CLIENT: St George West Londodn

CONTRACTOR: Expanded Structures

CONTRACT REF: Camden Goods Yard – Subs 1

Site Specific Emergency Preparedness Plan (Thames Water works)

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P0	21.09.21	P Rowland	S Manson	R Miles	For Acceptance
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Rev No	**Date**	**Summary of Changes**	**Section Number**
P00	20/09/21	First issued	N/A
P01	5/10/21	Revised with comments re TW monitoring	3.7
P02	22/10/2021	Inclusion of Parameters around surcharge loading	2, 3.13
P03	25/10/2021	Inclusion of additional emergency contacts and reference to ground movement vibration monitoring	3.8, 3.13

Contents

1. Overview & Site Location 1
2. Scope 3
3. EMERGENCY ARRANGEMENTS FOR WORKS REQUIRING SEWER ENTRY AND WORKS IN SHAFTS/MANHOLES 6
3.1 Emergency services and operational capacity 6
3.2 First Aid provision 7
3.2.1 First aid provision 7
3.3 Procedure to evacuate a person to a place of safety – Shaft's/Manholes 8
3.4 Access for emergency services 9
3.5 Access / egress 9
3.5.1 Access / egress to the shafts/manholes 9
3.6 Accounting for personnel 9
3.7 Thames Water flow monitoring 9
3.8 Ground movement and vibration monitoring 9
3.9 Gas monitoring 10
3.10 Ventilation 10
3.11 Fire preparedness provision 10
3.12 Emergency report procedure 10
3.13 Emergency phone numbers 11
3.14 Emergency scenarios for Shafts/Manholes 11

1. Overview & Site Location

The purpose of this Emergency Preparedness Plan is to describe and communicate the emergency arrangements for the construction of the S185 works on the main sewers across the Camden Goods Yard (CGY) site and the S106/114 diversion works adjacent Gilbeys Yard, also on the CGY site.

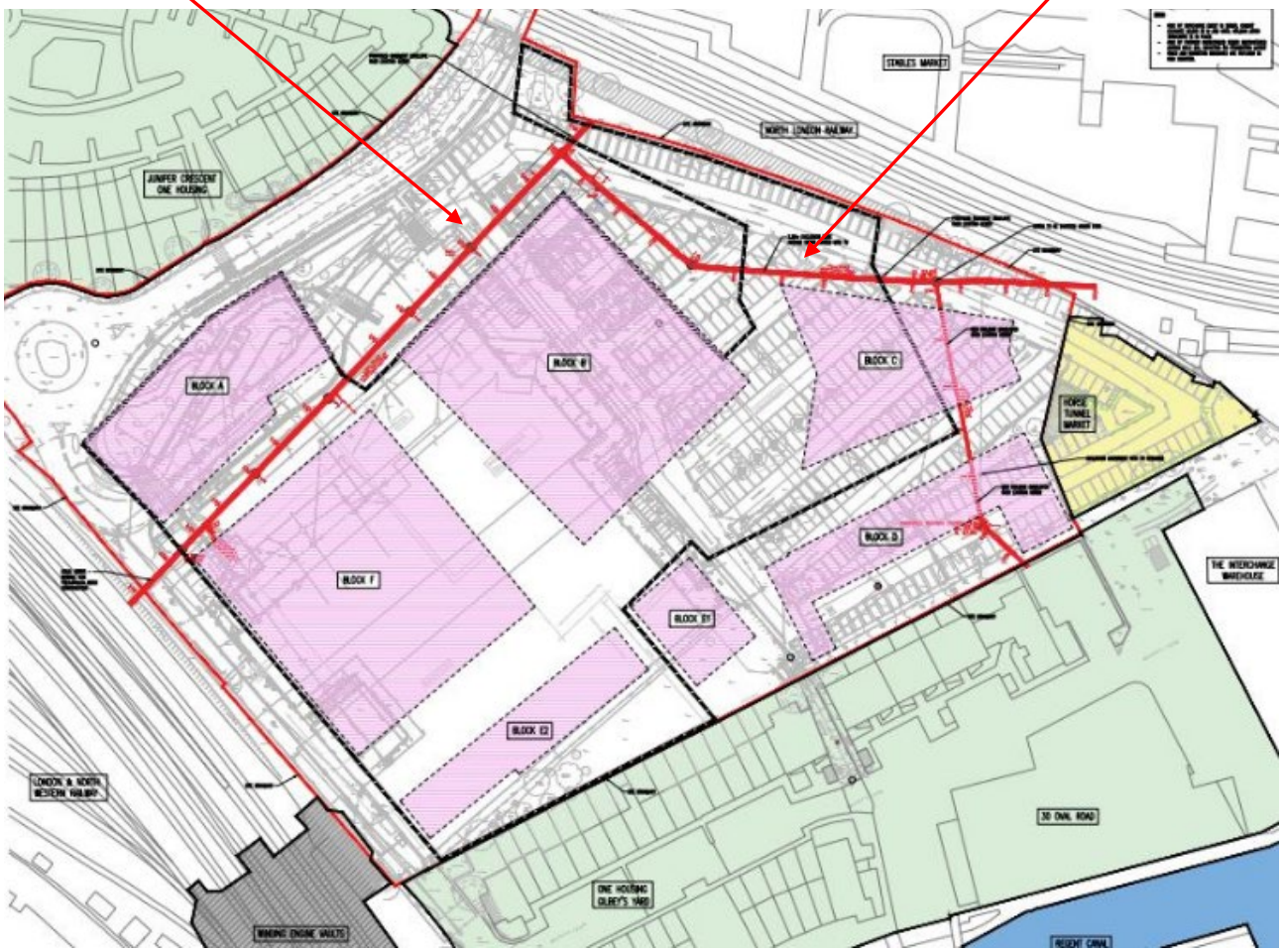
This plan is to be read in conjunction with each activities site specific risk assessment.

Because of the nature of the environment in which the works are being undertaken, the implications of an emergency occurring below ground can become quite serious and potentially difficult to resolve. Therefore, it is essential that Expanded (EXP) are in a position to respond to an emergency incident and will have in place the relevant resources and emergency equipment to carry out non- complicated emergency rescue operations within its capability and/or assist the emergency services in the event of an emergency incident on the worksite.

The site is located off Chalk Farm Road, Tottenham Rise, Camden Town, London NW1 8AA. The site is the old Morrison's Supermarket, now demolished & removed.

Pic 1 – Camden Goods Yard

The site has two main sewers running across the site, both oval/egg brick, running south to north, into west to east, as pic 2 below –

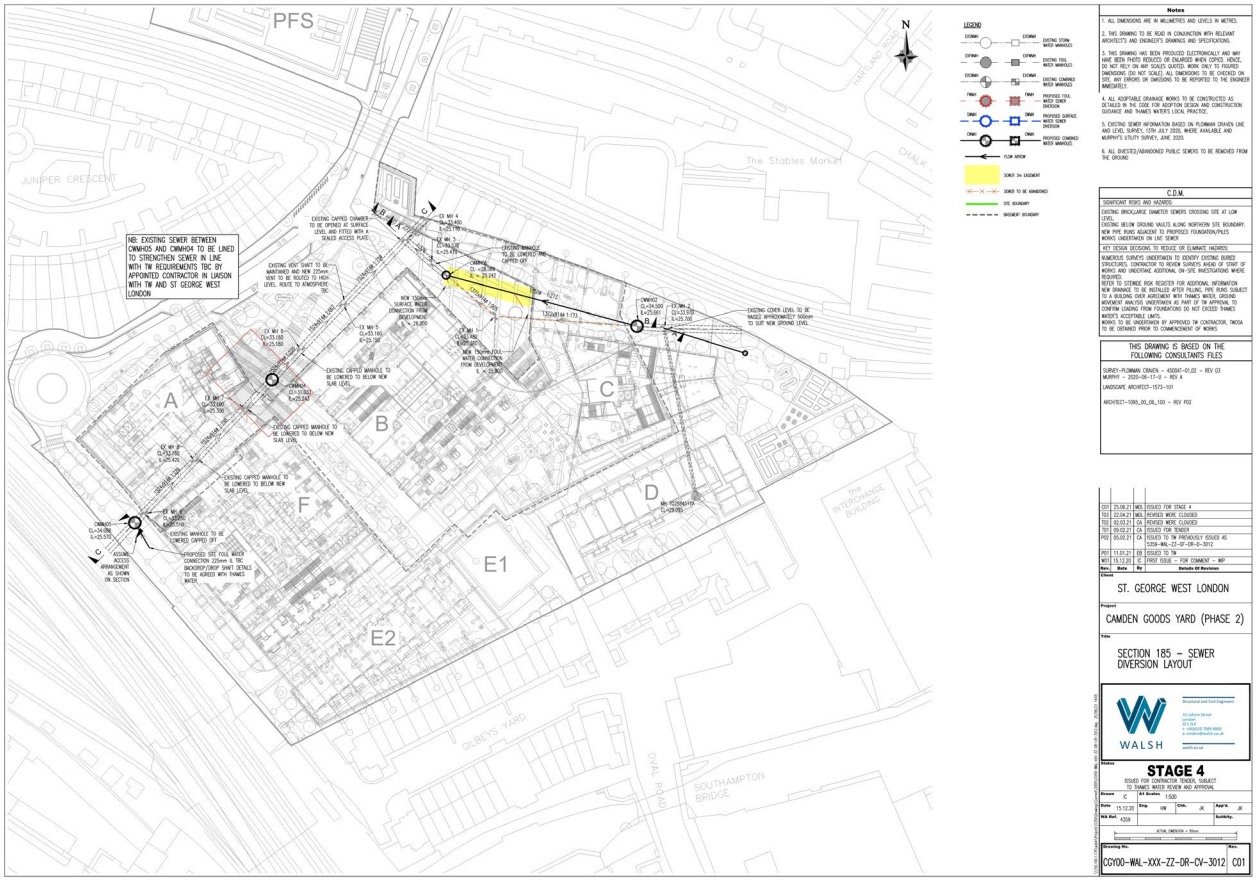


Pic 2 – Camden Goods Yard Sewer Locations

2. Scope

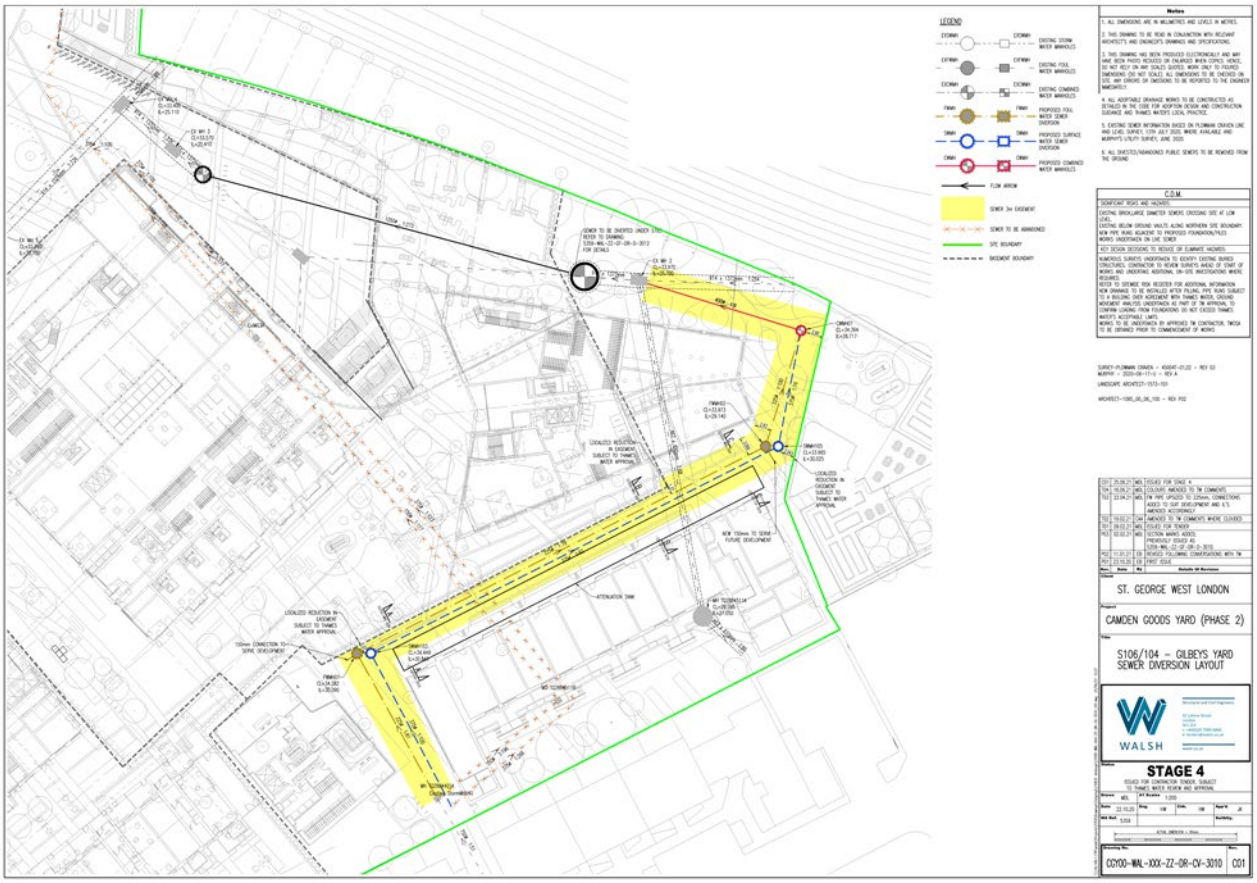
The works at CGY can be broadly broken down to the following –

S185 works – New CWMH02, 04,05 & 06, new 1050dia pipe diversion between CWMH02 & 06. Sewer Lining between CWMH04&05 tbc. These works as shown on Walsh drawing 3012 – Pic 3 below –



Pic 3 – S185 Works

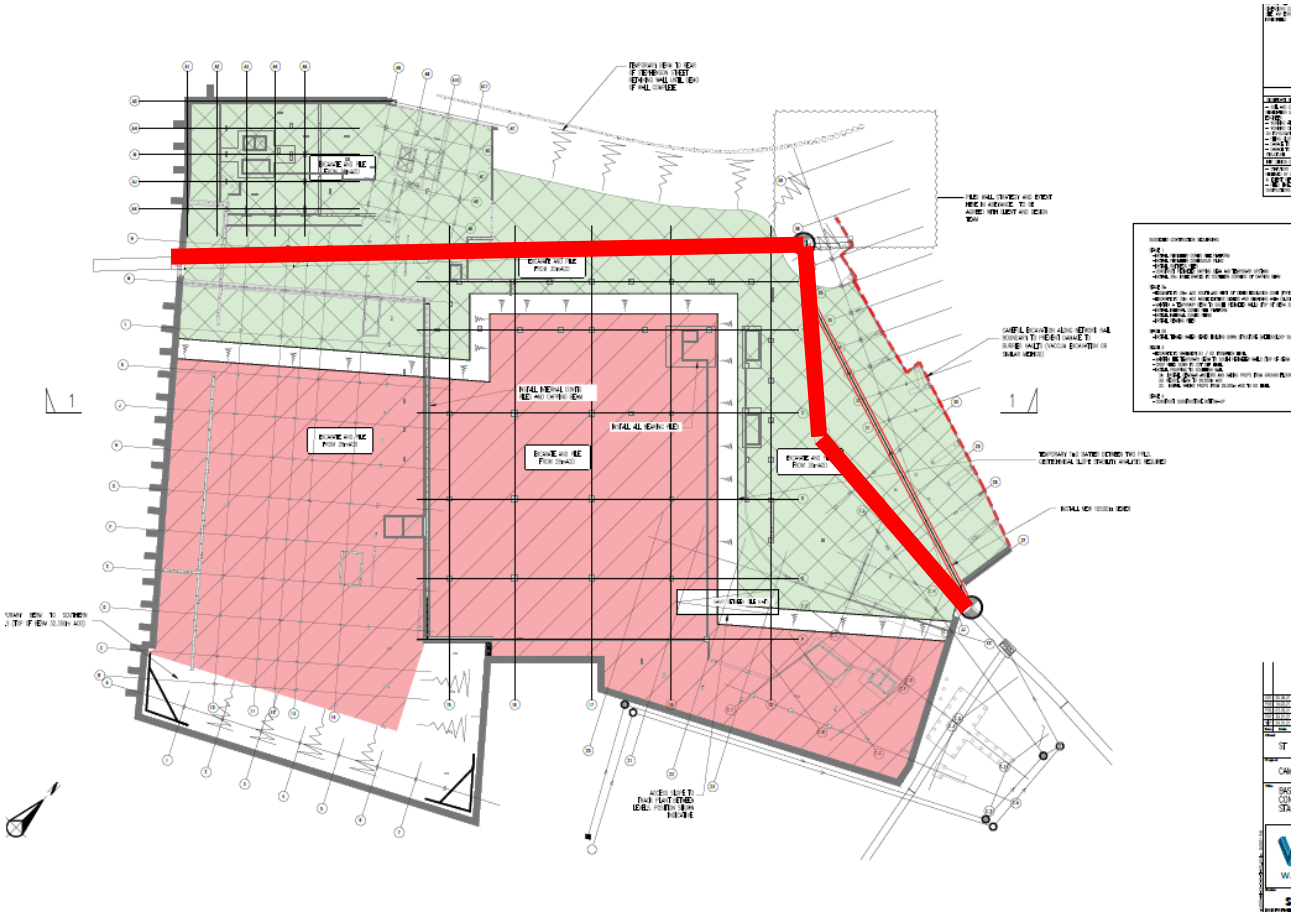
S106/104 works – Gilbey's Yard - New CWMH01, new SWMH103&105 & FWMH01&02 and new pipework between all of the above and connections into existing system – EX MH2, EX MH TQ2884401A – These works as shown on Walsh drawing 3010 as Pic 4 below –



Pic 4 – S106/104 Works – Gilbey's Yard

The majority of the above scope will be conducted in the manner of a normal construction site activity – blue sky, some may require consideration as restricted an even smaller amount will be confined space defined. The specific requirements of each activity will be highlighted in each WPP/RAMS. The works also include all activities required to complete design, construction, commissioning and hand-over of civil, structural elements.

Bulk Excavation Works – The site levels will be lowered to 28.0m and 30.0m as shown in Pic 5 below. The sewer (shown in red) crown level is generally at 27.0m or lower across its length. Excavation works and manhole lowering will not go below this agreed surcharge level of 30.0m except for local areas where new manholes are being constructed. These areas will be controlled under a local excavation and temporary works scheme.



Pic 5 – Excavation works. Area in green is level 30.0, area in pink level 28.0m. Existing sewer shown in Red.

Site construction engineers will be in attendance with the excavation team when working near the existing sewer network. In general, there will be no plant sitting on top of the sewer. Further information and controls will be detailed in the bulk excavation RAMS.

3. EMERGENCY ARRANGEMENTS FOR WORKS REQUIRING SEWER ENTRY AND WORKS IN SHAFTS/MANHOLES

3.1 Emergency services and operational capacity

Part of this EPP is that EXP have in place a plan that interfaces with the Emergency Services in the event of their arrival on site after request from site in an emergency. The primary control of this plan is that dedicated persons meet and greet the emergency services to brief them of the situation and environment of the emergency. This person will always be identified on each WPP and alternative persons, should the primary be unavailable.

The person representing EXP on the worksite in an emergency is the Emergency Response Co-ordinator (ERC) (sometimes referred to as the SIC – Site Incident Controller) is the respective project manager & project engineer as table 1 below.

NAME & JOB TITLE	CONTACT DETAILS	RESPONSIBILITY
Robert Miles Project Manager acting as : Emergency Response Roll Call Co-ordinator/Controller	Expanded Structures Bridge Place 2 Anchor Boulevard Crossways Dartford Kent DA2 6SN Mob 07385 410123 rmiles@laingorourke.com	Emergency Response Co-ordinator shall: Brief site personnel on the key contents in this plan and highlight where it is stored on site. Ensure effective implementation of this plan. Including provisions of adequate resources to deal with emergency incidents
Simon Manson Project Engineer acting as : Deputy Emergency Response Roll Call Co-ordinator/Controller	Expanded Structures Bridge Place 2 Anchor Boulevard Crossways Dartford Kent DA2 6SN Mob 07469 417161 smanson@laingorourke.com	The Deputy Emergency Response Co-ordinator shall: Brief site personnel on the key contents in this plan and highlight where it is stored on site. Ensure effective implementation of this plan. Including provisions of adequate resources to deal with emergency incidents

Site emergency equipment and other issues taken into account needs to be risk assessed when planning a response to emergencies include the following items:

- Emergency Lighting, communications, ventilation and smoke control.
- Transportation of casualties and personnel back to the surface (craneage and davit arm)
- Portable fire-fighting equipment (No hot works in shafts/sewers)
- Maintenance of an Emergency Exercise Planner to schedule exercises involving the workforce and/or emergency services.

The nearest A&E Hospital is located at the Royal Free, Hampstead, Pond Street, NW3 2QG – 1.4miles away. (St Pancreas is a similar distance but probably more timely to get to)

Emergency procedures / plans shall be communicated to our workforce during the site induction. The nearest hospital to the Camden Goods Yard project can be seen below:

St George: Camden Goods Yard
Chalk Farm Rd, London NW1 8AA

1. Head south-west
82 ft
2. Turn right
98 ft
3. At the roundabout, take the 2nd exit
0.1 mi
4. Turn left onto Chalk Farm Rd/A502
Continue to follow A502
1.1 mi
5. Turn right onto Pond St/B518
0.1 mi
6. Turn right
33 ft

Royal Free Hospital Emergency Room
Pond St, London NW3 2QG

3.2 First Aid provision

3.2.1 First aid provision

A Risk Assessment of any required first aid equipment will also be carried out, allowing any specific items to be provided prior to work starting. This will include an industrial First Aid Kit commensurate with the heavy civils work operations and the potential for serious injuries to occur.

First aid equipment, including stretchers will be available next to the shafts, for use in the situation where an injured person is at risk of further harm and needs to be moved or is unable to move

themselves. The stretcher shall be used by competent persons and the emergency services should be contacted and directed to aid the injured person.

Dedicated escape routes will be sign posted and explained to all site and office operatives during induction training and daily activity briefings.

First aid points will be situated at the top of the shaft.

All first aiders will be identified on the site notice boards, including the shaft/pit head board and communicated during the site specific induction.

Self-rescuer sets (PP10's or similar) will be kept with each operative.

3.3 Procedure to evacuate a person to a place of safety – Shaft's/Manholes

Access to each shaft/coffer dam for manhole construction will be via a ladder or site stairs, this being the primary access and escape route. When injured persons are unable to self-evacuate, they will be lifted to the surface with the following options-

There are two backup options, listed in order of priority:

1. There will be a Davit Arm fixed at surface level or tripod and winch for smaller shafts which will act as the primary emergency rescue.
2. A hoisting device will be available on site that can be attached to the attending site lifting devices such as this may raise or lower a stretcher.

The general procedure for emergency/evacuation as follows –

1. Works to be stopped and alarm to be raised via radio informing the slinger and site supervisor of the nature of the alarm.
2. First aider to assess injury/situation – if evacuation required
3. Pit Top to send the stretcher cage down using stairs/backup to incident location.
4. If the injured party cannot be moved, first aider must remain with the injured party until emergency services arrive.
5. If the emergency services are employed on to the site, the site supervisor will explain the risks and hazards of the incident location – if confined or restricted space.
6. If required, lie the injured person via stretcher and secure with safety belts.
7. Stretcher to be secured to davit arm/hoist
8. Stretcher to be brought to ground level.

Emergency escape routes will always be kept clear of trip hazards and obstacles, indicative directional arrows will be clearly displayed and kept up to date at all times as construction develops.

The number of operatives working within the shaft/sewers will be limited as much as possible, reducing the risk exposure of operatives and allowing faster evacuation.

3.4 Access for emergency services

Should the Emergency services need to attend site then vehicles are to go directly to the site RVP on Stephenson Street/Juniper Crescent main site entrance. EXP traffic marshals will assist bringing the emergency services vehicles onto site. The emergency services will be met by the ERC, as identified in section 3.1 above.

Access to the Worksite will be available for the emergency services at all times. The surface of any walkways will be maintained in a safe condition so that they can be used safely by fire-fighters, even in conditions of nil visibility.

Where appropriate EXP will provide assistance with its plant/cranes and man-riders etc to assist the Emergency Services.

3.5 Access / egress

3.5.1 Access / egress to the shafts/manholes

The pit top man will control a tally system alongside the main shaft entrance allowing the site team to quickly ascertain the number and identity of persons who are in the shaft and where they should be working.

3.6 Accounting for personnel

Accounting for site personnel in an emergency StG/EXP site team to print out of who is on site and then being ticked off at the designated muster point. This information will be supplied to the emergency services in the event of an emergency. The personnel in the shafts/manholes will be monitored considering 3.5.

3.7 Thames Water flow monitoring

Before any planned entry is made into any sewer/manhole, flow monitoring records will be reviewed to inform expected flow depths/velocity, these will be used to develop each specific RAMS for any entry. These will be submitted to Thames Water for approval with application for TWOSA and to the IAB prior to entry. Works will then follow the TWOSA and IAB entry protocols as detailed fully in these RAMS

3.8 Ground movement and vibration monitoring

During construction works, ground movement and vibration will be monitored using inclinometers, survey monitoring points and vibration monitors throughout the site. The location of these monitors, measuring frequency, trigger levels and response action is detailed further in Monitoring Action and Response Plan – SEL-KGX-MAP-001.

3.9 Gas monitoring

Shafts, Sewers

Each operative entering the sewer will have a personal Gas monitor. There will be a portable monitor located at the entrance that the top man will take readings from as per the confined space entry procedure. In the event of a fixed or portable gas monitor sounding all personnel shall be briefed to begin immediate safe evacuation. The gas monitors will be calibrated and maintained according to manufacturer's recommendations.

3.10 Ventilation

Shafts/Manholes

Each entry will be assessed individually for ventilation requirements. This will be detailed in the applicable RAMS. Atmosphere will be monitored by the top man using mobile GAS monitor.

Temporary Ventilation system are not currently considered necessary – shafts up to 10M deep with blue sky are normally within comfort levels for heat and humidity. The gas monitoring will give us evidence that the atmosphere is free from pollutants or harmful gases.
Ventilation fan, if subsequently found required will be installed and stated in WPP and Temporary Works Design.

3.11 Fire preparedness provision

Shafts/Manholes

Fire arrangements will be in line with the EXP fire risk assessment. The fire alarm system will be extended and modified as necessary for the different phases of work. The locations of the alarm devices will take into account the layout of the working areas, the adverse nature of the working conditions (especially high noise levels) and the transient nature of the working locations.
Generally – NO hot works inside the shafts/sewers.

3.12 Emergency report procedure

- All accidents or incidents to be reported to the supervisor in charge of the work immediately
- Personal injury accidents are to be recorded in the Accident Book on the same day. Area supervisor is responsible for report incident within area of responsibility
- Supervisor or area manager will then report to the SIC (Site Incident Controller) stating the following:

    - Nature of incident, e.g fire, illness, collapse, atmospheric contamination.
    - Location of incident
    - What assistance is required, if any.
    - Whether evacuation is in progress
    - Any other relevant information

In an emergency situation immediate IMPACT meeting will be held to find solutions. There will be tool box items available on site to deal with bad ground condition.

3.13 Emergency phone numbers

- EXP - SIC (Site Incident Controller) Bob Miles = 07385 410123
- EXP – deputy SIC Simon Manson = 07469 417161
- Fire/Ambulance/Police = 999/112/911
- London Electricity Board = 0800 31 63 105
- Gas Emergency Service = 0800 111 999
- Thames Water = 0800 714 614
- Thames Water 24-hour service number on 0800 316 9800
- Thames Water Waste Operational Control Centre on 0800 009 3908
- Environmental Agency = 0800 807 060
- Duty Manager Contact No 0808 164 4405

3.14 Emergency scenarios for Shafts/Manholes

The table below indicates foreseeable emergency events –

Injuries and medical emergencies	• All work to stop, the SIC will deploy First Aiders if it is safe to do so and emergency services to be contacted in line with the emergency report procedure. • If unable to walk injured party will be assessed by a competent first aider and keep stable until the emergency service arrives on site. The injured person will be ex vac using Davit arm - depending on scenario. • Stretchers will be available next to the shaft. The stretchers shall be used by a competent persons emergency services should be contacted and directed to aid the injured person • SIC will assess the emergency event and evacuate the rest of the personnel outside the shaft and connection tunnel to a place of safety (Muster point - site welfare) if required.
Fire	• Fire Safety arrangements will be in line with EXP Fire risk assessment. • Portable fire extinguishers will be deployed in the shaft at ground level and at the base. • Alarm will be sounded and site evacuated to muster point, • SIC (Shift Manager) will deal with the emergency event and called the emergency services if required.
Flooding of shaft	• Should water start leaking in through the internal perimeter walls of the shaft then the shaft must be evacuated immediately to a point of safety (muster point). • This will be managed on an individual entry by entry basis under the RAMS and approved by Thames Water as a TWOSA and IAB entry permit. Temporary works including bungs / dam boards / diversion or similar may be used. • Sump pumps will be located within the excavation to pump away any surface water.

Collapse of excavation	• Should there be a collapse or instability in the excavation then the area should be demarked as an exclusion zone and the excavation inspected by a TWS/TWC before remedial works are agreed. • If collapse of the excavation within the shaft occurs then the shaft should be evacuated immediately.
Heave from below ground	• In the event of heave coming from the base of the excavation the shaft will be immediately evacuated. • The shaft will be backfilled to compensate the pressure of the ground either with muck if available in the muck bin or with water if muck is not available. • TWC will be called to address the situation.
Breach of surcharge requirement	• Bulk Excavation is not to progress below level 30.0m. • Local excavation below 30.0m will be controlled using a planned approved temporary works scheme and method statement, detailing all control requirements.

Gas Monitor is triggered – No one injured	• If the gas monitors alarm sounds due to gas presence, stop works, check the alarm and alert the working team and the Pit Top via radio/horn.
	• The Pit Top to raise the alarm and to inform the site supervisor of the nature of the alarm and commence immediate safe evacuation.
	• The Pit Top will count exits and update the tally board.
	• The supervisor will investigate the cause of the alarm and to mitigate the reoccurrence prior to anyone entering the confined space.
	• Prior to anyone re-entering the shaft:
	  ○ The shaft will be ventilated.
	  ○ The atmosphere will be checked for at least 20mins without alarm.

Operative injured and incapacitated – Good atmosphere	• Stop works, raise the alarm and inform the Pit Top of the nature of the alarm. • Pit Top to inform the site supervisor of the nature of the alarm and Emergency services will be called if deemed necessary. • Pit Top to send the stretcher down (with Rescue team if needed) via Davit. • First Aider at the bottom to assess emergency/injury and if possible, evacuate the injured person with the stretcher/Davit. • Emergency services will be called, and the guide should be informed. (If deemed necessary) and First Aider will provide assistance. • If the injured party cannot be moved, at least one member of the team must remain with the injured party until the emergency services arrive. • If the emergency services are employed on to the site the Pit Top/SIC will explain the risks and hazards of the confined space to the emergency services prior to entry.

Gas Alarm is triggered – Operative Collapses	• If the gas monitors alarm sounds due to gas presence, stop works, check the alarm and alert the working team and the Pit Top via radio/horn. • Pit Top to raise the alarm and to inform the site supervisor of the nature of the alarm and Emergency services will be called if deemed necessary. • The existing work party will communicate to the Pit Top the gas monitor readings of where they were working and report any injury or casualty. • Pit Top to send the stretcher to lift out the collapsed operative. • Pit Top will count exits and update the tally board to make sure everybody is out. • The first aider will attend to the unconscious person. The first aider must stay with the injured person until the Emergency services arrive.