

Procedure on Access to Service Tunnels				
Policy...	Code of Practice...	Guidance...	Procedure✓	
Organisation-wide✓		Local...		
Approved by the University Health & Safety Committee				
Chairman	Mr Eliot Glover	Date	May 2021	Review date 2024

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1. INTRODUCTION

1.1 The Brunel University London (Brunel) service tunnels are defined as a "confined" space because their configurations hinder the activities of personnel who must enter, work in, and exit them. A confined space has limited or restricted means for entry or exit, and it is not designed for continuous personnel occupancy.

1.2 This procedure applies to all work, including inspection, in the BRUNEL service tunnels regardless of who undertakes the work. All access should be subject to a specific Risk Assessment and Method Statement to identify the risks posed by each tunnel and the intended work activity e.g. hot works in a confined space, asbestos, water ingress, COSHH etc.

2. MINIMISING THE RISKS ASSOCIATED WITH ENTRY

2.1 The Estates Compliance Team controls all access into the tunnel network. Written authorisation to proceed and begin the Risk Assessment for each specific tunnel must be obtained from them.

- Areas within the network contain friable asbestos in poor condition and are identified in the register for the site. Access shall only be made to these areas by a Licensed Asbestos Removal Contractor.
- Some parts of the network have been decontaminated and the remaining asbestos materials are in good condition and labelled. Access to these areas shall be granted by the compliance team.

Written permission to be attached to the permit once granted.

2.2 When entry is required as no other methodology can be applied, any associated risks must be assessed (Risk Assessment) and minimised by adopting safe systems of work (Method Statement), including the use of Permits to Work (refer to Appendix 1), and by the provision of the necessary supervision, training, equipment and personal protective equipment (PPE).

2.3 Everyone involved must be physically and mentally fit to enter the tunnels, e.g. not prone to claustrophobia.

2.4 An Appointed Person (refer to the BRUNEL Permit to Work policy) shall issue a Permit to Work to the individual who is in charge of the work on site. If an Appointed Person is personally involved in the work and is therefore also in charge on site, then arrangements must be made for the Permit to be issued by another Appointed Person.

2.5 Before issuing a Permit, the Appointed Person shall ensure that an adequate risk assessment has been carried out, taking into account the hazards of the tunnel itself and of the work to be done. The Permit to Work shall refer to compliance with this policy and to full adoption of the precautions resulting from the risk assessment.

2.6 In addition to issuing the Permit, the Appointed Person shall personally brief everyone on the requirements of the Method Statement prepared for the work (including inspection only). Upon completion of the briefing they shall sign a register to indicate that they have fully understood its contents and agree to abide by its instructions. This register must be kept on file. The individual in charge shall ensure that everyone at all times complies with requirements. On completion of the work, or on expiry of the time specified on the Permit, the Appointed Person shall cancel the Permit.

2.7 For purposes of both ventilation and egress, whenever possible at least two access points shall be opened, preferably on either side of the work location. No open access point shall at any time be left unmanned, unless securely fenced; and no one is permitted to enter or remain in any tunnel without a 'top man' in position.

2.8 A minimum of two people is required for any work inside a tunnel, including inspection, which takes place out of sight of a 'top man'.

2.9 The 'top man's' functions is to control access, noting all who enter or leave the tunnel; to ensure the safety of others, in particular ensuring no one inadvertently falls into an open access point; and to obtain assistance in the event of emergency.

2.10 The entry team and each 'top man' shall be provided with radios, and shall make voice contact at intervals of no more than a quarter of an hour. In addition, where the radios operate only within the team, each 'top man' shall also be provided with a means of summoning external assistance.

2.11 Checks on the oxygen level and for toxic or explosive gas must be carried out for at least five minutes before entry, with monitor(s) lowered far enough to sample at the working level as gases can be denser or lighter than air. Sampling shall then be continuous at each point of work for the duration of the work. Entry teams shall be trained in the use of the gas and oxygen monitors.

2.12 Adequate lighting and ventilation must be ensured to allow safe working, using artificial means if necessary. Switch Delmatic lighting to 'manually on' using key switch located at the tunnel entry point.

2.13 Hot work in the tunnels shall be avoided whenever possible. When unavoidable, appropriate portable fire fighting equipment shall be located at the point of work and at least one member of the working party in the tunnel shall be trained in its use.

NB A separate permit to work is required for any hot work, similarly any other activity requiring a BRUNEL permit to work will require a separate permit for that activity.

2.14 When accessing a tunnel that has been decontaminated for the asbestos presence, the integrity of the walls that segregate the contaminated areas of the tunnel network from the decontaminated space should be checked to ensure the integrity has been maintained. The location of the segregation walls will be provided by the Compliance Team during issue of the permit. During this initial inspection RPE should be worn. If any doubts regarding the integrity of the segregation wall, works should be stopped and emergency procedures adopted as outlined in the Asbestos Management Plan.

2.15 Appropriate Personal Protective Equipment:

1. Emergency portable oxygen cylinders, including appropriate mask or hood (dependant on personal requirements)
2. Personal gas monitors
3. Two way radio
4. Torches
5. Hard hat/gloves/goggles/foot protection/protective clothing i.e. overalls
6. Full body harness
7. Rescue tripod – (A frame)
8. Disposable protective clothing (all protective clothes should be treated as asbestos waste on completion of the work)
9. Respirator – disposable half mask fitted with a P3 filter (EN149:2001 FFP3) for example a 3M 7500 Silicone Half Mask is regarded as suitable protection.

2.14 Smoking, eating and drinking are prohibited in the tunnels and at open access points.

3. METHOD STATEMENT

3.1 A method statement must be produced in addition to the risk assessment outlining exactly how the work will be carried out. Careful thought must be given to the work process, which may be low risk in other environments but due to limited space or reduced ventilation be high risk in a service tunnel. This will form the briefing to everyone involved with the work in the service tunnels.

The method statement for work in a service tunnel must include:

- name, position and signature of the appointed supervisor
- details of suitability, to include competence and experience, of everyone working in the service tunnel
- details of the person who will be outside of the service tunnel and in a safe position to monitor those entering and working within the referred to as the “top man”
- details of any mechanical or electrical isolation required if the item can be inadvertently operated or if gas fume or vapour could enter the service tunnel via pipe work; details of any plant shut down required
- details of any prior inspection or cleaning required before entry
- details of the access and egress points, including its properties such as size
- provision of any ventilation
- details of any air tests and equipment
- provision of tools and equipment
- provision of safety barriers to prevent falls or unauthorised access to work area
- provision of breathing apparatus for emergency evacuation
- provision of personal protective equipment
- details of emergency arrangements, including equipment, training and practice drills; how the alarm will be raised; any resuscitation equipment identified as required in the risk assessment; the capabilities of rescuers; and details of the local emergency services
- provision of rescue equipment including lifelines and harness and their attachment point i.e. tripod and winches (at each egress point to enable anyone to be winched out of the tunnels should they be injured)
- details of the communication system to be used
- first aid arrangements

Work in a service tunnel must not commence until a Permit to Work has been issued (Appendix 1).

4. PERMIT TO WORK FOR SERVICE TUNNELS (CONFINED SPACES) – Appendix 1

4.1 The purpose of the permit to work in a service tunnel is to ensure that all risks have been controlled where possible and that appropriate supervision and rescue provision is in place.

4.2 A BRUNEL permit to work in a service tunnel may only be issued for one day. Work taking place over more than one day will require a new permit to be issued at the beginning of each working day before the space may be accessed. The exception to this rule will be during CDM projects where the site has been handed over to the ‘Principal Contractor’ who shall retain responsibility for issuing permits during their occupancy.

4.3 The person who accepts the permit must be the person in charge of (supervising) the work. In accepting the permit this person confirms that the guidance printed on the permit will be adhered to prior to and for the duration of the work within the service tunnel. This includes the procedure that the person in charge will remain at the work site at all times.

4.4 The permit duplicate must be held at the point of entry at all times. Failure to do this will result in the work being stopped.

4.5 Prior to the permit being issued the person in charge must:

- ensure equipment is available, maintained and fit for use
- ensure adequate emergency arrangements are in place
- ensure pre-entry gas checks are carried out, the results of which must be entered on the permit
- report any changes or problems to the authorised person
- ensure all work can be carried out in line with this policy and the permit to work policy ensure the full work team are competent to carry out the work within the service tunnel

Failure to do any of the above will mean the permit cannot be issued and will delay the commencement of the work.

5 AUTHORISATION TO COMMENCE WORK

5.1 Only Estates staff authorised to issue service tunnel (confined space) entry permits may authorise work to commence within a service tunnel – Refer Appointed Personnel List – BRUNEL Permit to Work Policy.

5.2 All such persons also hold the authority to stop any work within a service tunnel for any reason they see necessary. Where work is stopped then the permit must be cancelled and the person in charge of the work must withdraw all personnel and equipment.

5.3 Where work is stopped in such circumstances a new permit must be issued before re-starting work.

6 TRAINING AND COMPETENCE

6.1 All persons, whether Estates personnel or contractors, planning and carrying out work within a service tunnel should be competent to do so, including the use of emergency lifting equipment i.e. harnesses, A-frame and winch and escape breathing sets.

6.2 All persons entering the service tunnels must complete a confined space training course provided by an approved trainer/organisation.

6.3 All persons must be able to demonstrate their level of competence

7 EMERGENCY ARRANGEMENTS

7.1 In **any** emergency, the top man must immediately summon external assistance **and must not enter the service tunnel.**

7.2 BRUNEL employees are prohibited from entering a service tunnel to rescue an asphyxiated colleague.

7.3 In the event of a gas or other alarm, all members of the entry team must immediately evacuate the service tunnel. The individual in charge of the team and the 'top man' are jointly responsible for ensuring that everyone has been accounted for. The alarm and evacuation must be reported immediately to the Appointed Person who issued the Permit and who will decide what remedial action needs to be taken prior to any re-entry.

8 REVIEW OF PROCEDURE This procedure will be kept under review and may be amended by the University after consultation. Appropriate measures will be taken to inform staff and contractors of any changes

Appendix 1: Permit to work – Confined Space Entry (Service Tunnels)

Permit to work – Confined Space Entry (Service Tunnels)

Applicable to – Entry into any space, (not necessarily enclosed) designated either permanently or temporarily as a confined space within the meaning of the Confined Space Regulations 1997.	Local Serial #:
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Site address:	Location (work area):
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Detailed description of space:

Work to be carried out:

Mandatory Attendant: _____ Number in rescue team: _____

Permit to Work (PtW) valid from date: time: to date: time:

Emergency telephone: Security telephone:

Other activities which may affect this work:

Names of persons in work team:

Mandatory safety precautions:
(Refer to, and attach copies of relevant written safe systems of work, method statements, etc.)

Written authorisation to enter obtained from Compliance team: (copy to be attached to permit)

Space isolated? Yes, No or N/A _____ Space purged / vented? Yes, No or N/A _____

Appropriate tests undertaken: Oxygen: Toxic Gas: Flammable Gas: Other (Specify):

Arrangements for continuous / frequent monitoring:

Provision of suitable Personal Protective Equipment (PPE):

Emergency procedures:

Authorisation (Authorised Person)

I declare that it is safe to work in the above confined space which has been isolated in accordance with the attached method statement. I have explained the method statement. I have demonstrated the extent of the work and the safety arrangements at the points and places affecting the work to the Person in Charge. I am satisfied that all persons in the work team are properly equipped and trained and that all safety equipment is present and working. I authorise Entry.

Name: _____ Signature: _____ Time: _____ Date: _____

Acceptance (Competent Person / Person in Charge)

I accept responsibility for the entry, work and equipment stated; also for the personnel under my charge, and confirm that they will work in accordance with designated safe working procedures. I understand that I must be present throughout the work, and the actions I must take in event of emergency. I confirm that the rescue team is fully equipped and on immediate standby.

Name: _____ Signature: _____ Time: _____ Date: _____

Clearance (Competent Person / Person in Charge)

I confirm that personnel have been withdrawn from the space. The Space, Services and Equipment have been left in a safe condition. Re-entry will not be attempted until a new permit has been issued. I have indicated to the Authorised Person any changes that have occurred and subsequent action taken.

Name: _____ Signature: _____ Time: _____ Date: _____

Cancellation (Authorised Person)

I am satisfied the worksite is now safe. I have noted any changed and will take the necessary follow up action. This Permit to Work is hereby cancelled.

Name: _____ Signature: _____ Time: _____ Date: _____

PERMIT TO WORK SAFETY CHECKLIST

This checklist provides guidance on how to meet the mandatory safety precautions specific to this permit.

- Written authorisation to proceed obtained from the Compliance Team.
- All gaseous and liquid leaks must be isolated, and the space fully vented and purged. Any extraneous sources of toxic or harmful substances, which could enter the space, must be identified and stopped. Sources of mechanical, electrical and other energy sources must be isolated. Padlocks / valve locks must be applied at all points of isolation, and warning notices put in place, generally in accordance with the requirements for the General Isolation permit.
- Access to the space must be assessed to ensure that it is adequate to safely effect rescue in emergency, bearing in mind the person in the space may not be in a state to assist. Entry to the space is prohibited if this requirement cannot be met.
- An attendant must be present at all times whilst the person is in the space, with the means to rapidly summon the emergency team. The attendant must be cautioned that if the occupant of the space appears to be in distress or to have been overcome, they must not enter the space unless equipped with, and trained in use of suitable breathing apparatus. The rescue team must be summoned before any other action is taken.
- A team of competent persons, sufficient to meet foreseeable rescue requirements from the space, must be readily available, with an effective means of rapid communication in place to summon them and manage any emergency. They must be provided with suitable equipment (safety ropes, lifting frame, pulleys, etc) to effect rapid rescue, without the need to enter the space, and to minimise further injury to the occupant of the space. The person entering the space must also be provided with safety harness and any other equipment necessary to assist rapid rescue by the emergency team.
- The atmosphere in the space must be tested, to ensure the presence of correct levels of oxygen, and that any toxic or harmful gasses likely to be found in the space have been purged. Remember that such gasses may be produced when sediment or other matter within the space is disturbed. If there is a risk this could happen, arrangements must be made for regular testing whilst the space is occupied, forced air ventilation must also be provided. All test results must be recorded.
- Personal protective equipment and clothing must be adequate to protect both against work-related hazards, and to help prevent injury during any rescue.
- The person entering the space must be cautioned to leave the space at the first signs of any dizziness, eye irritation, headache, pulsating of the temples or nausea.

SAFETY CHECK LIST: (Circle where applicable):

Written permission to proceed from the Compliance Team	Yes	Written permission to proceed from the Permit Issuer	Yes
Special precautions or equipment	Yes / N/a	Inflows stopped and equipment isolated	Yes / N/a
Warning signs / barriers in place	Yes / N/a	Cleaning / Purging / Inerting complete	Yes / N/a
Warning systems for rainfall / tides in place	Yes / N/a	Forced air ventilation in place	Yes / N/a

Rescue services informed	Yes / N/a	Lighting installed	Yes / N/a
Tel#:		Safety / protective equipment examined	Yes / N/a
Competency of work team checked	Yes / N/a	Safety Method Statement attached	Yes / N/a