

Construction Phase Plan

In Accordance with the Construction (Design & Management) Regulations 2015

Client: Rochdale Development Agency

Project: Broadfield Slopes

**Completed by: Robert Clegg
Health and Safety Advisor**

Date: 05/12/2024

Rev: I

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OL12 9PS**

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DOCUMENT REVIEW FORM

Project Name: Broadfield Slopes, Rochdale

VERSION	DATE	DESCRIPTION	CREATED BY	REVIEWED BY
I	05/12/2024	Tender Issue	RClegg	

Construction (Design and Management) Regulations 2015

Construction Phase Plan Index

1.0 Introductory Statement

2.0 Key Project Information

- 2.1 Client
- 2.2 Principal Designer / CDM Designer
- 2.3 Architect
- 2.4 Principal Contractor
- 2.5 Principal Contractor's Health and Safety Director
- 2.6 Principal Contractor's Health and Safety Advisor
- 2.7 Principal Contractor's Contracts Manager
- 2.8 Site Location
- 2.9 Nature of Work
- 2.10 Programme
- 2.11 Health and Safety Executive
- 2.12 Temporary Works Co – Ordinator

3.0 Health and Safety Information

- 3.1 Company Health and Safety Policy Statement
- 3.2 Company Health and Safety Management Structure
- 3.3 Procedures for Communicating Health and Safety Information to Site
- 3.4 Emergency Procedures
- 3.5 Notification to H.S.E. (F10 REV)
- 3.6 Monitoring Health and Safety Standards

- 3.7 Unplanned Events
- 3.8 Health and Safety File
- 4.0 Existing Site Information**
- 4.1 The Surrounding Environment
- 4.2 Services
- 4.3 Ground Conditions
- 4.4 Buildings/Structures
- 4.5 Existing Drawings
- 5.0 Design**
- 5.1 Anticipated Hazards
- 5.2 Risk Assessment & Method Statements
- 6.0 Construction Materials**
- 6.1 Materials
- 6.2 C.O.S.H.H.
- 6.3 Lifting/Manual Handling
- 6.4 Storage of Materials
- 7.0 Site Wide Elements**
- 7.1 Traffic Systems and Restrictions
- 7.2 Compound Area
- 7.3 Welfare Facilities
- 7.4 Fire and Explosion
- 7.5 Waste Disposal
- 7.6 Control of Noise and Vibration
- 7.7 Control of Dust
- 7.8 Children

- 7.9 Asbestos
- 7.10 Plant & Equipment
- 7.11 Working at Height
- 7.12 Site Security
- 7.13 Permits to Work
- 7.14 Temporary Works

8.0 Sub – Contractors Information

- 8.1 List of Subcontractors
- 8.2 Information for Subcontractors
- 8.3 Selection
- 8.4 Co-ordination
- 8.5 Checklist
- 8.6 Agenda for Induction Meetings
- 8.7 Non-Compliance

9.0 Overlap with Clients Undertakings

10.0 Site Procedures

- 10.1 Site Rules
- 10.2 Training and Information
- 10.3 Site Liaison
- 10.4 Continuing Liaison

Appendices

- Appendix 1 Method Statement
- Appendix 2 Risk Assessments
- Appendix 3 CDM Checklist (CGC/CDM/01)

Appendix 4	Pre-Construction Information
Appendix 5	Plant /Machine Operators Certification & Evidence of Competency
Appendix 6	Site Layout and Traffic Management Plan
Appendix 7	COVID-19 Procedures
Appendix 8	Accident and Emergency Procedure
Appendix 9	NJUG Guidance- excavation near trees
Appendix 10	F10
Appendix 11	Asbestos
Appendix 12	HSG 47

I.0 Introductory Statement

- I.1 The document is in accordance with the recommendations laid down within Schedule 5 - Appendix 3 of Document L153 forming part of the Construction (Design and Management) Regulations 2015 (CDM 2015).
- I.2 This Construction Phase Plan has been prepared from all available and relevant information relating to the project, including the Preconstruction Information dated 12th December 2023. It sets out the general framework for the management of health and safety during the duration of the project.
- I.3 This document will need to be developed, reviewed and updated as the project progresses, further design work is completed, information from sub – contractors become available and unforeseen circumstances or variations arise.
- I.4 In order to maintain high standards of health and safety, all construction work will be monitored and controlled throughout the duration of the project.
- I.5 The main objectives of this Construction Phase Plan are to achieve a safe working environment for all persons who may be affected by the work operations. Such objectives include inter alia:
 - The elimination of all reportable accidents (under the provisions of Reporting of Injuries, Diseases and Dangerous Occurrence Regulations)
 - To actively manage safety and in so doing, improve the safety awareness of all personnel involved with the site and ensure that safe working practices, for all employees, are established and adhered to
 - To encourage all employees to take part in improving the health and safety standards as detailed within this Construction Phase Plan.

This document details the various health and safety arrangements, which will be required during the progress of all construction work on the Client's property/land.

This document will be completed in full, where relevant to this project, and developed as the project progresses and will provide the basis for the Health and Safety File.

2.0 Key Project Information

2.1 Client / Project Manager

Rochdale Development Agency
Number One
Riverside,
Smith Street,
Rochdale.
OL16 1XUM.
07976 059162
E.Birkett@investinrochdale.co.uk

2.2 Principal Designer

Safer Sphere
Victoria House
15 Pocket Nook Street
St Helens
WA9 1LR
M.07927 550922
chris.shaw@safersphereco.uk

2.3 Principal Contractor

P Casey & Co Ltd
Rydings Road
Rochdale
OL12 9PS

Graham Lang
01706 341 121
graham.lang@casey.co.uk

2.5 Principal Contractor's Health & Safety Director

The Casey Group Ltd
Rydings Road
Rochdale
OL12 9PS

Paul Turner
01706 341121
paul.turner@casey.co.uk

2.6 Principal Contractor's Health and Safety Advisors

The Casey Group Ltd
Rydings Road
Rochdale
OL12 9PS

Phil Hey (Group Advisor)
01706 341121
0797 099 4350
phil.hey@casey.co.uk

2.7 Principal Contractor's Contracts Manager

Richard Charlesworth
01706 341121
Richard.charlesworth@casey.co.uk

2.8

Site Location:

Broadfield Slopes (rear of Town Hall),
Rochdale Town Hall,
The Esplanade,
Rochdale,
OL16 1AB.

2.9 Nature of Work

- The works will consist of the following activities;
- Structural and civil works including regrading, releveling and stabilising the existing
- slopes, together with drainage improvements,
- Creation of accessible pathways through the slopes,
- Restoration works to the stonework including the walls, steps and features around Packer Spout,
- Installation of new lighting to the amenity space and footpaths together with lighting to Packer Spout such as feature lights to the stairs and lanterns to stone pillars around the Packer Spout,
- Landscaping works to the slopes including tree, shrub and grass planting and also the creation of wildflower meadow areas,
- As part of the planned works, an archaeological study will be carried out during the works.

2.10 Programme

Commencement Date : TBC

Proposed Completion Date : TBC

2.11 Health and Safety Executive

Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS

2.12 Temporary Works Supervisor & Site Manager

TBC
P Casey & Co Ltd
Rydings Road
Rochdale
Lancashire OL12 9PS

3.0 Health & Safety

3.1 Company Health & Safety Policy Statement

As enclosed.

3.2 Company Health & Safety Management Structure

As enclosed diagram.

- (a) Chris Casey Managing Director has overall responsibility for the Company's health and safety performance.
- (b) A member of the Health and Safety Team will make regular site inspections, reporting directly to the Managing Director.
- (c) The Site Manager has the day-to-day responsibility for the management of health and safety.

3.3 Procedures for Communicating Health & Safety Information to Site

This Construction Phase Plan will be issued to the Site Manager prior to commencement.

An induction meeting will be held by the Site Manager and Health and Safety Advisor before site work commences, to ensure that the operatives are aware of all basic health and safety practices, site rules etc.

This will be further augmented by on going inductions of new operatives and "toolbox" talks by the Site Manager as necessary.

3.4 Emergency Procedures

The attached list of emergency telephone numbers will be completed by the Site Manager on commencement and displayed in the site office, (prior to this the local Hospital A&E information must be appropriately entered) adjacent to the telephone. All operatives shall be advised of its existence during induction processes.

The Company accident/emergency procedure will also be displayed alongside the above – indicating the precise location of the site and the name and location of the nearest Hospital with accident and emergency facilities.

3.5 Notification to H.S.E.

The Company has, as Principal Contractor, completed the particulars specified on the F10 form for notification to the Health and Safety Executive. Copies of this form will be displayed on site at all times.

3.6 Monitoring Health and Safety Standards

Regular visits will be made by a Company Health and Safety Advisor who carries out inspections and prepares reports, drawing any non - compliance to the Site Manager's immediate attention. Any serious situations or continuing non - compliance will be reported to senior management.

At the conclusion of the project the reports will be reviewed, and any incident report studied, in order to eliminate any similar circumstances or occurrences in the future.

3.7 Unplanned Events

The Site Manager shall inform, by telephone immediately, and subsequently confirm in writing, any of the following to the Principal Designer and the Company Health and Safety Advisor.

- a) Any incident/accident required to be reported to the H.S.E. under the R.I.D.D.O.R. Regulations.
- b) Any enforcement action by the H.S.E. or any other enforcement body, whether in relation to Health & Safety matters or otherwise.
- c) Any major change of the design and/or to the resources required to complete the work which may involve amendment to the Construction Phase Plan.

3.8 The Health & Safety File

An existing Health & Safety File and Operations and Maintenance Manual(s) are not provided.

All relevant documentation will be handed over to the Principal Designer at the end of the project for incorporation into the Project Health & Safety File.

All alterations to the “original design proposals” will be recorded by the Principal Contractor / sub – contractor concerned and incorporated within this Construction Phase Plan in order that they can be included within the final Health & Safety File.

COMPANY HEALTH & SAFETY POLICY STATEMENT

The company recognises that under the Health and Safety at Work etc. Act. 1974, the company has a legal duty to ensure, so far as is reasonably practicable, the health, safety and welfare of all its employees, all members of the public and all users of its premises.

The Board of Directors of the Company accepts this duty, and it will continue to be the policy of the Company, as it has always been, to give the greatest importance to these matters, considering that safety is a management responsibility at least equal to that of any other function. It is equally the legal duty of every employee to take responsible care for the health and safety of themselves and any other persons who may be affected by their acts or omissions at work and to co-operate with management in ensuring the safety, health and welfare of employees as a whole.

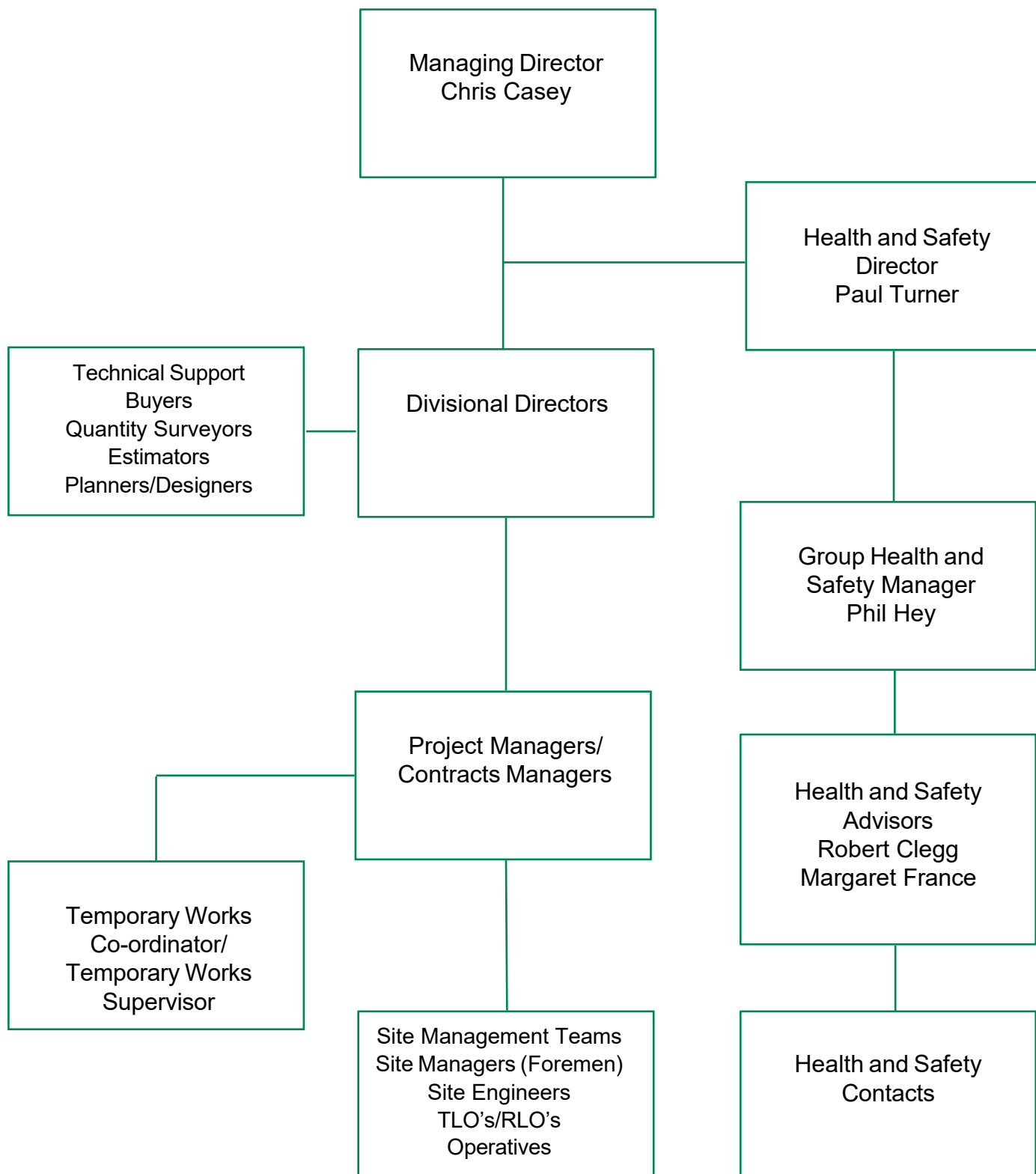
The Board and management of the company believe that, given such care and co-operation by employees, it is possible for it to conduct its operations in such a way that injury to employees, and loss or damage to property can be reduced to a minimum. To achieve this, the company will continue to make available safety training, to provide personal protective equipment where necessary and to regularly review its safety organisation and procedures.

The company maintains OHSAS 45001 certification.

Managing Director: Mr C P Casey

Date: 7th August 2023

HEALTH & SAFETY MANGEMENT STRUCTURE



TO BE DISPLAYED ADJACENT OR AS CLOSE AS POSSIBLE TO THE SITE TELEPHONE: -

POLICE, FIRE, AMBULANCE	999
POLICE STATION	101
NEAREST ACCIDENT & EMERGENCY HOSPITAL DEPT	Rochdale Old Rd, Bury BL9 7T 0161 624 0420
ELECTRICITY	0845 272 2424
BRITISH TELECOM	100
ENVIRONMENT AGENCY	0800 807060
BRITISH GAS TRANSCO	0800 111 999
NORTHERN POWERGRID	0800 375 675

HEALTH AND SAFETY EXECUTIVE	0161 952 8200
CONTRACTORS 24 HOUR EMERGENCY NUMBER	0800 328707

4.0 Existing Site Information

4.1 The Surrounding Environment

The site is set within a busy town centre location, the surrounding land is used for a variety of uses such as retail, food and beverage establishments, Broadfield Primary School is also located within close proximity to the site.

4.2 Services

Drainage CCTV Report, CCTV Drainage survey and Manhole Report all provided with

4.3 Ground Conditions

Awaiting Information

4.4 Building / Structures

Structural - Foundations of previously demolished structures to be removed as part of this contract.

Mechanical and/or electrical - Statutory undertakers diversions will be required as part of this contract and managed by the Principal Contractor.

4.5 Drawings

As per drawings provided.

5.0 Design

5.1 Anticipated Hazards

The following significant hazards or work sequences, which cannot be avoided or designed out, have been identified:

1. The Site Set – Up, Material Deliveries and Traffic Management
2. Maintenance of access and egress
3. Protection of Children, Visitors and Members of the Public
4. Control of Noise, Vibration and Dust
5. Working with Powered Hand Tools
6. Manual Handling
7. Mechanical Handling
8. Procedures for dealing with fire
9. Removal of Rubbish
10. Leptospirosis – Weils Disease
11. Hazardous Substances
12. Procedure for dealing with Needles/Sharps
13. Working inside of Tenants Properties
14. Site Security – Out of hours
15. Working inside tenants' properties
16. Working with Stepladders
17. Working in the vicinity of trees
18. More to follow as works proceeds

5.2 Risk Assessments & Method Statements

Risk Assessment & Method statements addressing the aforementioned hazards will be prepared before commencing any of the operations. These will be included in Appendix I of this Health & Safety Plan.

Method statements incorporating risk assessments will be required from sub-contractors as the project progresses but before their commencement on site. The Principal Contractor will co-ordinate the preparation of method statements where the activities and risk relate to more than one sub-contractor.

6.0 Construction Materials

6.1 Materials

In general, the materials to be used in this project are commonly used in construction and their handling and use will be strictly in accordance with the manufacturer's information, recommendations, and good practice.

Asbestos registers to be referred to prior to commencement of works.

Should any asbestos or suspect asbestos be uncovered in any other location likely to be affected by the works, then work in that area must stop immediately and the Site Manager and the client notified. The HSE EMI Asbestos Essentials procedure for discovery of suspected asbestos containing material must be followed which is located in appendix 8

6.2 COSHH

Any materials or substances which fall under The Control of Substances Hazardous to Health Regulations, the manufacturer's health and safety data sheets will be obtained and a COSHH assessment prepared before any such material is brought to site.

This information will be made available on site and all staff and site operatives are instructed to refer to the COSHH assessments before handling, storing or using the material.

All sub-contractors will be required to carry out their own COSHH assessments on any materials which they intend to use and these, together with the manufacturer's health and safety data sheets, will be submitted to this Company for approval before the materials are brought to site.

The COSHH assessments will be contained in the Risk Assessment Manual on site.

6.3 Lifting/Manual Handling

Risk assessments in relation to the handling, lifting or carrying of heavy or awkward loads will be carried out in accordance with The Manual Handling Operations Regulations 1992 and all operatives will be instructed and trained accordingly. Wherever practicable, mechanical handling aids will be employed, or additional labour will be used to assist.

6.4 Storage of Materials

Specific areas will be set aside for the delivery, loading, and unloading of materials and contractor's storage.

All unloading will be at the side accommodation or direct into the works area and will not be left blocking public access routes. Storage of material will be within suitable containers within the compound area, positioned away from vehicular access and routes in order to allow access and egress of emergency vehicles.

7.0 Site Wide Elements

7.1 Traffic Systems and Restrictions

A traffic management plan will be completed by the Site Manager prior to commencement of the works this will include delivery times, routes etc. Consideration will be given with regards to the delivery times and the drop off and collection times.

Access to be kept clear for emergency services at all times.

All vehicular and pedestrian thoroughfares must be maintained clear and free from obstructions at all times except where secured off in the immediate vicinity of the works.

Parking of contractor's vehicles will be done so not to hinder residents parking.

The Principal Contractor will take into account any parking / unloading restrictions imposed by the local authorities or police and should restrict construction traffic parking and unloading to the site as far as practicable.

In accordance with the Planning Restrictions and Conditions the working hours will be agreed by the Client, no working on Sunday or Bank Holidays without prior written permission from the Client.

No deliveries will be accepted on the site before 08.00 or between 08.45 – 09.30 and 15.00 – 16.00 or after 16.30. There will be no waiting allowed on the public road outside the site or in the site entrance before site start time or during the specified times. All lorries will be turned away from the vicinity of the site.

The Principal Contractor will incorporate existing conditions noted into the Traffic Management Procedure, giving due cognisance to the existing surrounding residential and commercial developments, existing vehicular traffic and pedestrian routes, the on-site works and how they interact.

7.2 Compound Area

The compound area will be set up in the agreed location and a compound layout plan will be drawn up.

The compound will be fenced off by Heras fencing which will be double clipped and have lockable gates. The Gates will be locked at all times when not in use. All materials will be stored within the compound area to prevent any unauthorised access, and suitable signage will be posted.

7.3 Welfare Facilities

Welfare facilities will consist of:

1. A heated and ventilated mess room for site personnel.
2. Facilities to heat food.
3. A hot water supply for hand washing.
4. A facility to boil water.
5. An adequate supply of wholesome drinking water.
6. Toilet and hand washing facilities.
7. Provision will be made for changing out of wet clothing and for drying wet clothing.
8. An appointed first aider and adequate and suitable first aid during normal working hours.
9. An Accident Book will be kept in a prominent position in the site office at all times. All accidents must be reported to the Site Manager and entered in the Site Accident Book.
10. Access to and egress from all site accommodation and welfare facilities will be kept in a safe, clean and tidy condition.
11. All site accommodation and welfare facilities will be cleaned regularly and kept in a clean, tidy and hygienic condition.
12. Suitable fire extinguishers for all staff and welfare accommodation and for all storage heaters will be provided.
13. All cabins and/or offices using mains electricity will be a protected electricity supply by means of a residual current device (RCD).
14. LPG, if used, will be stored in secure external ventilated gas cages and not be stored in site accommodation or storage units.

7.4 Fire and Explosion

A fire risk assessment will be completed prior to commencement of the works this will be available to view on site.

All site operatives and sub-contractors will be made aware of company procedure in the event of fire and explosion.

The Site Manager will advise the operatives of the sound of the intended fire alarm and the location of the designated assembly point where everyone must register their presence in the event of a fire.

Operatives will be trained to consider the changing nature of the site and that to understand, unlike an office or warehouse, where very little changes, the site is constantly changing:

‘Last week’s evacuation route could be this week’s dead end.’

All site offices, stores, mess cabins etc. will be fitted with suitable fire extinguishers and all site personnel will be made aware of correct usage in case of emergency.

All materials and substances must be stored in accordance with the manufacturer’s instructions and the information contained in the COSHH assessment records and the manufacturer’s health and safety data sheets.

All flammable materials will be kept in a separate flameproof lockable container fitted with suitable extinguishing media.

All spare and empty LPG cylinders will be stored in a lockable gas cage situated at least 3 metres from any other building, cabin, structure, perimeter fence or excavation and in the open air. All gas cages must be fitted with the regulation inflammable gas warning signs and notices. Gas cylinders will not be stored in cabins, containers or other similar buildings unless they are an integral part of the equipment.

The burning of rubbish on site is not permitted in any circumstances.

Smoking will only be permitted in the designated areas.

7.5 Waste Disposal

Rubbish, debris, etc. will be collected regularly from the work area and not allowed to accumulate.

The Company is registered with the Environment Agency as required by The Controlled Waste (Registration of Waste Carriers and Seizure of Vehicles) Regulations 1991, Registered Carrier No. CBDU110103.

Relevant waste transfer notes and duty of care notes will be required to be completed and copies kept on site.

7.6 Control of Noise and Vibration

All necessary steps will be taken to reduce noise levels from plant and machinery in accordance with The Control of Noise at Work Regulations 2005. Where reasonably practicable, noise levels will be reduced at source to their lowest reasonable level and Personal Protective Equipment must only be employed as a last resort.

Noise assessments, where considered necessary, will be carried out by the Company Health and Safety Advisor and appropriate measures taken to protect site operatives, residents and the general public from the effects of noise.

Vibration assessments will be carried out on site for all tools which are being used, this is undertaken by either collecting data from the tool and then transferred onto the HSE vibration calculator. Daily HAV's records will be kept on site for audit purposes.

7.7 Control of Dust

All necessary precautions will be taken to protect residents, site operatives and the general public from the effects of the inhalation of respirable dust caused by the works. All operations, which create dust, will include a type of dust suppression technique, such as damping down or mechanical dust extraction. This applies especially to cutting or grinding operations. All operatives will be issued with and required to wear suitable goggles and masks or respirators, wherever this type of work is being carried out. All operatives who wear a dust mask will be required to have completed a Face Fit Test within the last 2 years.

7.8 Children

It will be assumed that there will be children living on or in close proximity to the work areas. Therefore, all work operations will be carried out in accordance with HSE Guidance Note GS7 "Accidents to Children on Construction Sites" and HSE publication "Protecting the Public – Your Next Move", both of which are issued to all sites in the Company Site Starter Packs.

All high-risk areas will be made safe at the end of each working day by the erection of a secure fence (Heras or similar) around the area. Suitable warning signs and notices will be securely affixed to the fencing.

All site plant will be either locked securely away or be effectively immobilised to prevent unauthorised use.

7.9 Asbestos

If any material is suspected to contain asbestos, then works will be stopped immediately and the Site Manager will be informed. The correct removal / clean up procedure will be adopted; this will be carried out by a competent sub-contractor and following the HSE – EMI Asbestos Essentials Guidelines found in Appendix 8 of the document.

Anyone who may potentially come in to contact with any asbestos must have received asbestos awareness training prior to works commencing.

7.10 Plant & Equipment

Each activity involving the use of plant and equipment will have a Risk Assessment completed and a maintenance regime in place. Each item of plant will undergo a daily inspection which will be recorded and lifting plant and accessories will have the thorough examination certificate available to view on site. All lifting plant and accessories will also be LOLER inspected every 7 days by a competent person and this will be recorded.

There is a risk of causing damage to the health of operatives due to manoeuvring heavy plant or materials around the site. Where construction materials exceeding 20kg in weight require to be dismantled from or installed in the building, the Principal Contractor shall describe their method of dismantling/transporting/unloading/installing the materials, paying due attention to health and safety.

All electrical equipment on site will be PAT tested.

Refuelling

Refuelling of plant and equipment will take place in a designated area of the site and is to be done only by competent persons.

Bunded fuel tanks will be used to contain any spillages.

A spill kit will only be located in the refuelling area. Any spillages are to be reported to the Site Manager.

Where possible, battery powered tools will be used.

If this is not possible then generators should be used to provide power. Caution must be taken with trailing cables to prevent any trip hazards. Generators must be selected bearing in mind the noise levels emitted, control measures such as exclusion zones and hearing protection must be implemented if the generator emits excessive noise levels. Drip trays must also be used for the generators.

7.11 Working at Height

All work at height is to be planned and organised. If work at height is unavoidable then suitable and sufficient equipment i.e scaffolding, mobile tower scaffolds etc. will be used. All hazards surrounding these activities will be identified in risk assessments and appropriate control measures will be established which will be communicated to operatives before any works commence.

Falling Objects

All operatives, management & visitors are required to wear hard hats at all times. Scaffolds are to have sufficient toe boards and no gap greater than 50mm (scaffold tube width) to reduce the risk of materials or tools falling from the scaffold.

All loads being lifted will be secured by a competent person to ensure that the load is not going to fall. There will be no slewing over persons.

7.12 Site Security

The site will be securely fenced off with the use of solid and non-solid hoarding. All access gates will be kept closed at all times, except from vehicles are entering and exiting the site. Clear signage will be displayed to deter any unauthorised persons from entering the site.

Suitable and sufficient CCTV will also be in use once the site has commenced.

7.13 Permits to Work

The Principal Contractor shall operate a “Permit to Work” system for the following situations:

- As required by Statutory Services Undertaking
- Use of ladders
- Works on live services
- Excavations in connection with ground contaminants
- Hot Works (to be kept in a minimum, designed out where possible)

7.14 Temporary Works

A temporary works folder will be available on site. This will include all the temporary works appointments, register, design briefs, permit to load, safety checklist, inspection form and permit to dismantle.

8.0 Sub-Contractors Information

8.1 Sub – Contractors

The enclosed list will be completed as sub – contractors are appointed.

8.2 Information for Sub-Contractors – Notification of Risks

All Sub – Contractors will be given a copy of the Construction Phase Plan or relative sections, Group Health & Safety Policy and the Casey Group Safe Systems of Work and will be required to confirm their agreement to comply with these documents before a contract is placed.

8.3 Selection Procedures

The Principal Contractor will ensure the competence and resources of all Sub - Contractors to be engaged in the works (see CGC/CDM/03).

Sub – Contractors will be required to submit their Company Health & Safety Policy, general systems of work, COSHH / risk assessments and specific method statements before commencing work on site. These documents will be checked by the Principal Contractor and copies of relevant information forwarded to site for inclusion into this Construction Phase Plan.

The Health and Safety performance of Sub-Contractors will be monitored and recorded during health and safety inspections and audits.

8.4 Co – ordination

The Site Manager will be responsible for the co – ordination of the works carried out by separate contractors and ensuring the Sub - Contractors compliance with the Construction Phase Plan.

The Site Manager will ensure that all operators of plant possess the requisite training and certificates and copies will be retained for inclusion into the Construction Phase Plan.

8.5 Checklist

The enclosed checklist CGC/CDM/02 will be completed before a sub – contractor commences on site.

8.6 Agenda for Induction Meetings

The enclosed agenda CGC/CDM/04 will be used as a guide for all CDM induction meetings held on site.

8.7 Non-Compliance

In the event of any subcontractor failing to comply with the Health and Safety Regulations and continuing to do so following verbal warning, will be formally notified in writing as per our standard letter enclosed. (CGC/CDM/05)

List of Sub - Contractors

[illegible]

Ref:
Date:

Tel.No. 01706 341121
Fax.No. 01706 861156

To:



Dear Sirs

Contract:

You are being considered as sub – contractor for:

.....

As Principal Contractor we are required by the Construction (Design & Management) Regulations 2015 to ensure that your company is sufficiently competent and resourced to carry out the works satisfactorily. To assist us, we should be pleased if you could let us have the following information as soon as possible.

- a) A copy of your Company Safety Policy (unless already forwarded on a previous contract).
- b) The name of your Company Safety Advisor.
- c) A method statement for the works, incorporating risk and COSHH assessments as necessary.

The above must be submitted for approval before an order can be placed with yourselves and prior to work commencing on site we will require copies of training certificates for all operatives including plant operatives, if appropriate, to be employed on the site.

We enclose herewith for your information a copy of our Construction Phase Plan prepared for this contract and would point out that we would expect you to comply in all respects with the contents of the document whilst working on the above site.

Yours faithfully

P CASEY & CO. LTD

Quantity Surveyor

CGC/CDM/03

THE CASEY GROUP

CONSTRUCTION DESIGN & MANAGEMENT REGULATIONS 2015

CHECKLIST CGC/CDM/02 SUB - CONTRACTORS

To be completed before a sub - contractor commences on site.

Name of Sub - Contractor: - _____

Description of Work: - _____

	Tick	Date	Action
a) Sub-Contractors Health & Safety Policy: - copy sent to Principal Designer - added to the Construction Phase Plan			
b) Sub-Contractors Risk Assessments: - copy sent to Principal Designer - added to the Construction Phase Plan			
c) Sub-Contractors Method Statement: - copy sent to Principal Designer - added to the Construction Phase Plan			
d) Form CGC/CDM/03 completed and added to the Construction Phase Plan			
e) Sub-Contractors Safety Induction Meeting held. Form CGC/CDM/04			
f) Sub-Contractors Plant & Machinery Operators Certificates added to the Construction Phase Plan			

CGC/CDM/02

THE CASEY GROUP

CONSTRUCTION DESIGN & MANAGEMENT REGULATIONS 2015

AGENDA FOR C.D.M. INDUCTION MEETINGS FOR SUB - CONTRACTORS

- 1.0 Introduction
- 2.0 Principles of Construction Phase Plan
- 3.0 Site Access and Egress Points
- 4.0 Site Rules
- 5.0 Welfare Facilities
- 6.0 Lines of Communications
- 7.0 Plant and Machinery Operators Certificates
- 8.0 Materials Storage and Distribution
- 9.0 Underground Services
- 10.0 First Aid Arrangements
- 11.0 Variations and Updating of the Construction Phase Plan
- 12.0 Requirements for the Health & Safety File.

CGC/CDM/04

Date:

Tel.No. 01706 341121

Fax.No. 01706 861156

To:



Contract Name:

Contract No:

Dear Sirs

We formally notify you that your company/operatives currently engaged in sub - contract work on this site are failing to comply with the Health and Safety Regulations in the following respect(s):

This situation must be corrected immediately or we will exercise our powers as Principal Contractor and:

- suspend your work until compliance is achieved, or
- take all necessary steps to achieve compliance and charge you with all the cost of same, including direct, indirect and consequential costs.

Signed:

Site Manager
for P CASEY & CO. LTD

Action Taken

Circulation:
Sub-contractor
Site Safety File
Quantity Surveyor

CGC/CDM/05

9.0 Overlap with Clients Undertaking

Please refer to Section 3 – ‘Client Considerations & Management Requirements’ of the Pre-Construction Information.

Communication and liaison between client and others

Exchange of Design Information

If any design work is to be undertaken, designers must provide evidence that they are competent within their role and match with our criteria outlined in our Health and Safety Policy.

Changes in design or changes which negate assumptions made in the Construction Phase Plan, whether made by the Design Team or the Principal Contractor, and which may significantly affect the Construction Phase Plan, sequence of working or the resources necessary to comply with health and safety legislation, shall be referred to the Principal Designer and agreed by the Client in writing before any change is implemented. This relates only to the Health and Safety Aspects of the design.

Exchange of Health & Safety Information between Contractors

The Principal Contractor is to implement a system for the exchange of health and safety information between Contractors not only for this contract but if any construction works of any nature are undertaken on or in the immediate vicinity of these works. This may result in the need to meet with other contractors. Details of any meetings or other relevant information are to be copied to the Principal Designer for information and possible inclusion within the Health & Safety file.

Health & Safety Objectives

To achieve Zero complaints in relation to health, safety and welfare.

To achieve Zero accidents, incidents and near misses.

Meet site objective and legal requirements both during and after the construction period safeguarding all.

10.0 Site Procedures

10.1 Site Rules

The following site rules shall be copied and displayed in the site office and mess rooms in order that all operatives will have the opportunity to make themselves aware of them.

SITE RULES TO BE ADHERED TO AT ALL TIMES

1. All operatives, including those of sub-contractors, have a duty to be aware of and observe the requirements of the Construction Phase.
2. All operatives and visitors to site must report to the Site Manager before proceeding onto the site.
3. The site will be a “Hard Hat” site at all times where there is a risk of head injury. All operatives, staff and visitors to the site are provided with safety helmets complying with BS EN 397. The wearing of safety helmets will be enforced at all times and appropriate signs will be posted.
4. All personnel, including Sub – Contractors personnel, must wear identification badges with photographs, clearly displayed at all times. They shall be issued in this time each morning and the same number collected each evening.
5. An appointed first aider will be available on site at all times during normal working hours.
6. No person will be allowed on site if under the influence of alcohol or drugs (unless prescribed) or if they are in the possession of alcohol or drugs.
7. The notification of the project to the Health and Safety Executive (Form F10 REV) will be prominently displayed on the site office notice board.
8. All temporary warning signs and notices are to be maintained and replaced where necessary.
9. All machinery, tools and plant on site, including power hand tools, must be tested every three months and maintained in good condition. All temporary electrical equipment and power tools must not exceed 110 volts.
10. All ladders and access equipment must be securely locked away during non-working hours and when not in use or required for imminent use to prevent unauthorised access to scaffolding etc.

11. All necessary and reasonably practicable measures must be taken to exclude unauthorised persons from the work area at all times.
12. The site is to be kept clean and the creation of dust is to be eliminated as far as is practicably possible.
13. The playing of radios, cassette players or personal stereos or the like will not be permitted on site at any time.
14. All site security fencing, including gates and hoardings must be properly maintained and made secure at the end of each working period.
15. Protective footwear must be worn by all persons whilst on site.
16. No fires will be allowed on site.
17. Smoking shall not be permitted within the confines of the site, apart from in the designated smoking area. The location of the designated smoking area is to be agreed once on site. For further assistance contact your visiting Health and Safety Advisor or refer to the Smokefree Law guidance supplied by H M government.
18. Suncream must be applied during sunny periods, this will be available in the site office.

10.2 Training and Information

All personnel will receive appropriate induction before they start working and personnel will also receive periodic “toolbox” talks from the Site Manager. These will include the implementation of safe working practices, the proper use of personal protective equipment and general conduct.

Operators of plant, machinery and portable electrical equipment will be trained in accordance with relevant regulations before being authorised to use these items on site.

All personnel on site will have already received, or will be given, suitable training to ensure their health and safety so far as reasonably practicable, as required by the Health and Safety at Work Act 1974.

Training falls into three basic categories: -

General Training
Trade Specific
Site Specific

General Training

Employees will be given information on the risks to their health and safety. Training is linked to capabilities to ensure that anyone given a specific task is capable of carrying this out in the prescribed manner.

In addition, employees and subcontractors will be provided with adequate health and safety training through induction talks prior to commencement and “Tool Box” talks aimed to make employees aware of risks and the necessary controls prior to commencing an operation.

Trade Specific

Most of this training is covered by organisations such as the C.I.T.B., and the Site Manager will ensure that only properly trained persons, holding a current training certificate, undertake the required during the duration of the project.

Site Specific

All personnel employed on the site will receive a Site-Specific Induction before commencing work on site.

10.3 Site Liaison

1. Regular chats, weekly briefing and toolbox talks will be undertaken by the Site Manager with all operatives on site.
2. Regular site meetings will be held with all Sub – Contractors and major suppliers, at which the Company will present the following information in relation to health and safety.
 - a). A report on any accident along with the H.S.E.’s comments and a copy of the Accident Book.
 - b). Notes of any meetings with Police/Emergency services.

Arrangements for co-operation and co-ordination between Sub – Contractors and major suppliers will be discussed, and methods agreed for ensuring that all health and safety decisions will be passed between all parties and to the site operatives

Meetings to discuss health and safety will be held as and when required either by the Principal Contractor.

3. Any unforeseen eventualities during the execution of the works, which could have implications on health and safety matters, will be brought to the attention of the Company Safety Advisor immediately

10.4 Continuing Liaison

This document will be reviewed and developed throughout the project, to incorporate any procedures occurring later in the programme which may not have been detailed in this Construction Phase Plan.

Procedures for considering the health and safety implications of design elements of the Principal Contractors and other Contractors packages.

Where a change in design is required, then the Principal Contractor will consult with the Designer to consider safety implications of possible design changes, for example:

- a) What new hazards arise from the design changes.
- b) How these hazards can be designed out or minimised and additional safety measures that may be required.

Procedures for dealing with unforeseen eventualities during project execution (resulting in substantial design change and which might affect resources).

The Principal contractor will consult with the Designer to consider:

- a) Safety implications of proposed design changes.
- b) What new hazards arise from the proposed design changes?
- c) How these hazards will be designed out or minimised and additional safety measures that may be required

Liaison with any subcontractor who may be involved, or possibly manufacturer/supplier may be necessary during consultations, but in all cases the Contract Administrator/Principal Designer will be advised on the outcome and the effect upon the Construction Phase Plan.

Appendix I

Method Statements

Scheme Method Statement

The following information has been prepared in order that work can proceed without risk of personal injury or damage to plant or equipment on this project. This method statement will be brought to the attention of all those operatives and others concerned with this part of the project. This will be done during the Site Safety Induction Talk prior to commencement on site.

Client: Rochdale MBC

Project Title: Broadfield Slopes

Summary of Risk Analysis:

1. The Site Set – Up, COVID 19, Material Deliveries and Traffic Management
2. Protection of Children, Visitors and Members of the Public
3. Existing Services
4. Control of Noise, Vibration and Dust
5. Working with Powered Hand Tools
6. Working at height
7. Manual Handling
8. Mechanical Handling
9. Procedures for dealing with fire
10. Removal of Rubbish
11. Leptospirosis – Weils Disease
12. Hazardous Substances
13. Procedure for Dealing with Needles
14. Working inside Tenants properties / Pr-entry surveys
15. Traffic Management
16. Working in the vicinity of trees
17. Excavation
18. Site Security – Out of Hours
19. More to follow as the work proceeds

Method Statement

1. The Site Set – Up, Material Deliveries and Traffic Management

The site compound will be set up with the confines of the site.

A site compound layout will be drawn up prior to the commencement of the works.

Heras fencing will be placed around the compound area to prevent any unauthorised access, and suitable signage will be posted.

The welfare facilities for the site will be as listed within Section 7.3 of the Construction Phase Health and Safety Plan and in accordance with The Construction (Design and Management) Regulations 2015.

A COVID 19 Cleaning Champion will be appointed for the project, their duties will include continual cleaning of site to ensure welfare and offices are of the highest standard in the battle of COVID 19. Please see separate method statement within this appendix.

The latest government guidelines will be included in the site induction.

The routes of least inconvenience will be used for transporting materials to and from their place of use from the compound and a scheme Traffic Management Plan and Assessment will be developed as the site progresses.

Delivery drivers to the site will first report to the Site Manager. Reversing without a Banksman will not be permitted.

If necessary, delivery times will be phased to avoid high vehicular and pedestrian times i.e. school rush hours etc.

2. Protection of children, visitors and members of the public

Advise the surrounding residents of intended commencement of work and advise them of the sequence and likely duration. Also discuss safety aspects and how they can co-operate, particularly if children are involved, including our Site Managers number and emergency number. There will be a TLO on site for the duration of the works who will be on hand to translate any necessary information to tenants.

Protection from accessing the site will be via Heras fencing and signs to warn of work in progress. All the necessary safety signs will be translated into Cantonese to ensure the safety of all tenants.

Where access equipment is erected for work at high level, the access equipment will have toe boards, guard rails and brick guards fitted where there is any danger of falling objects onto anyone below.

Access ladders will be removed at the end of each working day and locked in a secure store.

Footpath will be kept clear of materials, debris etc. at all times to avoid tripping.

Excavations and unfinished work will be adequately cordoned off.

3. Existing Services

A visual inspection will be carried prior to the erection of the access equipment. Prior to excavation work service drawings will be viewed and the area will be scanned using a cable avoidance tool. Any services located will be clearly marked and hand digging employed to discover the exact location.

All work will be undertaken in accordance with HS(G) 47 Avoiding Danger From Underground Services.

4. Control of Noise, Vibration and Dust

All necessary steps will be taken to reduce noise levels from plant and machinery in accordance with The Noise at Work Regulations. Where reasonably practicable, noise levels will be reduced at source to their lowest reasonable level and Personal Protective Equipment must only be employed as a last resort.

Noise assessments, where considered necessary, will be carried out by the Company Health and Safety Advisor and appropriate measures taken to protect site operatives, surrounding residents and the general public from the effects of noise.

All necessary steps will be taken to reduce vibration levels to be below the current threshold limit of 2.5 m/s^2 from tools, equipment, plant and machinery.

Those using tools which vibrate, which could potentially cause ill health will be specifically trained to eliminate or reduce the harmful effects of vibration through good operating techniques and job rotation.

All necessary precautions will be taken to protect surrounding residents, site operatives and the general public from the effects of the inhalation of respirable dust caused by the works. All operations, which create dust, will include a type of dust suppression technique, such as damping down or mechanical dust extraction. This applies especially to cutting or grinding operations. All operatives will be issued with and required to wear suitable goggles and masks or respirators, wherever this type of work is being carried out. Operatives will have a current face fit certificate for the mask they are wearing. All not involved with the work will be excluded from work areas where dust arises. Area to be thoroughly cleaned on completion.

5. Working with Powered Hand Tools

The majority of portable tools will be battery operated, however if electric is used the following must apply.

All portable electric tools shall be 110V rated and supplied from either a mains supply via a transformer or alternatively a generator (petrol or diesel).

Where a mains supply is used, the 240-volt lead from the socket to the transformer should be kept as short as possible AND a Residual Current Device (RCD) fitted between the power supply source and the tool.

Where a generator is used, consideration needs to be given to the siting of this in an attempt to reduce the effect of noise and fumes. The generator should be switched off as soon as it is not required to keep noise to a minimum.

In all cases, the trailing leads should be kept to a minimum to avoid damage to them, and possible tripping, and care needs to be taken when using cable drums or reels as they can overheat and cause fires.

Maintenance

The risks from damaged or faulty equipment or leads are HIGH and the consequences SERIOUS - therefore a PRO-ACTIVE maintenance system has been developed in an attempt to prevent accidents from happening.

All portable electric tools are inspected and tested prior to issue by our own Plant Department, and thereafter at annually. The date of issue is recorded by the Plant Department and also by site to which it is issued. Should the equipment be required for an extended period, the site must be returned or have a reinspection. The same procedure is followed for any equipment hired externally from a Plant Hire company.

In addition to the above, a responsible person on site will be allocated and suitably trained to carry out a weekly visual site inspection of all portable electric tools and leads and maintain a record for each item. This should not involve taking the equipment apart but will include checks that:

- a. the plug has a proper and correct fuse
- b. cable terminations are correct
- c. no signs of damage to tools or extension cables
- d. no ingress of liquid into equipment

Any item found to be faulty will be taken out of use immediately, reported to the Site Manager and returned to the Plant Department for repair.

Further, the actual user is asked to carry out visual checks of any item, before commencing work to ensure that:

- a. bare wires are not visible
- b. the cable covering is not damaged, free from cuts and deep abrasions

- c. plug is in good condition, i.e. casing not cracked, pins are not bent or the socket is not blocked
- d. there are no taped or other non - standard joints in the cable
- e. the cable sheathing is securely gripped where it enters the plug or equipment (the coloured insulation of the internal wires must not be visible)
- f. the outer casing of the equipment is not damaged or loose and all screws are in place
- g. there are no overheating or burn marks on the plug, cable or the equipment

Users Checklist

Disconnect before adjusting or working on machine

Disconnect when not in use

Check that colour codings are correct

Do not use “unofficial” extension cable

Do not carry out “makeshift” repairs

Report defects immediately to Site Manager and do not use

Keep machine clean and free from damp

Do not carry equipment by the cable

Do not start or stop the machine under load

Emergency Treatment for an Electric Shock Casualty

In the event of someone suffering an electric shock, the first priority for the rescuer is to avoid becoming a casualty themselves.

DO NOT TOUCH the casualty with bare hands until you have made sure that they are not still connected to the electric current in any way.

Break the electrical contact by either SWITCHING OFF the supply or wrenching the cable free.

If you are unable to isolate as above, stand on dry insulating material such as a plastic or rubber mat, wooden box or a pile of dry newspapers and then use a wooden stick, plastic implement or a length of rope to free the casualty from contact with the electricity.

Once this has been achieved, ensure there is no more danger to anyone, and send for assistance of the first aider who is always on site during working hours.

Extra care must be taken to ensure that they are never left with power switched on when not attended and must be protected against interference by unauthorised personnel, intruders particularly children.

Trailing leads must be kept as short as possible to avoid tripping.

6. Working at Height

All work at height will be carried out in accordance with The Working at Height Regulations.

All working at height will have a risk assessment for the task in hand.

7. Manual Handling

Risk assessments in relation to the handling, lifting or carrying of heavy or awkward loads will be carried out as necessary in accordance with the Manual Handling Operation Regulations 1992. Any operative involved in the operations will receive clear instructions from a Competent Supervisor before commencing and will be provided with the necessary PPE i.e. hard hat, gloves, suitable footwear and hi visibility clothing.

Copies of Manual Handling Assessments will be maintained on site in the Company's Risk Assessment Manual on site for quick and easy reference.

Materials will be delivered as close as possible to the site of use.

Wherever possible mechanical lifting aids will be employed, or additional labour used to assist.

Those required to manually lift will be trained in kinetic handling techniques. No person will be expected or permitted to work beyond their physical capabilities. No work rate will be imposed on this activity.

All weights of heavy or awkward items will be made available to those concerned.

Where any lifting operations involving glass are to take place, the area will be cordoned off to prevent unauthorised access.

8. Mechanical Handling

Site supervisors must ensure that:

Each lifting operation is pre-planned and organised, taking full account of visibility, environment, proximity hazards, ground stability etc.

Only trained and certified plant operators operate machinery.

All lifting operations are under the control of an experienced slinger / signaller.

The Safe Working Load (SWL) is clearly labelled on the machine boom and in the machine cab.

Only the correct and tested chains, slings, wire ropes or webbing are used.

Any safe working load is not exceeded.

Only necessary, authorized operatives are present in the immediate lift area during any lifting operations.

All operatives involved in the lifting operation are wearing the necessary personal protective equipment (PPE) i.e. safety helmet, protective footwear, gloves and high visibility clothing.

All lifting gear is inspected regularly and maintained in accordance with statutory and manufacturer's instructions.

GSO307 register is completed every 7 days and all records of tests and certificates are available on site.

All operations of this nature are carried out in strict accordance with The Lifting Operations and Lifting Equipment Regulations (LOLER) 1998 and The Provision and Use of Work Equipment Regulations (PUWER) 1998.

9. Procedures for Dealing with Fire

A fire risk assessment will be drawn up prior to commencement of works this will include fire fighting equipment, location of fire assembly point etc. The risk assessment will be displayed on site and operative's attention will be drawn to it upon site induction.

10. Removal of Rubbish

Rubbish, debris, etc. will be collected regularly from the work area and not allowed to accumulate.

The Company is registered with the Environment Agency as required by The Controlled Waste (Registration of Waste Carriers and Seizure of Vehicles) Regulations 1991, Registered Carrier No. CBDU110103.

11. Leptospirosis – Weils Disease

Each operative will be given a leaflet "Leptospirosis – are you at risk?" Produced by the Health and Safety Executive which explains the symptoms, who is at risk and what to do. There will be adequate welfare facilities available on site as referred to in The Construction Phase Plan Section 7.3.

12. Hazardous Substances

A COSHH assessment will be undertaken for all substances on site. Substances without a COSHH assessment will not be permitted to be used.

Copies of COSHH assessments will be maintained in the Company's Risk Assessment Manual on site for quick and easy reference.

The Company Buying Department will inform the Company Health and Safety Advisors of new products to be used so that the necessary assessments may be undertaken. The product hazard data sheets must also be obtained by the Buying Department.

All substances to be used on this project will be notified to the Health and Safety Advisors by the Company Buying Department.

All substances to be used by a nominated sub-contractor will be brought to the attention of the Health and Safety Department at the time of the pre-contract appraisal therefore allowing the Health and safety Advisors to assess the use of such substances.

Hazardous substances and the required control measures will be discussed during the Site-Specific Safety Induction before work commences on site.

13. Procedure for Dealing with Needles

There is an obvious risk of injury and possible risk to health of persons who come into contact with hypodermic needles. The risk is low, nevertheless it cannot be discounted.

In order to minimize any risk involved, the following precautions should be taken.

All employees must be aware of the possibility of finding hypodermic syringes and needles in valve, hydrant and stop-tap boxes, any sewage or drainage system, sand piles etc and in all areas frequented by drug users.

Before reaching into any valve box etc a careful examination should be made to ensure that no syringes or needles are present. If the presence of water prevents this, then it should be pumped or baled clear.

Any employees working in areas where syringes or needles may be found must wear protective gloves at all times.

If a syringe or needle is found and cannot be handled or disposed of safely, then the nearest Environmental Health Department must be contacted immediately, for them to deal with the situation safely.

On no account must syringes or needles be disposed of on tips or in rubbish bins or skips, they must be incinerated in a safe manner.

In the event of a puncture wound occurring, the injured person should squeeze the affected area to promote bleeding and the affected area should be thoroughly cleansed with clean warm water. The injured person must then attend the Accident & Emergency Department of the nearest hospital immediately, as immunization against Hepatitis B needs to be administered within 72 hours of the incident.

The Company Health & Safety Department and the local Environmental Health Department must be notified immediately.

14. Working inside Tenants Properties

We will work closely with the TLO to identify any vulnerable Tenants, and to ensure minimal disruption to all where possible. A risk assessment will be carried out regarding working inside Tenants properties, these will be communicated to all contractors.

All contractors will ensure that they wear the correct livery PPE.

15. Traffic Management

All comprehensive Traffic Management Plan will be completed by the Site Manager.

16. Working in the vicinity of trees

Any work near trees with a tree preservation order or in a conservation area must be notified to the local authority. Protect tree roots in the same way you would protect other exposed services. Do not cut any roots unless absolutely necessary and never if its bigger than 25mm. Excavations will be carried out by hand dig and follow the NJUG guidelines attached in Appendix 9

17. Excavations

Any excavations will be carried out under the guidance of the HSE HSG 47. Risk assessment in place and a permit to dig.

18. Site Security – Out of Hours

The Site Compound will be made secure at the end of each working day. There will be an out of hours emergency contact number provided.

19. More to follow as the work proceeds

Appendix 2

Risk Assessments

Risk Assessment Scoring Matrix

Written By: PT/PH/RC/MF

The Management of Health and Safety at Work Regulations 1999 require that every employer shall carry out a suitable and sufficient risk assessment of all aspects of his work activities.

Under the Management of Health and Safety at Work Regulations 1999, the minimum we must do is:

1. Identify what could cause injury or illness in your business (hazards).
2. Decide how likely it is that someone could be harmed and how seriously (the risk). Risk Rating before Control Measures are put in place:

Risk Rating: H = High, M = Medium, L = Low

3. Take action to eliminate the hazard, or if this isn't possible, control the risk. Residual Risk after Control Measures put in place:

M = Medium, L = Low

The three main factors to be considered in any risk assessment are:

1. Hazard

Something with the potential to cause harm (this can include substances, machines, methods of work and other aspects of work organisation).

Risk Assessment Scoring Matrix

Written By: PT/PH/RC/MF

2. Risk

The likelihood that the harm from a particular hazard is realised.

3. Extent

The extent of the risk covers the population, which might be affected by a particular risk i.e. the number of people who might be exposed to the risk and the possible consequences for them.

Risk therefore reflects both the likelihood that harm will occur and its possible severity. Within the Company risk assessments are produced for high and medium risk activities, by the Company Health and Safety Department.

The overall effectiveness of controls and recommendations are monitored by the Health and Safety Department by regular site visits, inspections and safety audits by the Company Health and Safety Advisors

Risk Assessment Scoring Matrix

Written By: PT/PH/RC/MF

RISK RATING KEY	SEVERITY 		
LIKELIHOOD 	Low Severity (Little of no effect)	Medium Severity (Medium effect/consequences)	High Severity (Serious / Significant Consequences)
Improbable Risk is unlikely to Occur	LOW	LOW	MEDIUM
Possible Risk is likely to Occur	LOW	MEDIUM	HIGH
Probable Risk Will Occur	MEDIUM	HIGH	HIGH

TRAFFIC MANAGEMENT

HAZARDS

The main hazards associated with traffic management include:

1. Contact between site plant / vehicles.
2. Contact between site plant and site users vehicles.
3. Contact between site plant / vehicles and pedestrians.
4. Tipping operations.
5. Unsafe or unauthorised operation of plant / vehicles.
6. Poorly maintained plant / vehicles.
7. Reversing unsupervised.
8. Vehicles overturning.
9. Poor visibility due to adverse weather.
10. Incorrect selection or use of plant / vehicles.

PLANNING AND PROCEDURES

All work will be planned in accordance with the relevant standards and the appropriate risk assessments.

The Site Manager will ensure that:

Suitable plant / vehicles are provided taking into account the work to be carried out and the relevant standards.

A site traffic management plan is produced, implemented and maintained.

CONTROL MEASURES

1. Only trained and authorised operatives must operate site plant / vehicles.
2. Ensure that plant / vehicles are maintained in a safe and effective condition.

3. Wheeled plant / vehicles, such as Dump Trucks and Loading Shovels must be brake testing periodically.
4. Ensure that site plant / vehicles operate at a safe speed taking into considering site conditions such as gradient, materials and weather etc. and do not exceed the site speed limit.
5. Ensure that haul roads and site access roads are maintained in a good state of repair.
6. Ensure that haul roads are sufficient to allow for passing vehicles.
7. Ensure that 'tip heading' areas are effectively compacted to aid access / egress.
8. Ensure that site plant / vehicles are fitted with flashing beacons and reversing alarms, where appropriate.
9. Only one vehicle must be permitted to tip at any one time. Waiting vehicles must not encroach into the tipping area until the previous vehicle has left the immediate tipping area.
N.B. Tipping vehicles can tilt / fall sideways.
10. If necessary, ensure that reversing operations are supervised.
11. All pedestrians must wear suitable high visibility clothing (i.e. coats or vests).

References: [The Workplace \(Health, Safety and Welfare\) Regulations 1992](#)

[The Construction \(Design and Management\) Regulations 2015](#)

[The Quarries Regulations 1999](#)

[HSE - SIM 02/2010/04: The Management of Temporary Works in the Construction Industry](#)

Forms: [Traffic Management Assessment](#)

BURIED SERVICES

HAZARDS

The main hazards associated with underground services include:

1. Contact with electricity cables, gas pipes or water pipes.
2. Flooding.
1. Gas leaks with the risk of explosion / asphyxia.
2. Possible contact with sewage.

PLANNING AND PROCEDURES

All work will be planned in accordance with the relevant standards and the appropriate risk assessments.

Full details of all underground services from the various authorities must be obtained. For example,

Local Authority - street lighting cables and sewers.

Local Electrical Authority.

Gas Company.

Water Company - mains water, sewers.

British Telecom.

Cable T.V. Companies.

Where there are a large number of existing services, e.g. town centre or a large industrial site, then a Permit to Work system may be required.

CONTROL MEASURES

1. The Site Manager must ensure that all the necessary information is obtained before work commences and the services are physically located and marked out by means of location equipment and or carefully hand dug trial holes.

2. Others:

- a) Do not assume that the plans are accurate or to scale, but use them as an indicator for position, layout and the number of services.
- b) Use the locating devices provided. Training will be arranged, for those persons required to use such equipment.
- c) Do not rely on the locating equipment alone. Look for physical indicators such as previous excavations, junction boxes, manholes, lamp posts, etc.
- d) Dig trial holes carefully using hand tools only, to confirm the location of the services. If pointed implements have to be used then do so carefully and avoid thrusting spikes into the ground.
- e) Mark the line of the services with paint, wooden pegs, etc. and place signs to indicate their presence.
- f) Do not assume that services will be at their recommended depth. Continue to use the locating equipment as excavations proceed.
- g) Do not use mechanical tools or excavators within 0.5 m of any service.
- h) Do not smoke in or around open service excavations.
- i) Where services are believed to be encased in solid material such as concrete, etc., then arrange for the service to be isolated before excavation or breaking away commences.
- j) If any service is damaged it must be reported immediately and the area cleared. If a cable is struck by a machine, the operator should stay in the cab or jump well clear, do not climb down.
- k) All services crossing an excavation must be adequately supported and services must not be used as stepping points for access.

References: [The Electricity at Work Regulations 1989](#)

[Health and Safety Executive Guidance Note HS\(G\)47, 'Avoiding Danger from Underground Services'](#)

Forms: [Permit to Dig](#)

Risk Assessment

ACTIVITY: Working in or in Close Proximity to Excavations

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Collapse of excavation sides. Striking buried services such as gas, electric, water etc. Plant running into excavations. Persons falling into excavations. Contact with adjacent structures.	Operatives. Others in immediate vicinity. Members of the general public.	Injuries of various severities: Crushing, entrapment and possible death. Contact with services may give rise to electrocution, explosion, fire, flooding. Damage to adjacent buildings, structures etc.	H	Ensure method statements are in place. Adequate supports to be used in excavations or the sides battered back as appropriate. No person must enter an unsupported excavation Supervisors and key operatives to be trained in Trenching Operations if appropriate. Ensure that a safe access and egress is provided. Ensure plant, equipment and arisings are not placed near edges of excavation i.e. within the shear zone of the embankment. All excavations to be CAT scanned prior and during excavations to locate buried services. Ensure that adjacent structures etc. are not undermined. Where there is a risk of plant running into excavations physical barriers should be provided in the way of stop blocks, bunds, barrier tape and suitable signage as required. Precautions must be taken to prevent persons from falling into excavations i.e. effective barriers and suitable signage.	L

Risk Rating: **H = High**, **M = Medium**, **L = Low**

Ref: G.W.001

Risk Assessment

ACTIVITY: Working in or in Close Proximity to Excavations

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Whilst excavating if unusual or unidentified materials are exposed 'digging' operations must cease until the material has been positively identified. Depending on depth and the material through which the excavation is dug the excavation may be considered as a confined space and therefore suitable additional precautions may be required. Work to be supervised by a competent person. Regular inspections to be carried out by the Site Supervisor. If excavations are open for 7 days or more the results of the inspection should be recorded. Notwithstanding the recorded inspection the excavation must be inspected each time before entry and after adverse weather conditions. Inspect open trenches following adverse weather conditions. Ensure the correct PPE is worn e.g. safety helmet, safety footwear, gloves etc. <u>Specific Legal Requirements</u> Construction (Design and management) Regulations 2015.	

Risk Rating: **H = High**, **M = Medium**, **L = Low**

Ref: **G.W.001**

Risk Assessment

ACTIVITY: Working in Close Proximity to Buried Services

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Striking buried services such as gas, electric, water etc.	Operatives. Others in immediate vicinity. Members of the general public.	Injuries and damage of various severity, such as:- Burns. Electrocution. Explosion. Fire. Flooding.	H	Contact must be made to the pipeline owner prior to working within 50 metres of pipeline. No work to take place within 3 metres of Cadent owned pipelines unless Cadent have been to site and clearly located and marked out the pipeline. Also Specification for safe working in the vicinity of National Grid high pressure gas pipelines and associated installations – requirements for third parties booklet (T/SP/SSW/22 April 2014 must be adhered to. Obtain plans / drawings of immediate area. Use suitable detector to locate services prior to digging. Operatives using detectors must be suitably trained. Mark position of services once located. Re – mark every 500mm of excavating down. Ask utility owners to make safe before excavation begins. Dig trial holes.	L

Risk Assessment ACTIVITY: Working in Close Proximity to Buried Services

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Use blunt digging tools. Excavate alongside the service rather than directly above it. Final exposure of the service by horizontal digging is recommended, as the force applied to hand tools can be controlled more effectively. Insulated tools should be used when hand digging near electric cables. Pins should not be moved unless a re-scan has been carried out. Do not mechanically excavate within 0.5m of the services identified. All operatives who hand dig must be warned of the hazards and instructed in the safe system of work. Work to be supervised by the Site Supervisor. <u>Specific Legal Requirements</u> HS(G)47 - Avoiding Danger from Underground Services.	

Risk Assessment

ACTIVITY: Drainage Connections

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Falling into excavation. Contact with buried services. Contaminated ground. Weils Disease. Lack of Oxygen. Poisonous Gases / Fumes. Flammable / Explosive Gases.	Site Operatives. Members of the public. Residents.	Injuries and conditions of various severities such as trapping, crushing, asphyxiation, poisoning explosions, and possible death.	H	Ensure that drainage connection work is carried out in safe and controlled manner. Ensure that those involved are aware of the hazards and the control measures required. Ensure residents and others likely to be affected are given due notice of the work commencing. Ensure that if necessary an exclusion zone is established, Use cable avoidance tool prior to commencement of excavation. Refer to G.W.002 for information in relation to buried services. Ensure that the excavation is backfilled or unauthorised access prevented at the end of the working day. If due to depth or other reason the excavation becomes a confined space then the precautions in G.W.003 must be adhered to. Ensure that operatives wear the required PPE. As a minimum hard hat, safety footwear and impervious gloves. Ensure a high standard of personal hygiene.	L

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: G.W.004

Risk Assessment

ACTIVITY: Drainage Connections

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				To prevent collapse on deep drainage excavations install a trench box system to the manufacturers instructions or shoring to a temporary works design. All excavations are to be protected by barriers / fencing to prevent falls into the excavation. Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> Construction (Design and Management) Regulations 2015. The Personal Protective Equipment Regulations 1992. HSG 47 Excavations around buried services. BS 5975 The management of temporary works in the construction industry.	

Risk Assessment

ACTIVITY: Road Works

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Interaction between plant, vehicles and pedestrians. Unauthorised use of plant. Poorly maintained plant.	Site Operatives. Road Users. Others in the immediate vicinity.	Injuries of various severities, possible death. Damage to plant / vehicles.	H	All work must be planned and organised in accordance with the Safety at Street Works and Road Works - A Code of Practice. Sufficient lights, signs and physical guards must be available and erected before work commences. All control measures must be periodically inspected to ensure compliance and safeguard against unauthorised interference or vandalism. All plant operators must be trained and authorised (CPCS / NPORS or equivalent). The use of mobile phones is not permitted whilst operating plant. Ensure that plant and vehicles are operated in accordance with the Road Traffic Act 1988. All operatives must wear hi visibility clothing. Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> The New Roads and Street Works Act 1991. Safety at Street Works and Road Works - A Code of Practice.	L

Risk Assessment

ACTIVITY: Leptospirosis (Weils Disease)

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Leptospirosis (Weils disease) - contracted through exposure to rat's urine.	Site Operatives.	Leptospirosis - Weils disease (flu like symptoms with the possibility of death if not treated at an early stage).	H	Keep mess areas clean and free from debris and waste. Rodent control by competent pest control company. Issue Leptospirosis cards to those employees at risk. Ensure that cuts, grazes / dressings etc. are effectively covered. Ensure correct PPE is worn when working in risk areas such as ditches, watercourses, and excavations e.g. impervious gloves etc. Ensure a high standard of personal hygiene. Ensure that suitable and adequate welfare facilities are provided. Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> Control of Substances Hazardous to Health 2002. HSE Leptospirosis Card.	L

Risk Assessment

ACTIVITY: Exposure to Legionella

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Legionella. (Legionellosis) Where is it found? Air conditioning systems. The warm organisms thrive in moderately warm cooling water and are transmitted on aerosol droplets, it can also infect showerheads.	Site Operatives and others likely to be affected.	Legionella pneumonia (characteristic symptoms – high fever, chills, headaches, muscle pain), respiratory failure, death.	H	Chlorinate water supply or maintain water temperature below 20c or above 60c. Regular inspection and sampling of water storage systems. Regular inspection and maintenance of air conditioning systems. Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> Control of Substances Hazardous to Health Regulations 2002. HSE Guidance lan (L) 27(rev) The Prevention and Control of Legionellosis (including Legionnaires disease). Approved Code of Practice (L8).	L

Risk Assessment

ACTIVITY: Exposure to Noise

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Excessive noise.	Operatives. Others in immediate vicinity.	Noise induced hearing loss. Stress.	H	Carry out a noise assessment, where necessary. Noise exposure to be reduced so far as reasonably practicable i.e. isolate the noise or the operative. NB. PPE should only be considered as a last resort. Ensure that consideration is given to purchasing low noise emission equipment. The equipment should display the maximum noise levels emitted by the equipment. Establish an exclusion zone if appropriate and erect suitable signage. Ensure that suitable ear defenders are worn as necessary. Any defect in any hearing defenders must be reported immediately to the Site Supervisor and replacements obtained. Young persons are not to use or be in the vicinity of equipment which produces noise above 80db this will be covered on induction and monitored by their work buddy. Regular inspections to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> Noise at Work Regulations 2005. Personal Protective Equipment at Work Regulations 1992.	L

Risk Rating: **H = High**, **M = Medium**, **L = Low**

Ref: **H. 003**

Risk Assessment

ACTIVITY: Exposure to Vibration

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Vibration. N.B. Noise is usually associated with vibrating equipment. Please refer to the Noise Risk Assessment Record.	Operatives.	Vibration White Finger / Hand Arm Vibration. Muscle damage. Musculoskeletal disorders. Potential for long term back injury.	H	Use low anti vibration models of equipment. Work to be effectively shared or a job rotation scheme implemented to reduce exposure. Ensure that vibration levels are clearly marked on tools and equipment. All tool exposure limits to be kept on the sites HAVs register by the site manager. Ensure equipment is maintained in effective working condition and tips, blades etc. are kept sharp so as to reduce vibration levels. Keep hands warm especially in cold weather. VWF is more prevalent in cold weather. N.B. VWF is known to be more prevalent in those who smoke. Ensure correct PPE is worn i.e. ear defenders, suitable and effective gloves, footwear etc. Items of plant and equipment must be periodically inspected. Report any defective equipment to the Site Supervisor and do not use equipment until defects are remedied.	L

Risk Assessment

ACTIVITY: Exposure to Vibration

Written By: Phil Hey / Robert Clegg
 Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Items of plant and equipment must be periodically inspected. Report any defective equipment to the Site Supervisor and do not use equipment until defects are remedied. Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> Provision and Use of Work Equipment Regulations 1998. Control of Vibration at Work Regulations 2005.	

Risk Assessment

ACTIVITY: Exposure to Dust

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Excessive exposure to environmental / nuisance dust.	Operatives. Others in the immediate vicinity. Neighbours.	Respiratory disorders of various severities from temporary mild discomfort and coughing to debilitating conditions. Environmental Impact.	H	Ensure that operations are carried out so as to prevent the production and spread of environmental / nuisance dust. Provide suitable dust suppression techniques i.e. 'damping down' with water. Provide suitable personal protective equipment i.e. dust masks or respirators of the correct type. Provide environmental and personal monitoring as necessary. Regular inspections to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> Control of Substances Hazardous to Health 2002. Environmental Protection Act 1990.	L

Risk Assessment

ACTIVITY: Exposure to Dust

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Excessive exposure dust.	Operatives. Others in the immediate vicinity. Occupants Neighbours.	Respiratory disorders of various severities from temporary mild discomfort and coughing to debilitating conditions. Environmental Impact.	H	Ensure that operations are carried out so as to prevent the production and spread of dust. Ensure that equipment is operated in accordance with the manufacturers instructions at optimum speeds etc. and blades and bits are maintained in effective working condition. Provide suitable and adequate ventilation if working in enclosed areas. Ensure, if necessary, that dust extraction equipment is fitted to tools and equipment. Provide suitable dust suppression techniques, i.e. 'damping down' with water, if appropriate. Along with wearing of FFP3 face fit tested masks. Provide suitable personal protective equipment i.e. dust masks or respirators of the correct type. FFP3 face fit tested masks to be provided as a minimum. Provide environmental and personal monitoring as necessary. Regular inspections to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> Control of Substances Hazardous to Health 2002.	L

Risk Assessment

ACTIVITY: Hazardous Substances

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact with hazardous substances through Ingestion, inhalation and contact with skin. Environmental contamination.	Operatives. Others in immediate vicinity of use.	Injuries and conditions of various severities such as sickness and nausea, burns, sensitisation, respiratory conditions, etc. Environmental impact.	H	Ensure that the working area is safe and free from risk. Ensure that a COSHH assessment and hazard data sheet are available for reference. Ensure that non-essential personnel are removed from the immediate area of use and unauthorised access is prevented if necessary. Establish an exclusion zone if required. Ensure that all substances are stored, used and disposed of in accordance with the manufacturer's instructions. Ensure that any spillages are immediately cleaned up and disposed of in accordance with the manufacturer's instructions. Ensure that suitable first aid facilities are provided and maintained. Ensure that emergency procedures are maintained. Ensure a high standard of personal hygiene. Ensure that suitable Personal Protective Equipment (PPE) is worn as necessary i.e. safety glasses / goggles, impervious gloves, respirators etc.	L

Risk Assessment

ACTIVITY: Hazardous Substances

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont			H	Defects in any piece of PPE must be reported immediately to the Site Supervisor and a replacement obtained. Regular inspections to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> Control of Substances Hazardous to Health 2002. The Environmental Protection Act 1990.	L

Risk Assessment

ACTIVITY: Manual Handling

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Heavy, awkward loads. Lifting in confined areas. Tripping, stumbling etc. whilst carrying load.	Operatives.	Injuries of various severities, such as sprains and strains and more serious musculoskeletal injuries.	H	Ensure that items to be manual handled are located in accessible places and deposited as close to their site of use by mechanical means. Use mechanical aids whenever possible. Consideration must be given to 2 man lifts when lifting items in excess of 25kg. Walk through the intended route before the lift takes place. Remove any obvious obstructions or tripping hazards. Ensure that safety footwear and suitable gloves are worn. Ensure all operatives are adequately trained in good manual handling techniques. Ensure that you do not work beyond your physical capabilities. All loads should be assessed prior to lifting checking for weight, centre of gravity, stability, any sharp edges. Regular inspections to be carried out by the Site Supervisor or nominated competent person. Specific Legal Requirements The Manual Handling Operations Regulations 1992.	L

Risk Assessment

ACTIVITY: Planning and Organising Lifting Activities

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Failure of load bearing parts of equipment and machines. Overturning. Overloading. Poorly attached loads. Contact with proximity hazards i.e. overhead electric power lines, adjacent structures etc. Unauthorised use.	Operatives. Others in immediate vicinity of use. Members of the general public.	Injuries of various severities, possible death. Damage to plant and structures etc.	H	All lifts must be planned and organised by a competent person. Consideration should be given to sub-contracting out esoteric lifting operations. Alternatively all lifting operations must be pre-planned and Form L.E.3 from Compliance Manual completed before the lift takes place. All persons must be trained and authorised for the work to be done. Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> Lifting Operations and Lifting Equipment Regulations 1998. Provision and Use of Work Equipment Regulations 1998.	L

Risk Assessment

ACTIVITY: Use of Hand Tools

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Defective tools, Tools in poor repair.	Site Operatives. Other in immediate vicinity of use.	Injuries of various severities such as cuts / bruises / penetrating eye injuries etc.	H	Use the correct hand tool for the job. Keep hand tools maintained in good condition, Ensure that tools are stored in accordance with manufacturers instructions. Report any defect immediately to the Site Supervisor and do not use any defective or worn tools. Ensure that defective tools are taken out of use and cannot be used by others. Ensure PPE is worn e.g. eye protection, if required, gloves etc. Regular inspections to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> Provision and Use of Work Equipment Regulations 1998.	L

Risk Assessment

ACTIVITY: Working with Powered Hand Tools

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Defectives. Electrical faults. Tools in poor state of repair. Defective or incorrect attachments etc. Incorrect usage.	Site Operatives. Others in vicinity of use.	Injuries of various severities such as: - Cuts - Amputation of fingers - Penetrating eye injuries - Electric Shock	H	Use the correct tool for the job. Provide and maintain an exclusion zone if necessary. Ensure any guards provided are maintained in working order and are effectively used. Keep blades, drill bits etc. sharp. Ensure 110 volts supply tools. If impracticable RCD's and transformers must be used as necessary. Ensure that power is from an authorised source with the owner's permission. Ensure electric leads and plugs are effectively maintained and positioned so as to prevent trips and injuries etc. Ensure tools are inspected on a regular basis. Ensure tools are stored in accordance with manufacturers instructions. Ensure PPE is worn e.g. eye protection, if required, gloves of practicable etc.	L

Risk Assessment

ACTIVITY: Working with Powered Hand Tools

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Regular inspections to be carried out by Site Supervisor. <u>Specific Legal Requirements</u> Provision and Use of Work Equipment Regulations 1998. Electricity at Work Regulations 1989.	

Risk Assessment

ACTIVITY: Working with Abrasive Wheels

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact with abrasive wheel. Bursting of discs. Machine fuel.	Operatives. Others in vicinity of use. Members of the general public.	Injuries of various severities i.e. Loss of sight. Head and face injuries. Burns from fuel.	H	Only operatives who have been trained to use and change abrasive wheels must use or change abrasive wheels. Only machines fitted with the correct guards and effectively in place must be used. Ensure that the disc is mounted correctly. Only use the correct disc for the material to be cut. Ensure that spin speed of the machine does not exceed the wheel spin speed. Ensure discs are stored correctly. Ensure that the work area is clear and free from tripping hazards. Establish an exclusion zone if necessary. Allow the machine to cool before refuelling. Refuel away from the work area. Avoid wearing loose clothing.	L

Risk Assessment

ACTIVITY: Working with Abrasive Wheels

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Ensure that the correct PPE is worn i.e. boots, gloves, safety helmet, eye and ear defenders. Ensure that defects are recorded and immediately reported to the Site Supervisor and the saw not used until the defect is remedied. Obtain Hot Works Permit if Required. Regular inspections carried out by Site Supervisor. <u>Specific Legal Requirements</u> Provision and Use of Work Equipment Regulations 1998. Personal Protective Equipment Regulations 1992.	

Risk Assessment

ACTIVITY: Use of Chainsaws

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact with chainsaws blade. Machine fuel. Unauthorised use.	Operatives. Others in vicinity of use. Members of the general public.	Injuries of various severities i.e. Amputation of limbs. Burns from fuel. Possible death.	H	Only trained and authorised operatives must use chainsaws Establish an exclusion zone if necessary. Ensure that the correct PPE is worn i.e. Boots, gloves, leg and body protection, safety helmet, face shield and ear defenders. Only use the saw whilst on stable ground or suitable working platform. Do not use the saw above shoulder height. Allow the saw to cool before refuelling. Refuel away from the working area. Ensure that defects are recorded and immediately reported to the Site Supervisor and the saw not used until the defect is remedied. Regular inspections carried out by Site Supervisor. <u>Specific Legal Requirements</u> Provision and Use of Work Equipment Regulations 1998. Personal Protective Equipment Regulations 1992.	L

Risk Assessment

ACTIVITY: Use of Mobile Plant

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact between plant / vehicles and pedestrians Reversing. Misuse of plant. Unauthorised use. Use of defective plant. Contact with buried services and overhead power lines. Work on gradients. Overturning.	Site Operatives. Visitors. Others in the immediate vicinity.	Injuries of various severities, including death.	H	Only trained and authorised operatives must operate site plant / vehicles (CPCS or equivalent). Ensure that plant is operated at a safe speed and as conditions permit i.e. gradients, ground conditions, weather conditions etc. Ensure that the item of plant / vehicle is used for its intended purpose and it is not used beyond its capabilities. Ensure keys are removed from plant when not in use. If fitted, wear the seat belt provided and do not carry passengers unless suitable seats and belts are provided. Ensure that designated traffic routes provided for customers / site users vehicles etc. are not encroached upon without effective control measures being provided. Ensure that consideration is given to the presence of buried and overhead services and other proximity hazards, adjacent structures etc. Do not operate plant / vehicles in close proximity to pedestrians. Ensure that Towing operations are carried out in accordance with the Company Towing Procedure.	L

Risk Assessment

ACTIVITY: Use of Mobile Plant

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Ensure that visual driving aids such as rear view mirrors and CCTV are effectively used and maintained in working order. Ensure that suitable warning devices, such as flashing beacons, reversing alarms etc. are effectively used and maintained in working order. Care should be taken during all reversing activities. Mobile phones must not be used whilst operating plant / vehicles. Ensure that plant and vehicles are inspected before use and any defects immediately reported to the Site Supervisor and in turn the Plant Department. Ensure that the Company's Daily Plant Inspection Sheet is completed. Ensure that plant and vehicles are maintained in accordance with manufacturers recommendations. <u>Specific Legal Requirements</u> The Provision and Use of Work Equipment Regulations 1998. The Lifting Operations and Lifting Equipment Regulations 1998.	

Risk Assessment

ACTIVITY: Use of Building Site Dumper

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact between plant / vehicles and pedestrians. Reversing activities. Overturning. Working on gradients. Climbing on and off machine. Loading and tipping operations. Greasing / maintenance operations. Refuelling. Mis-use of plant. Unauthorised use. Use of defective plant.	Site Operatives. Visitors. Others in the immediate vicinity.	Serious and possible fatal injuries caused by contact with moving Dumper and parts thereof. Damage to other plant and vehicles. Damage to nearby structures.	H	Only trained and authorised operatives must operate site plant / vehicles (CPCS or equivalent). Ensure that plant is operated at a safe speed and as conditions permit i.e. gradients, ground conditions, weather conditions etc. Ensure that the dumper is used for its intended purpose and it is not used beyond its capabilities Get on and off the machine by the authorised way. Never jump from a machine. Do not stay on the machine during loading operations. Ensure that stop blocks or bunds are effectively used whilst tipping into excavations or over leading edges. Ensure that the machine is fitted with a ROP's and that the seat belt is worn whilst operating the dumper. Be aware of soft ground whilst operating the dumper especially when tipping loads. Do not encroach close to unprotected / un-bunded edges.	L

Risk Assessment **ACTIVITY: Use of Building Site Dumper**

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Ensure that operatives do not stand in the oscillating point. Ensure that machines are refuelled at designated areas and do not decant fuel into non-approved containers. Impervious gloves should be used to prevent accidental skin contact and safety goggles in windy weather. Suitable personal protective equipment (PPE) should be worn whilst greasing and undertaking daily checks etc. i.e. goggles, impervious gloves etc. Ensure that, if fitted, driving aides such as mirrors are effectively used. Exercise great care during reversing activities. Ensure that suitable warning devices, such as flashing beacons and reversing alarms, if fitted, are effectively used and maintained in working order. Mobile phones must not be used whilst operating plant / vehicles. Ensure that plant and vehicles are inspected before use and any defects immediately reported to the Site Supervisor and in turn the Plant Department.	

Risk Assessment

ACTIVITY: Use of Building Site Dumper

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Ensure that the Company's Daily Plant Inspection Sheet is completed. Ensure that plant and vehicles are maintained in accordance with manufacturers recommendations. Do not undertake any unauthorised repairs or maintenance. Regular inspections to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> The Provision and Use of Work Equipment Regulations 1998.	

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: P.E. 012

Risk Assessment

ACTIVITY: Use of Ride on Roller

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact between plant / vehicles and pedestrians Reversing activities. Overturning. Working on gradients. Climbing on and off machine. Greasing / maintenance operations. Refuelling. Mis-use of plant. Unauthorised use. Use of defective plant.	Site Operatives. Visitors. Others in the immediate vicinity.	Serious and possible fatal injuries caused by contact with moving machine. Damage to other plant and vehicles. Damage to nearby structures.	H	Only trained and authorised operatives must operate site plant / vehicles (CPCS or equivalent card). Ensure that plant is operated at a safe speed and as conditions permit i.e. gradients, ground conditions, weather conditions etc. Ensure that the machine is used for its intended purpose and it is not used beyond its capabilities Get on and off the machine by the authorised way. Never jump from a machine. Continual consideration must be given to the presence of pedestrians whilst rolling material. Ensure that visual driving aids such as mirrors are, if fitted, effectively used and maintained in working order. Ensure that machines are refuelled at designated areas and do not decant fuel in to non-approved containers. Impervious gloves should be used to prevent accidental skin contact and safety goggles in windy weather. Ensure that the machine, if necessary, is fitted with a Roll Over Protection (ROP's) and an effective seat belt, which must be worn whilst the machine is in use.	L

Risk Assessment ACTIVITY: Use of Ride on Roller

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Ensure that suitable warning devices, such as flashing beacons and reversing alarms, if fitted, are effectively used and maintained in working order. Exercise extreme caution during reversing activities. Mobile phones must not be used whilst operating plant. Ensure that plant and vehicles are inspected before use and any defects immediately reported to the Site Supervisor and in turn the Plant Department. Ensure that the Company’s Daily Plant Inspection Sheet is completed. Ensure that plant and vehicles are maintained in accordance with manufacturers recommendations. Do not undertake any unauthorised repairs or maintenance. <u>Specific Legal Requirements</u> The Provision and Use of Work Equipment Regulations 1998.	

Risk Assessment

ACTIVITY: Use of Hand Operated Roller

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact between plant / vehicles and pedestrians Reversing activities. Out of control. Working on gradients. Greasing / maintenance operations. Refuelling. Mis-use of plant. Unauthorised use. Use of defective plant. Vibration.	Site Operatives. Visitors. Others in the immediate vicinity.	Serious and possible fatal injuries caused by contact with moving machine. Damage to other plant and vehicles. Damage to nearby structures.	H	Only trained and authorised operatives must operate vibrating rollers Ensure that rollers are unloaded and loaded in a controlled manner. Delivery vehicle / trailer must be securely parked. Ensure that plant is operating at a safe speed and as conditions permit i.e. gradients, ground conditions, weather conditions etc. Ensure that the machine is operated under power when working both up and down slopes. Ensure that the machine is used for its intended purpose and it is not used beyond its capabilities Continual consideration must be given to the presence of pedestrians whilst rolling material. Exercise extreme caution during reversing activities and be aware of tripping or trapping situations. Ensure that machines are refuelled at designated areas and do not decant fuel in to non-approved containers. Impervious gloves should be used to prevent accidental skin contact and safety goggles in windy weather. Mobile phones must not be used whilst operating plant / vehicles.	L

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: P.E.015

Risk Assessment

ACTIVITY: Use of Hand Operated Roller

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Ensure that the roller is inspected before use and any defects immediately reported to the Site Supervisor and in turn the Plant Department. Ensure that the Company's Weekly Plant Inspection Sheet is completed. Ensure that plant is maintained in accordance with manufacturer's recommendations. Do not undertake any unauthorised repairs or maintenance. To eliminate or reduce vibration the machine handles must be fitted with anti vibration hand grips. Implement job rotation if necessary. Suitable PPE must be worn. In particular safety footwear, ear defenders. Regular inspection to be carried out by the Site Supervisor. <u>Specific Legal Requirements</u> The Provision and Use of Work Equipment Regulations 1998.	

Risk Assessment

ACTIVITY: Use of Excavators

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact between plant / vehicles and pedestrians Reversing activities. Overturning. Working on gradients. Climbing in and out of cab. Greasing / maintenance operations. Refuelling. Mis-use of plant. Unauthorised use. Use of defective plant. Contact with buried and overhead. Services. Shuttering / un-shuttering operations.	Site Operatives. Visitors. Others in the immediate vicinity.	Serious and possible fatal injuries caused by contact with moving excavator and parts thereof. Other injuries caused by falling materials and falling from heights. Damage to other plant and vehicles. Damage to nearby structures.	H	Only trained and authorised operatives must operate site plant / vehicles (CPCS or equivalent). Ensure that plant is operated at a safe speed and as conditions permit i.e. gradients, ground conditions, weather conditions etc. Ensure that the item the excavator is used for its intended purpose and it is not used beyond its capabilities Access and egress the machine cab by the designated way. Never jump from a machine. Ensure that site operatives are not in the machines working radius whilst the machine is in operation. If operating the machine in a confined area a minimum of 1 metre clearance must be maintained to allow for tail swing. Exercise extreme caution during reversing activities. A Banksman must always be deployed when working in a confined area or when the operator's vision is impeded.	L

Risk Assessment

ACTIVITY: Use of Excavators

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				The manufacturers recommended bucket size or load / capacity must never be exceeded and the bucket must be effectively secured to the boom. Excavator buckets, whether loaded or not, must not be slewed directly over site operatives or vehicle cabs. Consideration must be given to the tip stability if loading material from a spoil heap/tip - heap/tip stability alters as material is removed from it. Ensure that machines are refuelled at designated areas and do not decant fuel in to non-approved containers. Suitable personal protective equipment (PPE) should be worn whilst greasing and undertaking daily checks etc. i.e. goggles, impervious gloves etc. Ensure that visual driving aids such as mirrors and CCTV, if fitted, are effectively used and maintained in working order. Ensure that suitable warning devices, such as flashing beacons and reversing alarms, if fitted, are effectively used and maintained in working order. Only pass under overhead power lines at designated points.	

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: P.E. 016



Risk Assessment
ACTIVITY: Use of Excavators

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
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Risk Assessment ACTIVITY: Use of Excavators

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Cont				Mobile phones must not be used whilst operating plant / vehicles. Ensure that extreme care is taken whilst shuttering and un-shuttering machine cabs especially in wet or frosty conditions. Do not undertake this unless there are two people present. Ensure that the machine is inspected before use and any defects immediately reported to the Site Supervisor and in turn the Plant Department. A competent person must inspect these machines at intervals not exceeding 7 days and record the results on Company Form LE2 and ensure that the Company's Daily Plant Inspection Sheet is completed. Ensure that plant and vehicles are maintained in accordance with manufacturers recommendations. Do not undertake any unauthorised repairs or maintenance. Ensure excavations are battered back to prevent collapse. Safety Barriers to be positioned to prevent plant and people falling into open excavations and inspected regularly as per permit to work system. <u>Specific Legal Requirements</u> The Provision and Use of Work Equipment Regulations 1998. The Lifting Operations and Lifting Equipment Regulations 1998.	
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Risk Rating: H = High, M = Medium, L = Low



Project: Broadfield Slopes, Rochdale

Risk Assessment
ACTIVITY: Use of Excavators

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Risk Assessment

ACTIVITY: Traffic Management

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Vehicular / Pedestrian Movements - consideration must be given to the following: Unauthorised operators / drivers. Contact between site plant / vehicles / site user vehicles and pedestrians.	Operatives / General Public / Site Visitors etc. Operatives / General Public / Site Visitors etc.	Personal injury, possible death. Damage to plant / vehicles. Personal injury, possible death. Damage to plant / vehicles.	H	Ensure a Site Traffic Assessment and Plan is completed. Only trained and authorised operatives to operate site plant / vehicles (CPCS or Casey permit). Site Management to monitor the use of site plant / vehicles. Only trained and authorised operatives to operate site plant / vehicles (CPCS or Casey permit). Ensure that operatives have a valid driving licence if operating on adopted highway. Segregate site plant from public vehicles - if this is not practicable then:- Ensure minimal construction vehicle movements / journeys by good planning / sequencing of work. Ensure that the route of least inconvenience and most safe is used at all times. Ensure that pedestrians at work wear high visibility vest coats.	L

Risk Assessment

ACTIVITY: Traffic Management

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Deploy a banksman whilst depositing or removing materials in the build areas from adopted highways. Ensure that plant is operated at a safe speed as site conditions permit (e.g. gradient, weather etc.) and does not exceed the specified site speed. Ensure that site plant has suitable warning devices - flashing beacons, reversing alarms as appropriate. Ensure that plant / vehicles are maintained to manufacturers standards. Erect suitable signage. Ensure that plant / vehicles operating on adopted highways have the appropriate Road Fund Licence (Road Tax). Site Management to monitor the above control measures.	

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: T.M. 001

Risk Assessment

ACTIVITY: Traffic Management

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Terrain – working / travelling on gradients.	Operatives / General Public / Site Visitors etc.	Personal injury, possible death. Damage to plant / vehicles.	H	Only trained and authorised operatives to operate site plant / vehicles (CPCS or Casey permit). Ensure that the machine is operated within the safe operating capability of the machine. ROPs fitted as required. Consideration should be given to the travelling surface. Ensure that the route of least inconvenience and most safe is used at all times. Ensure that plant is operated at a safe speed as site conditions permit (e.g. gradient, weather etc.) and does not exceed the specified site speed. Site Management to monitor the above control measures.	L
Existing structures / overhead cables etc.	Operatives / General Public / Site Visitors etc	Personal injury, possible death. Damage to plant / vehicles.	H	Only trained and authorised operatives to operate site plant / vehicles (CPCS or Casey permit). Ensure that structures and overhead services are effectively demarcated and brought to the attention of those concerned.	L

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: T.M. 001

Risk Assessment

ACTIVITY: Traffic Management

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont Material deliveries / storage.	Operatives / General Public / Site Visitors etc.	Personal injury, possible death. Damage to plant / vehicles.	H	Ensure that the route of least inconvenience and most safe is used at all times. Site Management to monitor the above control measures. Ensure that there is no un-authorised access to any unloading /storage area. - set up an exclusion zone. Provide Banksman as required Limit deliveries to periods of low pedestrian / vehicular traffic. Ensure that materials are unloaded / loaded in a safe and controlled manner using the correct plant / equipment. Ensure that any plant used during this activity is maintained and used in accordance with the manufacturer's instructions and current legislation. Site Management to monitor the above control measures.	L

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: T.M. 001

Risk Assessment

ACTIVITY: Traffic Management

Written By: Phil Hey / Robert Clegg

Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Compound areas.	Operatives / General Public / Site Visitors etc.	Personal injury, possible death. Damage to plant / vehicles.	H	Ensure that consideration is given to the position of compound areas e.g. safe access and egress. Ensure that the compound is situated safe from structures and overhead services. Ensure that there is no un-authorised access to compound area. In the event of un-authorised access ensure that materials, substances are stored in a safe manner to further prevent the risk of injury or damage. Site Management to monitor the above control measures.	L
Road clearance.	Operatives / General Public / Site Visitors etc.	Personal injury, possible death. Damage to plant / vehicles.	H	Ensure that roads are kept free from debris. Ensure road cleaning plant / vehicles are provided with flashing beacons, Site Management to monitor the above control measures.	L

Risk Rating: **H** = High, **M** = Medium, **L** = Low

Ref: T.M. 001

Risk Assessment

ACTIVITY: Reversing Vehicles

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Vehicles reversing into other vehicles, plant, pedestrians, other structures and over leading edges.	Site Operatives. Plant and vehicle drivers Others in vicinity of use. General public.	Injuries of various severities, possible death. Damage to plant / vehicles.	H	Ensure a Site Traffic Management Assessment and Plan is completed. Where practicable ensure that vehicle movements are separate from pedestrians. Avoid the need for excessive reversing of vehicles on site by providing designated turning areas or one-way routes. Do not allow large vehicles, if practicable, onto site if they have to reverse back onto public highways. Provide trained and authorised Banksmen if reversing / manoeuvring is unavoidable. Vehicles should be fitted with flashing beacons, reversing alarms and CCTV. Ensure that structures and leading edges are effectively protected, demarcated and bunded as appropriate Ensure that high visibility vests / coats are worn by everyone on site. Regular inspections to be carried out by Site Supervisor or nominated competent person.	L

Risk Assessment

ACTIVITY: Reversing Vehicles

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				<u>Specific Legal Requirements</u> The Construction (Design and Management) Regulations 2015.	

Risk Assessment

ACTIVITY: Banksman Operations

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Contact with plant and vehicles. Materials falling from vehicles.	Banksman.	Injuries of various severities, possible death.	H	Ensure a Site Traffic Management Assessment and Plan is completed which also includes a site layout plan. Only deploy a Banksman if other control measures are considered ineffective or impracticable. The Banksman must be given information, instruction and training as necessary to undertake the job safely and effectively. The Banksman must operate in a designated area and be in full view of the drivers at all times, especially if guiding reversing vehicles. Banksman must maintain a safe distance from vehicles and stand on the higher side if vehicles are operating on gradients. If operating at a crossing point the Banksman must give clear unambiguous signals to the drivers involved. Approach signs must be erected denoting the use of Banksman if operating in areas with poor site lines. Suitable P.P.E. must be worn i.e. high visibility vest / coat, safety helmet and safety footwear.	L

Risk Assessment

ACTIVITY: Banksman Operations

Written By: Phil Hey / Robert Clegg
 Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				The Banksman must report any incident or unsafe practices immediately to the Site Manager. Regular inspections to be carried out by Site Supervisor or nominated competent person. <u>Specific Legal Requirements</u> The Construction (Design and Management) Regulations 2015.	

Risk Assessment

ACTIVITY: Use of Ladders

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Falling from height. Falling materials. Manual Handling.	Operatives. Others in vicinity of use.	Injuries of various severities and possible death.	H	Ensure ladders are not used as places of work when other means are reasonably practicable. Ladders should only be used for short duration work (30mins or less) and the user can maintain a suitable hand hold when carrying a load. i.e three points of contact. Use correct ladder for the work to be done (including length). Ensure that ladder cannot slip by ensuring it is effectively tied on both stiles with rope and not bandings, secured with ladder clips / footed, or an effective anti-slip or stability device is used. Ensure the ladder is set at the correct angle for use. (1 in 4). Ensure a suitable safe landing area or rest area where a ladder has a vertical distance or 9.0m or above. Ensure ladders are marked for identification and inspection. Do not use painted ladders as the paint can hide defects. Ensure that ladders are inspected at regular intervals and certainly before use.	L

Risk Rating: **H = High**, **M = Medium**, **L = Low**

Risk Assessment

ACTIVITY: Use of Ladders

Written By: Phil Hey / Robert Clegg
Date: 5th December 2024

Project: Broadfield Slopes, Rochdale

Hazard	Persons in Danger	Harmful Consequences	Risk Rating before control measures	Control Measures / Method Statement	Residual Risk after control measures
Cont				Long or heavy ladders may require two persons. No person should work beyond their physical capabilities. Ensure that persons are trained and competent to use ladders. Ensure the correct PPE is provided and used. Ladders must be inspected and the results recorded on Work Equipment form located in the H&S Compliance Manual section 3 by the Site Supervisor or nominated competent person. Regular inspections on the use of ladders to be carried out by Site Supervisor. All ladders must comply with EN 131 professional standards. <u>Specific Legal Requirements</u> The Work at Height Regulations 2005. Provision and Use of Work Equipment Regulations 1998. The Manual Handling Regulations 1992.	

Appendix 3

CDM Checklist

APPENDIX 4

Pre – Construction Information



Pre-Construction Information Pack
Broadfield Slopes – Rochdale MBC
17 October 2024
Version: Rev C

safersphere.co.uk



Contents

1. Description of Project.....	5
Project description.....	5
Scope of works	5
Programme.....	6
Project directory.....	6
Existing records	7
Client's Considerations and Management Requirements.....	9
Planning for and managing the works - Client CDM brief.....	9
Site security.....	12
Welfare facilities	12
Site transport and vehicular restrictions.....	12
Client permit to work systems	13
Fire precautions, emergency procedures and means of escape.....	13
No-go areas.....	14
Smoking and parking	15
Confined spaces.....	15
1. Environmental Restrictions and Existing On-site Risks	16
Safety Hazards	16
Boundaries and access	16
Delivery and waste vehicle restrictions	16
Adjacent land uses.....	17
Existing storage of hazardous materials.....	17
Location of existing services.....	17
Ground conditions and underground structures	17
Information on existing structures.....	20
Structural integrity and previous modification of structures	20
Health Hazards	20
Asbestos	20
Existing storage of hazardous materials.....	20
Contaminated land.....	20
Existing structures containing hazardous materials.....	21
4. Significant Design and Construction Hazards	22
Significant risks identified during design.....	22
Arrangements for co-ordination of on-going design work	22
Items requiring particular precautions.....	24

5. Construction Phase Plan.....25

6. Project Health and Safety File.....26

Appendix A27

 Site Location Plan27

Appendix B27

 Project Directory27

Appendix C27

 Project HARM Register Summary27

Appendix D27

 Construction Phase Plan Checklist27

Appendix E.....27

 Health and Safety File Template.....27

Appendix F.....27

 Surveys, Reports, etc27

Amendments to the Pre-Construction Information

Date	Issue	Comments
11.09.24	00	Draft
12.09.2024	Rev A	For Comment and Issue
09.10.24	Rev B	Updated with contractors access & compound
17.10.24	Rev C	Tender Issue
This document has been issued by the project Client appointed CDM Principal Designer for the project, on the Client's behalf, to meet compliance with the CDM Regulations 2015.		
Prepared:	C Shaw	Signature: <i>C Shaw</i>
Reviewed:	S Brennan	Signature: <i>S Brennan</i>
Approved:	S Brennan	Signature: <i>S Brennan</i>

1. Description of Project

Project description

Project Address	Broadfield Slopes (rear of Town Hall), Rochdale Town Hall, The Esplanade, Rochdale, OL16 1AB.
Site Location Plan	

Scope of works

The project at Broadfield Slopes project will consist of the improvement of an existing neglected area between the Town Hall and St Chads Parish Church. The planned works will create a usable public amenity and recreational space for the residents and visitors to Rochdale.

The works will consist of the following activities;

- Structural and civil works including regrading, levelling and stabilising the existing slopes, together with drainage improvements,
- Creation of accessible pathways through the slopes,
- Restoration works to the stonework including the walls, steps and features around Packer Spout,
- Installation of new lighting to the amenity space and footpaths together with lighting to Packer Spout such as feature lights to the stairs and lanterns to stone pillars around the Packer Spout,
- Landscaping works to the slopes including tree, shrub and grass planting and also the creation of wildflower meadow areas,
- As part of the planned works, an archaeological study will be carried out during the works.

Programme

Start Date: TBC
 Duration: TBC
 Completion Date: TBC

Project directory

The following table provides the project-specific roles and necessary contact details for liaison with other CDM duty holders and consultants associated with the project:

Role	Company/Address	Contact	Telephone E-Mail
CLIENT	Rochdale Development Agency Number One Riverside, Smith Street, Rochdale. OL16 1XU	Emma Birkett Stephanie Taylor	M. 07976 059162 E.Birkett@investinrochdale.co.uk M. 07588887474 S.Taylor@investinrochdale.co.uk
LANDSCAPE ARCHITECT (Lead consultant)	Gillespies Westgate House, 44 Hale Road, Hale, Cheshire, WA 14 2EX	Warren Chapman Scarlett Towse	T. 0161 928 7715 Warren.chapman@gillespies.co.uk T. 0161 928 7715 Scarlett.Towse@gillespies.co.uk
ARCHITECT	Donald Insall Associates Bridgegate House 5 Bridge Place, Chester CH1 1SA	Caroline Drake Sarah- Elizabeth Geldard	M. 07801 478681 Caroline.Drake@insall-architects.co.uk M. 07464 486588 Sarah-lizabeth.Geldard@insall-architects.co.uk
STRUCTURAL ENGINEER	Price & Myers Beehive Lofts, Jersey Street Manchester M4 6JG	Haley Stringer Steffan Rees	T. 020 4524 6743 hstringer@pricemyers.com T. 020 4524 6770 srees@pricemyers.com
MEP ENGINEERS	Max Fordham Exchange Place 3 3 Semple Street Edinburgh EH3 8BL	Gillian Pyatt Iain Shaw	T. 0131 476 6001 G.Pyatt@maxfordham.com M. 07968 866 182 I.Shaw@maxfordham.com

PRINCIPAL DESIGNER ADVISOR	Safer Sphere Victoria House 15 Pocket Nook Street St Helens WA9 1LR	Chris Shaw	M.07927 550922 chris.shaw@safersphereco.uk
PRINCIPAL CONTRACTOR	TBC	TBC	TBC

Existing records

Record	Number/Reference	Origin	Location
BROADFIELD PARK SLOPES, ROCHDALE – SURFACE WATER SAMPLING	372700-L01 (01) 20th December 2022	RSK Geosciences	Included with the tender documents.
Ground Investigation	372700-R03 (01) October 2022	RSK Geosciences	Included with the tender documents.
Geotechnical Design Report	372700-R02 (00) June 2023	RSK Geosciences	Included with the tender documents.
Geotechnical Design Report	372700-R03 (01) July 2023	RSK Geosciences	Included with the tender documents.
Topographical Survey (Sheet 1 of 3)	58612/1 24/05/22	Malcolm Hughes Surveyors	Included with the tender documents.
Topographical Survey (Sheet 2 of 3)	58612/2 24/05/22	Malcolm Hughes Surveyors	Included with the tender documents.
Topographical Survey (Sheet 3 of 3)	58612/3 24/05/22	Malcolm Hughes Surveyors	Included with the tender documents.
Drainage CCTV Survey Report	49962 10/07/2023	Survey Solutions	Included with the tender documents.
CCTV DRAINAGE SURVEY. SHEET 1 OF 1	49962MCUG-01 26/06/2023	Survey Solutions	Included with the tender documents.
Manhole Report	16/06/23	Survey Solutions	Included with the tender documents.
Hydrology Studies	Rev 00. August 2022.	Ambellia Consultancy	Included with the tender documents

Initial Hydrology Report	Rev 00. September 2021.	Ambellia Consultancy	Included with the tender documents
Park Slopes Water Flows Investigations Interim Report	Rev 00. June 2022.	Ambellia Consultancy	Included with the tender documents
Park Slopes Water Flows Excavations Plan	Rev 00. May 2022.	Ambellia Consultancy	Included with the tender documents
Slopes Drainage Review Following Tree Clearance	Rev 00. April 2022.	Ambellia Consultancy	Included with the tender documents
Plan for April 2022 Site Water Flow Investigations	Rev 00. March 2022.	Ambellia Consultancy	Included with the tender documents

Client's Considerations and Management Requirements

Planning for and managing the works - Client CDM brief

Project Objectives:	The project at Broadfield Slopes project will consist of the improvement of an existing neglected area between the Town Hall and St Chads Parish Church. The planned works will create a usable public amenity and recreational space for the residents and visitors to Rochdale. The works will consist of the following activities; • Structural and civil works including regrading, relevening and stabilising the existing slopes, together with drainage improvements, • Creation of accessible pathways through the slopes, • Restoration works to the stonework including the walls, steps and features around Packer Spout, • Installation of new lighting to the amenity space and footpaths together with lighting to Packer Spout such as feature lights to the stairs and lanterns to stone pillars around the Packer Spout, • Landscaping works to the slopes including tree, shrub and grass planting and also the creation of wildflower meadow areas, • As part of the planned works, an archaeological study will be carried out during the works.
Client Representative:	The client main point of contact is; Emma Birkett (Rochdale Development Agency)
Stakeholders:	The site is located within the Rochdale town centre, this is expected to be extremely busy with pedestrians and visitors accessing the Town Hall and other buildings and services within close proximity to the site.
Design Programme:	The Design programme is currently being developed.
Design Stage Principal Designer:	The client has appointed Safer Sphere to act as the Principal Designer for RIBA Stages 4
Construction Stage Principal Designer:	The client has appointed Safer Sphere to act as the Principal Designer for RIBA Stages 5 - 6
Designer Compliance:	The client objective is to meet with industry best practice in relation to providing a project that can be built, used, maintained and ultimately demolished without undue risk to safety or exposure to ill health. The client expects that all designers associated with the project comply with the requirements of Regulation 9 of CDM 2015. All designers must cooperate and coordinate with the Principal Designer in ensuring hazard elimination and risk reduction. The above applies to consultant designers, contractor designs,

	specialist and any designers as defined in CDM 2015. Project HARM register A Hazard and Risk Management (HARM) Register has been set up for the project on HARM Zero* to track and manage significant risks and design mitigation measures. Link to the full 'live' online HARM Register with supporting information https://harmzero.co.uk/registers/export-pdf/1338 HZ1338 HARM Register Directory Broadfield Slopes All designers are expected to work collaboratively to review and update the HARM Register throughout the project including through design reviews and workshops. Information regarding risks and mitigation measures will be clearly presented using photos, drawings ...etc, where appropriate to highlight key issues. * HARM Zero is online software tool developed by Safer Sphere to facilitate collaborative design risk management on any construction project. For further information see https://safersphere.co.uk/harm-zero/
Construction Programme:	The planned timescales for RIBA Stages 5 to 6 are to be confirmed by the client.
Principal Contractor:	TBC
Principal Contractor Compliance:	The appointed contractor for the project, will for the purposes of the CDM Regulations 2015 be the Principal Contractor as required under this legislation. To this end the contractor will be responsible for planning, managing and monitoring all activities in pursuance of safety and health. The successful delivery of the project is reliant on the management of the aspects relating to health and safety, as well as the normal constraints of cost, programme and quality. Rochdale Development Agency put great emphasis on the controls for H&S on site as well as the importance of the projects being compliant with the CDM Regulations 2015. A proactive culture will be encouraged to allow open communication regarding health and safety with all those involved from client to operatives so that the programme is delivered at the highest level of safety standards within the construction industry. The aim of Rochdale Development Agency including the specific H&S goals is to comply with all appropriate health and safety legislation and minimum standards. These can be achieved by providing a safe and healthy working environment that will minimise workplace hazards and thereby minimise potential accidents to

	personnel and others involved directly or indirectly with the work and also minimise the likelihood of harmful incidents. The client will pursue this project to have: • No prosecutions or enforcement notices for Health and Safety issues • No reportable injuries, diseases or dangerous occurrences • No falls from height of personnel, materials, plant or equipment • No personnel injured by the movement of plant or vehicles especially during reversing operations • No slips, trips and falls • No fires, environmental incidents or cases of public nuisance • No cases of occupational dermatitis, 'Hand Arm Vibration Syndrome' (HAVS) or occupational 'Noise Induced Hearing Loss' • No cases of occupational injury from manual handling In addition to these Safety Goals the following targets have been set for achievement by the Contractor and Sub-Contractors: • Safe working will be a condition of employment in all contractors organisations • They will ensure that no additional fire risk is provided to the property as a consequence of the planned works • They will maintain site security throughout the duration of the construction works.
Handover:	The project H&S Files and O&M Manuals are required to be issued in draft format at Practical Completion of the works, with final documentation issued within 30 days of PC. The Principal Contractor will be responsible for preparing, collating and issuing the O&M Manuals, for example, in accordance with BISRIA Guidance BG1. The Principal Designer(s) shall, for the stages of their appointment, ensure the H&S File is prepared as a live document and handover to the following Stage Principal Designer, or Principal Contractor where the Principal Designer appointment ceases prior to completion. Confirm as follows: RIBA 4 H&S File Responsibility: Safer Sphere RIBA 5 H&S File Responsibility: Safer Sphere RIBA 6 H&S File Responsibility: Safer Sphere

Site security

Securing the construction site is the duty of the Principal Contractor.

It is expected that the Principal Contractor will develop their own site security measures to comply with the requirements of HSE Guidance HSG 151 Protecting the Public your next move.

The site hoarding will be erected around the periphery of the construction site. The site hoarding should be designed as temporary works as appropriate. Heras fencing can be used so long as it is stable and secure for the duration of the work. Permanent posts may be required if Heras fencing is to be employed to accommodate additional loading requirements. The entrance to the site compound/working areas should be clearly marked and procedures should be in place for visitors to report their presence as soon as they arrive at the site. Authorised persons should have the relevant site rules explained to them and undertake any necessary induction training.

The principal contractor is to consider special security measures due to the presence of children.

Welfare facilities

The Principal Contractor must ensure that suitable and sufficient welfare facilities are provided and maintained throughout the construction phase. As a minimum, all welfare arrangements must meet the requirements of Schedule 2 of CDM 2015. Facilities must be made available before any construction work starts and should be maintained until the end of the project.

See Construction - Welfare standards 2022, a copy of this guidance is located in Appendix G of this PCI document.

Site transport and vehicular restrictions

The main access for the Principal Contractors site compound is via Nelson Street, which is off Drake Street. The route and the extent of the contractors compound and laydown area is shown on the Gillespies drawing P20949-00-001-GIL-0800-00 Contractor Compound and Site Access.

The current Town Hall renovation works are expected to be completed in time for the start of the Broadfield Slopes project. In the event that they overrun and the renovation Principal Contract still has a site presence, it is expected that a collaborative approach in relation to access, storage, laydown and compound area is operated to allow both projects to be carried out at the same time.

The principal contractor will be responsible for establishing the traffic and providing temporary protected pedestrian routes in and around the building/site where necessary.

All necessary traffic management systems, including warning signs, diversion signs, barriers, temporary lighting, etc. shall be erected/provided to ensure safe public passage past the works and give advance warning of site hazards, restricted access, vehicular circulation routes, pedestrian access routes, etc.

Where necessary these should be in accordance with The Traffic Signs Manual (Chapter 8). The principal contractor must provide or arrange for adequate space on site for offloading vehicles. The area must be capable of withstanding the wheel loads of delivery vehicles as well as any mobile plant used for unloading. The sequence in which vehicles are loaded should be such that they can be removed in the desired order. Weights of all items should be readily available and lifting points/sling positions marked where necessary.

Deliveries to the site should be properly planned to coincide with the availability of personnel and plant adequate to deal with the work. Delivery times should be identified to ensure busy traffic or pedestrian periods are avoided. A trained signaller should direct vehicles and assist with loading and unloading. Materials should be stored within the site perimeter or in a separate compound as agreed with the client.

Client permit to work systems

Client permission and authorisation must be sought for the control of high-risk activities listed. Currently there is no client permit to work system in place. Authorisation and control of high-risk activities would be the responsibility of the Principal Contractor.

Safe systems of work within the construction demise shall be implemented and managed by the contractor. Permits to work are to be used for elements of the works for which there is a raised safety hazard, and may include such items as:

- Hot works
- Works at height
- Confined spaces
- Works on services (underground and overhead)
- Hot works
- Works within excavations.

A full description of how the Principal Contractors permitting and work authorisation must be included within the Construction Phase Plan.

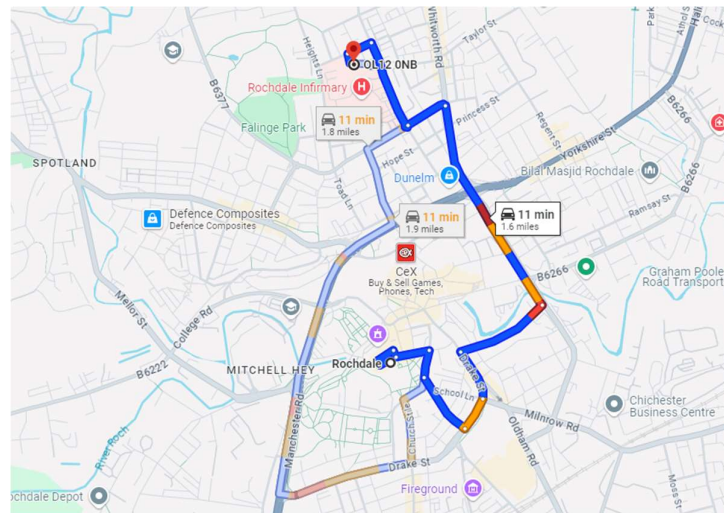
Fire precautions, emergency procedures and means of escape

The Principal Contractor shall ensure that fire safety provisions during construction are compliant with HSG 168 Fire Safety in Construction and the Joint Code of Practice (JCoP) Fire Prevention in Construction 10th edition (a copy of these documents are located in Appendix G of this PCI document). The contractor must ensure that there is no conflict between fire safety measures in operation during the construction works and emergency arrangements in place for people using tenanted floors of the office complex or people in neighbouring properties. An Emergency Plan, including means of escape from the buildings during construction activities, suitable and sufficient escape routes and muster points, must be developed and regularly reviewed by the contractor. The Plan will include contact names and telephone numbers of people or organisations that can deal with emergencies 24 hours a day, 7 days a week.

The Principal Contractor must appoint his own Fire Marshal for the duration of the project works.

The Accident & Emergency department of the Rochdale Infirmary, (OL12 0NB) is located just 1.6 miles to the north of the proposed Rochdale Town Hall / Broadfield Slopes site site.

Rochdale Infirmary,
Whitehall St,
Rochdale
OL12 0NB
Tel: 0161 624 0420



Whilst the works are being undertaken on site the Principal Contractor should formulate a suitable Emergency Procedure Plan. This Emergency Procedure for both fires and accidents is to be included within the Construction Phase Health & Safety Plan and communicated to all visitors and operatives on site via Site Inductions and Notices in prominent places.

These arrangements must be compatible and coordinated with the emergency arrangements of the adjacent Town Hall building.

No-go areas

At the time of writing this PCI document, there are no known 'no go areas' associated with the site. The Contractor should only access the parts of the site which are within his remit, entry to any other part of the site, can be done with permissions and authorisation.

The Principal Contractor must carry out works in such a way as the needs of the existing surrounding buildings are taken into account. This is particularly important if the Town Hall renovation works are still ongoing.

Smoking and parking

Smoking is not permitted on-site – operatives must leave the site to smoke or vape.

Parking on site should be restricted to contract vehicles only, all non-essential contractor parking should be parked off site.

Confined spaces

See the Ground Conditions and Underground Structures Section later in this PCI document for the potential for confined spaces during excavation works.

Other than the potential for confined spaces during excavation works there are currently no locations within the site demise which are classed as 'confined spaces', however confined spaces can be created when certain conditions arise as part of the work activities. The Principal Contractor must risk assess all work activities associated with the riser works and identify when these conditions may be created.

It is presumed that areas classified as confined spaces will be present within existing inspection chambers, proposed ductwork and potentially unventilated or poorly ventilated rooms. Prior to any works being undertaken within a potentially confined space, a suitable and sufficient risk assessment must be undertaken to decide what measures are necessary for health & safety (under the Management of Health and Safety at Work Regulations 1999, regulation 3).

All confined space work must comply with the Confined Space Regulations 1997, <http://www.hse.gov.uk/pubns/books/l101.htm>

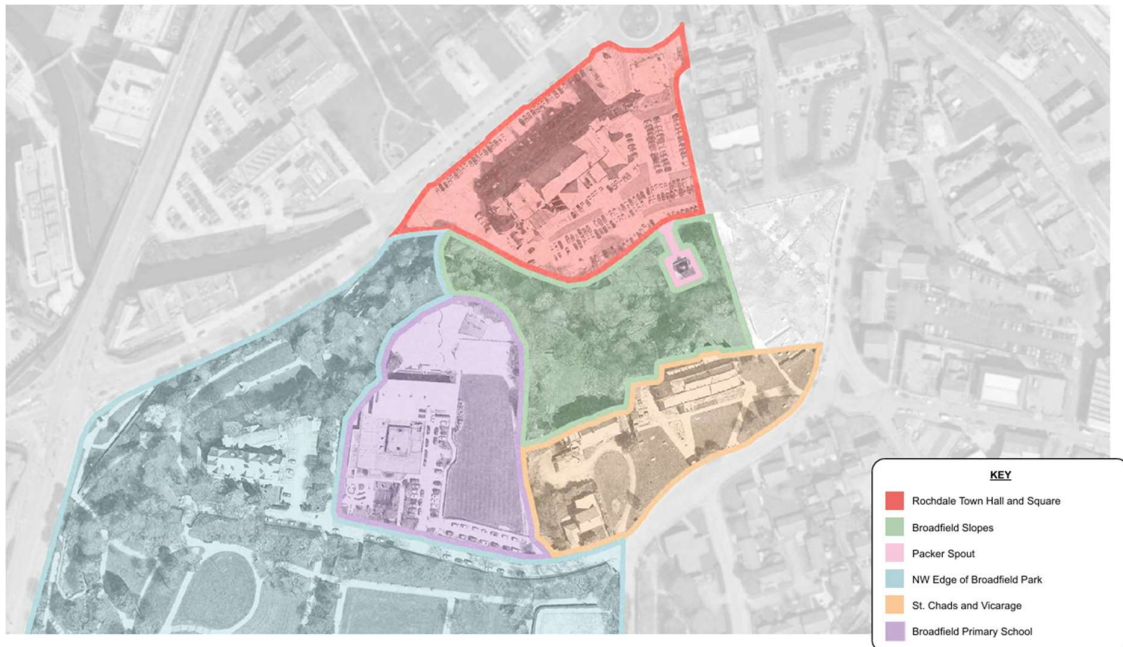
1. Environmental Restrictions and Existing On-site Risks

Safety Hazards

Boundaries and access

The Broadfield Slopes site is located within the busy town centre of Rochdale.

The main access for the Principal Contractors site compound is via Nelson Street, which is off Drake Street. The route and the extent of the contractors compound and laydown area is shown on the Gillespies drawing P20949-00-001-GIL-0800-00 Contractor Compound and Site Access.



The work area is located between the Town Hall to the north and St Chads Parish Church to the south, Broadfield Primary School is located to the west and the town centre bars and shops are located to the eastern flank of the site.

Delivery and waste vehicle restrictions

The site is located within the Rochdale town centre, this is expected to be extremely busy with pedestrians and visitors accessing the Town Hall and other buildings and services within close proximity to the site.

All site traffic entering and exiting the site, including deliveries and muck away vehicles must be escorted from the main vehicular access point located on Nelson Street by a trained Banksman. It is expected the Principal Contractor will develop a traffic management plan and construction sequence to take account and comply with the requirements of HSE Guidance HSG 144 Safe use of Vehicles on Construction Sites.

Specific consideration should be made accessing through the neighbouring streets and the associated risks of site delivery vehicles. Reference should be made to the Clocs Scheme here [CLOCS - Construction Logistics and Community Safety](#).

Adjacent land uses

The site is set within a busy town centre location, the surrounding land is used for a variety of uses such as retail, food and beverage establishments, Broadfield Primary School is also located within close proximity to the site.

Existing storage of hazardous materials

At the time of writing this PCI document the presence of existing hazardous materials within the site confines is no known.

Location of existing services

Record	Number/Reference	Origin	Location
Drainage CCTV Survey Report	49962 10/07/2023	Survey Solutions	Included with the tender documents.
CCTV DRAINAGE SURVEY. SHEET 1 OF 1	49962MCUG-01 26/06/2023	Survey Solutions	Included with the tender documents.
Manhole Report	16/06/23	Survey Solutions	Included with the tender documents.

The Principal Contractor must also ensure that all excavations on site are carried out in accordance with the safe digging practices identified in HSG47 Avoiding Danger from Underground Services, and the relevant statutory authority guidance document should be used to identify the presence of services, diverting and working alongside them.

Ground conditions and underground structures

For further information relating to the nature of the ground at the Broadfield Slopes site, the following GI report prepared by RSK Geosciences should be consulted.

Record	Number/Reference	Origin	Location
Geotechnical Design Report	372700-R03 (01) July 2023	RSK Geosciences	Included with the tender documents.

Section 2.6 of the GI report describes the ground conditions encountered during the investigation works.

2.6 Ground model and characteristic parameters

In view of the lateral variations in ground conditions and topography across the site, two ground models have been adopted for the purpose of providing design recommendations, with each ground model split into two ground profiles to reflect the geology at the top and bottom of the slopes in Zone A and Zones B/C. It should be noted that within each ground model there may be localised cohesive horizons present within the Glaciofluvial Deposits that are not represented in the models, owing to the local lateral and vertical variation in their presence.

The ground models adopted are presented in **Table 3**. Depths and thicknesses of strata are based on average thicknesses encountered within each zone. Potentially significant localised variations to quoted thickness / depths may exist. Specific logs should be referred to for localised detailed information and to confirm any variation locally from the generalised ground models presented below.

Table 3 Ground model derived from ground investigation

Stratum	Elevation at top of stratum mbgl (mAOD)	Thickness (m)
Zone A – Ground Model 1A – top of slope		
Glaciofluvial Deposits (sand and gravel)	139.85	>25 (total)
Glacial Till	>114.83	>7.83
Pennine Coal Measures	107.00 ¹	>0.50
Zone A – Ground Model 1B – base of slope		
Made Ground	121.50	0.60
Glaciofluvial Deposits (sand and gravel)	120.90	1.45
Glacial Till	119.45	12.45
Pennine Coal Measures	107.00	>0.50
Zone B/C – Ground Model 2A – top of slope		
Made Ground	141.20	1.20 ²
Glaciofluvial Deposits (sand and gravel)	140.00	8.00
Glaciofluvial Deposits (clay)	132.00	4.00

Stratum	Elevation at top of stratum mbgl (mAOD)	Thickness (m)
Glaciofluvial Deposits (sand and gravel)	128.00	3.00
Glaciofluvial Deposits (clay)	125.00	2.00
Glaciofluvial Deposits (sand and gravel)	123.00	8.00
Glacial Till ³	115.00	5.15
Pennine Coal Measures ³	109.85	>1.70
Zone B/C – Ground Model 2B – base of slope		
Made Ground	121.83	4.10
Alluvium	117.73	1.60
Glaciofluvial Deposits	116.13	1.13
Glacial Till	115.00	5.15
Pennine Coal Measures	109.85	>1.70
Notes: ¹⁾ Inferred from base of Zone A slope (Ground Model 1B) ²⁾ Made Ground approximately 1.20m thick noted at top and within slope. ³⁾ Inferred from Zone C (Ground Model 2B)		

Section 4.4.1 Excavations of the above report indicates that stability of excavations was an issue during the investigation works onsite.

Excavations with vertical or relatively steep sides in the made ground or Glaciofluvial Deposits strata are likely to be unstable during excavation. In particular, the presence of water bearing sands presents a high risk of 'running' sand conditions in open excavations and resulting instability.

It is therefore recommended that excavation support systems are made available during the groundwork stage of the development.

Man entry into any excavations should not be undertaken without provision of suitable shoring and support and dewatering or suitable regrading and battering of side slopes to safe angles. **Confined spaces** protocols for the Health and Safety of personnel should always be used where man entry into excavations is to be undertaken as low oxygen conditions may be present.

Pumping from open sumps in soft cohesive and non-cohesive soils can result in instability and general loosening of the soils at the base of the excavation and, as such, should be avoided.

Information on existing structures

With the exception the Packer Spout and surrounding stairs, paving and walls, there are no other structures within the confines of the site.

Due to the heritage nature of Packer Spout, a sensitive restoration and conservation works are to be carried out, this will also include a recommissioning of the water feature.

Structural integrity and previous modification of structures

There are no obvious structural concerns with the Packer Spout structure, it is recommended that prior to works a full structural investigation of the existing buildings should be carried out.

Health Hazards

Asbestos

With the exception the Packer Spout and surrounding stairs, paving and walls, there are no other structures within the confines of the site.

See Contaminated Land for further information for the presence of ACMs within the soil.

Existing storage of hazardous materials

At the time of writing this PCI document the presence of existing hazardous materials within the Broadfield Slopes site is not known and no further details have been provided to this affect.

Contaminated land

The following ground investigation report to be prepared by RSK Geosciences was undertaken, this report consisted of an assessment of the structural properties only. No data is present within the report on the potential for contamination or asbestos to be present within the soil.

Record	Number/Reference	Origin	Location
Geotechnical Design Report	372700-R03 (01) July 2023	RSK Geosciences	Included with the tender documents.

The following section of the above report indicates the limitations of the investigation and subsequent laboratory testing of the soils present.

Appendix A Service Constraints

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off site of **asbestos**, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, persistent, bioaccumulative or toxic chemicals (including PFAS compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.
11. **Asbestos** is often observed to be present in soils in discrete areas. Whilst **asbestos**-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that **asbestos** fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works.

Due to the lack of data with regard to potential contamination of the presence of ACMs within the soil. The Principal Contractor must ensure that all those working on site are provided with a suitable site induction and TBT on working in potentially contaminated ground and the importance of good occupational hygiene, suitable welfare facilities must also be provided from the start of the site works.

Existing structures containing hazardous materials

At the time of writing this report, the presence of other hazardous materials have not been identified.

4. Significant Design and Construction Hazards

Significant risks identified during design

A project HARM Register has been set up on HARM Zero* to capture significant risks identified by the project team.

*HARM Zero is Safer Sphere's cloud-based Hazard And Risk Management tool that facilitates collaborative design risk management. It helps clients and project teams discharge their legal duties as well as promote excellence and share best practices with the aim of achieving Zero work-related accidents and ill health.

For further information see: <https://safersphere.co.uk/harm-zero/>

See **project HARM Register Summary**

<https://harmzero.co.uk/registers/register-view/1338>

HZ1338 HARM Register Directory Broadfield Slopes

The areas/activities to consider when identifying significant risks include:

1 - Construction and demolition

- 1A General planning
- 1B Excavation and foundation
- 1C Primary structure
- 1D Building elements and building services
- 1E Civil engineering

2 - Access for maintenance (including cleaning and repair)

- 2A Access for maintenance - building
- 2B Access for maintenance - services

3 - Workplace (in use) safety

4 - Fire safety (construction and in use)

- 4A_Process safety - how to stop fire occurring
- 4B_General fire precautions - what is needed in event of fire

5 - Temporary works

Red, amber and green (RAG) lists are practical aides to designers that highlight hazardous procedures, products and processes that should be eliminated from the project where possible. They also highlight products, processes and procedures to be positively encouraged.

Please follow the link to view the RAG List in the CITB Guidance for Designers:

<https://www.citb.co.uk/media/ndlbmb5v/cdm-2015-designers-interactive.pdf>

Arrangements for co-ordination of on-going design work

HARM Zero is being used on this project to coordinate the design risk management process. The project HARM Register records the hazards and risks identified along with risk and risk mitigation measures and information relating to any residual risks.

The project HARM Register is a live register that is continuously updated and reviewed throughout the project. It is reviewed at design meetings and specific CDM

meetings/workshops as required. The project HARM Register is reviewed at each RIBA design stage.

All designers and others involved on the project have access to the HARM Register. Each risk is assigned an 'owner' who is normally the person best placed at that time to mitigate the risk. Anybody can identify a risk and some risks will require coordinated input from multiple parties to mitigate the risks. The risk owner may change throughout the project and when the risk owner changes the new owner will automatically receive an email alert to look at the risk.

All designers must provide information that other project team members are likely to need to identify and manage the remaining risks. **This should be project specific and concentrate on significant risks which may not be obvious to those who use the design.** For example, providing generic risk information about the prevention of falls is pointless, because competent contractors will already know what needs to be done, but if the design gives rise to a specific and unusual fall risk which may not be obvious to contractors, designers should provide information about this risk.

Designers also need to provide information about aspects of the design that could create significant risks during construction work or in use. If in doubt about the level of information needed, the best way to find out is to ask those who will use it.

Significant risks are not necessarily those that involve the greatest risks, but those, including health risks that are:

- (a) not likely to be obvious to a competent contractor or other designers:
- (b) unusual; or
- (c) likely to be difficult to manage effectively.

Information provided should be brief, clear, precise, and in a form suitable for the users.

HARM Zero allows users to attach relevant information (e.g., photos, drawings, surveys and reports) to risks, to highlight risks and risk mitigation measures. Relevant guidance is also provided.

Designers duties

It is a legal requirement for Designers (this includes Contractors with design responsibilities) to provide useful and appropriate health & safety information with their design to address residual risks (construction, cleaning & maintenance, and building in-use as a Workplace) that have not been designed out or significantly reduced,

CDM Regulations 2015, Reg 9(4),

A designer must take all reasonable steps to provide, with the design, sufficient information about the design, construction or maintenance of the structure, to adequately assist the client, other designers and contractors to comply with their duties under these [CDM] Regulations.

Any Designers design health and safety risk information received, 'Designers Risk Assessments' Et al, are contained in Appendix C.

Items requiring particular precautions

Refer to the project HARM Register.

The main dangers on site include the following which must be specifically addressed where applicable in the Construction Phase Plan:

- Falls from height
- Collapse of excavations
- Collapse of structures
- Exposure to building dusts
- Exposure to asbestos
- Activities or workers requiring supervision
- Electricity
- Maintenance of plant and equipment
- Risks to members of the public, the Client and others

See CITB guidance CIS80 Construction Phase Plan <https://www.hse.gov.uk/pubns/cis80.pdf>

Additional particular risks which must be addressed where applicable include:
(CDM Regs 2015, Schedule 3)

- Chemical or biological substances
- Working with ionising radiation
- Work near high voltage power lines
- Risk of drowning
- Wells, underground earthworks and tunnels
- Work in caissons with a compressed air atmosphere
- Work involving explosives
- Work involving assembly or dismantling of heavy prefabricated components

5. Construction Phase Plan

The enclosed **Construction Phase Plan review checklist (Appendix D)** highlights the items that should be included within the Construction Phase Plan prepared by the Principal Contractor.

The Construction Phase Plan must be site specific and should include the Pre-Construction Information provided and address the risks identified on the project HARM register.

The Principal Contractor must liaise and coordinate with the Principal Designer and the project HARM register should be updated throughout the project.

The Construction Phase Plan should also include details of welfare facilities arrangements to ensure they are suitable and meet the requirements set out in the CDM regulations schedule 2.

The Construction Phase Plan should be provided to the Client and or Client CDM advisor at least 2 weeks before commencement on site so the Client/Client CDM advisor can confirm that arrangements are adequate to enable construction to proceed.

The Construction Phase Plan Review is based in the requirements of CDM 2015 and in line with appendix 3 of the HSE's Legal (L) series guidance L153 managing health and safety in construction. The review takes into account the main dangers on-site as highlighted in HSE guidance (CIS80) construction phase plan and includes a reference to CDM 2015 schedule 3 for work involving particular risks.

6. Project Health and Safety File

The Principal Designer will collate the required information and prepare a Health and Safety File for the project based on the remaining hazards and risks. The Designers and Principal Contractor has a duty to obtain relevant information for the health and safety file as required by the Principal Designer. It is important that this information is provided promptly, and all parties must ensure that any contractors and or designers appointed by them are aware of what is expected from them and when to deliver it. The Health and Safety File will be part of the handover documentation, and as such handover will not be accepted without this completed document.

A template for the Health and Safety File giving guidance on information to be provided is provided in Appendix E.

Appendix A

Site Location Plan

Appendix B

Project Directory

Appendix C

Project HARM Register Summary

Appendix D

Construction Phase Plan Checklist

Appendix E

Health and Safety File Template

Appendix F

Surveys, Reports, etc



Safer Sphere CHS Ltd.
Head Office
Victoria House
15 Pocket Nook St.
Saint Helens
WA9 1LR

Safer Sphere CHS Ltd.
Basingstoke Office
Worting House
Church Ln
Basingstoke
RG23 8PY

Appendix 5

Plant / Machine Operators Certification

Evidence of Competency

Appendix 6
Traffic Management Plan
&
Site Layout

THE CASEY GROUP LTD

SITE TRAFFIC MANAGEMENT ASSESSMENT & PLAN

CONTRACT NAME:

CONTRACT NO:

ORIGINAL ISSUE DATE:

REVISED DATE:

REVISED DATE:

CONTENTS

1. Introduction
2. Management
3. Proximity Hazards
4. Plant / Vehicles Operating on a Public Highway
5. Site Plant / Vehicles
6. Personnel / Pedestrians
7. Site Traveling Routes
8. Tipping Areas
9. Site Terrain
10. Site Parking
11. Training
12. Compound Area
13. Public Highways - Chapter 8
14. Road Clearance
15. Materials Deliveries and Storage
16. Monitoring and Controls
17. Further Guidance
18. Additional Information

SITE TRAFFIC MANAGEMENT ASSESSMENT & PLAN

Introduction

This Site Traffic Management Assessment & Plan has been developed so that operations on Company Sites may continue without risk of personal injury, damage to plant / vehicles and property etc. The control measures identified in the Assessment / Plan should be effectively implemented, monitored and reviewed. Any alteration to working practices must be evaluated and incorporated into the Assessment / Plan and the review date recorded.

Once complete this Assessment / Plan should be brought to the attention of those concerned and a copy readily displayed on site.

1. Management	YES	NO	COMMENTS
1.1 Does the Company's Health and Safety Policy contain a Traffic Management section?	✓		
1.2 Does the Company have a generic Traffic Management risk assessment?	✓		
1.3 Is the site wholly owned / operated by the Company?		✓	
1.4 If not, are there clear boundaries between operations?			All operations will be fenced off from other trades
1.5 If not, what control measures have been implemented?			Contractors will barrier themselves off to keep pedestrians from entering their workspace.

2. Proximity Hazards	YES	NO	COMMENTS
2.1 Are there any overhead electric power lines present on the site?		✓	
2.2 If yes, have the control measures, detailed in GS6 Avoidance of Danger from Overhead Electric Power Lines, been implemented? If not, what controls are in place to prevent accidental contact?			No power lines present
2.3 Are there any underground services present on site? If yes, are they effectively demarcated so as to prevent damage? If not, what control measures are in place?			Not known – Will ask client for service drawings
2.4 Are there any other proximity hazards and considerations on site such as water courses, railway lines, schools, community centres, residential areas etc. likely to affect or be affected by site traffic? If yes, what are they and what control measures are in place?		✓	

2.5 Are there any restrictions on plant / vehicle movements due to nearby schools etc. If yes, what are they?		✓	

3. Plant / Vehicles Operating on Public Highways	YES	NO	COMMENTS
3.1 Are plant / vehicles required to operate on public highways? (Plant and vehicles must be taxed and insured for road use). If yes, list the type and number of plant / vehicles to be used on site:			N/A
3.2 Are plant / vehicles wholly owned / operated by Company Employees? If not, identify the other owners and operators of the plant / vehicles:			N/A
3.3 All operators who operate plant / vehicles on a public highway must have a valid driving license in addition to a valid CPCS Operators Card or equivalent.			N/A
3.4 If plant is operating outside of day light hours plant must be fitted with suitable lights in accordance with the Road Vehicles Lighting Regulations 1989.			N/A
3.5 Plant / vehicles operating on adopted roads must be operated in accordance with the Road Traffic Act 1988.			N/A

4. Site Plant / Vehicles	YES	NO	COMMENTS
4.1 Is there a planned maintenance procedure in place?			N/A
4.2 Are plant vehicles inspected daily and defects reported?			N/A
4.3 Is CCTV fitted to all required plant?			N/A
4.4 Are vehicles fitted with effective mirrors?			N/A
4.5 Are vehicles fitted with reversing beepers and flashing beacons?			N/A
4.6 Are risk assessments and method statements available for specific site operations?			N/A

4.7 Are all plant operatives trained and authorised? If the answer to any of the above is no, please record the action taken.			
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5. Personnel and Pedestrians	YES	NO	COMMENTS
5.1 All employees, contractors and visitors are required to wear high visibility clothing i.e. vests or coats.	✓		
5.2 Have Banksmen been deployed on site? If yes, have the Banksmen been issued with Information, Instruction and Training? If not, what control measure are in place to protect the Banksmen from moving plant / vehicles?		✓	Only time we will need a banksmen is when removing materials from wagon and the removal of skips. Contractors and skip company will be told to wait outside before entering site and will be under instruction by a banksman
5.3 Are sight lines satisfactory? If not, is approach signage in place? If not, what control measures are in place?	✓		

6. Site Travelling Routes	YES	NO	COMMENTS
6.1 Are travelling routes clearly demarcated?			N/A
6.2 Does the site have a one-way system?			N/A
6.3 Does the site have passing points?			N/A
6.4 Is there a maximum speed limit in place and signs indicating such?			N/A
6.5 Are there effective earth bunds in place? N.B. earth bunds must be 1.5m high or the radius of the wheel / tyre whichever is the greater.			N/A
6.6 Are travelling routes on a reasonable gradient? If the answer to any of the above is no, please record the action taken.			N/A
6.7 Are there any blind corners, which cannot be eliminated? If yes, are there signs and mirrors in place to reduce the hazard of blind corners? If not, what control measures are in place?			N/A

7. Tipping Areas (If Applicable)	YES	NO	COMMENTS
7.1 Does the site have designated tipping areas? If yes, are tipping areas provided with suitable turning areas? If not, what control measures are in place?	✓		These will be on grassed areas in front of where the work is to be carried out.
7.2 Has consideration been given to reducing excessive reversing of tipping vehicles? If not, what control measures are in place?			N/A

8. Terrain	YES	NO	COMMENTS
8.1 Does the terrain represent any abnormal risks of plant / vehicle overturning or other hazard associated with working on gradients? If yes, what controls measures have been implemented to eliminate or reduce the risk of injury, damage etc.			N/A

9. Site Parking	YES	NO	COMMENTS
9.1 Does the site have a designated parking area for employees and visitors? If not, what parking arrangements are in place?		✓	There is no designated parking. There is parking on main road and side roads
9.2 Is the parking area clearly indicated by suitable signage? If not, what control measures are in place?			N/A

10. Training	YES	NO	COMMENTS
10.1 Only trained and authorised operatives are permitted to operate site plant and vehicles.			N/A

11. Compound Area		YES	NO	COMMENTS
11.1	Is there a designated compound area with a designated pedestrian area? If not, what control measures are in place to effectively segregate site plant / vehicles from pedestrians etc.?.			There is no compound on site. There will be an isolated car parking space with a skip inside heras fencing and locked.

12. Public Highways		YES	NO	COMMENTS
12.1	Is there a designated compound area with a designated pedestrian area? If not, what control measures are in place to effectively segregate site plant / vehicles from pedestrians etc.?.			N/A
12.2	Does the work entail working on adopted highways as defined in the New Roads and Street works Act? If yes, have the control measures, detailed in Chapter 8, been implemented? If not, what controls are in place?			N/A

13. Road Clearance		YES	NO	COMMENTS
13.1	Are road clearance operations required and in place? Minimal on highway usage, deliveries will be taken directly from the highway i.e. Road Sweeper? Wheel Spinner? Wheel Wash?			N/A

13.2 Are there any other requirements for road clearance on this site? If yes, what are they?			N/A
--	--	--	-----

14. Material Delivery, Storage and Collection	YES	NO	COMMENTS
14.1 Has the safe system of work / site rules for Delivery Drivers been issued to all drivers? If not, what controls have implemented?			When ordering materials the vendor will be told to phone 20 minutes before and when vehicle is outside so they can be unloads in a controlled way.
14.2 Are there any restrictions on deliveries or collections? If yes, what restrictions apply?		✓	
14.3 Is there a designated storage area for materials? If not, what control measures are in place?	✓		Grassed areas in front of premises. Materials will be lay down and used during day. No materials will be left on site after working hours
14.4 Is there a clear and safe route to the designated area? If not, what control measures are in place?			N/A
14.5 All drivers are required to wear high visibility clothing whilst out of the vehicle cab.	✓		

16. Monitoring and Control

This is the responsibility of the Site Manager / General Foreman and visiting Health and Safety Advisor(s).

17. Further Guidance

Further guidance on Site Traffic Management can be found in the Group Health and Safety Manual and C.I.T.B. GE700 (Yellow Manual) and this document should be referred to when making amendments to this document. Other guidance includes: 'Protecting the public' HSG 151 and 'Safe use of vehicles on construction sites' HSG 144.

18. Additional Information

Enter any other information relating to the management of traffic on this site together with additional control measures that may be necessary.

Signed:

Position: Site Manager

Appendix 7

COVID-19 Procedures

Construction Sector - Site Operating Procedures

Protecting Your Workforce During Covid-19

Contents

Introduction.....	2
Travelling	2
Site Access and Egress Points.....	2
Hand Washing.....	3
Toilet Facilities.....	3
Canteens and Rest Areas.....	3
Changing Facilities, Showers and Drying Rooms.....	4
Close Working	4
First Aid and Emergency Service Response	5
Cleaning	5

Current Guidance

[Social Distancing](#)

Any national guidance on social distancing in [England](#), [Scotland](#), [Wales](#) and [Northern Ireland](#) must be adhered to.

[Going to Work](#)

Workplaces should be [Covid-19 secure](#).

[Face Coverings](#)

The CLC has published [The Use of Face Coverings in Construction](#) which includes the current requirements in canteens and rest areas.

[Self-Isolation](#)

Build UK has published a [flowchart](#) showing the actions to take if a worker has Covid-19 or has to self-isolate.

Introduction

Covid-19 will be a feature of our lives for the foreseeable future and needs to be managed to reduce the risk of transmission.

These Site Operating Procedures (SOP) are based on Government guidance on [Working safely during Coronavirus \(Covid-19\) - Construction and other outdoor work in England](#); other restrictions and advice may apply in [Scotland](#), [Wales](#) and [Northern Ireland](#), as well as in areas subject to a localised lockdown.

The objective is to ensure consistent measures on construction sites of all types and sizes.

The [HSE](#) is the relevant enforcing authority for occupational health and safety legislation and guidance to control public health risks in the construction sector. **If a site is not complying with the latest Government guidance on Covid-19, it may be subject to enforcement action.**

The health and safety requirements of any construction activity must not be compromised. If an activity cannot be undertaken safely, it should not take place.

Where Covid-19 measures are in place, organisations should remind the workforce of them during inductions and daily briefings and have effective monitoring arrangements in place to ensure compliance.

Travelling

Sharing Vehicles

If workers share transport, they should try to:

- Share with the same individuals and with the minimum number of people at any one time
- Keep the windows open
- Travel side by side or behind other people, rather than facing them, where seating arrangements allow
- Maximise the distance between people
- Wear a face covering
- Clean the vehicle between journeys, especially touch points, using gloves and standard cleaning products.

Using Public Transport

If workers use public transport, they:

- Should try to avoid travelling during peak times (05:45 - 08:15 and 16:00 - 17:30); and
- Must wear a face covering.

Sites should consider:

- Changing and staggering site hours to reduce congestion on public transport
- Parking arrangements for additional vehicles and bicycles
- Providing facilities such as lockers and showers
- Providing hand cleaning facilities at entrances and exits. This should be soap and water wherever possible or hand sanitiser if soap and water are not available
- How someone taken ill would get home.

Site Access and Egress Points

- Minimise non-essential visitors
- Consider introducing staggered start and finish times to reduce congestion and contact
- Plan and manage site access and egress points to minimise contact and ensure current social distancing requirements are met – you may need to change the number of access points, either increase to reduce congestion or decrease to enable monitoring, including in the case of emergencies
- Introduce one-way systems
- Allow plenty of space between people waiting to enter site

- Use signage:
 - such as floor markings, to minimise contact and ensure current social distancing requirements are maintained between people when queuing
 - reminding workers not to attend site if they have symptoms of Covid-19
- Require all workers to wash their hands for 20 seconds using soap and water when entering and leaving the site
- Regularly clean common contact surfaces in reception, office, access control and delivery areas e.g. entry systems, scanners, turnstiles, screens, telephone handsets and desks, particularly during peak flow times
- Manage the number of people in attendance at site inductions and consider holding them outdoors wherever possible
- Where loading and offloading arrangements on site will allow it, delivery drivers should remain in their vehicles. Where drivers are required to exit their vehicle, they should wash or sanitise their hands before handling any materials
- [Drivers](#) must be provided with access to suitable toilet and hand washing facilities and made aware of the social distancing measures in place
- Consider arrangements for monitoring compliance.

Hand Washing

- Allow regular breaks to wash hands
- Provide additional hand washing facilities (e.g. pop ups) to the usual welfare facilities, particularly on a large spread out site or where there are significant numbers of personnel on site, including plant operators
- Ensure adequate supplies of soap and fresh water are readily available and kept topped up at all times
- Provide hand sanitiser (minimum 60% alcohol based) where hand washing facilities are unavailable
- Regularly clean the hand washing facilities
- Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal.

Toilet Facilities

- Manage the number of people using toilet facilities at any one time (e.g. use a welfare attendant) and use signage, such as floor markings, to minimise contact and maintain current social distancing requirements
- Wash or sanitise hands before and after using the facilities
- Enhance the cleaning regimes for toilet facilities, particularly door handles, locks and the toilet flush
- Portable toilets should be cleaned and emptied more frequently
- Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal

Canteens and Rest Areas

- Confirm whether face coverings should be worn in canteens and rest areas - the latest position can be found in [The Use of Face Coverings in Construction](#)
- Ensure that the number and size of facilities available on site are sufficient to minimise contact and maintain current social distancing requirements
- The capacity should be clearly identified at the entry to each facility, and where necessary attendants provided to supervise compliance
- Break times should be staggered to reduce congestion and contact
- Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced
- Frequently clean surfaces that are touched regularly, using standard cleaning products e.g. kettles, refrigerators, microwaves
- Hand cleaning facilities or hand sanitiser should be available at the entrance to any room where people eat and should be used by workers when entering and leaving the area

- All rubbish should be put straight in the bin and not left for someone else to clear up
- Tables and chairs should be cleaned between each use
- Crockery, eating utensils, cups etc. should be disposable or washed and dried between each use
- Payments should be taken by contactless card wherever possible
- Canteen staff should wash their hands often with soap and water for at least 20 seconds before and after handling food
- Consider arrangements for monitoring compliance.

Changing Facilities, Showers and Drying Rooms

- Ensure that the number and size of facilities available on site are sufficient to minimise contact and maintain current social distancing requirements
- Manage the number of people using these facilities at any one time e.g. use a welfare attendant
- Introduce staggered start and finish times to reduce congestion and contact
- Introduce enhanced cleaning of these facilities throughout the day and at the end of each day
- Provide suitable and sufficient rubbish bins in these areas with regular removal and disposal.

Close Working

Hierarchy of Controls

Sites and work need to be planned and organised to avoid crowding and minimise the risk of spread of infection.

If you are not able to avoid contact whilst working, you should consider whether the activity should continue and, if so, risk assess it using the hierarchy of controls below and against any sector-specific guidance. The results of risk assessments should be shared with the workforce.

Eliminate	• Workers who have Covid-19 symptoms or a positive test result should not travel to or attend site • Rearrange tasks to enable them to be done by one person, or in a way that maintains current social distancing requirements • Avoid skin to skin contact and face to face working • Stairs should be used in preference to lifts or hoists and consider one-way systems • Consider alternative or additional mechanical aids to reduce worker interface Site Meetings • Only necessary meeting participants should attend • Attendees should maintain current social distancing requirements • Rooms should be well ventilated / windows opened to allow fresh air circulation • Hold meetings in open areas where possible
Reduce	• Minimise the frequency and time workers are working together • Minimise the number of workers involved in tasks • Workers should work side by side, or facing away from each other, rather than face to face • Manage the number of people in lifts and hoists to reduce congestion and contact • Regularly clean common touchpoints, doors, buttons, handles, vehicle cabs, tools, equipment etc. • Increase ventilation in enclosed spaces • Wash or sanitise hands before and after using any equipment

Isolate	Keep groups of workers: • Together in teams e.g. do not change workers within teams • As small as possible • Away from other workers where possible
Control	• Consider introducing an enhanced authorisation process • Provide additional supervision to monitor and manage compliance
PPE	• Covid-19 needs to be managed through social distancing, hygiene and the hierarchy of controls and not through the use of PPE • Sites should not encourage the precautionary use of PPE to protect against Covid-19
Behaviours	The measures necessary to minimise the risk of spread of infection rely on everyone in the industry taking responsibility for their actions and behaviours Encourage an open and collaborative approach between workers and employers on site where any issues can be openly discussed and addressed

First Aid and Emergency Service Response

The primary responsibility is to preserve life and first aid should be administered if required and until the emergency services attend.

- When planning site activities, the provision of adequate first aid resources must be agreed between the relevant parties on site
- Emergency plans including contact details should be kept up to date
- Consider potential delays in emergency services response due to the current pressure on resources
- Consider providing additional competent first aid or trauma resources for high-risk activities.

Cleaning

Enhance cleaning procedures across the site, particularly in communal areas and at touch points including:

- Taps and washing facilities
- Toilet flush and seats
- Door handles and push plates
- Hand rails on staircases and corridors
- Lift and hoist controls
- Machinery and equipment controls
- Canteens and rest areas which must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, vending machines and payment devices.
- Telephone equipment
- Key boards, photocopiers and other office equipment
- Rubbish collection and storage points should be increased and emptied regularly throughout and at the end of each day.

Appendix 8

Accident and Emergency Procedure

ACCIDENT / EMERGENCY PROCEDURE

This site office is situated at:

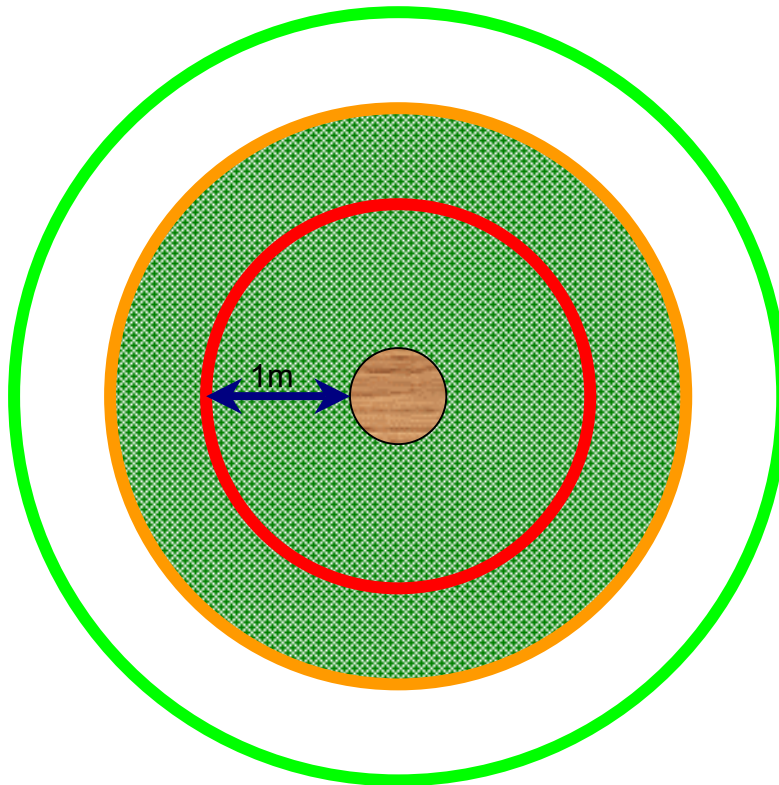
Site Telephone Number:

When telephoning the emergency services, please give the exact address and location of the site and state the precise nature of the accident or emergency.

The name and address of the NEAREST HOSPITAL with accident and emergency facilities is:

Blackburn Royal Infirmary

Appendix 9
NJUG Guidelines for
Excavations,
Planning, Installation and
Maintenance of Utility Apparatus /

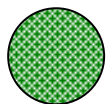


TREE PROTECTION ZONE

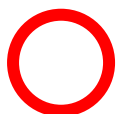
Key to Diagram



Trunk of Tree



Spread of canopy or branches



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Local Authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Local Authority Tree Officer if in any doubt.



PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2

DAMAGE TO TREES

Tree roots keep a tree healthy and upright. Most roots are found in the top 600mm of soil and often grow out further than the tree's height. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil. Most street tree roots grow under the footway but may also extend under the carriageway. If roots are damaged the tree may suffer irreversible harm and eventually die.

PROTECTING ROOTS - **DO'S** and **DON'TS**

There are three designated zones around a tree each of which has its own criteria for working practices.

THE PROHIBITED ZONE

Don't excavate within this zone.

Don't use any form of mechanical plant within this zone

Don't store materials, plant or equipment within this zone.

Don't move plant or vehicles within this zone.

Don't lean materials against, or chain plant to, the trunk.

Do contact the local authority tree officer or owner of the tree if excavation within this zone is unavoidable.

Do protect any exposed roots uncovered within this zone with dry sacking.

Do backfill with a suitable inert granular and top soil material mix as soon as possible on completion of works.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PRECAUTIONARY ZONE

Don't excavate with machinery. Where excavation is unavoidable within this zone excavate only by hand or use trenchless techniques.

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Don't repeatedly move / use heavy mechanical plant except on hard standing.

Don't store spoil or building material, including chemicals and fuels, within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do backfill the trench with an inert granular material and top soil mix. Compact the backfill with care around the retained roots. On non highway sites backfill only with excavated soil.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PERMITTED ZONE

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Do use caution if it is absolutely necessary to operate mechanical plant within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

Appendix I0

F10

Appendix I I

ASBESTOS

em1

asbestos essentials

What to do if you discover or accidentally disturb asbestos during your work

Equipment and method sheet

Non-licensed tasks

This information will help employers and the self-employed to comply with the Control of Asbestos Regulations 2012.

It is also useful for trade union and employee safety representatives.

Only carry out work if you are properly trained and have the right equipment.

Remember:

- Asbestos fibres can cause fatal lung disease and lung cancer.
- Read the safety checklist and sheet a0.
- You must be trained to work safely with asbestos materials.
- Asbestos isn't always obvious. Would you spot an asbestos gasket on an old engine, asbestos cement pipes or an asbestos-containing fuse board? If you're not sure, the premises owner needs to get it checked out!
- There are three 'colours' of asbestos, but you can't tell just by the colour what you have found; it could be mixed with other materials which change its appearance.

What this sheet covers

This sheet tells you what you need to do if you discover or accidentally disturb and release asbestos during your work.

Unexpected discovery of asbestos

If during your work you discover materials which you believe to be asbestos stop work immediately. Put up a warning sign and ensure nobody enters the area. Report the problem to whoever is in charge and arrange to have a sample of the material analysed. If it does not contain asbestos then work can continue. If the material does contain asbestos then follow the flow chart to decide if the work needs a licensed contractor.

Alternatively, you could presume that the material contains the worst type of asbestos and apply the appropriate controls, using a licensed contractor if required.

If you are employed in-house, remember to tell your manager to update the asbestos management plan; otherwise report it to the customer.

Accidental release of asbestos

If you accidentally disturb and release asbestos during your work, it must be dealt with quickly and appropriately.

The clean-up of lower risk asbestos materials where the fibres are firmly bound in a matrix but are essentially in good condition (ie mostly intact), such as asbestos cement (AC), bitumen products, papers, textiles, small-scale release of asbestos insulating board (AIB) etc will generally not require a licensed contractor.

Caution

Check what you're working on before you start:

- Avoid using a sweeping brush as this can spread asbestos.
- Make sure no unauthorised personnel enter the area.
- The clean-up of any accidental release of higher risk materials, eg asbestos lagging, loose fill, asbestos coatings (not textured coatings) or large-scale releases of AIB, must be done by a licensed contractor.

Emergency procedures

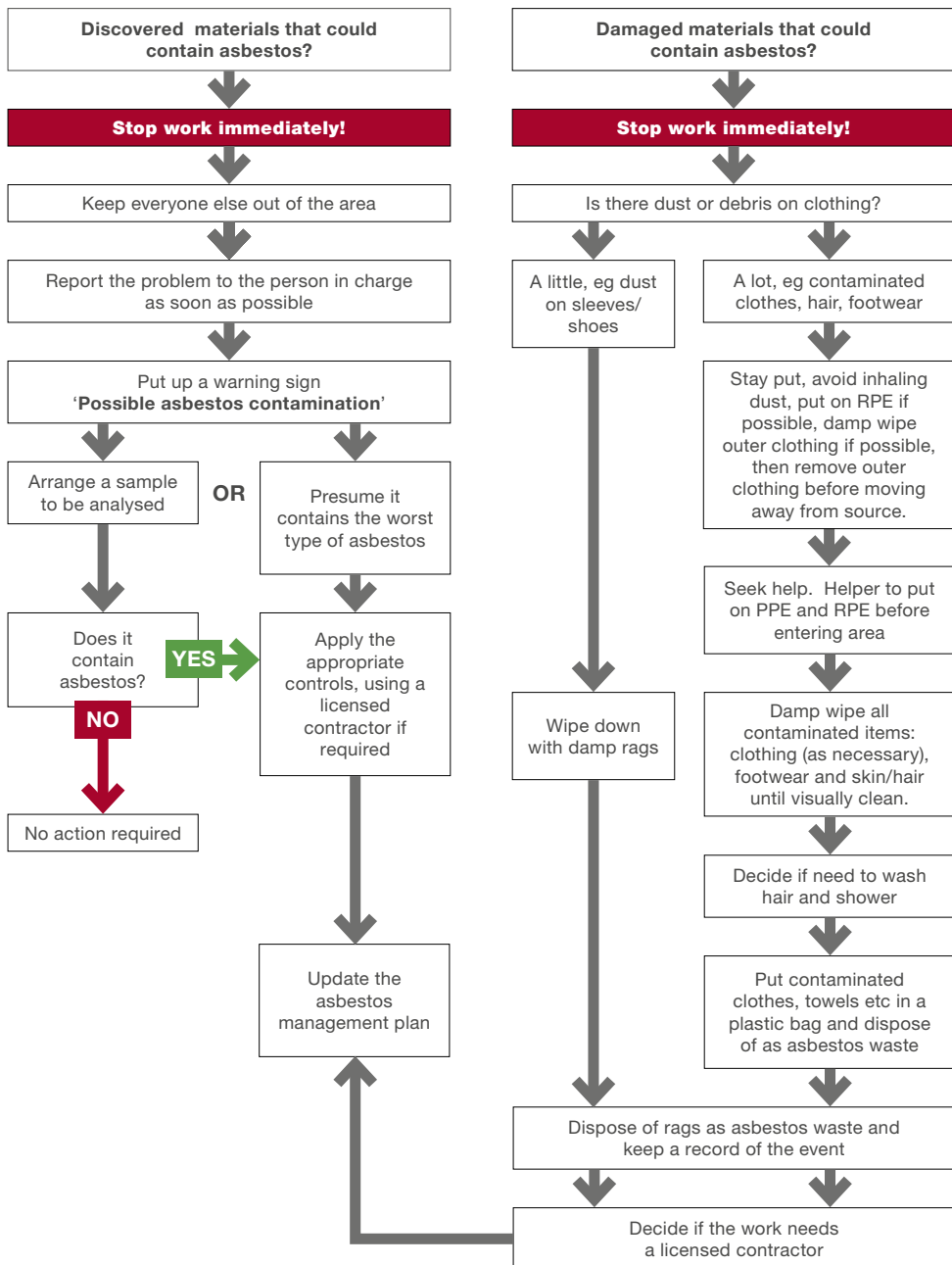
Your emergency procedures should include managing an uncontrolled release of asbestos materials into the workplace. Steps should be taken to:

- warn anybody who may be affected;
- exclude from the area anyone not needed to deal with the release;
- identify the cause of the uncontrolled release;
- regain adequate control as soon as possible;
- make sure anyone in the work area affected who is not wearing personal protective equipment (PPE), including respiratory protective equipment (RPE), leaves the affected area immediately. Minimise the spread of asbestos by ensuring they are suitably decontaminated;
- clean up dust and debris (see em7);
- decontaminate anyone who is contaminated with dust and debris;
- ensure rags, clothing or PPE is decontaminated or disposed of as contaminated waste;
- consider lone and/or remote workers to ensure they can alert someone if necessary.



Top row: An asbestos gasket, asbestos cement pipes and an asbestos-containing fuse board

Bottom row: The asbestos cement pipes are labelled, so are the tiles, but you might not know until you start to lift them. There could be sprayed limpet under the AC sheeting

Flow chart



AIB fire surround



Don't assume there will always be warning signs. There could be undiscovered asbestos in buildings you work on

More information

For information about health and safety visit <https://books.hse.gov.uk> or <http://www.hse.gov.uk>. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops. To report inconsistencies or inaccuracies in this guidance email: commissioning@wilt.com. British Standards can be obtained in PDF or hard copy formats from BSI: <http://shop.bsigroup.com> or by contacting BSI Customer Services for hard copies only Tel: 0846 086 9001 email: cservices@bsigroup.com. The Stationery Office publications are available from The Stationery Office, PO Box 29, Norwich NR3 1GN Tel: 0333 202 5070 Fax: 0333 202 5080. E-mail: customer.services@tso.co.uk Website: www.tso.co.uk. They are also available from bookshops. Statutory Instruments can be viewed free of charge at www.legislation.gov.uk where you can also search for changes to legislation.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

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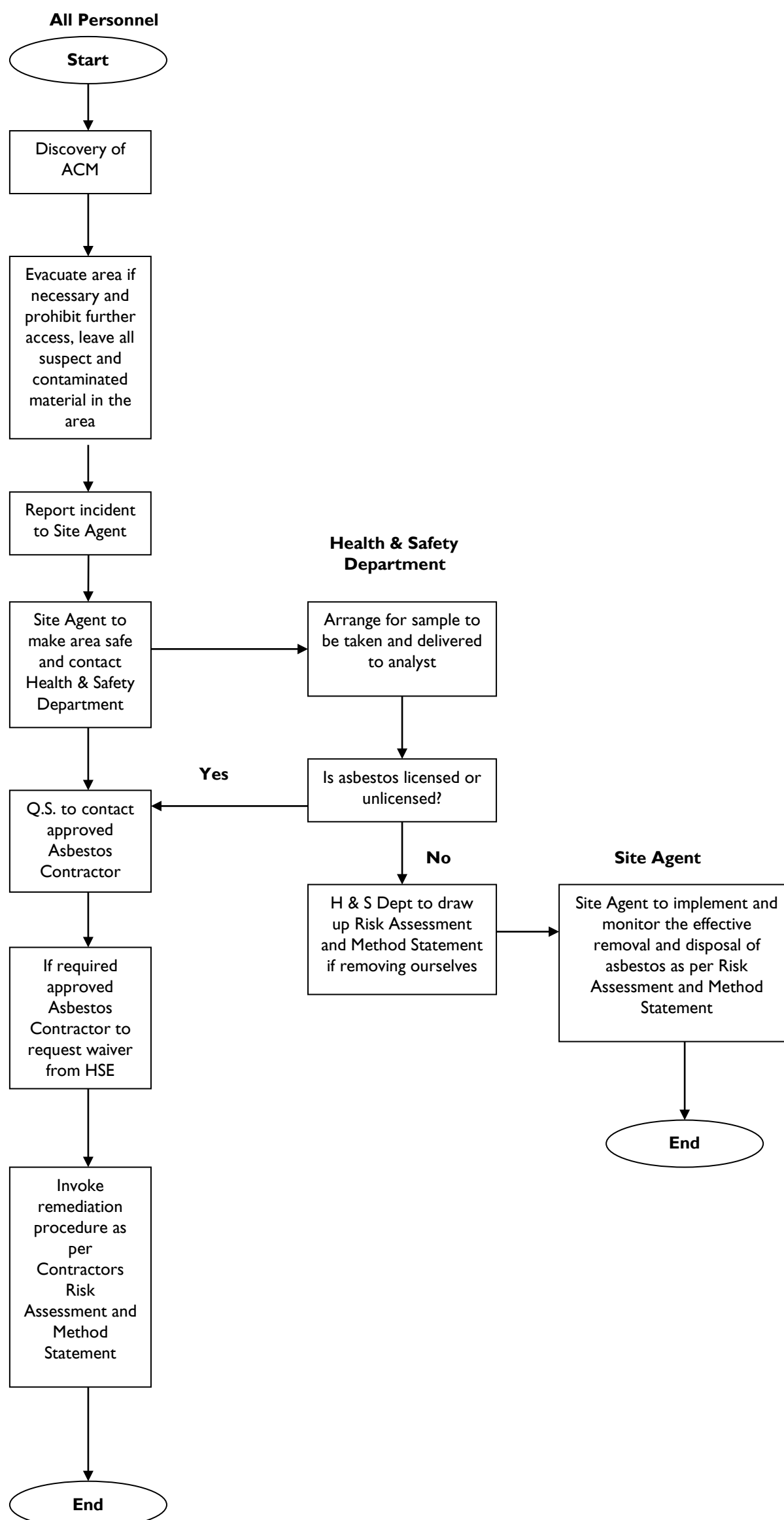
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Procedure on Discovery of Suspected Asbestos Containing Material (ACM)



Appendix I 2

HSG 47

Avoiding danger from underground services



**HSG47 (Third edition),
Published 2014**

This guidance is aimed at all those involved in commissioning, planning, managing and carrying out work on or near underground services. It will also be of use to the owners and operators of such services.

It outlines the potential dangers of working near underground services and gives advice on how to reduce any direct risks to people's health and safety, as well as the indirect risks arising through damage to services.

It explains the three basic elements of a safe system of work during excavation:

- Planning the work
- Locating and identifying buried services
- Safe excavation

This third edition brings the guidance up to date, but the basic requirements remain the same.

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First edition 1989
Second edition 2000
Third edition 2014

ISBN 978 0 7176 6584 6

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

Acknowledgments

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Contents

Introduction 5

Who is this guidance for? 5
Where does the guidance apply? 5
How to use the guidance 5
Terms used in the guidance 5

Identifying and managing the dangers 6

Underground services: the dangers 6
 Electricity cables 6
 Gas pipes 7
 Water pipes and sewers 7
 Other pipelines 7
 Telecommunication cables 7
Working safely 8

Planning the work 10

Obtaining information on services 10
 Electricity 10
 Gas 10
 Other services 11
 Provision of plans by service owners 11
Use and limitation of plans 11
 Service identification surveys 14
Your duties as a client 14
Your duties as a designer 14
 New housing developments (example) 15
 Major hazard pipelines (example) 16
 Installing new services near existing services 16
Your duties as a contractor 17
 Emergency work 18

Detecting, identifying and marking underground services 18

Detecting services 18
Types of detecting devices or locators 20
Using a detecting device 21

Safe excavation 23

Exposing services 23
Protective clothing 26
Identifying exposed services 26
Marking identified services 27
Safety at excavations 27
Backfilling 27
 Use of concrete as backfill 28
Updating plans 28
Electricity cables 28
Cables in concrete 28
Gas pipelines 29

<i>Gas leak or damage</i>	30
<i>Other work near gas pipelines</i>	30
Water pipes and sewers	30
Major hazard pipelines	31
Permit to work	32
Some specific sites and situations	32
<i>Safe systems of work for trenchless methods</i>	32
<i>Demolition sites</i>	33

Appendix 1: Legislation 34

References and further reading 38

Further information 40

Introduction

1 This guidance outlines the potential dangers of working near underground services and gives advice on how to reduce the risks. It deals principally with risks to health and safety rather than damage to services. However, precautions taken which reduce risks to people's health and safety will generally also reduce the risk of damage to services, which can directly or indirectly pose a risk to people's health and safety.

Who is this guidance for?

2 The guidance is aimed at all of those involved in commissioning, planning, managing and carrying out work on or near underground services, as well as the owners and operators of such services.

Where does the guidance apply?

3 The guidance applies to situations where underground services may be found and disturbed, including:

- street works;
- road works;
- excavation, drilling and piling;
- demolition and site remediation;
- site investigation surveys;
- any other work that involves penetrating the ground at or below surface level.

Underground services are widespread. Assume they are present unless you have been shown otherwise.

How to use the guidance

4 The guidance is divided into four chapters:

- Identifying and managing the dangers;
- Planning the work;
- Detecting, identifying and marking underground services;
- Safe excavation.

Guidance on the general precautions to prevent damage to all types of underground services is in the sections 'Planning the work' and 'Detecting, identifying and marking underground services'. Additional guidance for particular services is in the 'Safe excavation' section.

Terms used in the guidance

Service(s)

5 All underground pipes, cables and equipment associated with electricity, gas, water (including piped sewage) and telecommunications. Also includes other pipelines which transport a range of petrochemical and other fluids. It does not include underground structures such as railway tunnels etc.

Service connection(s)

6 Pipes or cables between distribution mains and individual premises.

Emergency work

7 Work that needs to be done immediately to repair damaged services in order to prevent continuing risk(s) to health and safety either directly, such as stopping a gas leak, or indirectly when restoring power to traffic signals at a major junction. It does not mean restoration of service to meet customer service targets.

Client

8 Any person or organisation for whom a project or work is carried out.

Design

9 Includes drawings, design details, specifications and bills of quantities. A designer is anyone who prepares or modifies these; for example, people planning the route of a new cable television scheme are designers.

Identifying and managing the dangers

Underground services: the dangers

10 Damage to underground services can cause fatal or severe injury as well as significant disruption and environmental damage; it can also delay the project and incur considerable costs.

Case study 1

A construction company paid £210 000 in fines and costs after an employee died in an explosion following damage to an 11 000-volt live cable within an excavation.

The worker suffered burns over 60% of his body while he and other workers were using breakers and a shovel within the excavation. He died of his injuries 13 days later. The company had not informed workers that there were live cables in the excavation and failed to put adequate measures in place to prevent them being damaged.

Electricity cables

11 Injuries are usually caused by the explosive effects of arcing current, and by any associated fire or flames that may result when a live cable is penetrated by a sharp object such as the point of a tool (see front cover). Such effects can also occur when a cable is crushed severely enough to cause internal contact between the conductors, or between metallic sheathing and one or more conductors. Typically, injuries are severe – potentially fatal – burns to the hands, face and body; electric shock is possible but less likely.

12 Incidents may also arise from cables, connections and terminations which have been damaged but left unreported and unrepaired, or which have deteriorated with age.

13 Other nearby services, such as plastic gas pipes, may also be at risk from damaged live electricity cables. This could result in explosions and a greater fire risk.

Gas pipes

14 Damage to gas pipes and connections can cause leaks that may lead to fire or explosion. There are two types of damage:

- damage that causes an immediate leak;
- damage that causes a leak some time later.

The damage may occur when the work is carried out, or subsequently; for example, poor reinstatement may leave a pipe inadequately supported or subject to unequal forces.

15 The risk from leaking liquified petroleum gas (LPG) is greater than from a natural gas leak as it is heavier than air and does not disperse so readily. It can also travel great distances below ground level before accumulating at low level, for example in basements and cellars.

Water pipes and sewers

16 Although damage to water pipes is less likely to result in injury, the following may occur:

- A jet of water from a main can be of sufficient pressure and intensity to injure a person. It may also contain stones or other hard objects ejected from the ground around the pipe.
- Leaks of water from underground pipes can affect adjacent services and reduce support for other structures.
- Damage to mains pipes can result in flooding, leading to subsequent risks from drowning or the rapid collapse of support to the sides of an excavation; water can enter gas pipes if they are also damaged.

17 While some sewage is pumped at pressure, sewers are generally gravity-fed and the main risks from damage to a sewer are to the health of workers from exposure to raw sewage, the chance of ground collapse and possibility of environmental contamination and pollution.

Other pipelines

18 The danger arising from damage to other pipelines depends on the nature of the conveyed fluid. Fluids and their associated risks include:

- flammable liquids and gases – risk of fire and explosion;
- fluids at elevated pressure – risk of injury from sudden release of contents;
- toxic liquids and gases – risk of poisoning;
- inert gases such as nitrogen and argon – risk of asphyxiation.

19 Very often a fluid will present a combination of risks; for example, a liquid may be both toxic and flammable.

Telecommunication cables

20 Damage to telecommunication and TV cables may require expensive repairs and can cause considerable disruption to those relying on the system. However, the risk of personal injury to workers is normally very low.

21 Flammable and toxic gases can enter cable-carrying ducts, particularly if the duct has been damaged. Such gases can accumulate in chambers, manholes etc and pose a risk to operatives who may need to work there.



Figure 1 Aftermath of a gas explosion, following damage to an underground gas service pipe

Working safely

22 A safe system of work has three basic elements:

- planning the work;
- detecting, identifying and marking underground services;
- safe excavation/safe digging practices.

23 These key elements complement each other, and all three are essential when working near underground services. More details of each are given in the chapters that follow. A flow diagram, outlining the process, is at Figure 2.

24 Anyone planning or undertaking work that may disturb underground services must contact the owners/operators of those services for information about the location and status of the services. Those owners and operators should in turn provide any relevant information about the location of services in the work area. Service owners and operators should be prepared to help locate and identify the services (for example, by sending a representative to the site). Long-term plans or formal arrangements for co-operation may be needed with other utilities, local authorities and contractors who carry out road and footway excavation.

25 Plan work to avoid underground services. Where this is not possible, develop plans to minimise the risk of damage to those services in the work area.

26 Detecting underground services will require information from those who own the services. Individuals with sufficient experience and technical knowledge should carry out a comprehensive survey of the work area using the appropriate survey tools and equipment.

27 When carrying out excavations, it is important that:

- those supervising and carrying out the work have sufficient skills, knowledge and experience to do so safely;

- safe working practices are put in place and used;
- appropriate traffic signing is used on highways; this is described in *Safety at street works and road works. A Code of Practice*¹ and chapter 8 of the *Traffic signs manual*;^{2,3}
- risks from other sources, such as collapse of excavations, are avoided;
- adequate welfare facilities are available to those doing the work.

A brief look at the process from referring to plans on site to the start of work near underground services

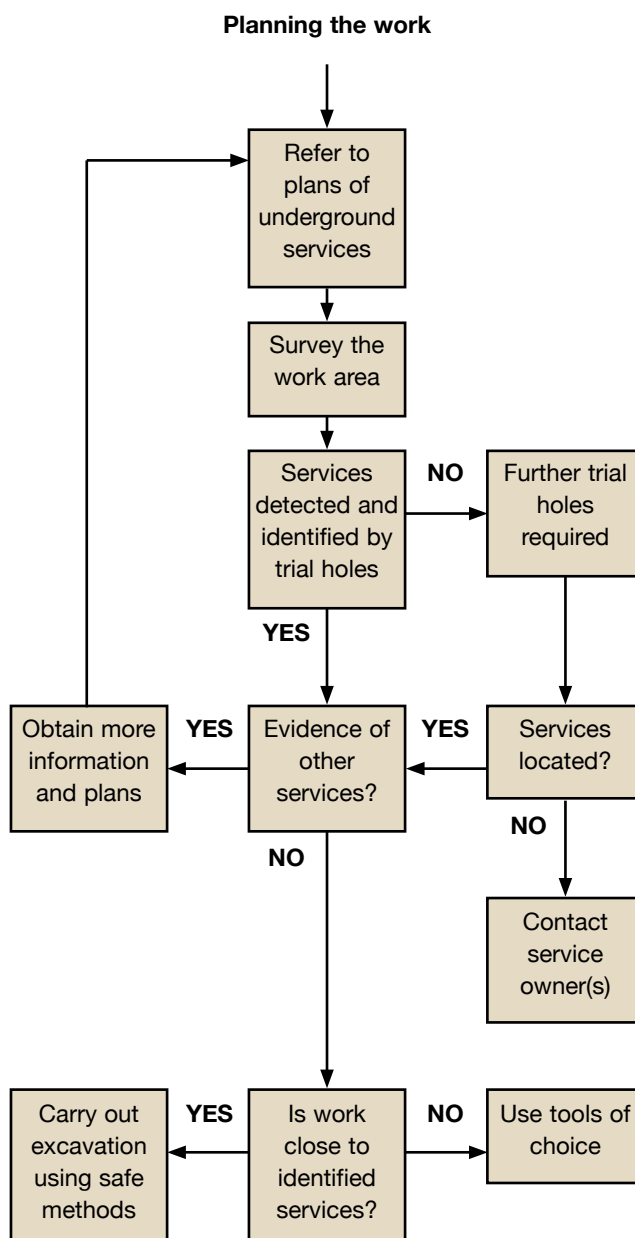


Figure 2 A safe system of work

Planning the work

In summary

Identify clearly the extent of the work area and find out what underground services are within the area before considering whether they are likely to be disturbed:

- Obtain service drawings from utilities companies and other organisations with relevant information about the site.
- Survey the site to identify the services and other underground structures. Record the location of any services.
- Review/assess the planned work to avoid disturbing services where possible.
- Allow sufficient time and provide sufficient resource to do the work safely.
- Emergency work still requires planning and assessment of the risks arising from the work. A precautionary approach must be taken when breaking ground.

Obtaining information on services

28 Obtain plans or other suitable information about all underground services in the area when the work is being planned. Wherever possible, you must consult owners/operators. Remember that for some services there may be more than one owner/operator.

29 There are a number of 'one-call' services available that can simplify the process of identifying who may have underground services in the work area and arranging for copies of plans and service records to be provided. Some of these services are free to use while others may charge.

30 Where it is not possible for those undertaking the work to obtain information, as may be the case when emergency work has to be undertaken, the work **must** be carried out as though there are underground services in the area.

Electricity

31 Most electrical service cables belong to the regional distribution network operator (DNO). However, some cables belong to other bodies, such as: the highway or roads authority; the street lighting authority; electricity generating companies; National Grid; Ministry of Defence; railway operator (usually Network Rail); Independent Distribution Network Operators (IDNOs); or other companies.

Gas

32 Most underground gas pipes are operated by public gas transporters (PGTs). The main exceptions are new developments, often supplied by independent gas transporters (IGTs) and properties fed from bulk-stored LPG, where the pipes may be owned by the property owners or other private individuals. In the latter case, owners/managers should be able to provide information but on certain estates owners and managers may not be available round the clock. You can obtain further information from the LPG supplier, whose name and telephone number (manned 24 hours) should be displayed at the bulk storage vessel compound or, for underground LPG tanks, at the segregated area above the tanks.

33 Where the presence of gas pipes which operate at pressures of 2 bar (30 psig) and above is indicated, consult the owner/operator before work begins.

Other services

34 Other underground pipes may be found on or around: hospitals; airports; Ministry of Defence sites; universities; research parks; petrochemical, nuclear and other industrial sites. Where work is planned on such sites, make contact with the owner/occupier of the sites to request specific information about underground services.

35 Because of the difficulty in detecting some telecommunication cables and the cost of damage to them, telecommunication companies may prefer to visit the site to locate the cables.

Provision of plans by service owners

36 Owners should provide either up-to-date, readable plans, which show the recorded line and depth (where known) of all their known services buried in the proposed work area, or other suitable information which achieves the same aim. A symbol key is important to help the recipient understand the plans.

37 Owners should do everything reasonably practicable to make sure that such information is made available to enquirers. They are likely to receive many routine applications for information and should consider how best to make information available at short notice. They should also make arrangements to deal with emergencies outside office hours so that operatives can be given plans of underground services when they receive their work instructions.

38 Some owners may have reservations, for reasons of security, about supplying copies of their underground services plans for areas such as those around important civil and military establishments. In such cases, an alternative method should be used; for example, a representative could be sent to the site to provide information.

Use and limitation of plans

39 Plans alone are not sufficient to identify and locate services before starting work. They provide basic information on which to base a thorough site survey before work begins.

40 Plans vary in scale, content and style. Two examples are shown in Figures 3 and 4. Provide adequate instruction and training in how to read and interpret plans to anyone who needs to use them. Ideally, plans should be in colour to assist their interpretation and understanding.

41 Plans can give an indication of the location, configuration and number of underground services at a particular site and should help subsequent tracing by detecting devices or locators. However, they are not always drawn accurately to scale and, even if they claim to be, you should not rely on them to obtain distances or depths. For example, errors may have been made during drafting, or reproduction may have changed the scale, especially if the plan was obtained from a microfiche slide or digital map. Accuracy may be further limited because:

- the position of reference points (eg the kerb line) may have changed since the plans were drawn;
- re-grading of the surface may mean that the depths shown are now incorrect;
- services, particularly cables, may have been moved without the knowledge of their owners/operators;

- in many cases service connections are not marked;
- services marked as straight lines may, in practice, snake. Excessively long cables may have been laid in horizontal loops outside substations, switch rooms etc;
- plans may show spare ducts;
- the routes of older services in particular may not have been recorded, so the absence of records should never be taken as proof that the area in question is free of underground services.

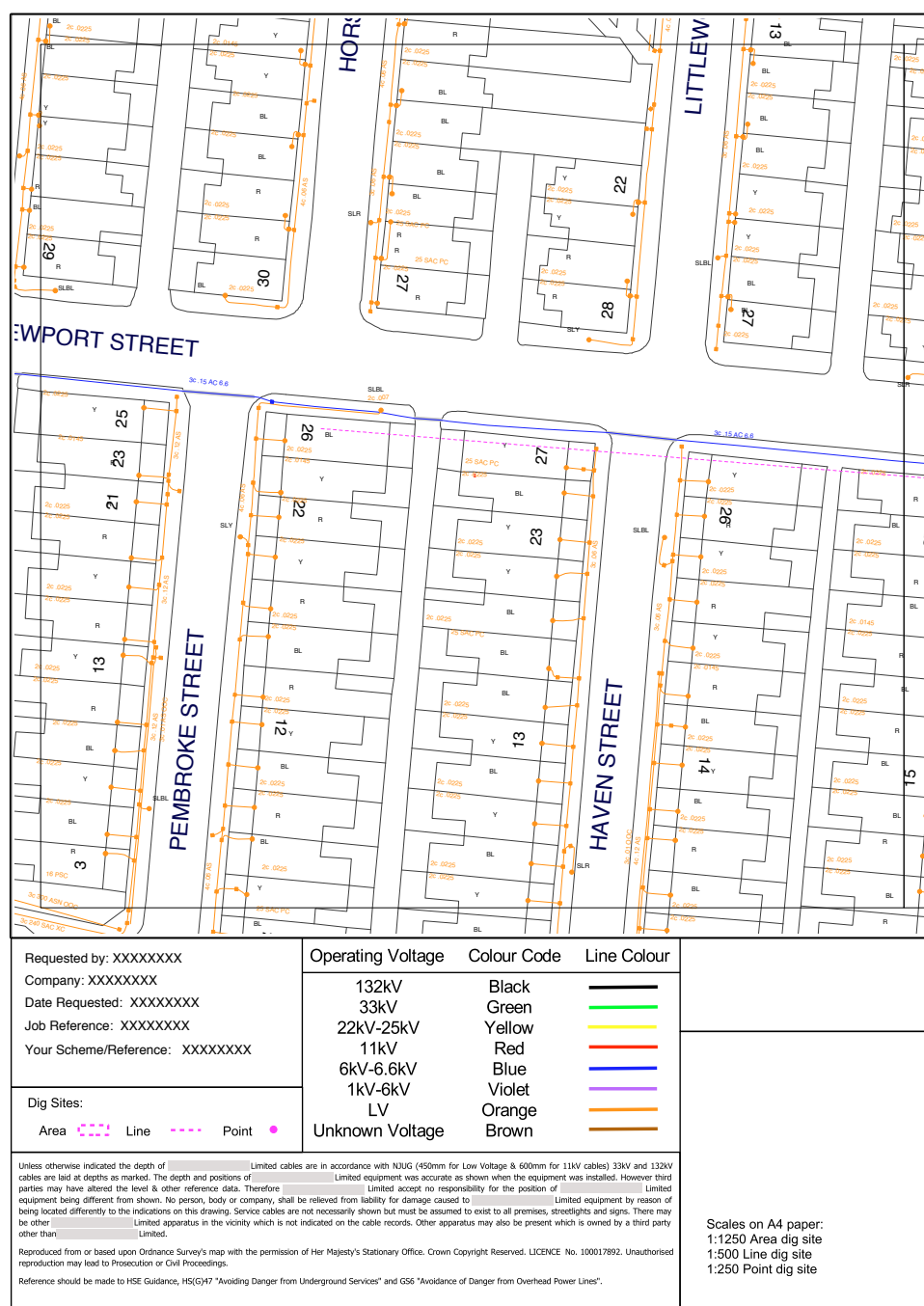


Figure 3 Example of an electricity plan

42 These limitations make it very important that you take into account other indicators and use a suitable detecting device and safe digging methods.



Figure 4 Example of a plan of gas pipes

43 The service location information should be copied onto the working drawings for the guidance of those carrying out the work. Information should include all relevant features, such as valve pits, depths etc. Take particular care where topographical changes have occurred since services were laid.

44 Those using or interpreting plans need to have sufficient knowledge and experience to understand what the plans show in order to determine the likely presence of services on the work site.

Case study 2

A 3-phase electrical cable was struck during excavation works by a renewable energy company. The cable was not marked with tape or tiles. The cable was shallower than shown on the plan. The work area was not surveyed to locate underground services. Relying on plans is not sufficient. The work area should be surveyed to accurately locate services shown on plans.

Service identification surveys

45 A service detection and mapping survey of the work area should be undertaken at the planning stage as its findings will be useful to the designer(s) and contractor(s) in designing out and planning to reduce the risk of damage to the underground services.

46 Time spent on a survey at this stage can save significant costs and delays to the work by allowing for the avoidance of damage to underground assets and efficient programming of the work.

47 More information on identification surveys is given in 'Detecting, identifying and marking underground services'.

Your duties as a client

48 Clients have a duty to make reasonable enquiries about underground services and pass relevant information to the designer(s) and contractor(s). Your own files and other records may contain information on underground services. If they do, remember that it may have been obtained for previous work and may be out of date. The most up-to-date information should be included in the tender information.

49 A client who is unable or unwilling to obtain this information **must** allow the contractor sufficient time and resource to do so instead.

50 Clients need to consider how contractors have addressed the risks from underground services.

Your duties as a designer

51 Designers have a duty to reduce or 'design out' the risks arising from damage to underground services. Having reduced the risks to a level as low as reasonably practicable by design, information should be provided to those doing the work about the risks that remain. In most cases, the best way of informing contractors and individuals doing the work is by providing this on working drawings.

52 You will need to know if there are underground services present so that you can amend the design to avoid them where possible.

53 For building work, re-siting the services away from the work is often a reasonably practicable means of avoiding the risk. Ask the service owner/operator to do this and include adequate notice.

54 Other options to re-siting the services may include:

- repositioning or redesigning structures or parts of structures to ensure that services are avoided during the work;

- arranging for the supply to be disconnected during the work; or, if none of these are possible;
- choosing methods to avoid the services; for example, by using ground beams to bridge or span the services.

55 For electricity cables more than other services, there may be a need to make them dead for the work to proceed safely. Contact electricity companies as early as possible to allow them to isolate supplies. Plan project schedules to allow sufficient time for this to happen.

56 If the cable cannot be made dead, an alternative safe way of doing the work will be required.

57 Permanent structures such as buildings should generally not be built over services, nor should services be encased in concrete as this may introduce additional risks to construction workers and can prevent future access to the services. If it is not possible to avoid building structures over any service, make arrangements with the utility to relocate the services in a duct or something similar.

58 Consider the location of underground gas pipelines when planning building, excavation, landfill or other such work. Such activities may either cause damage to the pipelines or deny access to them for maintenance purposes. Make suitable arrangements for future access and maintenance before undertaking the work.

59 Consider ancillary work, including the erection of perimeter fencing and walling, or the position of temporary and permanent roadways onto the site that may affect underground services at the site perimeter. Early identification and planning are essential if you are to control risks during the entire construction phase of the project, including enabling works.

Case study 3

A self-employed sub-contractor was burnt when he struck a 415 V electrical cable with an electrical breaker he was using to break up some concrete. The client had chosen to build over the cable rather than have it diverted. The cable had been protected by a conduit and its location was known. The client did not tell the contractor of its location before starting work and the contractor did not ask. The cable was diverted following the incident.

Some specific situations

New housing developments

Underground services within the confines of partly completed housing developments are especially prone to damage from ongoing construction work. Each utility company should keep to its agreed position; see *Guidelines on the positioning of underground utilities apparatus for new development sites Volume 2*.⁴ A common trench may help to control the position and separation of underground services. Special arrangements may be necessary to restrict vehicle and mobile plant crossings to locations where temporary protection for the services has been provided.

Where new services such as electrical or gas supplies are being installed, it may be possible to reduce risks by not installing or commissioning them until other groundworks and work on the installation have been completed.

This should be considered early in the design process to allow the works to be sequenced accordingly.

Close liaison should be maintained between the developers, their contractors and the utilities. The builder/developer should keep a marked-up plan of the estate showing the up-to-date position of underground services (including any variations from planned routes) on site for the information of those involved in excavation and groundwork.

Major hazard pipelines

Pipelines are used to convey a wide range of fluids, including oils and other petrochemicals, ethylene, oxygen, nitrogen and similar industrial gases and a number of other chemicals.

The more hazardous of these pipelines (known as major accident hazard pipelines) are not normally found in residential areas. They are usually in rural areas and often near chemical and petrochemical installations. Cross-country pipelines are also found on agricultural land. They usually cross roads, railways and motorways etc at right angles.

It is important to consider the location of underground pipelines before carrying out building, excavation, landfill or other such work. Such activities may not only cause damage to pipelines but could also affect future access to them for maintenance purposes. Both the landowner and local authority should be contacted for further information; it is a statutory requirement for plans of pipelines to be lodged with local authorities.

Liaison with the pipeline operator is important, as information can be provided about not only the location but also the nature of the fluid being transported, any restrictions on excavations near the pipeline, the precautions to be taken during excavating and action to be taken in an emergency. Accordingly, where work is proposed near pipelines, the specific requirements of pipeline operators should be adhered to.

Installing new services near existing services

60 New underground services often have to be laid in ground which contains existing services. Where it is reasonably practicable to do so, the designer planning the new installation should aim to site it so that it is separated from all existing underground services by the distances specified in *Guidelines on the positioning and colour coding of underground utilities' apparatus Volume 1*.⁵

61 It is important to have information about existing services to help select a route for the new service that avoids them. The risk of contact with existing services can be reduced by choosing a route with a low density of underground services. For example, a cable television duct might be routed at the side of a road if there is a reduced cable density there.

62 Designers of pipelines should also be aware of the guidance in *A guide to the Pipelines Safety Regulations 1996*,⁶ which advises that the parallel running of similar pipelines in the street should be avoided. Liaison with the owners of services is important as they are in a position to provide information to the designers to enable them to make such decisions.

63 Where you cannot achieve the recommended separation, there should be as great a separation as is reasonably practicable. Where the installation of a service would obstruct access to an existing service you should use all reasonably practicable means to avoid this. In particular, avoid the practice of laying multiple ducts directly above other services. This may require diversion of services or the installation of accessible shared service ducts or chambers.

64 If the utility or its contractors laying the new service have had to reduce the separation, they should inform the owner/operator whose service has been affected so that they can then amend their records for future reference.

Your duties as a contractor

65 Contractors must prepare safe systems of work for their employees by identifying the hazards they are likely to encounter during the work and making a suitable and sufficient assessment of the risks posed by those hazards. Clear information on the type, location and status of underground services and the tools, equipment and working practices they will require to avoid damaging the services is essential.

66 Make sure that those doing the work have sufficient information, clear instruction and training to work safely, and that proper management and supervision of the work ensures that it is done safely.

67 Information about the risks from underground services should be provided before arriving on site. Where services have been disconnected, this should be recorded and information about where and when the disconnection was done should be given to the contractors working in that area. Co-operate with any principal contractor to make sure any rules or agreed methods of working are adhered to.

68 Anyone who carries out work near underground gas pipes and associated equipment should observe any specific requirements made by the gas transporter, and make sure that access to the equipment is available at all times. Do not make any unauthorised repairs to gas pipes. If in doubt, seek advice from the appropriate gas transporter.

69 Where heavy plant may have to cross the line of any vulnerable service during construction work defined crossing points should be provided and used. Keep the number of crossing points to a minimum, indicate them clearly and do not allow crossings at other places along the line of the service. Where an existing road does not adequately protect the pipe, crossing points should be suitably reinforced with sleepers, steel plates or a specially constructed reinforced concrete raft, as necessary. The owner/operator of the service will advise on the type of reinforcement necessary.

70 On completion of the work, provide information on underground services, found or newly installed, to the client and the owners of other services encountered. This will allow them to update their own records on the position of their services and should be made available to others who will need to use this information for subsequent maintenance, repair and construction work.

Emergency work

71 There will be occasions where it is necessary to do emergency work to repair damaged services in order to make them safe or restore them following damage. Often this emergency work may just require a temporary fix before a permanent repair can be done, though circumstances may mean it is appropriate to make a permanent repair immediately.

72 Routine work that does not arise from a safety-critical situation, and could be planned, should not be done as emergency work.

73 Emergency work still requires planning and assessment of the risks before and while carrying it out. Attempts must be made to obtain information about underground services in the area.

74 Inevitably, there will be greater emphasis on the work on site to locate services and excavate safely. This is not an excuse for cutting corners or running unacceptable or avoidable risks. The work must be done by individuals with sufficient knowledge and experience, and be reviewed as it is undertaken.

75 Those managing emergency work must balance the risk of potential damage to underground services against the continuing risk from the emergency situation. For example, the risk of damage to cables while isolating a gas pipe to stop a leak must be weighed against the risk of fire and explosion from the continued leak. In all cases, make sure that the overall risk to safety is not increased.

Detecting, identifying and marking underground services

In summary

Locate the services identified at the planning stage survey as being in the work area.

Make sure those involved in detecting and identifying services are competent in the proper use of survey tools and detecting devices as well as reading/interpreting plans.

Once detected, identify and mark the services and confirm their status – ie whether electricity cables are live, whether gas pipes are pressurised – and then record their location.

Detecting services

76 There are different levels of survey:

- *Desktop study:* Involves requesting and considering the service drawings from the owners of underground services. This should be done for all projects that involve excavation or penetrating the ground.

- *Desktop study and site investigation:* Involves using the information from the desktop study to assist a physical inspection of the site (looking for physical signs such as inspection hatches, reinstated excavations, street lights and telecoms boxes) and a survey using detection tools.
- *Physical identification of the services:* In addition to the above, this involves taking steps to detect and identify the underground services through trial holes to verify their location, depth and identity. It may also involve passing a tracing device through a pipe or tunnel.

77 The level of survey needed will depend on the nature of the work site. Some congested urban locations will require a more detailed survey than some brown and green field sites. The decision on the necessary level of survey should be informed by an assessment of the likelihood of underground services being present, based on the information obtained for the work site. The designer should make this decision at the planning stage in consultation with the contractor and surveyor.

78 The results of the survey should be shared with the designer and recorded in a clear, usable format on working drawings to be shared with those working on the site and, where possible, marked out on site.

79 Those doing the survey need to have sufficient knowledge and experience in the use of survey equipment and techniques. They will need to understand the limitations of the equipment, the effect of differing ground conditions on the survey results, how to survey a given area effectively, and to appreciate the limitations of plans and drawings provided by the service owners. Some training providers offer courses in service detection and mapping and an NVQ qualification in utility mapping.

80 The position of any services in or near the proposed work area should be pinpointed as accurately as possible using a detecting device in conjunction with up-to-date service plans and other information which provides a guide to the possible location of services, and help interpret the signal.

81 Take account of any indications that underground services exist, such as the presence of lamp posts, illuminated traffic signs, gas service pipes entering buildings, pit covers, pipeline marker posts, evidence of reinstated trenches etc. However, if there are no such indications, this does not mean that there are no underground services.

82 Plans do not normally show the position of gas service connections and their existence should be assumed. It may be possible to estimate the probable line of the service connection pipe from the gas meter position, or from the point of entry into the premises.

83 Gas plant may be shown by valve boxes, pits and housings. However, covers for valve boxes and pits will sometimes not show clearly whether gas is the service present; if in doubt, contact the gas transporter.

84 Anyone selecting detection tools and survey methods must understand the range of methods and tools and their limitations. In particular, they need to be aware of the potential for false readings or signals in certain techniques as they may lead to inaccurate information being included in the plan of work and, in turn, lead to a false sense of security.

Types of detecting devices or locators

85 The main types available can be classed as follows:

- *Hum detectors* are receiving instruments that detect the magnetic field radiated by electricity cables which have a current flowing through them. They do not respond to:
 - cables where there is little or no current flowing; for example, service connection cables to unoccupied premises or street lighting cables in the daytime;
 - direct current cables;
 - some well-balanced high-voltage cables, where these generate relatively little field (which in turn may be further screened by the cable sheathing);
 - pot-ended cables, see paragraph 89.
- *Radio frequency detectors* are receiving instruments that respond to low-frequency radio signals, which may be picked up and re-emitted by long metallic pipes and cables. If radio frequency detection is used, other metallic objects such as abandoned pipes, cables and tram tracks may re-radiate the signal and results may vary appreciably according to locality, length of the underground cable or pipe and distance from the termination and geographical orientation.
- *Transmitter/receiver instruments*, where a small portable transmitter or signal generator can be connected to a cable or pipe, or placed very close to it so that the signal is introduced into it. The receiver, typically the same radio frequency detectors mentioned above, can then detect this signal. Usually the location of some part of the cable or pipe needs to be already known so that the transmitter can be properly positioned. A direct connection is not required but accuracy will be greatly improved if a direct connection can be made. Some signal generators can be sent along pipes. They can provide useful information in difficult situations where the techniques using hum detectors and radio frequency detectors have not been successful. **Use of signal generators will significantly increase the accuracy of the service location.**
- *Metal detectors* are conventional detectors, which will usually locate flat metal covers, joint boxes etc, but may well miss round cables or pipes.



Figure 5 Using a cable locator

- *Ground probing radar* is a method capable of detecting anomalies in the ground. When these anomalies can be plotted into a continuous line it may indicate a cable, duct or pipe. However, this technique alone would not determine the precise nature of the service and it should be supported by information available about the services present and also, preferably, by the use of other more conventional forms of detecting device. Knowledge of ground conditions is important. For example, false readings are most likely where there are boulders and debris in the ground or where the ground has often been disturbed. Because of equipment costs and the need for specialist training it may be cost-effective to use firms specialising in this technique.
- *Radio frequency identification (RFID)* is a system increasingly used to mark or 'tag' new services. These markers can be programmed with information about the particular service and its depth, and this information can be read by detecting devices. The accuracy of the information depends on the marker being properly attached to the service. As a developing system, RFID will often be found on new services so will not necessarily assist with older services. RFID marker systems may require specific detecting tools that may not be compatible with one another.

86 Some instruments use more than one of the technologies listed and may include a depth-measuring facility.

Using a detecting device

87 The degree of confidence with which underground services can be detected depends on a number of factors, such as:

- the training, skill, hearing and experience of the operator;
- the characteristics of the device being used;
- the calibration and reliability of the detecting device;
- the type, length and depth of the service;
- for cables, the magnitude of the current being carried;
- the effects of other nearby services;
- the nature of surface conditions, eg reinforced concrete;
- the nature of the ground conditions;
- whether or not a signal generator is being used.

88 Anyone who uses a locator should have received thorough training in its use and limitations. Always use detection devices in accordance with the manufacturer's instructions, check and calibrate regularly, and maintain in good working order.

89 Occasionally, cables are terminated in the ground by means of a seal, sometimes with external mechanical protection. These 'pot-ended' or 'bottle-ended' cables should be treated as live and should not be assumed to be abandoned or disused. They can be difficult to detect with locators even when 'live'.



Figure 6 Congested services

90 A locator may not be able to distinguish between cables or pipes running close together and may represent them as a single signal. If, for example, two are sited one above the other the lower one may not be detected. Use signal generators whenever possible as they greatly increase the accuracy of detecting and tracing an underground service.

91 Locators (with the possible exception of ground-probing radar) do not detect plastic pipes or other non-metallic services unless:

- a metallic tracer wire has been laid with the pipe. This enables a signal transmitter/receiver to be used. Plastic gas and water pipes are the non-metallic services most likely to be encountered and few have been laid with metallic tracer wires in the past, with the exception of plastic pipes on LPG-metered estates; or
- a small signal transmitter or tracing rod is inserted into and pushed along the pipe or duct. This is a sophisticated technique which may not be appropriate for many jobs; or
- RFID markers, or similar, have been affixed to or overlay the pipes.

92 **Note:** Tracer wire(s) on a service may not be continuous due to being damaged or not properly laid out, therefore the true length of a particular service may be missed.

93 If a service recorded on a plan cannot be located, seek appropriate assistance or advice from the service owner.

94 Many telecommunication and railway signalling cables cannot be located by detecting devices, unless metal components (such as a metal sheath) are connected to earth, they have been tagged with location markers, or they are laid in ducts where tracing rods can be used.

95 Services should be traced through the full extent of the work area as they may not run in straight lines. Cables will often have kinks or loops and pipes may have joints or bends that are not shown on service drawings.

96 Use trial holes to positively identify a service and its depth. Exposing a service safely in this way will allow its status to be checked and may make it easier for a tracing signal to be applied.

97 Note the line of any identified services and mark with waterproof crayon, chalk or paint on paved surfaces (use biodegradable paint or erase residual markings as far as possible after excavation), or with wooden pegs in grassed or un-surfaced areas, preferably to one side of the service. Steel pins, spikes or long pegs which could damage services laid at shallow depth should not be used.

Safe excavation

In summary

Determine the method or technique for excavating near underground services before work starts, taking account of:

- the nature and scope of the work;
- the type, position and status of underground services;
- the ground conditions;
- site constraints.

Provide those doing the work with a written plan, including information about the location and nature of underground services. They should be competent, provided with appropriate personal protective equipment (PPE) and work equipment, and allowed sufficient time.

Identified services should be carefully exposed and clearly marked. A permit system may be appropriate for particularly hazardous work. This will involve written authorisation by a responsible person, identifying the work to be done and the precautions to be taken. A permit system needs suitable supervision and monitoring to ensure that the conditions of a permit are complied with (see paragraph 163).

Backfilling of excavations must properly support and protect the underground services. Concrete must not be used to encase services when backfilling.

If an underground service suffers damage during the excavation or subsequent work, inform the owner/operator. In the case of electricity cables, gas pipes, other pipelines or high-pressure water mains, arrange to keep people well clear of the area until it has been repaired or otherwise made safe by the owner/operator.

Exposing services

98 All those working to expose services and those supervising them must be competent to do so. They should have had sufficient information, instruction and training to:

- understand the risk to safety from damaging services;
- use detection tools;
- practise safe excavation techniques and understand the value of hand digging and the risks from using power tools or mechanical excavators.

99 Excavation work should follow safe digging practices. Once a detecting device has been used to determine position and route, excavation may proceed, with trial holes dug (using suitable hand tools or vacuum excavation), as necessary, to confirm the position of any detected services. Take special care when digging above or close to the assumed line of such a service.

100 You should carefully plan and manage mechanical excavation, which is a common source of damage to services. Another person should assist the excavator driver, from a position where they can safely see into the excavation and

warn the driver of any services or other obstacles. This person should remain outside the operating radius of the excavator arm and bucket.

101 Instruct drivers to stay in the cab if a cable is struck. If drivers climb down, they may be electrocuted. When a cable is struck, the area should be isolated and secured; no one should go into the excavation or approach the excavator or the cable until the cable owner has made the damaged cable safe.

102 The danger created by damaging a gas pipe with an excavator is much greater than if the damage is done with a hand-held power tool, the opposite is true for work near electricity cables.

103 Remember that the effects may not only occur at the point of impact, for example:

- damage to a service connection may result in unseen damage to the connection inside the building;
- gas from a damaged pipe may travel along the line of a service pipe into a building, causing a dangerous build-up of gas there.

104 Hand-held power tools can damage services and should be used with care until the exact position of the service has been determined. You may use them to break a paved or concrete surface above a service, unless there are any indications that the service is particularly shallow or too close to the surface to be broken up.

105 Hand tools are a common source of accidents if incorrectly used. However, when used carefully, they can normally provide a satisfactory way of exposing services.

106 Make every effort to excavate alongside the service rather than directly above it. Avoid using hand-held power tools over the service unless:

- the service has already been exposed by digging under the surface to be broken out and it is at a safe depth (at least 300 mm) below the bottom of the hard surface material; or
- physical precautions have been taken to prevent the tool striking the service.

107 Mechanical excavators and power tools can be used to break up hard surfaces where the survey has proved that there are no services, or the services are deep enough so as not to be damaged by such tools.

108 Using hand-held power tools to break up hard surfaces often leads to accidents. Where practicable, only use such power tools 500 mm or more away from the indicated line of a service buried in or below a hard surface. Having done so, the service should then be positively located by careful hand digging under the hard surface. Gradually remove the hard surface until the cable is exposed. If the cable is not so exposed, then assume it is embedded within the surface.

109 Use a cable locator as a depth guide down the side of the excavation. The 500 mm safety margin may be reduced:

- where congestion of services renders it impracticable; or
- where surface obstructions limit the space available;

but **only** if the line of the cable has been positively identified by plans, confirmed by a locator, and additional precautions are used to prevent damage to the services.

110 Final exposure of the service by horizontal digging is recommended, as the force applied to hand tools can be controlled more effectively. Use insulated tools when hand digging near electric cables. In particular:

- spades and shovels (preferably those with curved edges) should be used rather than other tools. They should not be thrown or spiked into the ground, but eased in with gentle foot pressure;
- picks, pins or forks may be used with care to free lumps of stone etc, and to break up hard layers of chalk or sandstone;
- picks should not be used in soft clay or other soft soils near to underground services.



Figure 7 Using an air digging tool

111 Safe methods of excavating may include vacuum excavation, which may incorporate use of water jetting and high-velocity air jets. They can be very effective in congested excavations where mechanical excavation and use of hand tools is difficult. However, they have limitations and will not work on all ground conditions or materials such as concrete.

112 Assess the precautions needed to prevent injury – to the operative or those nearby – from ejected soil and other material and put in place appropriate controls.

113 Assess carefully the use of jetting tools to excavate around cables as there is potential for old and fragile cables to be damaged by the jet of water or air.

114 Make frequent and repeated use of locators during the course of the work. Service location is likely to become more accurate as cover is removed.

115 Once exposed, services may need to be supported and should never be used as handholds or footholds for climbing out of excavations.

116 Sometimes there may be joints in cables. These may be enclosed in earthenware pipes, filled compound, or be of cast iron or plastic epoxy-filled casings. They need proper support and should not be roughly treated. Do not move, except in consultation with the owner.

117 Where gas pipes cross or run alongside excavations, changes in backfill etc may cause differential ground settlement and increased stress in the pipe. Wherever an excavation may affect support for a gas pipe, consult the owner. In some cases, it may be necessary to divert the gas pipe before work begins.

118 Assume all services are live until disconnected and proven safe at the point of work. Obtain written confirmation of disconnection from the owner/operator before removing a redundant service.

Protective clothing

119 Burns are the main injuries that result from damage to live electrical cables or from fire or explosion following a gas leak. In many cases, burns are made more severe by the injured person working bare-chested. Even ordinary work clothing can greatly reduce the severity of the burns and protective clothing is better. However, clothing made from man-made fibres such as nylon may melt and stick to the skin, increasing the severity of the burns.

120 Where electricity cables may be encountered during excavation work, employers should consider whether the work justifies wearing clothing designed to protect against electric arc, or flame-retardant clothing. Advice on the suitability and performance of protective clothing should be available from reputable companies specialising in its supply.

121 Wearing protective clothing is not a substitute for a safe system of work.

Identifying exposed services

122 Once underground services have been uncovered, failure to identify them correctly is another common cause of accidents. A wide variety of materials and colours have been used for services over the years. Furthermore, some services may be very similar in appearance and some services run in ducts made of various materials, including asbestos cement, making them difficult to identify. Adopt the following approaches until you have positively confirmed the identity of the service:

- Water pipes, electricity cables and telecommunication cables may be covered in black plastic. If any black plastic service is found, assume it is a live electricity cable.
- Iron and steel water pipes and gas pipelines may appear very similar. If any such pipe is uncovered, treat it as if it were a gas pipe.
- Always treat continuously welded steel pipes as if they contain a hazardous or high-pressure fluid.
- At collieries, beware of electricity cables, some of which are yellow or blue and may be mistaken for other services.
- On some building sites beware of electricity cables being placed in yellow service pipes or blue water pipes.
- Where there is any doubt about the identity of an exposed service treat it as an electricity cable or gas pipe until proved otherwise.

123 For modern installations, most utilities have agreed a national colour coding system for underground services, described in *Guidelines on the positioning and colour coding of underground utilities' apparatus*. This colour coding system should not be confused with the one contained in BS 1710:1984,⁷ which generally applies to above-ground building and process services.

124 Remember that:

- old, non-utility services or other pipelines may not conform to this system;
- colours may look different under poor or artificial lighting;
- ducts could include any of the services.

125 Once the exposed service(s) is identified, determine its status, ie is it live or dead? **The status of the service may change, eg an electricity cable may become live or a pipe pressurised, so check the status when work near the service begins.**

Marking identified services

126 The system used to mark the identified services needs to be agreed and understood by all those working on site. If you use a colour coding system, this should correspond to the national colour coding system referred to in paragraph 123.

127 The services should be marked on site plans and on the ground. Markings on the ground are typically done with paint, though stakes, pins or posts can be used. Take great care if using stakes, pins or posts to make sure that they are not driven into ground where they could damage the services. For example, do not use them directly above the identified services.

Safety at excavations

128 Excavations should be properly supported, stepped or battered back to prevent them collapsing. Excavation support may involve the use of shuttering and shoring or a trench box system. Provide a safe means of access into the excavation, such as a secured ladder.

129 Provide edge protection, fencing and or coverings to prevent anyone falling into the excavation. Also take steps to prevent excavated material falling into the excavation.

Backfilling

130 Backfilling of any excavation should be done carefully to make sure that services are not damaged. Put back warning tiles, tape etc in their original position above the services unless visual examination after exposure showed this to be incorrect, in which case replace them above the service to which they refer. Do not use warning tape for any other purpose (for example, guarding an excavation) and do not discard it in an excavation during backfilling.

131 If road construction is close to the top of a gas pipe, ask the owner/operator about necessary precautions. Do not reduce the road construction depth without permission from the local highway or roads authority.

132 Backfill materials containing items likely to damage the services, such as large pieces of rock and hard core, should not be used. You can obtain further information on backfilling from:

- utilities and owner/operators, for their particular services;
- the Code of Practice (under Section 71 of the New Roads and Street Works Act 1991) *Specification for the reinstatement of openings in highways*.⁸

133 When backfilling an exposed gas pipe, observe the following:

- Backfill material adjacent to gas plant should be suitable fine material or sand, containing no stones, bricks or lumps of concrete.

- The backfill should be suitably compacted. Where the excavation has exposed an existing gas pipe, compaction should give comparable support and protection to that before the excavation. In all situations, compaction beneath the pipe is particularly important to prevent any settlement that would subsequently damage the pipe.
- There should be no power compaction until 200 mm cover of selected fine fill has been suitably compacted.
- Do not use concrete backfill within 300 mm of a gas pipe.

Use of concrete as backfill

134 Services should not be buried or encased in concrete as excavating close to them is dangerous. Using mechanical means to break up concrete can cause damage to cables or pipes which, if live, will likely mean that anyone present will be injured. Service owners should ensure that their own employees and contractors are aware that this practice is unacceptable.

Updating plans

135 If the plans or other information have proved to be inaccurate (for example, a service has been found well away from its recorded position), or if the present work changes the path or depth of a service, inform the service owners/operators (preferably before the excavation is backfilled) and they should amend their records accordingly.

136 The plans for new services should show how they have been laid, not how they were designed. Contractors may need to amend the design drawings accordingly.

Electricity cables

137 Most underground cables are laid in trenches between 450 mm and 1 m deep. Some high-voltage cables will be deeper. **However, never assume depths; you may find cables at shallower depths.**

138 In most cases, there will be no permanent surface marker posts or other visible indication of the presence of an underground cable. Even if no cables are shown on plans, or detected by a locator, there may still be cables present that could be live and you should keep a close watch for any signs that could indicate their presence.

139 A cable is positively located only when it has been safely exposed. Even then, digging should still proceed with care as there may be other cables and services adjacent or lower down. In addition, some lines of 11 kV or greater can be laid out as separate single-phase cables, spread out up to 600 mm across, particularly near cable joints. Where it is clear there is a risk of damage to a cable during the course of any work, the owner(s) may wish to be present on site.

Cables in concrete

140 It is bad practice for cables to be encased or buried in concrete. Unfortunately, it is not uncommon to find cables encased in concrete.

141 Using hand-held power tools to break up concrete can damage cables and, if the cable is live, anyone present is likely to be injured.

142 Careful planning is important to find alternative routes or, failing that, to arrange to make the cable dead. Cable owners are likely to want to attend the site to verify the circumstances surrounding any request to make dead. Electricity companies should co-operate, subject to the request being reasonable, and deal with the request as soon as possible. An alternative supply or bypass arrangement could be used to allow the cable to be made dead.

143 Work with the cable live should only be done if the circumstances mean it is unreasonable to make the cable dead, and if you take suitable precautions to prevent injury. If there is no alternative route, and the cable cannot be made dead, then you should agree alternative safe methods of excavation with the cable owners. Remember that powered hand tools used close to live cables are likely to represent the greatest risk of injury.

144 When work can proceed safely only after a cable has been made dead, the parties involved should continue to liaise to ensure that work is completed, and workers are clear, before the circuit is re-energised. A permit-to-work system may assist in managing this process.

145 Cables may have been laid directly in the ground with a bed or surround of fine soil or sand, or in cement-bound sand, or in earthenware or plastic pipes or ducts. Very occasionally, they may be in steel pipes. They may have a layer of tiles, slabs or coloured plastic marker tape laid above them. However, any such protection may have been disturbed and moved and you should not rely on them to give an accurate indication of a cable position.

Gas pipelines

146 The depth of cover for gas mains laid in a roadway is normally about 750 mm, and for those laid in a footway about 600 mm. The depth of cover for gas service connections is normally about 450 mm in both roads and footways. However, on private property, including at entry positions to buildings, the depth of cover for the service connection may be less, about 375 mm. High-pressure gas transmission pipelines are usually buried with at least 900 mm cover. **However, never assume depths; pipes may be found at shallower depths.**

147 Gas pipes are generally laid directly in the ground, although in certain soils selective backfill may have been used as a bed and pipe surround and, on occasion, pipes may be laid in ducts. Ductile iron pipe will sometimes be found wrapped in loose-fit polyethylene (PE) sleeving as protection against corrosion. PE mains may be inserted into redundant iron gas mains and PE service connection pipes may be inserted into yellow convoluted ducting on new housing estates.

148 Markers may also have been used to indicate gas services, namely:

- marker tiles, which may have been used above gas pipes; for example, when they have been laid at shallow depths in bridges or above cellars;
- coloured plastic markers, including for PE mains;
- marker posts/plates, which may show the position and size of valves or test points on gas mains.

However, such markers may have been disturbed and you should not rely on them as an accurate indicator of position.

149 Locate PE gas pipes by hand digging before mechanical excavation begins. This may also be necessary for metallic pipes if they have not been successfully located by a pipe-detecting device. This is particularly important for service connection pipes, which will not be marked on plans. A suitable hand-digging method is to dig a trial trench along the road near the kerb or in the footway where the service connection pipes are likely to be at their shallowest. When the position and depth of the pipes have been determined, work can proceed.

150 Gas pipes may have projections such as valve housings, siphons and stand pipes that are not shown on the plans. To allow for this, do not use mechanical excavators within 500 mm of a gas pipe. The gas transporter may advise greater safety distances, depending on the pipeline pressure.

151 Never disturb pipe restraints or thrust blocks (or the ground supporting them) where they are close to gas mains as this can cause sudden failure of the main.

Gas leak or damage

152 If a gas leak is suspected, do not attempt repairs. Instead, take the following action immediately:

- Evacuate everyone from the immediate vicinity of the escape. If the service connection to a building or the adjacent main has been damaged, warn the occupants to leave the building, and any adjoining building, until it is safe for them to return.
- Inform the gas distribution network operator by telephoning the National Gas Emergency number 0800 111 999.
- Prohibit smoking, and extinguish all naked flames and other sources of ignition within at least 5 m of the leak.
- Help gas transporter staff, police or fire services, as requested.

153 Report any damage, however slight, to the owner. Where an excavation uncovers a gas pipe with a damaged wrapping, tell the owner so that they can make repairs to prevent future corrosion and leakage.

Other work near gas pipelines

154 Because of the risks they pose, do not undertake the following without consulting the pipeline owner/operator:

- the use of explosives within 30 m of any gas pipe;
- piling or vertical boring within 15 m of any gas pipe;
- excavation work within 10 m of any above-ground gas installation;
- building a manhole, chamber or other structure over, around or under a gas pipe;
- work that results in a reduction of cover or protection over a pipe.

155 If you are to carry out welding or other hot work involving naked flames within 10 m of exposed gas plant, ask the gas transporter to check the atmosphere before work begins and continue monitoring during the work. Take care to make sure that no damage occurs, particularly to plastic gas pipes or to the protective coatings on other gas pipes.

Water pipes and sewers

156 To avoid the effects of frost, water mains and sewers are generally laid at depths of 900 mm or more; water services to premises normally have about

750 mm cover; unless local circumstances necessitate shallower depths. In general, work near underground water pipes is of low risk and most precautions are more concerned with reducing the cost of damage than with eliminating the risk.

157 However, there are some dangers and precautions should include:

- Where work is carried out near water mains, obtain plans from the relevant water company and use a pipe locator. However, plastic pipes will not be detectable by most detecting devices. Follow safe digging practices, using hand tools as far as practicable.
- At bends in mains, concrete thrust blocks may be used. Under no circumstances should either thrust blocks or the ground supporting them be disturbed, as this can cause sudden failure of the main.
- Support exposed water pipes, as necessary, and use the correct method of backfilling. For advice, contact the relevant water company or water authority.
- If a water pipe or its wrapping is damaged, inform the relevant water company or water authority – and the owners of any other underground services which may be affected – immediately. Do not make unauthorised repairs.

Major hazard pipelines

158 These pipelines may be laid directly in the ground, although sometimes selective backfill will have been used as a bed and pipe surround. They are normally buried with at least 900 mm cover and may be even deeper where they cross roads and railways. Therefore, they are unlikely to be affected by shallow excavations.

159 Although marker posts/plates are sometimes used to indicate the position, size and ownership of pipelines, such markers may have been disturbed and you should not rely on them as an accurate indicator of position.

160 Locate pipelines by hand digging before using mechanical excavators nearby. In any event, do not use mechanical excavators within 500 mm of a pipeline.

161 Most pipelines will be protected against corrosion by a coating. This will normally be:

- coal tar or bitumen – coloured black, sometimes with traces of white limewash;
- polyethylene cladding – usually yellow;
- fusion-bonded epoxy powder – can be any colour, usually green or beige.

162 Some pipelines will be protected against corrosion by an alternative method known as cathodic protection, which will be linked to the pipeline by cabling. Both pipeline coatings and cathodic protection systems are susceptible to damage, even with hand tools, so take great care when excavating and backfilling and use a physical means of prevention (such as boards etc) where appropriate. It is important to report to the owner/operator any damage, including to the corrosion protection, before reburying the service.

Case study 4

A worker suffered severe burns after drilling in to a low-voltage cable during work to install street furniture. The electrical cable had been moved, wrapped in plastic and encased in reinforced concrete during earlier works to redevelop the street environment. Its location had not been recorded by the contractor managing the work.



The cable should not have been encased in concrete. It should have been moved in consultation with the electricity distribution company.

Permit to work

163 A permit-to-work system is a formal recorded process used to control work that is identified as potentially hazardous. It is also a means of communication between managers, supervisors and operatives who carry out the hazardous work.

164 A permit-to-work system aims to ensure that proper consideration is given to the risks of a particular job, and authorises certain people to carry out specific work at a specific site at a certain time – and sets out the precautions needed to complete the job safely.

165 Essential features of permit-to-work systems are:

- clear identification of who may authorise particular jobs and who is responsible for specifying the necessary precautions;
- clear identification of the types of work considered hazardous;
- clear identification of permitted tasks, risks, duration and control measures to be applied.

166 A permit-to-work system will be more effective if you have consulted operatives. Imposing systems without consultation can lead to procedures that do not reflect the circumstances on site.

Some specific sites and situations

Safe systems of work for trenchless methods

167 Trenchless methods are increasingly used for laying and renovating underground pipes and cables, particularly where there is a need to avoid surface disruption. The most widely used techniques are directional drilling, impact moling, microtunnelling, pipe bursting and auger boring.

168 Use plans, detecting devices and trial excavations to locate existing services in the same way as for open-cut excavation methods. The route of the device being used should then be planned accordingly to avoid colliding with, and damaging,

other services. In addition, if moling or pipe bursting are undertaken too near to other services or ducts, displaced soil may damage or enter them.

169 As a general guide, to avoid damage and to allow sufficient clearance for maintenance of the services, the minimum clearance between adjacent services should be either 250 mm or one and a half times the diameter of the pipe being laid, whichever is the greater. For electricity cables, clearances for maintenance work should be approximately 300 mm.

170 However, clearances for any technique may need to be varied, taking into account such factors as the construction of adjacent plant, ground conditions, bore diameter, the accuracy and reliability of the technique/ equipment being used and whether the other plant is parallel to or crosses the proposed line. You should take into account any requirements of the owners of adjacent services.



Figure 8 Horizontal drilling being used for laying a cable under a road

171 Moles can be prone to deflection from their original course and, if there are existing services in the vicinity, you should use a mole-tracking device. Where you are using trenchless techniques, all equipment should be effectively earthed at all times it is in use using an equipotential mat, as required, in case it hits a power cable and causes the machinery to become live.

172 Further information in *Trenchless and minimum excavation techniques: Planning and selection*⁹ and *Trenchless techniques*.¹⁰

Demolition sites

173 Special problems can arise in the case of service terminations in derelict property or on demolition sites. Anyone concerned with demolition work should give adequate notice to the relevant gas, electricity and water services of their intention to demolish any premises. Do not start work until they have confirmed in writing that either the supply has been disconnected or other appropriate safeguarding action has been taken.

174 Underground services on industrial or commercial sites may be owned by the site occupier. A contractor who is to demolish buildings or plant on such a site should contact the owner or occupier, in addition to the utilities and other service operators, to ensure that all relevant services are isolated before work starts.

175 Even where supplies have been disconnected, beware of, for example:

- services that run through sites and are not part of the site supplies;
- pot-ended or bottle-ended cables.

If in doubt, treat services as 'live'.

176 Further advice on demolition can be found in BS 6187:2011.¹¹

Case study 5

A devastating explosion destroyed part of a former hospital building undergoing refurbishment to convert it into residential apartments. A demolition contractor cut through a 6-inch cast-iron gas main in an underground tunnel.

No checks were made about the pipe, its contents and whether it had been properly isolated.

When doing demolition and refurbishment works, confirm that gas and electricity supplies are properly identified, located and point of isolation confirmed before work starts on site.



Appendix 1: Legislation

1 The following summary outlines the main legal requirements that apply to work near underground services. The list is not exhaustive and does not give a definitive interpretation of the law. It summarises the main issues to bear in mind when carrying out such work.

The Health and Safety at Work etc Act 1974

2 The 1974 Act applies to all work activities. Section 2(1) imposes a duty on an employer to ensure so far as is reasonably practicable the health, safety and welfare of employees while at work. This extends to the provision and maintenance of safe systems of work as well as such information, instruction, training and supervision as is necessary.

3 Section 3(1) imposes a duty on employers to take precautions, so far as is reasonably practicable, to ensure the health and safety of people not in their employment. This duty could apply to any owner/operator of underground services, to clients, local authorities or contractors.

4 Section 3(2) imposes a similar duty on the self-employed for the health and safety of themselves and others.

5 Section 4(2) imposes a duty on people in control of non-domestic premises to ensure, so far as is reasonably practicable, the health and safety of people not in their employment who are using those premises. The definition of premises is wide-ranging and is not confined to buildings.

6 Section 7 imposes duties on each employee to take reasonable care for their own health and safety and for the health and safety of anyone else who may be affected by their acts or omissions at work, and to co-operate with their employer to enable the employer to comply with their duties.

The Management of Health and Safety at Work Regulations 1999

7 These Regulations require employers and the self-employed to assess the risks arising from work activities. They should do this with a view to identifying the measures which need to be taken to comply with relevant health and safety legislation, therefore eliminating risks where possible and controlling those which remain.

The Construction (Design and Management) Regulations 2007

8 The Construction (Design and Management) Regulations 2007 apply to all construction projects and set out requirements in relation to their design and management. They place responsibilities on all those who can contribute to improving health and safety, including clients, designers and contractors. These responsibilities relate to planning, management, design and co-operation between those involved in the project. Risks should be properly managed by action during the design, planning and execution phases of the project.

The Provision and Use of Work Equipment Regulations 1998

9 These Regulations require that equipment is maintained in good repair. Employers should ensure that employees who use work equipment or who manage or supervise its use, have received adequate training in the risks involved, methods of use and precautions to be adopted.

The Electricity at Work Regulations 1989

10 These Regulations require that those in control of part or all of an electrical system should ensure that the system is safe when provided, safe to use, and that it is maintained in a safe condition. They also require that any work activity on or near an electrical system be carried out in such a manner as to prevent danger – excavation work should not be carried out unless all suitable and sufficient steps have been taken to identify and, as far as is reasonably practicable, prevent any risk from any underground cable or other underground electrical service (regulation 4(3)).

11 Regulation 14 requires that work should not be done on or near a live conductor, where danger may arise, unless:

- it is unreasonable in all the circumstances for it to be dead;
- it is reasonable in all the circumstances for the work to be done while it is live;
- suitable precautions are taken to prevent injury.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

12 These Regulations require employers and the self-employed to report certain occupational injuries, diseases and dangerous occurrences to the relevant enforcing authority (for incidents arising during excavation work this will almost certainly be the Health and Safety Executive via an online reporting system).

13 Any work-related injury which results in a worker being unable to carry out the full range of their duties for more than seven days (including rest days and holidays) is reportable. There is also a range of injuries defined as specified injuries.

14 Where there are no reportable injuries, underground electrical cable strikes become reportable as dangerous occurrences where the resulting fire or electrical explosion had the potential to cause death, or if it puts the cable out of action for more than 24 hours.

15 Certain pipeline incidents, including gas escapes, are also reportable as dangerous occurrences by the operator of the pipeline. Schedule 2, part I, paragraphs 21 and 22 list dangerous occurrences associated with pipelines which

are reportable. (Certain pipelines are exempted, corresponding to those to which the Pipelines Safety Regulations do **not** apply, eg water mains, drains and sewers.)

16 The dangerous occurrences include:

Electrical incidents causing explosion or fire

17 Any explosion or fire caused by an electrical short circuit or overload (including those resulting from accidental damage to the electrical plant) which either:

- results in the stoppage of the plant involved for more than 24 hours; or
- causes a significant risk of death.

18 Where the failure of an item of electrical equipment (including as a result of accidental damage) results in a fire or explosion, the failure is reportable as a dangerous occurrence if the equipment concerned is rendered unusable for over 24 hours, or if the occurrence was one with the potential to cause the death of any person. The incident is reportable even if the system in which the damaged equipment was installed is put back into service using new equipment within 24 hours. In such a case, an assessment should be made on how long a repair to the damaged equipment would have taken had it been attempted. Repair time does not include incidental time delays such as those associated with travelling to repair plant in remote locations, or with sourcing parts.

Pipelines or pipeline works

19 In relation to a pipeline or pipeline works:

- any damage to, accidental or uncontrolled release from, or inrush of anything into a pipeline;
- the failure of any pipeline isolation device, associated equipment or system; or
- the failure of equipment involved with pipeline works;

which could cause personal injury to any person, or which results in the pipeline being shut down for more than 24 hours;

- the unintentional change in position of a pipeline, or in the subsoil, which requires immediate attention to safeguard the pipeline's integrity or safety.

20 The incidents listed are reportable in respect of onshore pipelines or pipeline works. The following types of pipeline are **not** covered by these requirements:

- a drain or sewer;
- any pipe used to provide heating or cooling, or for domestic purposes;
- a pipe used in the control or monitoring of plant;
- a pipe used for the conveyance of air, water vapour or steam;
- a water pipe, other than when used for the purposes of injecting water into an underwater well or reservoir containing mineral resources;
- a pipeline contained wholly within the premises of a single undertaking;
- a pipeline contained wholly within a caravan site;
- a pipeline contained wholly within land classed as a railway asset;
- any part of a gas-supply pipeline which is downstream of an emergency control.

21 The phrase 'accidental or uncontrolled release' is not intended to include minor leaks from pipelines, eg small leaks from valve stems, flanges etc. However, sudden or uncontrolled escapes requiring immediate attention or action should be reported.

22 Examples of reportable damage with the potential for harm would include such things as gouging, denting, buckling etc caused by external interference requiring immediate action. Such damage may or may not have resulted in any escape of the pipeline contents. External coating damage without damage to the underlying substrate would not be reportable.

The Gas Safety (Management) Regulations 1996

23 These Regulations are aimed at ensuring the natural gas distribution network is safely managed. To deal with gas leaks, they require the following:

- BG Group plc (or its successors) to provide a continuously manned, national freephone telephone service, so that people can report gas escapes;
- where BG Group plc (or its successors) is notified of escapes they should straight away notify the relevant gas conveyor or emergency service provider;
- the relevant gas conveyor or emergency service provider should go to where the gas is escaping as soon as reasonably practicable;
- gas conveyors/emergency service providers should stop gas escaping within 12 hours.

24 Where a gas escape from a service pipe or main has, or was likely to have, resulted in a fire or explosion, then the gas conveyor has to ensure an investigation is carried out.

The Pipelines Safety Regulations 1996

25 These Regulations deal with the safe design, construction and operation of pipelines. The scope includes requirements that:

- no person shall cause such damage to a pipeline as may give rise to a danger;
- pipeline operators shall take reasonable steps to inform people of the existence and whereabouts of a pipeline to prevent damage to it.

New Roads and Street Works Act 1991

26 This Act requires utilities and other undertakers (undertaker is a defined term under the Act) to give notice of their planned works under a variety of circumstances, depending upon the type of street in which the works are to be carried out and the type of works to be done. Emergency, urgent and some minor works can be started without issuing notice.

27 The Act also requires undertakers to record the location of apparatus belonging to them, to keep records up to date and to make them available for inspection at all reasonable hours, free of charge to any person having authority to carry out works in the street.

28 The terms 'emergency', 'urgent' and 'minor' works referred to above relate only to notifications for the purpose of the NRSWA and do not affect the legal obligations under the Health and Safety at Work etc Act 1974 (HSW Act) to give and obtain information needed to ensure safe working.

29 The HSW Act requirements apply to all work regardless of NRSWA classification and include work not covered by the NRSWA. There is also a specific duty on electricity companies to supply information under the Electricity Safety Quality and Continuity Regulations 2002 (see paragraph 31).

30 Section 67 of NRSWA requires that for any street works, work is supervised by a person qualified under the Street Works (Qualifications of Supervisors and Operatives) Regulations 1992. There also has to be an operative qualified under the same Regulations on site while work is in progress.

Electricity Safety Quality and Continuity Regulations 2002

31 A supplier of electricity has a duty under regulation 15 of the Regulations to make and, so far as is reasonably practicable, keep up to date 'a map or series of maps indicating the position and depth below surface level of all his works'. The supplier must provide these maps free of charge to anyone who has good reason for requiring them. Regulation 14 of the Regulations imposes requirements for the protection of underground cables and also imposes requirements for the depth and manner of their installation.

Fire Services Act 1947

32 Section 16 requires notice to be given to the fire authority of works which will affect a water supply or a fire hydrant.

References and further reading

- 1 *Safety at street works and road works. A Code of Practice* (also known as the Red Book) Department for Transport 2011 ISBN 978 0 1155 119580
- 2 *Traffic signs manual Chapter 8 (Part 1). Road works and temporary situations – design* The Stationery Office 2009 ISBN 978 0 11 553051 7
- 3 *Traffic signs manual Chapter 8 (Part 2). Road works and temporary situations – operations* The Stationery Office 2009 ISBN 978 0 11 553052 4
- 4 *Guidelines on the positioning of underground utilities apparatus for new development sites (Issue 3) Volume 2* National Joint Utilities Group 2010
- 5 *Guidelines on the positioning and colour coding of underground utilities' apparatus (Issue 6) Volume 1* National Joint Utilities Group 2012
- 6 *A guide to the Pipelines Safety Regulations 1996. Guidance on Regulations L82* HSE Books 1996 ISBN 978 0 7176 1182 9
www.hse.gov.uk/pubns/books/l82.htm
- 7 BS 1710:1984 *Specification for identification of pipelines and services* British Standards Institution
- 8 *Specification for the reinstatement of openings in highways: A Code of Practice* (Second edition) The Stationery Office 2002 ISBN 978 0 11 552538 4
- 9 *Trenchless and minimum excavation techniques: Planning and selection* (SP147) Construction Industry Research and Information Association (CIRIA) ISBN 978 0 8601 7483 7
- 10 *Trenchless techniques* IGEM/SR/28 Institution of Gas Engineers & Managers
- 11 BS 6187:2011 *Code of practice for demolition* British Standards Institution

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Guidelines on the management of third party cable ducting Volume 3 National Joint Utilities Group 2007

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Managing health and safety in construction. Construction (Design and Management) Regulations 2007. Approved Code of Practice L144
HSE Books 2007 ISBN 978 0 7176 6223 4
www.hse.gov.uk/pubns/books/l144.htm

Managing for health and safety
www.hse.gov.uk/managing/index.htm

Useful links

HSE
www.hse.gov.uk
Source of guidance and access to HSE publications

National Joint Utilities Group
www.njug.org.uk
Source of guidance and information on street works and detecting underground services

Energy Networks Association
www.energynetworks.org
Information about gas and electricity supply companies

Utility Strike Avoidance Group
www.utilitystrikeavoidancegroup.org
A collaborative group of utilities asset owners, industry groups and contractors developing standards of safety when carrying out work on services

Utility Mapping Association
www.utilitymappingassociation.com
A trade body developing standards of training and competence for surveyors

The Survey Association
www.tsa-uk.org.uk
A trade body for commercial surveyors and source of information about surveying companies and technologies

Association of Geotechnical and Geoenvironmental Specialists

www.ags.org.uk

Trade association for those involved in site investigation. Provides guidance for clients and practitioners

UKOPA

www.ukopa.co.uk

Industry body for pipeline operators. Source of information about pipeline safety

UKSTT

ukstt.org.uk

Source of information about trenchless technology

Linewatch

www.linewatch.co.uk/index.php

Source of information and guidance about some major hazard pipelines

British Standards Institution

www.bsigroup.co.uk

Institution of Gas Engineers & Managers

www.igem.org.uk

Electrical Safety Council

www.electricalsafetycouncil.org.uk

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

British Standards can be obtained in PDF or hard copy formats from BSI:

<http://shop.bsigroup.com> or by contacting BSI Customer Services for hard copies only Tel: 0845 086 9001 email: cservices@bsigroup.com.

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