 Site rules

The supplier must liaise with the Thames Water Site Manager, with regards any site rules or site-specific inductions that are required. This may include local restrictions on working hours or delivery times. The supplier must ensure that all personnel are aware of the basic requirements. These include the following:

- all employees are empowered to challenge unsafe working practices (Zero compromise cards)
- all employees must sign in and out at start and end of each period of work
- obey site rules and speed limits
- no children, pets or unauthorised passengers allowed on site (even if kept in vehicle)
- do not drop litter or leave rubbish on the site
- respect for other people including no use of foul, abusive or racist language, no abusive or violent behaviour, harassment or bullying
- Inappropriate behaviour will not be tolerated
- do not use the site or public highway as a toilet
- no personnel shall consume or be under the influence of alcohol or drugs. Prescribed medication is permissible but must be notified to a manager and must not affect a person's ability to work safely.
- mobile phones must not be used when driving or operating any plant or vehicles or where specifically prohibited
- do not leave keys in unattended vehicles
- smoking, drinking or eating is only permitted in designated areas provided with hand cleaning facilities.

6.6 Essential safety information

The main/principal contractor and the employing supplier must cooperate to provide essential health and safety information to all personnel, working under their control, before they commence work. During the briefing the supplier must ensure that all personnel have been made aware of the site rules prescribed by Thames Water and shall include the following training topics as a minimum;

- safe practice, relevant to the work content (including explanations of agreed method statements and safe systems of work)
- importance of challenging unsafe working practices (Zero compromise cards)
- identification of specific hazardous areas on site (e.g. overhead cables, railways etc.)
- explanation of policy on: personal protective equipment (including minimum dress standard), alcohol, drug abuse, inappropriate behaviour etc.
- details of first aid provisions
- provisions for welfare (canteens, toilets, drying rooms etc.)
- fire prevention provisions and emergency procedures
- incident and near miss reporting procedure

- procedures for control of materials and debris
- policy regarding operation of specific plant and equipment
- the use of scaffolding
- site mobile phone policy
- site smoking policy
- importance of notifying site management of any medical conditions
- other relevant requirements of the Health and Safety Plan (for construction work).

The main/principal contractor or employing supplier must maintain records to show that the briefing has taken place.

On some sites it may also be necessary for the personnel to attend a specific site briefing delivered by the Thames Water Site Management prior to work commencing.

6.7 Visitors/visiting workers

Visitors or personnel who will be working on site for a period of less than one day must as a minimum be:

- issued with information which identifies the site safety rules and site-specific hazards (for construction works as contained in the Construction Phase Health and Safety Plan)
- provided with the appropriate PPE, by the hosting supplier and advised in its correct use
- accompanied at all times by a competent person, who is formally allocated responsibility for the visitor (including in the event of an emergency).

Where a supplier wishes to host a group tour, risk assessments must be undertaken and on Thames Water sites must seek approval from the Thames Water Site Manager. If Thames Water wishes to arrange a similar visit to a supplier's site, then cooperation will be sought on the same basis.

Suppliers must ensure that planned interventions or site visits by key stakeholders e.g. Health and Safety Executive are notified to Thames Water as soon as possible. Suppliers must ensure that unplanned visits and interventions are notified to Thames Water as soon as practicable but, as a minimum, by the end of the working day. Suppliers must provide details of the visit and any significant findings.

6.8 Security

All employers and employees have a general duty under the Health and Safety at Work Act to take reasonable measures to minimise risks to the public. When working within a Thames Water operational works, the supplier must take measures to ensure the safety of the operational staff not involved with the construction work in a similar manner to the measures that would be taken to ensure public safety e.g., barriers and signs.

Suppliers must undertake a risk assessment considering the security of property within the site against acts of vandalism and theft by persons having unauthorised entry to the site, and also to the safety of the public who may be affected by the work, with the following as a minimum;

- unattended mobile plant and equipment shall be immobilised. Plant keys must be locked away when the site is unattended

- small plant, bottled gases and chemicals must be securely stored when not required for use in the works
- all reasonable precautions must be taken to secure the site against unauthorised entry.

6.9 Deliveries

Drivers delivering goods and materials must remain with their vehicles, except to visit welfare facilities or offices to deal with paperwork and when outside of the vehicle must wear the appropriate PPE for the site.

Drivers who work away from the vehicle or who operate their vehicles in construction operational areas must hold a Thames Water Safety Passport card and be provided with relevant information as identified by the essential safety information matrix, or be under appropriate supervision by the relevant supplier at all times.

6.10 Caravans/sleeping accommodation

- Sleeping accommodation is not generally permitted on Thames Water sites. In exceptional circumstances, written permission from the Thames Water Site Manager is required prior to set up.

Every caravan/sleeping accommodation cabin must;

- have a clear space of at least 6m from the nearest caravan or 10m from any building under construction or refurbishment, permanent building or structure. Alternatively a suitably designed firewall may be used (may be designed integral to the structure)
- have electrical circuits tested
- be provided with a smoke alarm and carbon monoxide alarm (tested at least weekly and result recorded)
- contain an appropriate fire extinguisher (included in any inspection regime)
- be included in the site fire risk assessment.

Unused LPG cylinders must be securely stored in the open as far away as practicable from the caravans. Storage must be a minimum of 6m away from any occupied structure and segregated from other potentially flammable consumable or waste storage areas.

6.11 Competence/Specific training requirements

All personnel must be competent to carry out their particular duties and tasks according to appropriate regulatory and industry standards e.g., Health and Safety Executive recommendations.

It is the responsibility of the supplier to ensure both task specific competence and also core health and safety competence throughout their organisation and sub-suppliers at all levels and to ensure compliance with Thames Water specific training requirements. This includes making suitable arrangements to ensure that managers and supervisory staff have core health and safety competence, understand what is expected of them and are able to effectively implement the requirements of the safety management system.

Suppliers are responsible for maintaining and providing upon request, adequate records to allow competence to be readily demonstrated.

The supplier must arrange regular toolbox talks to be attended by all staff and operatives, throughout the duration of the work. Such talks in a good environment must cover topics relevant to the work being undertaken and be of sufficient duration to ensure adequate discussion and a full understanding

of the topic. Attendance and topics covered must be recorded and kept available for inspection.

All personnel working with or for Thames Water on our sites or assets must have a Thames Water passport as part of our zero compromise culture.
Contractors must obtain the passport before committing people to working on our sites.
Personnel can only get the Thames Water Passport by attending a Thames Water Passport course.

Thames Water Passports must be kept up to date and readily available for inspection.

Any enquiries on the Thames Water Safety Passport Scheme should be directed by email to *TWpassport@thameswater.co.uk.*

All operatives and supervisors engaged in operations and activities on or near services must have attended a service avoidance awareness course, prior to commencing excavation (supplemental to 'New Roads and Streetworks Act' training).

All persons working intrusively on assets involved in the treatment (post primary barrier) storage, supply of drinking water must hold a valid EUSR National Water Hygiene Card.

Everyone engaged on Thames Water must be competent for his or her role and able to demonstrate an appropriate level of health and safety awareness and competence. Specifically:

- Directors should have attended the IOSH 'Safety for Senior Executives' course or equivalent.
- Managers must hold a NEBOSH General and Construction certificate or equivalent.
- Supervisors must hold an IOSH Managing Safely certificate or equivalent.

Any person undertaking a 'restricted operation' or working in a 'restricted operations area' at sites such as service reservoirs, water pumping stations, water treatment works, wells, springs and boreholes or working on the network of water mains and service pipes must be in possession of a EUSR National Water Hygiene Scheme 'blue card'. Restricted operations are defined as work that may involve direct contact or potential contact with:

- Untreated sources of underground water
- Partially or fully treated water within the water treatment works (including stored raw water on its way into the treatment works)
- Treated water at any stage in its storage or distribution to the point where it is made available to customers.

All persons required to use cable avoidance equipment must have received familiarity training on the specific equipment they are using together with successful completion of the 1-day Thames Water approved Utilities Management course or approved equivalent such as City & Guilds accredited.

All confined space training shall conform to the City & Guilds standard 6150 for confined space working and appropriate Thames Water standards.

CSCS Cards or Affiliated Schemes
All those undertaking a construction occupation will be required to hold a valid Construction Skills Certification Scheme (CSCS) card, relevant to the role and duties they undertake, or a card from a partner organisation as set out in the Build UK Training Standard (http://builduk.org/information).

Where it is proposed to use a non-UK contractor, the skill records of all individual workers must be submitted during the tender stage for review and assessment. These skill records must include competency and environmental and health and safety training, part of which must include an adequate understanding of UK environment, health and safety legislative requirements.

All personnel must provide details of their training and competence to a representative of the site management team before commencing work and cards presented may be subject to random verification with the card issuer.

Employers should implement a Competency v Confidence assessment programme, which includes site-based assessment of the skill levels on site in addition to the provision of a competency cards. Thames Water may also undertake and skills-based assessment, if the need arises and appointment process for certain roles.

Requirements for lifting operations and lifting plant operators are detailed in Appendix 2 sections 1.17 and 1.18.

Cultural and Behavioural Safety Programmes
Employers should operate cultural or behavioural safety programmes:

Contractors will be required to participate in these programmes unless they can demonstrate similar programmes of their own.

6.12 Supervision

The supplier must ensure that work is adequately resourced and supervised at all times by competent persons to ensure the complexity of work and risks to the individuals carrying out the work activity have been taken into consideration. The arrangements shall specifically address the supervision of personnel who are new to site, young persons, pregnant women and other personnel at risk e.g., lone workers. The arrangements must also include a plan for dealing with foreseeable emergencies, adverse events and include covering for sickness and leave. The Client has the right to challenge the supervision levels if they deem them to be inappropriate.

6.13 Personal Protective Equipment (PPE)

PPE is the last resort and reference must be made to the hierarchy of control when establishing safe systems of work. PPE required must be defined and suppliers must provide instruction, ensure it is effectively used, provide storage facilities and confirm arrangements for replacement. Where respiratory protection is defined by risk assessment, its use must be supported with face fit testing.

6.14 Occupational Health

Suppliers must ensure that the necessary arrangements are in place for managing occupational health. These arrangements should include pre-employment screening, sickness absence management and should reinforce the need to ensure that health issues are considered when compiling risk assessments.

Health problems should be managed, wherever possible by eliminating and reducing risks through good design. Any hazards and risks which remain following reasonable attempt to eliminate or reduce must be managed on site.

In addition to managing the risk to health arising from their activities, suppliers must manage other health related issues such as:

- the health assessment of those undertaking safety critical roles such as crane operators
- the management of people who have pre-existing health conditions such as diabetes, epilepsy etc.
- the promotion of general health and wellbeing of their workforce.

Where the need is identified through legal requirements or workers being subject to significant exposure of substances e.g., lead, asbestos or chemicals, suppliers must ensure that health surveillance is carried out. Health surveillance is about systematic, regular checks on workers to identify early signs of ill health, and then acting on the results. It is needed to protect workers who are at increased risk but is not a substitute for preventing and controlling exposure rather it is a way of seeking to protect employee's health.

As well as undertaking health surveillance, it is essential that suppliers also act on the results e.g., preventing further exposure to the substance, in the case of dermatitis.

All proactive health surveillance and interventions carried out must be reported to the Client on a monthly basis as part of the leading indicators and performance reporting.

6.15 Welfare

The supplier must arrange suitable and sufficient welfare facilities according to the work in hand, the location of which is to be agreed with Thames Water. In some cases, it may be possible to utilise Thames Water facilities although this must be agreed with the Site Manager prior to work commencing.

Suitable welfare facilities must be provided before the main construction work commences and meet the needs of men, women and anyone with a disability. Where the work being carried out represents a significant risk to health, the supplier must undertake a risk assessment to identify additional welfare arrangements as appropriate.

6.16 Alcohol and drugs (D&A)

The use of non-prescribed drugs and the consumption of alcohol are not permitted on any Thames Water site. Persons believed to be under the influence of either, will be refused entry to site or be directed to leave site. All supplier personnel who are performing safety critical roles and are under any form of prescription medication must notify their employer or principal contractor.

A drug and alcohol policy and associated procedures that include the organisation's approach to:

- Tolerance of alcohol and drug use and limits applicable to the work environment.
- Education and guidance on the effects of alcohol, drugs and substance abuse.
- Provision of assistance for those that declare or are found to have an addiction.
- Clear rules and expectations prohibiting:
  - the use or possession of alcohol, drugs or substances of abuse in the workplace,
  - reporting for work when unfit or under the influence of alcohol, drugs or substances of abuse,
  - allowing or promoting the use of alcohol, drugs or substances of abuse in the workplace.
- A testing regime that includes pre-start, random and 'for cause' testing.

In addition to their own policies all organisations working for Thames Water, and their employees, are required to comply with the Drug and Alcohol Policy a copy of which is available on request or via the Health and Safety Management System. This includes:

D&A Testing Regime

Pre-start testing: Everyone who works for Thames Water will be required to undertake a pre-start D&A test prior to starting work. This will be carried out by the Contractor.

Random testing: The Contractor will undertake a random drug and alcohol testing regime covering everyone who works at Thames Water sites or offices, aimed at testing approximately 10% of the population per year.

'For Cause' testing: Contractor will carry out 'for cause' D&A testing where:

- There is reasonable suspicion that a person's behaviour or performance at work may be impaired through alcohol or drug abuse.
- It is essential to determine whether alcohol or drug abuse was a causal factor in an incident.

Drug and Alcohol limits

- Drugs: There are no acceptable levels of drugs arising from drug misuse. The testing regime provides a positive or negative result. Those taking prescription drugs are advised to inform their supervisor/manager or relevant HR or Occupational Health department.
- Alcohol: The maximum blood alcohol level on Thames Water is 80 milligrams per 100 millilitres of blood, (35 micrograms per 100 millilitres of breath), the current driving limit in England and Wales. Please note that some employers have stricter limits e.g. the rail industry limit, and the employer's limit takes precedent over the Thames Water limit in terms of any disciplinary processes by the employer.

Failure of D&A tests

- Indicative or instantaneous drug testing via saliva or urine testing:
- Negative - clear of drugs, free to continue working
- Non-negative - second sample sent off for independent laboratory testing under full chain of custody arrangements. Individuals will be suspended from Thames Water pending the results, unless the PC gives formal approval following a risk assessment.
- Laboratory drug testing:
- Negative – clear of drugs, individual can return to work.
- Positive – individual not allowed to return to work for Thames Water and referred to his employer for appropriate action under the employer's disciplinary processes.
- Alcohol breathalyser test:
- Negative – free to continue working. However, if the result was only just below the limit the individual's employer will be informed.
- Positive – individual not allowed to return to work for Thames Water and employer asked to arrange safe transport off site appropriate action under the employer's disciplinary processes.
- Refusal to take a D&A test or to cooperate with the testing process will be classed as a positive result and the individual will be removed from Thames Water and referred to his employer for appropriate action under the employer's disciplinary processes.

In all cases of a positive result the Principal Contractor will arrange for the individual's Thames Water safety passport will be revoked.

6.17 Smoking and Vaping

Smoking or vaping on Thames Water sites is prohibited, except in specific designated locations, which excludes all enclosed work areas including offices and welfare facilities. The supplier is responsible for designating smoking areas which must be managed to minimise any fire risk, to avoid creating discomfort to others and as a minimum should comply with any legal requirements to protect people from passive smoking.

6.18 Audio equipment and mobile phones

Personal radios and portable audio equipment are prohibited from Thames Water work sites. The use of mobile phones should be confined to offices and welfare facilities wherever possible and in general, should not be used out on site except for essential business purposes, taking care that their use does not create a risk to the user or others. The use of mobile phones is not permitted when operating plant or equipment or whilst walking or travelling across the site.

The following controls are mandatory:

- Provision of safe zones for the safe use of mobile phones on sites/ locations where construction activities are taking place. These shall be clearly identified.
- Anyone driving a vehicle or operating plant, machinery or equipment is prohibited from using a mobile phone whilst the vehicle, plant or equipment is in use. This includes the use of hands-free devices and applies on all sites and off site if driving on company business.
- This is easily remembered as 'Engine On, Phone Off'

6.19 Non English-speaking personnel

The supplier must ensure that all personnel fully understand the site H&S requirements as expressed orally and in written signage, including emergency arrangements. The language needs of non-English speaking personnel must be addressed through training and during induction.

Non-English speaking personnel must be trained to the same standard as English speaking personnel.

Suppliers must ensure that all staff are properly supervised and particular attention is given to personnel who may have difficulties in understanding verbal or written communications.

Those who are responsible for managing such personnel on site must ensure that arrangements are in place to communicate information, in both written and oral English, relevant to the tasks being carried out. Personnel who are not competent in the English language are permitted provided that the supplier can demonstrate that:

- appropriate arrangements are in place to ensure that instructions are communicated effectively and understood by all team members
- other team members are able to give oral instructions and warnings to non-English speaking personnel
- all personnel have received the same standard of H&S training.

6.20 Inappropriate behaviour

Contractors/Suppliers must ensure that any employee displaying inappropriate behaviour which compromises safety are subject to appropriate action in line with their policy and procedures

6.21 Monitoring, auditing and investigations

Thames Water encourages all suppliers to carry out their own reviews, auditing and any such investigations necessary to provide assurance that the information generated and supplied is valid and verifiable. Suppliers and their personnel must also cooperate fully with any monitoring, audits or specific investigations carried out by suppliers above them in the supply chain, by Thames Water or its representatives.

6.22 Site Inductions

In addition to the Thames Water safety passport, everyone must attend a site induction before starting work on a construction or operational site. This induction is normally provided by the Principal Contractor or Controller of Premises (COP) for the site, unless agreed otherwise.

This induction is intended to engage the workforce in a collaborative approach towards health and safety and to provide specific information relating to hazards and controls on the site including the site rules and emergency arrangements.

Visitors to site will be provided with a visitor's induction and must be escorted on site at all times by someone in a supervisory/managerial position who will be responsible for communicating all relevant site rules and emergency procedures.

Where the person inducted may not understand sufficient written or spoken instructions it is the employing company's responsibility to ensure that information has been fully understood.

6.23 ID Cards

All contractors working in Thames Water permanent offices and on some sites may be required to hold a Thames Water ID card in order to access their place of work. They must thus abide by the Thames Water safety, security and ID requirements applicable to their place of work. Thames Water ID cards must be returned on leaving.

6.24 Personnel Medical Assessments

Thames Water currently offers its employees PMA consisting of the following assessments and therefore encourages all employers and contractors to offer the same to all those working on Thames Water:

- Height/weight
- Blood pressure
- Cholesterol
- Glucose
- Hip/waist ratio (rather than BMI)
- Heart age
- Lung function test (spirometry)
- Basic vision test
- Blood test for liver function
- PSA (Prostate) for men over 55 years of age

6.25 Summer Working

During periods of very hot weather the following measures are to be adopted:

- Those undertaking ground penetrating or other work immediately adjacent to live services or any other activities where there is a risk of flash or flame must wear flame retardant PPE. Those not exposed to such risks can wear non flame retardant, high-visibility, PPE (one or two piece).
- If the ambient temperature is above 28deg Celsius all manual excavation works (i.e. in flame retardant overalls) are to cease until the ambient temperature falls below 28deg C. Other physically demanding works should also be assessed on a case by case basis.
- Plan physically demanding tasks during the cooler morning period.
- Site managers and team leaders are to ensure an adequate supply of cool drinking water is freely available at all work locations.
- Suitable and sufficient breaks are to be taken in shaded areas.
- Rotation of people undertaking physical work to allow for rest and rehydration.

6.26 Weather Specific Clothing

Employers should asses if additional clothing is required to mitigate the impact of extreme weather including cold, wind and rain.

6.27 Emergency Procedures and Arrangements

Principal Contractors/ Contractor must ensure that each site has suitable published emergency arrangements for reasonably foreseeable incidents including fire, gas leaks, environmental pollution, summoning the emergency services and evacuation, etc. This will either be part of the Construction Phase Plan, Risk Assessment/ Method of work (RAMs) or referenced out in a specific Incident Response and Emergency Action Plan. The what3words site address must be included in these procedures and arrangements.

These procedures must be brought to the attention of site managers and supervisors who may need to lead a response from staff and to the site workforce who need to understand the response and comply with the emergency arrangements.

Sites and offices are required to undertake emergency preparedness drills and reviews, which must be communicated to the COP for site. Suppliers are required to participate in these exercises and implement lessons learnt.

6.28 First Aid Provision

Principal Contractors will undertake a risk assessment to determine the appropriate number of trained first aiders and/ or emergency responders and appropriate first aid kits are provided on all sites. They will also ensure that names and locations of first aiders/emergency responders and first aid kits are made known to all on site

All sites should have a fist aider on site at all times, there should be one first aider for the first twelve operatives on process sites.

6.29 Automated External Defibrillator's (AEDs)

Managers of all sites, offices and depots shall consider provision of Automated External Defibrillator's (AEDs). AED(s) as part of their first aid risk assessment which should include the following factors:

- Emergency services accessibility to a casualty who has suffered a sudden cardiac arrest – particularly relevant on remote sites
- The population – is there a high number of persons over 50 years of age?
- The cardiovascular profile of the workforce [elevated cholesterol levels, hypertension, sex, age and body mass index (BMI)]. A BMI of over 30 doubles the risk of heart disease in men.

As all locations are unique, the number of AEDs required should be based on accessibility to workers within 5 minutes as far as is reasonably practical and may therefore mean that not all workers can be covered all of the time.

6.30 Lone Working

Depending on the level of risk to the individual and complexity of work activity, lone working must be avoided where reasonably practicable. Anyone expected to carry out lone working activities shall complete a risk assessment which will include the following:

- Control measures to ensure that they have a means of contact that they define a checking in mechanism.
- That they are suitably first aid trained.
- That they ensure they establish a reporting line with site management wherever they are working.

6.31 Near Misses/ Observations

Everyone is encouraged to report anything with the potential to cause harm or ill health. This can be done via a near miss/observation card e.g. 'See it, Sort it, Report it' or using the reporting database such as SpheraCloud. Only if you are safe to do so, the potential hazard must be removed and the area made safe before an incident occurs.

6.32 Monthly Performance Reporting

Thames Water will be provided with monthly statistical and performance data by the 3rd working day of each month. Depending on the level of work and service being provided, this will include, but not be limited to information such as number of employees, hours worked, any incidents and injury categorisation, site inspections/audits and safety observations, HS&W training, occupational health issues and surveillance, behavioural safety programmes, materials and waste information and fuel

consumption and any other relevant proactive initiatives or campaigns rolled out that improves Health, Safety and Wellbeing. This data will then feed into the overall business leading and lagging indicators on HS&W performance.

Appendix 1 - Incident reporting

Contractors and all individuals must immediately report any incidents to site management and ensure that they are logged within 1 hour of occurring. Reporting and investigation timescales are set out below:

Incidents are classified in the following categories and must be carefully recorded and reported as follows:	Inform line manager, Project Manager & H&S Advisor	Escalate to TW Head of Delivery/ Operations and Contractor Head of SHE	Inform TW Capital Delivery/ Operations Director & Head of SHE	Record incident on SpheraCloud (initial report)	Complete and send Thames Water Home safe counter summary	Submit Exec report EMT paper	Complete Investigation on SpheraCloud	Conduct Executive Incident Review Submit EIR presentation	Complete and issue Lessons Learned/ Briefing note
Low/ Medium risk near miss and service strikes	1hr			24hrs			14 days		
High risk near miss and service strikes/ Dangerous Occurrence	1hr	1hr	1hr	24hrs		48hrs	14 days	21 days	24 days
First aid injury, non- lost time	1hr			24hrs			14 days		
Serious injury Potential LTI	1hr	1hr	1hr	24hrs	24hrs *	48hrs	14 days	21 days	24 days
RIDDOR Reportable injury, including specified injuries or Member of Public	1hr	1hr	1hr	24hrs	24hrs	48hrs	14 days	21 days	24 days
Absenteeism from SAD cases	24hrs	7 days	28 days			**	**	**	

*24 hours or as soon as confirmed as a Lost Time Injury.
**Investigation by employer. Anonymised SAD case data collated at month end.
All documents produced relating to an incident must be attached to the incident investigation on SpheraCloud

The level of investigation should be in proportion to the severity of the incident. Where applicable, relevant documents must be attached to the investigation, for example, witness statements, notification to the HSE, or photographs. As a minimum, the investigation must identify:

- key details of the incident (circumstances, personnel involved, environment etc.)
- immediate action taken
- analysis of assessment of risk and application of safe system of work
- immediate and root cause
- constructive recommendations
- achievable action plan to prevent recurrence (including identification of responsible person

and date for delivery).

Supporting documents must also be attached to the investigation. These will vary depending on the severity of the incident but may include a copy of notification to the enforcing authority, witness statements, maintenance records of relevant tools and plant, relevant inspection records of the site at which the incident occurred, relevant training records, systems of work in place at the time of the incident and toolbox talks which have been provided.

Contractors and Principal Contractor will undertake and complete the investigation within 14 days of the incident occurring. Where this is not reasonably practicable, an application for extension must be made in writing to Thames Water and the relevant HS&WLead as soon as possible. Timely updates (minimum weekly) shall be provided to Thames Water during the investigation.

The prime purpose of incident investigation is to learn and prevent recurrences. For significant incidents and high potential near misses contractors may be required to have senior managers of their business (i.e. Director level) attend a Thames Water 'Executive Incident Review' (EIR).

Contractors and suppliers are expected to undertake incident investigations and support imbedding and communicating lessons learnt. This may include:

- Undertaking an incident investigation.
- Send materials, plant and equipment to independent organisations for testing and evaluation.
- Supplying information to an independent investigation organisation.
- Attend investigation meetings and close outs
- Facilitate the production and communication of lessons learnt, which includes at least;
    - date of alert issue
    - author of the alert
    - clear explanation of the danger/incident
    - detail of the action required and by whom
    - provision for confirmation that action has been taken

Appendix 2 – General hazards

1. Potential hazards found on all Thames Water Sites

1.1 Buried services

Buried electricity cables of all voltage ratings, gas, air and water pipes, chemical lines, oil pipes and fibre optic cables may be encountered on any operational site, private land or highway and record drawings are often incomplete or contain errors. Electric cables do not necessarily lie in straight lines - they snake about within the trench in which they were laid and will not necessarily be laid at standard depths or have warning tape/slabs above them. Hazards from electric cables include burns, electrocution and indirect consequences from the stoppage of process plant. Gas, air, steam, fuel, chemical or water services may be under high pressure and water associated with heated sludge treatment processes may be very hot such that hazards include explosion, flooding, scalding and indirect consequences from the stoppage of operational plant.

1.2 Overhead electricity cables

These are not insulated and may be encountered at all voltage ratings. On operational sites, the clearance may be lower than in highways or public areas. Hazards are similar to those for buried cables but with the additional risk that arcing may occur between the cable and any metal object or water spray.

1.3 Moving machinery

Any operational plant may contain moving machinery, much of which is likely to be controlled automatically and liable to starting from a stationary position without warning. Electrical plant, usually associated with such machinery, will provide hazards similar to those of electricity cables.

1.4 Noise, Dust and Vibration

Machinery, such as engines, turbines, generators, pumps or compressors operating inside buildings may produce very loud noise. High speed machinery may produce high frequency noise.

Minimisation of noise, dust and vibration must be one of the foremost considerations in selection of work methods, tools, plant and equipment. This applies to considerations of both workforce and local community exposure.

- Information on the control of noise, dust and vibration must be included in relevant risk assessments and method statements.
- All compressors, percussion tools, plant and vehicles will be fitted with effective silencers of a type recommended by the manufacturers.
- All plant will be shut down or throttled back to idling speed in between periods of use.
- Plant and equipment will be maintained in good working order, with particular attention being paid to the condition of silencers and acoustic panels.
- All powered hand tools that produced high levels of vibration are to be fitted with vibration reducing isolation measures which reduced vibration transmitted to the user to a minimum. Tools which exceed the action value of (2.8m/s2) are to have reasonably practical (HAVS exposure Monitoring) controls in place.

1.5 Confined spaces

"Confined space" means any place, including any chamber, tank, vat, silo, pit, excavation, tunnel, manhole, pipe, sewer, flue, well or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk of:

i) Serious injury to any person at work arising from a fire or explosion

ii) without prejudice to paragraph (i)
   - the loss of consciousness of any person at work arising from an increase in body temperature;

- the loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen

iii) the drowning of any person at work arising from an increase in the level of liquid

iv) the asphyxiation of any person at work arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid.

Confined spaces are extremely hazardous places, focus should be on the avoidance of entry and must not be entered without a robust safe system of work that includes competent personnel, atmosphere monitoring and rescue arrangements.

1.6 Chemicals

Diesel is stored for use in emergency electricity generators and vehicles. Petrol and liquid petroleum gases are sometimes stored for use in vehicles. Small quantities of chemical reagents are stored for use in laboratories. Escaped liquid gases and laboratory fumes are vented to atmosphere, giving rise to the hazards noted in their vicinity.

Chemicals are stored and used in many processes. Many are toxic, corrosive, harmful or irritant. Gases used in treatment processes (except ozone) are usually stored in liquid form. Lime (irritant), ferric and aluminium sulphates (irritants), hydrofluoric acid and odour suppressants (toxic and corrosive), hydrogen peroxide (oxidising and corrosive) and various polyelectrolytes (which cause surfaces to become slippery if spilt), some of which are flammable, are used in water, sewage and sludge treatment processes. Weed killers are used to reduce maintenance of paved areas. Mercury (toxic) is used as a seal or for electrical contact in some moving process machinery.
Sodium hypochlorite (corrosive, oxidising) is used in the disinfection of water, water mains and plant. In use, it can liberate chlorine gas if mixed with acid or alkali (noted above). Sodium Bisulphate will give off sodium oxide when poured from its container or spilt.

1.7 Working over or near water, including Deep water

In addition to rivers, many works contain large areas of deep and/or fast flowing water which present the risk of drowning.

Thames Water Essential Standard no 3 – ‘Working Near Water’ defines the minimum requirements.

Where possible work should be planned so as to avoid the need to work over or near water.

When working over or near deep/fast flowing water, collective protection measures e.g. guardrails are preferable to individual protection e.g. harnesses.

Anyone carrying out work over or near water must be informed of risks associated with the specific environment and the control measures. They must also be trained in the use of any additional PPE and emergency procedures and rescue equipment.

Thames Water essential standard no3 details specific arrangements for working near non-buoyant water.

1.8 Mechanical and electrical plant/equipment

All such plant/equipment may be dangerous if operated incorrectly. The supplier must not work on Thames Water mechanical plant or electrical equipment unless authorised. Some activities may require a written permit to work.

1.9 Moving vehicles

Any road on an operational works may carry vehicles which are relatively heavy for the class of road. Such vehicles may carry any of the chemicals mentioned above, or sewage sludge.

1.10 Asbestos

Asbestos products, including insulation material, may be found in existing Thames Water structures.

1.11 Lead
Lead may be present in old pipes, roofs, paint, electrical cables, etc.

1.12 Contaminated land
All areas within Thames Water process sites must be treated as ‘brown field sites’ and certain areas may fall within the definition of ‘contaminated land’

1.13 Poisonous plants and dangerous animals
Care should be taken when encountering poisonous plants or potentially dangerous animals on site. These have the potential to cause serious injuries, for example, the sap of giant hogweed can cause severe blistering when exposed to skin and sunlight, and grass snakes emit a very unpleasant deterrent if cornered, similar to skunks. Any unknown plant or animal should be left alone, and the Thames Water Site Manager should be informed so that the necessary steps can be taken to safely manage the plant/animal or remove it from site according to our procedures.

1.14 Temporary Works
Arrangements for minimising and controlling risks throughout the temporary works life-cycle are set out in the Thames Water Essential Standards and constituent principle contractor respective temporary works procedures.

All temporary works are to be designed, design checked, installed, dismantled and checked/approved for loading/ unloading by competent people. Demonstration of their competence to discharge their professional responsibilities will be required.

1.15 Excavations
Thames Water Essential Standards defines minimum requirements.

All excavations shall be subject to a risk assessment by a competent person to determine the need for an appropriate engineering solution, e.g. shoring, battering or stepping. Excavations 1.2m or more in depth shall require such an assessment and the implementation of an agreed engineering solution. Excavations less than 1.2m deep shall be assessed by a competent person to determine the requirements for support.

All practical steps must be taken to prevent danger to any person from excavation/trench collapse.

In all cases where ground is to be broken, a safe system of work must be established to mitigate the risks posed by any underground services or structures. As a minimum this will include use of a Permit to Break Ground.

Conventional hand digging excavation work methods must use electrically insulated digging tools.

1.16 Working at Height

Scaffolding
Thames Water Essential Standard no 17 – ‘Scaffolding’ defines the minimum requirements.

Ladders and Stepladders
Thames Water Essential Standard no. 13 – ‘Portable Access Equipment’ defines the minimum requirements.

Mobile Scaffold Towers
- Must be individually identified and controlled using a tagging system that details who the tower belongs to, who erected it and the date of the last inspection.
- Must be erected and inspected by PASMA trained operatives in line with the manufacturer’s instructions

Open Edges and Openings

- All openings must be clearly marked with indelible markings.
- Netlon type fencing and barrier tape is not to be used as edge protection or as a barrier for restricted area demarcation.
- Staircases will be installed with an integrated handrail or with a proprietary handrail system.
- On steel frame construction, edge protection will be installed on the beams prior to lifting into place.

Shaft Protection

To prevent the falls of persons and materials, shafts will:

- Have edge protection and a designed wall-to-wall platform at each and every floor level below the level under construction.
- Have a full height lockable door/gate to be installed upon striking of the formwork/completion of the riser walls at each floor level
- Have lighting at every floor level in accordance with temporary lighting standards.
- Be under the control of one named company and all access controlled by a permit to work system
- Have signage indicating this is a riser shaft, safe working load of platforms, riser “controller” name/ company.

Falling materials and Tool Tethering

All items used at a height from which they could fall will be used and stored in a suitable manner to prevent the possibility of items falling. Where items cannot be suitably secured during use or storage exclusion zones must be created, demarcated, labelled and maintained until the risk of the item falling has been removed. These must be suitable to contain any falling item based on an assessment which takes account of what might fall, from where, from what height, and potential to be deflected if striking a structure.

All tools used at height where there is a risk of the tool falling further than the working platform or exclusion zone the user is on shall be secured to a suitable anchorage point using specifically designed tool tethering equipment.

Mobile Elevating Work Platforms (MEWPs)

All work involving the use of a Mobile Elevated Work Platforms (MEWPs) on site must:

- Be planned by a competent person who has completed a MEWPs for Managers course.
- Have a specific risk assessment in place.
- Use appropriate equipment.
- Have suitable emergency arrangements in place i.e. a rescue plan and a drill schedule.
- Ensure the prohibition of lone working.

In addition, all MEWPS will:

- Be the correct type for the task.
- Be fitted with a safety device fitted to the basket of the machine to guard against operator injury from entrapment (applicable to all category 3b MEWPs)
- Be subject to a reception check by the Contractor/ Principal Contractor prior to being used on site.
- Have designated and authorised users who are clearly identified.
- Have valid weekly and daily inspections carried out and valid certification in place.
- Be removed from use following the identification of any defects.

1.17 Lifting Operations

All lifting operations should be planned and undertaken in accordance with BS7121 and Thames Water Essential Standard 32.

Principal Contractor will appoint a competent 'appointed person' for lifting operations for all sites where lifting operations are to be carried out. Where the appointed person cannot be on site full time or where there are multiple lifting operations on the site, the Principal Contractor may also appoint a crane coordinator. The site team and the appointed person or crane coordinator must be consulted before contractors carry out any lifting operations.

Contractors must appoint the following personnel for lifting duties – appointed person, crane supervisor, crane driver/ machine operator and slinger/signaller. These persons must be trained and competent to carry out their duties and must be in possession of an appropriate CPCS card or other CSCS approved partner card as set out in the Build UK Training Standard. Contractors' appointed persons are subservient to the Principal Contractor's appointed person.

General Requirements

- All statutory inspections, examinations and tests must be carried out together with planned maintenance as per the manufacturer's guidance.
- All lifting appliances must undergo a formal daily check by the operator.
- A defect reporting procedure must be established where defects are corrected and, where necessary, the lifting appliance is taken out of service.
- Lifting accessories must be clearly marked to identify the date of next inspection. This may be through a colour coding or tagging system.
- Assessment of ground bearing capacity and outrigger pad/haul road and pavements/piling mat design must be carried out by a competent person. Ground conditions, underground services and position of any substructures must also be fully considered by the temporary works coordinator and the appointed person.
- Where 4 yearly overload testing is not carried out, the crane owner must be able to demonstrate that there is a "Defined Written Scope" for the thorough examination of the crane. There must be a "Declaration of Compliance" from the independent company carrying out the thorough examinations. (Note: this does not apply to lorry loaders which still require the 4 yearly static overload testing).
- Independent inspection organisation used for the periodic thorough examinations must be accredited by UKAS and be members of The Safety Assessment Federation (SAFed). Individual engineer surveyors must be independent of those carrying out regular maintenance of the equipment.
- Where the crane or part of the load being lifted can enter prohibited space, such as over a public highway, over a site boundary or adjacent to overhead lines, the crane must be fitted with zone limiting devices. The limiting devices must limit both slewing and derricking as required.
- Truck mounted forklifts and other small forklifts used by delivery companies must not be used on construction sites. Deliveries must be restricted to a suitable hard standing segregated compound.
- Non-hydraulic crawler cranes are prohibited.
- Mobile cranes are prohibited from extracting sheet piles.
- The use of excavators, telehandlers, lorry loaders and lift trucks for lifting personnel is prohibited.
- The use of all types of forks fitted to or suspended from 360 excavators and the backhoe of a 180 excavator is prohibited
- The use of Gin Wheels not fitted with an automatic brake is prohibited.
- The use of Swivel Hoists is prohibited.
- The slinger/signaller is prohibited from acting as the crane operator, except for the lorry loader lifting of small loads.
- When lifting large loads with lorry loaders a slinger/signaller should be used to guide the load, leaving the machine operator to focus on operating the machine from a place of safety. Where small loads are attached/detached by the lorry loader operator, he must not carry the remote control unit whilst climbing onto or off the vehicle.

- It is prohibited to undersling loads under the forks of wheeled forklifts and mobile plant for transportation.
- Suppliers should provide information of the centre of gravity to ensure that lifting operations can be planned.

1.18 Lifting With Excavators

- Excavators are not always the most appropriate machine for lifting operations, as they do not provide the same degree of fine control as a crane. This needs to be taken into account in planning any lifting operations.
- It is recommended that mini excavators (below 8 tonnes) are not used for general lifting duties on construction sites unless specific precautions are taken to ensure that they only operate on firm level ground and only lift well below their rated capacity. Principal Contractors will advise on their approach.
- Excavator operators who are to be engaged in lifting operations must be trained and competent in lifting with an excavator and must be familiar with Rated Capacity Indicators, understand the machine's lifting duty chart and be competent in the use of quick hitch attachments (Module C endorsement on CPCS card).
- Rated Capacity Indicators (RCIs) must be calibrated at least annually and must not be relied upon for establishing the weight of the load.
- A Lift Plan and Permit to Lift must be in place for all excavator lifting operations.
- In order to prevent undue lateral twisting to shackles, the master link must be able to hang freely and an in-line swivel shackle must be used.
- When lifting with excavators the bucket must be removed, and the shackle must be free hanging when attached to the designated lifting point. A swivel shackle must also be placed between the load and the lifting point.
- Any excavator used for lifting shall be fitted with the following equipment and only once a lifting plan has been developed and approved:
- Load fixing device (if a hook, it must be fitted with a safety catch).
- If maximum lift is over 1000kg (1 tonne) a boom lowering control i.e. hose burst check valves to ISO 8643:97.
- Acoustic or visual limiter / indicator.
- Outriggers / blades to manufacturers standards
- All attachments must be compatible and have the SWL indicated and shall be included within the weight of the lift.

1.19 Tunnelling

All shaft, tunnelling and heading works shall be carried out in compliance with BS6164, Code of Practice for Safety in Tunnelling in the Construction Industry and relevant legislation.

Competence requirements are to include the City and Guilds 6151 standard.

1.20 Vehicles, Plant and Equipment

The following, but not limited, Thames Water Essential Standards are relevant and set out minimum requirements:

- No. 4 - Telehandlers
- No. 6 – Mobile Plant
- No. 7 – Fixed Plant and Equipment
- No. 8 – Electrical Safety at Work (Portable Equipment)
- No. 14 – Safety in Vehicle Movements
- No. 19 – Safe Use of Quick Hitches
- No. 21 – Large Commercial Vehicles on Public Highways and Construction Sites
- No. 23 – Occupational Road Risk
- No. 29 – Safe Isolation of Plant and Equipment
- All Angle Grinders are to be fitted with 'kickback' protection – i.e. a system that detects when a

disc is jammed and automatically shuts down the grinder.
- The use of fix blade knives is prohibited on Thames Water activities, only knives that are self-retracting (safety-type) knives are to be used.

Evidence would suggest that the single biggest risk in the use of construction plant and equipment is the in people/plant interface i.e. people getting too close to plant and being struck or trapped. Principle Contractors and contractors will establish, implement and abide by a hierarchy of control.

2. Potential hazards of sewerage and sewage treatment sites

2.1 Sewage

Foul effluent from domestic and industrial discharges may be present in sewers, drains (including those on water treatment sites), tanks, pumping stations, channels, chambers on sewage treatment works and within the network. Its effects are potentially harmful with the possibility of disease (including leptospirosis, otherwise known as Weil's disease) or infection if it enters the body by ingestion, inhalation or through a wound (however minor). Sewage sludge is a product of the sewage treatment process and is extensively present on sewage treatment works in open and sealed tanks. It generally offers harmful effects similar to those of sewage but with greater potential to cause disease due to higher concentrations. Explosions or fire hazards are caused by the gases which are generated by sewage sludge.

Protection against the harmful effects of sewage and sewage sludge is by:

- wearing protective clothing, especially gloves
- washing hands thoroughly before eating or smoking, after using the toilet and after work
- obtaining first aid treatment for all injuries.

2.2 Explosive gases and oxidising substances

Explosive and flammable gases include methane (generated by sludge treatment processes or encountered during excavation), propane and other hydrocarbons and solvents (spilled or discharged to sewers). Oxygen is not itself explosive or flammable, but in excessive concentration can cause other substances (especially hydrocarbons) to ignite or explode unexpectedly (oxygen is used in laboratories, workshops and some treatment processes). Compressed air vessels may burst explosively.

There is a risk of flammable gas and explosive atmospheres in the vicinity of biogas installations (digesters, gas holders, flares, engine houses, etc) and there is a low risk of an explosive atmosphere in sewage pumping stations and sewage installations inlet and primary treatment processes.

The oxidising substances hydrogen peroxide and potassium permanganate are also sometimes used during sewage treatment.

2.3 Toxic gases

Include hydrogen sulphide (generated by septic sewage or sludge), carbon monoxide (generated by combustion engines) and other gases evolved from accidental or illegal discharge into the sewerage system.

2.4 Aeration lanes

Buoyancy is reduced by the super aerated water in this process; life jackets of minimum 275N buoyancy complying with BSEN 399 will be required.

2.5 Absence of oxygen

Caused either because the oxygen has been used up chemically or biologically (e.g. excavation in

chalk) or has been displaced by another, heavier gas (e.g. carbon dioxide).

2.6 Rising mains

Whilst working on rising mains it may be possible for work area to be affected by a back flow or flooding from the delivery end of the rising main.

3 Potential hazards on potable water and water treatment sites

3.1 Chemicals

Water is disinfected by injecting measured quantities of toxic gases, which are stored under pressure in cylinders and drums. The chemicals are chlorine (yellow container), sulphur dioxide (green with yellow band container) and ammonia (black, yellow and red container). All are dangerous gases.

Other hazardous chemicals such as acids, alkalis and liquid oxygen are also frequently present in bulk tanks on Thames Water sites.

Conventional warning signs will usually indicate the presence of such containers, which must not be tampered with. Work in the vicinity of such storage facilities needs clear authorisation and then only with the use of a safe system of work.

3.2 Sludges

Sludge from water treatment processes may contain strong concentrations of the chemicals noted above (section 3.1)

3.3 Immersion in water or other liquids

All tanks, chambers, flumes, channels, filters and reservoirs may contain water or other liquids, carrying a risk of drowning whether deep or shallow. Escape from deep liquids is more difficult. Additionally, when storage reservoirs or other covered structures are filled with liquid, the space above the liquid may become a 'confined' space with potential to cause asphyxiation due to lack of oxygen or the presence of toxic gases.
Abstraction boreholes usually contain very deep water.

There is a risk of illness by contact with certain species of algal toxins (for example, blue green algae) at raw water storage reservoirs.

3.4 Granular Activated Carbon (GAC)

The dust from GAC washing plants may contain peroxide and ozone (both irritants).

3.5 Boreholes

Carbon dioxide and methane gas may accumulate in boreholes; the action of water rising in the borehole can release the gasses out of the top of the borehole.

3.6 Explosive gases and oxidising substances

Where ammonia gas is used, this gives rise to potential explosive atmosphere. The oxidising substances liquid oxygen is used on some water treatment to make ozone which is toxic and oxidizing.

3.7 Loss or contamination of supply

Contamination of drinking water can lead to a significant risk to the health and wellbeing of our customers. This can be from improper use of materials and chemicals or the introduction of harmful pathogens and biological agents.

Appendix 3 – Safe systems of work

The safe system of work must describe the sequence and means of construction and shall include, as a minimum;

- a brief description of the work to be undertaken; including a sketch if necessary
- key activity and/or task specific risk assessments
- details of tools, equipment, plant, materials to be used
- details of environment (physical) factors
- details of permits to work or authorisations required
- specialist safety equipment required
- personal protective equipment required
- details of contacts, site management etc., contingency arrangements
- emergency arrangements
- sequence of main job tasks (identifying the method and associated safety controls)
- details of those persons involved in the work and confirmation that relevant information/instruction (including safety controls) have been satisfactorily communicated
- name of person responsible for implementation and monitoring of safe system of work
- provision to review the safe system of work as appropriate

Appendix 4 – Minimum standards for TOCOP

4.1 TOCOP – General

The TOCOP form confirms that a site, part of a site, or an asset has been passed over to a contractor. This form is not a permit-to-work, nor does it in anyway prescribe safety controls. It does, however, confirm that the site, area or asset is now the responsibility of the Main or Principal Contractor (PC).

It is possible to issue a TOCOP to another third party or Thames Water team. In this case the third party/Thames Water team receiving the TOCOP will take on the role of the 'contractor' and be fully responsible for discharging those duties.

The Contractor is now effectively the Controller of Premises (CoP) for the TOCOP area and anyone entering the TOCOP area must comply with the contractor's rules. This might include requirements such as additional PPE and the requirement to be inducted.

The TOCOP form itself must be authorised and contain the signature of both the Thames Water site manager and the contractor, in order to confirm both transfer and return of control of premises.

A copy of the completed TOCOP should be clearly displayed on the site along with appropriate signage clearly indicating that the area is subject to a TOCOP.

The boundaries of the TOCOP area must be capable of being clearly delineated

4.2 Contractor responsibilities

When issuing the TOCOP it is essential that the contractor understands their responsibilities:

- The transferred TOCOP area must be clearly fenced off with appropriate signage.
- It should be clear who is controlling the TOCOP area and who to contact in an emergency or if access is required.
- Access to the TOCOP area must be controlled.
- Access arrangements i.e. deliveries must be managed to minimise disruption to any nearby residents.
- The contractor is responsible for making regular security/safety checks of the boundary of their TOCOP area. Documentary evidence of these checks should be maintained.

4.3 TOCOP – Key Points

Under the Construction Design and Management Regulations 2015 (CDM 2015) The Client (Thames Water) has the duty to supply the contractor with any pre-construction information that Thames Water may already have. This may include information on existing hazards, service drawings, hazardous area plans etc.

Agree the area that is to be transferred by TOCOP and ensure that this is clearly indicated on a

documented plan.

Identify a suitable means of fencing and securing the area and ensure that signage is in place on the fencing to identify it as a TOCOP work area.

The TOCOP is issued for the duration of the job or 6 monthly, whichever is the shortest. A TOCOP can only be issued for a maximum period of six months as per Thames Water Health & Safety Procedure (HSP) 6 – Permits and Authorisations. If the TOCOP is to continue beyond this period, a full review of arrangements must take place and a fresh TOCOP issued.

The TOCOP must be reviewed if work or site circumstances change significantly.

4.4 TOCOP – Access / Supervision / Liaison / Incidents

There may be a requirement for operational staff to gain specific access to equipment, therefore arrangements must be made in advance and detailed on the TOCOP or a supporting document. If frequent unimpeded access by operational staff is required it may be more appropriate to issue a Thames Water Operational Safety Authorisation (TWOSA) rather than a TOCOP.

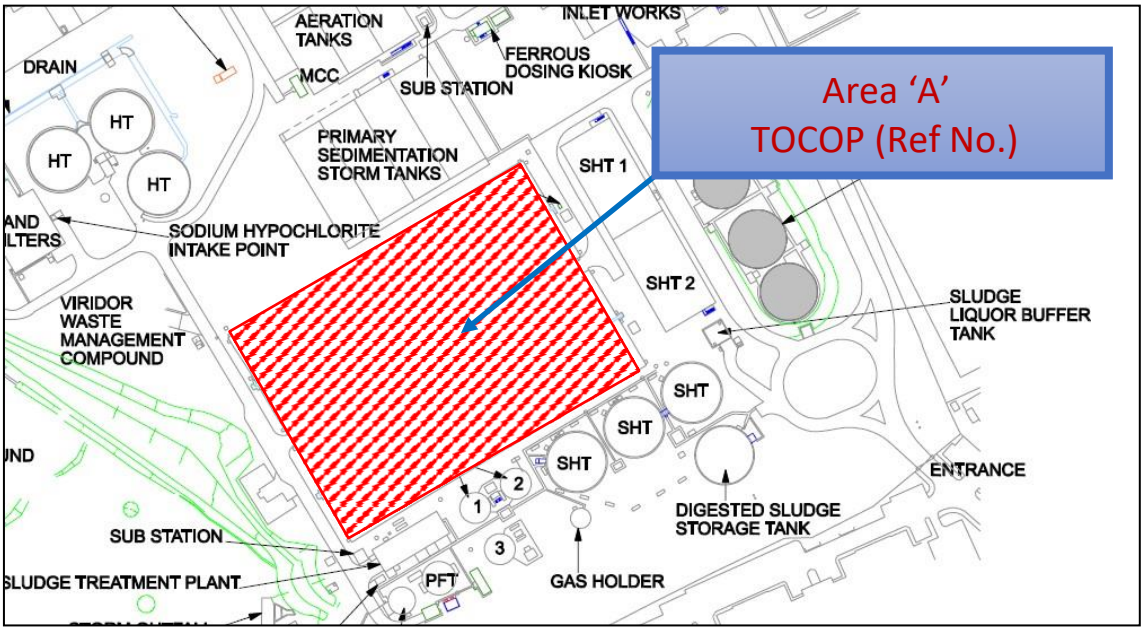
Often access to a TOCOP area is through an operational site so inductions for the TOCOP area must incorporate the bigger site risks and site expectations such as speed limits. Also consider muster points for incidents such as fire, explosions or gas release on larger sites, gas or COMAH sites.

A programme of regular inspections/liaison meetings with the site CoP is required (frequency to be agreed and detailed on the TOCOP or a supporting document). These inspections/liaison meetings should be documented, and records maintained.

All incidents (Injuries, Security Breaches and Near Miss Events) must be reported immediately to the CoP and recorded on Safeguard.

4.5 TOCOP – Site plan requirements

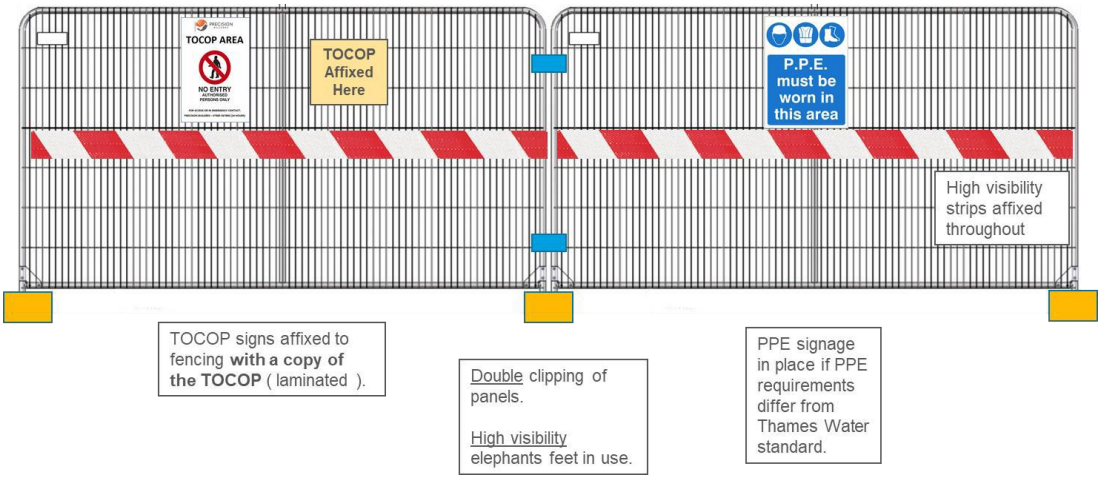
TOCOP Areas must be identified on a site location plan:



4.6 TOCOP – Delineation and security

TOCOP areas must be delineated and secured.

Heras fencing – Expected Minimum Standard:



Alternatives to HERAS fencing such as hoarding are permitted but the TOCOP area must be clearly delineated from any areas not covered under the TOCOP.

The standard of fencing should be sufficient to prevent unauthorised entry to the TOCOP area.

If alternatives to HERAS fencing are used signage requirements are unchanged.

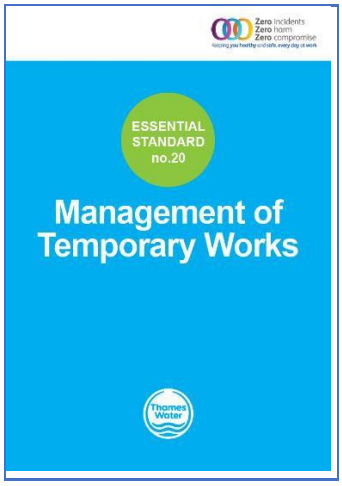
4.7 TOCOP – Temporary works

Temporary site fencing is covered under the Construction (Design and Management) Regulations 2015 and is regarded as Temporary Works.

All Temporary Works must be classified according to risk.

All Temporary Works must be designed and planned by a competent person.

For temporary site fencing on Thames Water sites it is important that Essential Standard No.20 – Management of Temporary Works is followed.



4.8 TOCOP – TOCOP area identification sign (minimum requirements)

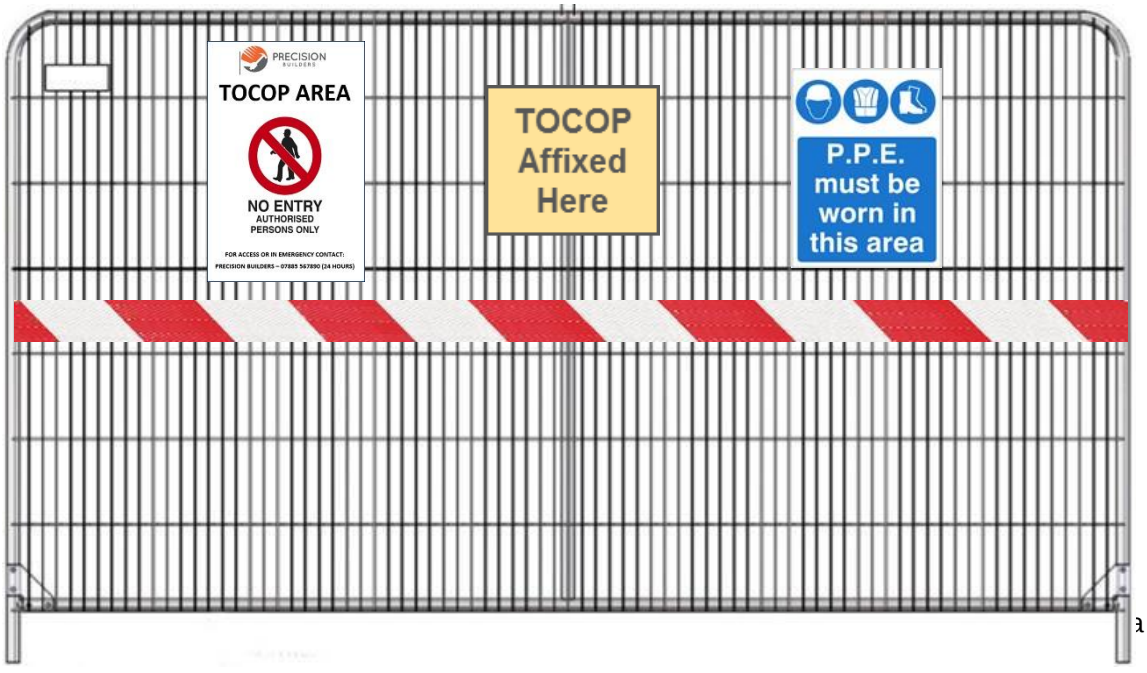
Contractor I.D.

"TOCOP AREA"

Prohibition No Entry pictogram AND wording

Access & Emergency contact details. MUST include 24/7 phone number

4.9 TOCOP - Minimum general signage requirements



TOCOP and PPE signage should be displayed at all agreed access points into the TOCOP area.

Further TOCOP signage should be repeated at intervals along the full demarcation of the TOCOP area such that the signage can easily be seen by persons approaching.

At least one copy of the TOCOP document itself is required to be displayed. As a minimum this should be located at the main access point to the TOCOP area.

Signage must be maintained so that it is in good condition, clean and legible.

The contractor must make regular checks of the signage and immediately replace any that is damaged, missing or illegible.

4.10 TOCOP – NO UNAUTHORISED ACCESS

Entering a TOCOP area without permission constitutes a serious safety breach.

If you are not sure that you are authorised to enter a TOCOP area STOP and contact one of the contacts named on the TOCOP sign or the TOCOP document itself.

If you cannot reach the contacts listed on the sign or TOCOP document, call the Operational Control Duty Manager on 0118 953 1313.

Do not proceed into the TOCOP area until you are sure you are authorised.

Appendix 5.0 Summary of items that are prohibited in Thames Water

Procedure approval/owners/changes to this version

Procedure owners/ latest changes to this version
Procedure owners: Gareth Mullen
Procedure development/review/approval: Gary Crisp; Viv Harvey,
Changes to this version: requirement for what3words address to be recorded and used as part of the site emergency arrangements included in: S5.5, S5.10 and S6.27.
Document Version: 8
Change Note Reference: CR 496
Any identified changes required to this document should be mailed to safetyhealthandwellbeing@thameswater.co.uk