Health & Safety - Section 1
Site Aspects

by
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Please note that, for convenience, the Practical Restoration Handbook "Health & Safety" chapter is split into 4 sections:

1. Site Aspects
2. Personal Safety and Insurance
3. Construction Design and Management Regulations
4. Control of Substances Hazardous to Health

Although these sections are primarily separate there are subjects which overlap and so all four sections must be considered as one chapter. It is essential that all four sections are read together to get an adequate understanding of the Health and Safety requirements for waterway restoration.

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This document is a completely revised version of the Waterway Recovery Group’s ‘Health and Safety Guide’. The author is grateful to the following people for their assistance with the original volume:

John Baylis, Dave Carnell, Christine Meusz, John Palmer and Mike Palmer.

INTRODUCTION

1. This guide is intended primarily for site leaders and others who have responsibility for the operation of waterway restoration work sites. This volume deals with the Health and Safety areas which should concern a leader in setting up and operating a site. It is not exhaustive and common sense will carry site leaders far. Leaders need not be expert in all of the techniques and in the operation of all plant on a site, but should be aware of the hazards and of the working practices required. The advice frequently given to volunteers: "If in doubt, don't", applies with even greater force to leaders. Leaders should not take responsibility for plant or construction techniques which are unfamiliar, but should recognise their limitations and ensure that there is a competent and experienced person on site who is familiar with the equipment or technique.

2. Health and Safety Legislation does not apply to volunteers working on sites where there are no paid employees. However, it has a great deal to say which is useful as guidance in the safe operation of a work site and, as such, we recommend that its requirements are studied and, where sensible, used as guidelines for the operation of voluntary sites.

3. If a restoration society has even one employee, and that employee works on site alongside volunteers, then the site must be registered and the full provisions of the Health and Safety at Work Act apply.

4. This guide outlines what we believe is a sensible approach to ensuring the safety of volunteers on a site and it written from the premise that the site is not registered and that there are no employees working there. It does not intend to set out working methods, but to serve as a guide to safe and healthy working practices. If positive steps are taken by all concerned, more efficient, productive and rewarding work parties will ensue. This guide does not absolve you from the need to take common sense precautions and its listing of safety procedures is not exhaustive.

5. Personal health and safety standards are only as good as you make them.

6. Later sections outline specific areas which should receive consideration and offer advice on them. Your attention is also drawn to the associated publications in this series which cover the Control of Substances Hazardous to Health (COSHH) and the Construction, Design and Maintenance (CDM) regulations.

GENERAL GUIDELINES

7. Most of the following points are amplified in later sections of this document.

8. Before agreeing to undertake work on a waterway site, restoration groups should give careful consideration to matters of volunteer health and safety. If, after this consideration, it is felt that the group cannot make proper arrangements for some aspect of volunteer health and safety, then advice and guidance should be sought from those more experienced and work on the site should not begin until all such matters have been satisfactorily resolved.

9. The organisation should have a formal health and safety policy which is available to all volunteers; a possible model is on a later page.

10. The organisation should have a small and easily-read volunteers' guide to health and safety which should be available at all times to volunteers. We recommend that all new volunteers are asked to sign a document which states that they have received a copy of this guide, have read it and agree to abide by its contents.

11. Site organisers should themselves be of sufficient experience and maturity to understand the health and safety issues likely to arise on their site and should have assessed them carefully before work begins.

12. Site organisers must be willing to bar from site any volunteer who disregards health and safety matters after a clear warning and must be of sufficient maturity to be willing and able to enforce this regime. Committees of groups and societies must be willing to give this backing to the site organiser without reservation.

13. It is essential that volunteers comply with Health and Safety requirements and you should be rigorous in your dealings with them. Minor transgressions should be given a stern warning; major transgressions or a second minor one should result in the volunteer being sent home. You owe this to other volunteers, your organisation and to the whole of the waterway restoration movement. The accident record so far is good; were it not, we would find it impossible to obtain insurance and that would effectively stop volunteer restoration work over the whole country. Finally, of course, you owe it to yourself: even if not legally liable, you will have to live with the consequences if you are lenient with volunteers who break the safety rules. It is one of the most difficult things a leader can be called upon to do; if you think that you could not do it, you should not be a site leader.

General Considerations : Checklist

- Under no circumstances should any volunteer work alone (out of sight or earshot of others).
- Every site should have adequate means of emergency communication. In these days, this could be a volunteer's personal mobile telephone - but site organisers should check that it will operate from all parts of the site; such equipment often has 'dead spots' which could be crucial in an emergency.
- Every site should have a first aid box which is adequate and regularly checked and should maintain an accident book. It is good practice to ensure that there is a trained first-aider on site at all times.
- All site personnel should know the location of the nearest hospital with a (functioning) Accident and Emergency Unit.
- All personnel working on a site should be properly trained for the tasks which they are asked to undertake, and particularly in the operation of any plant or equipment which they may use. Other volunteers should be made fully aware of the hazards of working on a site where plant and equipment operates. WRG operates a driver authorisation scheme, participation in which is mandatory for those groups using the IWA/WRG Insurance Scheme.
- All volunteers should be adequately insured against the risks they will encounter on site; such insurance should be arranged by the site organisers and may not be left to the individual. Note that groups using the IWA/WRG Insurance Scheme must also participate in the WRG driver authorisation scheme.
- If the site is accessible to the public, careful consideration should be given to the safety of members of the public whilst work is in progress and to fencing and otherwise making the site safe when work is not in progress.

- Do not expect a volunteer to perform an unfamiliar job without instruction.
- Take careful note of the capabilities of individual volunteers. Be particularly careful to ensure that tasks given are within the physical and mental capabilities of the volunteer. Many may be too embarrassed to admit a lack of knowledge, or that a particular task is beyond their strength.
- Do not allow volunteers to perform demanding tasks for long periods without rest; work which is within the capabilities of volunteers for a few minutes may prove impossible to sustain for longer periods.
- Always observe normal safety practices and if in doubt, seek advice.
- Keep your eyes and mind on the work in hand. It is the task of the leader to superintend the site. If you are the leader, do not allow yourself to become so wrapped up in one aspect of the work that you are unaware of the conduct of the remaining volunteers.
- Think the job out before you start and ensure that volunteers are given clear instructions both about the work and about health and safety matters.
- Encourage others by working safely and setting a good example, and look out for the safety of others.

A SPECIMEN HEALTH AND SAFETYPOLICY FOR A VOLUNTEER GROUP

Health and Safety Policy

14. It is the policy of (the Leafy Mould Canal Trust) when engaged on or associated with any restoration work or other projects connected with waterways to ensure that all reasonable and practicable safeguards are taken for the safety and welfare of all employees, volunteer workers, and visitors who are likely to be involved. This is not only for the benefit of such employees, volunteer workers and visitors but also to minimise pollution of the environment where possible.

15. Accident prevention has to have priority in all aspects of the (Trust's) work. The (committee) therefore ensures that so far as it possibly can, all conditions in which its members and any others are involved are both healthy and safe.

16. The (committee) makes the maximum effort to see that all supervisory staff and others in authority observe the (Trust's) policy in matters of health and safety working. The same is expected and required from its members, voluntary workers, and any person employed by it, at all times. To encourage this, the (committee) places great emphasis on the availability of both adequate and efficient safety equipment.

17. Whilst engaged in any project or associated with it in any way, members are urged in their own interests and that of their colleagues to observe health and safety standards and in no way to jeopardise the high standard required by the (Trust). Full co-operation and communication throughout the organisation, whether on site or otherwise, must therefore be maintained. Any matter which those participating in any activity consider may be a danger, to either health or safety, should be brought to the notice of their supervisors at the earliest opportunity.

(N.B. the items shown in italics should be replaced as appropriate)

GENERAL WORK HABITS - 'GOOD HOUSEKEEPING'

18. 'Good Housekeeping' covers all aspects of laying out a work site so that the work may be done efficiently and the safety of the volunteers is assured. The well known phrase "a place for everything and everything in its place" is one of the guiding principles of accident prevention. Sensible site organisation not only reduces accident risks by eliminating the physical hazards, but personnel can work more easily in clean and tidy surroundings than when disorder prevails. Too many accidents occur as a result of poor housekeeping. The work is also more efficient if proper consideration has been given to the establishment of materials stores, pipe and cable runs etc.

19. The overall layout of the site is the responsibility of the site leader and the most useful contribution individual volunteers can make to site safety is to practice good housekeeping within their own work area.

'Good Housekeeping' Checklist

- Never leave tools in a position where they can fall and injure someone. When they are no longer required, put them away tidily and in a clean and serviceable condition.
- Always tidy up after completing a job.
- If you see any material or equipment in a position that is likely to cause an accident, move it to a safe place. Broken glass, nails protruding from boards and badly stored equipment are common causes of injury.
- Keep roads, gangways and all other routes free from obstruction at all times.
- Encourage others to follow your efforts in good housekeeping.
- Materials must always be stored neatly and tidily and should never be over-stacked so that they become falling hazards.
- Materials must always be stored in compliance with the manufacturer's instructions and any relevant regulations.

SPECIFIC STORAGE AND HANDLING CONSIDERATIONS

Petrol and Two-stroke Mixture

20. Storage of flammable liquids, chief among which is petrol should be given careful attention. Only suitable containers should be used and should be clearly marked. This is particularly important where both petrol and two-stroke mixtures are kept on site. Petrol must be stored in suitable metal or plastic containers with screw caps and marked PETROLEUM SPIRIT - HIGHLY FLAMMABLE. Do not store petrol or two-stroke mixture in any improvised container. The maximum amount that may be stored in any one building is:-

In metal containers	2 x 2 gall (10 litre) cans
In BS approved plastic containers	1 x 5 litres

21. **DO NOT** store such containers under stairways or adjacent to emergency exits and doorways. Larger quantities, up to 60 gallons, should be kept in a specially constructed store at least 20 feet (6 metres) from any other building and suitably marked.

22. Equipment should not be refilled whilst it is running and care should be taken not to allow petrol (or its heavy vapour) near hot exhausts and naked flames.

LPG (Liquefied Petroleum Gas)

23. There is much legislation on the storage and handling of LPG. Some of the more relevant points are:

Carriage

24. The carriage of flammable gases in vehicles on public roads is subject to regulation. Included in the Carriage of Dangerous Substances in Packages Regulations are butane (blue cylinder) and propane (red cylinder) LP Gases, and gases used for welding and cutting purposes. When these gases are carried in containers of 5 litres or more the Regulations require:-

    a. The driver of the vehicles to be aware of the correct manner in which to carry the containers (cylinders) and the dangers that can arise from leaks, fires or other emergencies.

    b. Documentation must be carried, showing the substances carried. This must be made available to any Police Officer or Dept. of Transport Traffic Examiner on request.

    c. Vehicles carrying more than 500 kg of such substances must display warning orange-coloured plates to the front and rear.

25. There are exceptions to these Regulations which apply to items (b) and (c) above. These are under Regulation 3 (2): "The carriage of LPG cylinders which are part of equipment being carried in a vehicle such as tar boilers, burning gear, (cookers and fridges and boilers) are exempt. This exception permits the carriage of a single spare cylinder (per appliance) with such equipment as long as the equipment concerned operates using only a single cylinder."

26. Should the occasion arise when replacement of a cylinder is required from a stockist, and the cooker is not being carried, Reg. 3 (2) (j) 'excepts from the regulation the carriage of dangerous substances by the public for recreational and other purposes'.

The Storage and Use of LPG

27. Every year about half the accidents involving LPG in industry occur in the construction sector. Refillable LPG cylinders are used extensively on waterway sites and it is important to observe the following:-

    Storage:

28. When not in use, cylinders should preferably be stored outside in a well ventilated area at ground level on a firm surface and at least three metres away from any cellars, drains, excavations or other hollows where the denser-than-air vapour may collect. There should be good access to the area which should be kept clear of combustible material including wood, packing materials and vegetation.

29. If storage in the open air is not reasonably practicable, cylinders may be stored in adequately ventilated storerooms that are constructed of non-combustible materials.

30. It is important that all so-called empty cylinders' valves are kept closed and plugs, caps or shrouds are kept in place on ALL cylinders. All cylinders must be stored with the valves uppermost.

31. At the end of each working day precautions must be taken to ensure that gas supplies to all equipment are isolated and special care taken to ensure the cylinders are not tampered with or vandalised, e.g. removal to a secure store.

Ventilation:

32. It is essential to ensure there is adequate ventilation of the space in which the burners are being used. Incomplete combustion can lead to a build-up of carbon monoxide and this has led to many fatalities. Also the vapour is dense and if an appliance should leak, it can accumulate until and explosive mixture is formed.

Handling of LPG Cylinders:

33. Cylinders should always be handled with care. The valve on a cylinder should not be used for lifting or to lever the cylinder into position. Damage to the valve can lead to a highly dangerous leak. For the same reason cylinders should not be thrown or dropped. The 'neck' or valve is the most vulnerable point on the cylinder.

Connecting LPG Cylinders:

34. Before connecting any cylinder or container of LPG to equipment it is essential that all fires, flames or other sources of ignition including pilot lights and cigarettes in the vicinity are extinguished. If a cylinder is found to be leaking and cannot be stopped it should be carefully removed to a well-ventilated area free from sources of ignition. The area should be cordoned off with warning notices, and left until the leak ceases. The cylinder should then be marked and the supplier informed. Under no circumstances should users attempt to dismantle valves or repair the defect.

35. Note that if valves or regulators are attached to propane (red) cylinders by screw threads, they will be left-hand (i.e. will operate in the reverse of the normal manner). Small butane (blue) cylinders have conventional right-hand threads. Having connected the cylinder, the connection should be checked for leaks, by smell or soapy water, NOT by matches or naked flame. Use the correct size of spanner; do not use 'stilsons' or adjustable wrenches. Do not use oil, grease of PTFE tape when fitting regulators to cylinders.

Soap Testing:

36. This is the preferred way to trace gas leaks on propane (red cylinder), butane (blue cylinder) and compressed air systems. Very simply a small amount of soap or washing-up liquid is shaken into a foam with a small amount of water and then brushed or carefully poured over the suspect joints. Any leaks will cause the solution to bubble. If a leak is found, turn off the supply and remake the joint. Switch on and retest until satisfactory.

Regulators and Hoses

37. These should be suitable for the type of gas and compatible with the cylinder. Flexible hoses should comply with the British Standard BS3212 or BS5120.

Lighting the Appliance

38. Follow the manufacturer's recommended procedure. Before turning the supply on at the cylinder ensure all appliance valves are closed. In the event of a leak from an unsuccessful attempt to light up, or an open valve leaking gas, turn off the gas and leave it to disperse before trying again. Check that any flame failure devices which are fitted are working properly.

SUBSTANCES WHICH MAY CAUSE HARM TO HEALTH

39. Substances hazardous to health may occur in any form - solid, dust, liquid, vapour etc. Many common and unregarded substances which are found in the home can be hazardous in the quantities found on site e.g. paint, oils etc. and the hazards of substances such as brick dust, mortar plasticisers and waterproofers or glass wool may be unexpected. Basically, the classification covers any substance which has the potential to cause harmful effects to health, either by inhalation, ingestion or contact with the skin. Before storing, handling or using any such substance, make sure you are aware of the potential effects and the relevant safety precautions and that you have communicated them to the volunteers who will be working with the substances.

40. You attention is drawn to the companion volume in this series which gives greater detail on the legislation and hazard sheets for the most commonly encountered hazardous substances. Site leaders should have assessed the site for potential contacts with hazardous substances, know the storage and safety precautions for each of them and the first aid treatment for victims.

41. In general, where protective equipment is indicated, make sure that it is available, that it is in serviceable condition and, most importantly, that volunteers actually make use of it.

42. Damage to health from exposure to these substances may be permanent and it is your responsibility to know what protective equipment and precautions are required and to make sure that they are in place.

43. For further information please refer to Section 2 : Insurance, Safety and First Aid and the HSE Construction Summary Sheet - The Control of Substances Hazardous to Health Regulations 1988 (COSHH). (No. SS16)

Cement and Concrete

44. This is one of the commonest hazards on a site and so details are repeated below. Cement dust, both airborne and in contact with the skin, can present a serious health hazard, as can cement in wet mixes such as mortar or concrete. With sensitive skins, burning can take place very quickly and all users should be fully aware of the hazard and of the precautions necessary. A particular danger is trapping of dust or splashes, e.g. around the top of boots, where damage is accelerated by abrasion and rubbing.

45. When cement is mixed with water such as when making concrete or mortar, or when the cement becomes damp, a strongly alkaline solution is produced. If this comes into contact with the eyes or skin it may cause serious burns and ulceration. The eyes are particularly vulnerable and damage will increase with contact time.

46. Strong alkaline solutions in contact with the skin tend to damage the nerve endings first before damaging the skin; therefore chemical burns can develop without pain being felt at the time.

47. Cement mortar and concrete mixes may, until set, cause both irritant and allergic contact dermatitis:

- irritant contact dermatitis is due to a combination of the wetness, alkalinity and abrasiveness of the constituent materials
- allergic contact dermatitis is caused mainly by the sensitivity of an individual's skin to hexavalent chromium salts.

First Aid Measures for Cement and Concrete Burns

Eye Contact

48. Wash eyes immediately with plenty of clean water for at least 15 minutes and seek medical advice without delay.

Skin Contact

49. Wash the affected area thoroughly with soap and water before continuing. If irritation, pain or other skin trouble occurs, seek medical advice. Clothing contaminated by wet cement, concrete or mortar should be removed and washed thoroughly before use.

Ingestion

50. Do not induce vomiting. Wash out mouth with water and give patient plenty of water to drink.

Inhalation

51. If irritation occurs, move to fresh air. If nose or airways become inflamed seek medical advice.

Accidental Release Measures : Cleaning Up

52. Recover the spillage in a dry state if possible. Minimise generation of airborne dust. The product can be slurried by the addition of water but will subsequently set as a hard material. Keep children away from clean-up operation.

Storage and Handling

Storage

53. Bags should be stacked in a safe and stable manner.

Handling

54. When handling cement bags due regard should be paid to the risks. Some bags may have a small amount of cement on the outer surface. Appropriate personal protective clothing should therefore be used whilst handling.

Personal Protective Equipment

Respiratory Protection

55. Suitable respiratory protection should be worn.

Hand and Skin Protection

56. Protective clothing should be worn which ensures that cement, or any cement/water mixture e.g. concrete or mortar, does not come into contact with the skin. In some circumstances such as when laying concrete, waterproof trousers and wellingtons may be necessary. Particular care should be taken to ensure that wet concrete does not enter the boots and persons do not kneel on the wet concrete so as to bring the wet concrete into contact with unprotected skin. Should wet mortar or wet concrete get inside boots, gloves or other protective clothing then this protective clothing should be immediately removed and the skin thoroughly washed as well as the protective clothing/footwear.

Eye Protection

57. Dust-proof goggles should be worn wherever there is a risk of cement powder or any cement/water mixture entering the eye.

Short term effects

Eye Contact

58. Cement is a severe eye irritant. Mild exposures can cause soreness. Gross exposures or untreated mild exposures can lead to chemical burning and ulceration of the eye.

Skin

59. Cement powder or any cement/water mixture may cause irritant contact dermatitis, allergic (chromium) dermatitis, and/or burns.

Ingestion

60. The swallowing of small amounts of cement or any cement/water mixtures is unlikely to cause any significant reaction. Larger doses may result in irritation to the gastro-intestinal tract.

Inhalation

61. Cement powder may cause inflammation of mucous membranes.

Chronic effects

62. High repeated exposures have been linked with rhinitis and coughing. Skin exposure has been linked to allergic (chromium) dermatitis. Allergic dermatitis more commonly arises through contact with cement/water mixtures than dry cement.

PROTECTIVE CLOTHING AND EQUIPMENT

63. Personal Protective Equipment (PPE) must be used where there is a risk of harm due to contact with materials or substances or where plant or equipment which requires it (e.g. chain saws) is being used. Where personal protective equipment is required on a site, the leader should issue it and check that it is in good condition. It then becomes the volunteer's responsibility to maintain it in a usable condition and to report any damage or faults.

64. The following is a brief guide, but for detailed information please refer to the HSE publication YOUR BODY AT RISK : ARE YOU PROPERLY PROTECTED? (HSE Construction Sheets nos 28-35, ref. NIS/06/28-35)

Head Protection:

65. Safety helmets must be worn where there is a risk of head injury - only turban-wearing sikhs are exempt from this requirement. ('Bump caps' do not provide sufficient protection against impact and are not suitable for construction sites.) The helmet must be adjusted correctly to provide a good fit and if the task requires frequent bending, a chin strap should be used.

66. Safety helmets should not be worn back to front - safety comes before fashion!

67. Safety helmets manufactured to BS5240 have a useful life of approximately 5 years, which can be shortened by exposure to strong sunlight, repeated minor impact damage or the application of paint or labels. The date marking can usually be found on the underside of the peak. Helmets which are well out of date should be destroyed and replaced.

Eye/Face Protection:

68. Suitable eye protection should be worn to prevent harm from dust, flying particles, fumes, strong light and heat. Safety glasses, goggles or face shields are available and appropriate protection for the task should be selected. When carrying out work which could affect others, (e.g. welding, chipping or grinding) remember to provide appropriate screening to prevent harm.

Hand/Skin Protection:

69. Where gloves are required ensure that volunteers use them. Make sure to select the right gloves for the job. Some materials from which gloves are made can be irritant in themselves - this problem can usually be avoid by the use of cotton liners.

- Wash hands frequently, especially if the skin is contaminated by hazardous substances (e.g. cement).
- Do not use solvents or abrasives to clean the skin - these destroy the skin's natural protective oils and can lead to dermatitis - use only proprietary branded skin cleansers.
- Use of a moisturising 'after-wash' cream helps prevent damage. Barrier creams may be used if desired, but their effectiveness is limited and there is a danger of them sealing in the irritant; they are generally not recommended.

Protection of Feet:

70. Safety boots, shoes or wellingtons with steel toe caps and protected mid-sole are recommended, and should be in good repair. In the event of an injury to the foot, safety footwear should be removed as soon as possible as the foot may swell, which can cause further damage.

Hearing Protection:

71. Damage to hearing caused by exposure to high levels of noise is irreversible. The Noise at Work Regulations define the noise levels at which protective measures must be taken but as a rough guide - if you have to shout to be heard by someone standing close to you, you should both be wearing hearing protection.
72. Ear protection may take the form of ear muffs or ear plugs, whichever is appropriate for the individual and the task being carried out.

Respiratory Protection:

73. Some operations (e.g. using disc saws on concrete etc.) can produce high levels of dust and particles. Inhalation of some dusts and fumes can cause permanent damage to health and appropriate respiratory protection must be worn. Remember that this will usually need to be combined with eye/face protection and it is important that both can be worn without discomfort. Ensure that the correct grade of filter is fitted to any respirator or dust mask used and that the filter is serviceable.

74. Site leaders must ensure that only properly approved safety equipment is issued, that it is worn at all times when required, that it is in good condition and that it is not abused or treated lightly by volunteers.

SPECIFIC SITE HAZARDS

Work on Elevated Locations

75. Leaders should be sensitive to the problem that some volunteers will be afraid of heights and may not wish to work on ladders or scaffolding and that they may well feel embarrassed to admit this in front of others.

Ladders

76. When using ladders on site, you should ensure that they are in good condition and that volunteers understand the safe use of ladders.

Ladders Checklist

- Ladders must stand on a firm even base.
- Ladders must project at least one metre (3’ 3”) above any landing, or work area, or one metre (3’ 3”) above the highest rung to be used if working from the ladder.
- The pitch of the ladder should be approximately 4 to 1, i.e. for a ladder placed 6m (20’) up a vertical wall, the base should be 1.5m (5’) away from the base of the wall.

- Volunteers should always face the ladder when climbing and descending.
- Defective ladders must not be used - have them removed from the job until they are repaired or destroyed.
- Ladders should be secured in position near the top to prevent them slipping. If they cannot be secured at the top, they should be secured at the base using fixed blocks or cleats, sandbags, stakes embedded in the ground etc. Where it is not practicable to do this, a second person should 'foot' the ladder until the user has returned to the bottom. 'FOOTING' IS NOT CONSIDERED ACCEPTABLE FOR LADDERS LONGER THAN 5 METRES (16 feet)
- Ladders should be inspected regularly.
- Ladders should not be placed where they (or volunteers climbing them) may come into contact with unprotected live electrical equipment.
- Ensure that volunteers do NOT over reach from a ladder - make them move the ladder to a more convenient position.
- Ensure that volunteers keep their hands free when climbing ladders. Tools and equipment should be carried on the waist belt or lifted by hoist.
- Ensure that volunteers are aware of the hazards of slippery rungs and mud and worn shoe soles.
- Wooden ladders should not be painted

77. You will find HSE Construction Sheet No2 (rev) - Safe Use of Ladders (ref. NIS/06/02) useful.

Scaffolding:

78. Scaffolding on site should be left to competent personnel who understand the design of scaffolding structures.

Scaffolding Construction Checklist

- Do NOT erect 'makeshift' scaffolding.
- Scaffolding must be erected by, or under close supervision of, competent personnel and should be designed to meet the requirements of the job.
- Staging platforms should have guard rails and toe boards if persons or materials are liable to fall more than 2 metres (6'6") or if they could injure passers-by.
- Do NOT use tubes and clips that are bent or pitted with rust.
- Safe access to platforms must be provided by suitable lashed ladders, which should be removed when the scaffolding is left unattended.
- Scaffolding must also be dismantled by competent persons.
- Scaffolding must be inspected before it is used, and at regular intervals thereafter, and a record of inspections kept on site.
- Check for insecure foundations, placed on uneven ground.
- Check for insecure supports, such as drums, ladders and bricks.

79. Site leaders can carry out their own inspections of scaffolding. It should be checked at least once a day. The record should show the location of the scaffolding, the date, the condition and the signature of the person who carried out the inspection. Standard record books are obtainable for long term works.

Scaffolding Inspection Checklist

- Working platforms not wide enough - four planks is the minimum and five when used for storage of working materials.(although three is acceptable for light work (e.g. painting).
- Tightness of clips and clips fitted upside down.
- Ensure that no unauthorised modifications have been made to the structure.
- Absence of tie-ins and bracing where necessary.
- Boards inadequately fixed and liable to tilt or be blown off by the wind.
- Defective boards, having large knots or splits in them.
- Leaders should check frequently that volunteers are using scaffolding correctly and safely.

Scaffolding Accident Prevention Checklist

- Do NOT use incomplete or unsafe scaffolding.
- Place all loose materials not required for use so as to leave an unobstructed passage.
- Keep walkways free of slippery materials.
- Do NOT stack materials insecurely or so as to cause danger by over-loading.
- At the end of the period of work, leave the scaffold in a safe condition; lower suspended loads to the ground; do not leave materials aloft unless they will be needed within a short time.
- Materials and tools must be lowered from elevated locations and not dropped.
- A means of preventing materials from falling must be incorporated in the construction of the platform and scaffolding, e.g. toe boards.
- Where there is a risk of falling objects, the area below must be roped off to prevent personnel from entering.

80. The most complete set of requirements for scaffolding erection and use is contained in the ‘Construction (Working Places) Regulations (1966)’

81. See also HSE Construction Sheet No 3 (revised) - General Access Scaffolds (ref. NIS/06/03)

Excavations

General:

82. Planning and design of excavations is a specialised area which must only be undertaken by competent and experienced personnel and appropriate shoring must be provided. Installation of support work must be carried out by experienced workers under the supervision of a competent person and it must be soundly constructed. All struts and braces must be secured so that they cannot be accidentally displaced.

83. Excavations must be regularly inspected by a competent person and those inspections recorded. See notes on scaffolding records.

84. Safe access into and out of excavations must be provided and adequate means of escape must be available, particularly where there is a danger of flooding.

Excavations Checklist

- Erect adequate barriers / fencing to prevent people falling into the excavation.
- Ensure that spoil is thrown clear of the sides of the excavation.
- Maintain shoring.
- Provide safe means of access / egress and ensure that they are used.
- Take precautions to avoid vehicles being driven into the excavation e.g. provision of stop blocks and ensuring only trained and experienced operators use vehicles and plant in the vicinity.
- Inspect shoring daily when work is in progress, and whenever there is a change in climatic conditions (see below).
- Ensure adequate ventilation (see below).

85. **Do Not:**

- Allow anyone to work in an excavation if there is the slightest doubt about its stability.
- Keep vehicles, plant or equipment close to the edge - this could cause the side to collapse owing to overloading and fumes or vapour to collect in the excavations.

Inspection:

86. Excavations should be regularly checked by a competent person and a record kept of the inspections. See notes under inspection of scaffolding.

Excavation Inspection Checklist

- Movement of soil due to drying out, absorption of water or freezing.
- Shrinkage of timber shoring (through drying).
- Runs or leakage of soil from behind sheeting.
- Wedges must be checked and tightened as necessary.

Ventilation of Excavations:

87. Ventilation in trenches can be poor. Positive steps must be taken to prevent exhaust gases, petrol vapour or LPG collecting in the bottom of trenches and to provide adequate fresh air. Remember that a lock chamber, a tunnel or a bridge hole in calm weather will have the same ventilation needs and difficulties as an excavation.

Stop Planks, Stanks and Earth Dams:

88. These fall into the same category as excavation shoring and must be checked prior to each day's work and whenever there is a change in climatic conditions. More frequent checks should be made when they are holding water at a level above that at which volunteers are working.

89. REMEMBER : Adequate means of escape must be provided in case of emergency. Consideration must be given to the number of people working in the area who will need to escape quickly should water break through the barrier, and to the force with which this may occur.

90. See also HSE Construction Summary Sheet - Safety in Excavations. (ref: SS8 revised)

SPECIFIC SITE PLANT

Mechanical Plant

91. Mechanical plant must only be driven or used by competent persons. If your organisation participates in the IWA/WRG insurance scheme, it is essential that operators hold a WRG Insurance Authorisation Card for the relevant plant category and that the permission of the Site leader has been obtained. The site leader must be satisfied that drivers / operators are aware of the correct method of operating the plant; particularly with tractors, dumpers, and other earth-moving equipment. All dumper drivers must hold a full, current driving licence or an exemption issued by the WRG Board.

92. Plant should be checked daily by a competent person; more often if the site conditions are particularly severe or problems are reported. The most important points to look at are:- tyres or tracks, steering, brakes (where applicable), cracks and leaks on the hydraulic hoses and fittings, oil levels and leaks.

93. It is a legal requirement that all plant and machinery is kept and maintained in an efficient state, and in good working order and in a good state of repair. Any defects must be reported to the site leader.

Mechanical Plant Operation Checklist

- When plant is being operated in a confined space or the operator's view is restricted he must have someone to guide him.
- NEVER reach under the raised body of a tipper lorry or dumper.
- NEVER use plant or equipment for work it has not been designed to do.
- ENSURE that warning notices "KEEP CLEAR" are fitted to the rear of cranes and earth-moving equipment that pivot round during operation.
- NEVER leave the engine of a dumper running whilst loading or unloading, unless the driver is at the controls.
- NEVER carry passengers unless there is a proper seat provided.

Hand Tools

94. Hand tools are often neglected as a source of hazard. They should always be kept clean, be well maintained and volunteers should be encouraged to use the proper tool for the job and to report defects at once. Remember that the use of hand tools may not be obvious; training should be given. For example, proper use of a shovel will make a volunteer more productive, less tired and less susceptible to back injury and it can not be assumed that everyone knows how to use such a 'simple' tool.

Hand Tools Checklist

- Always use the correct tool for the job.
- DO NOT use damaged or worn tools.
- NEVER use a file without a handle.
- Always use correct sized spanners.
- When using a sharp tool, keep your hands behind the cutting edge.
- DO NOT keep sharp tools in your pocket.
- Keep all tools clean and in good condition. Sharp tools when not in use should have their cutting edges covered.
- When using hand tools, if at all possible, wear protective gloves.

Lifting and Winching Tackle

95. Lifting equipment and hand winches such as Tirfors should be used with great care. Large forces can be generated with relatively small effort on the part of the volunteer. Tensions in ropes and cables can be very great and dangerous if suddenly released by a sling slipping or a cable snapping.

96. Lifting and winching operations should always be carried out by the minimum number of people, with all other volunteers safely out of reach. Volunteers carrying out lifting and winching should be experienced and full training should be given. Powered lifting and winching equipment is covered by the WRG authorisation scheme.

97. Lifting and winching equipment should be inspected before and during use by the team leader or the operator. Any signs of weakness, fraying, splitting or serious kinking should cause the rope or cable to be taken out of service at once. All such equipment is subject to regular inspection and certification. If your group participates in the IWA/WRG Insurance Scheme, such official inspections can be arranged through the scheme. All lifting equipment, e.g. chain sling, rope sling, or similar gear and a ring, link, hook, shackle, swivel or eye bolt, chain, rope or item of lifting gear, block and tackle, etc., MAY NOT be used unless it has been examined by a competent person and the regulation test certificates signed.

98. Lifting tackle (chains, slings, hooks, swivels etc.) should be examined every six months.

99. Lifting machines (cranes, winches, pulley blocks, barrow hoists etc.) should be examined every fourteen months.

100. A barrow hoist, sling, shackle, lifting chain or swivel must be marked with its safe working load. In practice it would be cheaper to hire such equipment for use on isolated occasions.

101. If equipment is hired - check with the hirer that the statutory examinations have been carried out!

Workshop Machinery

102. Workshop machinery is not often found on waterway restoration sites, except those long established schemes which usually have employees. If volunteers are using workshop equipment, leaders should ensure that they have the training and skills necessary to do so safely.

Workshop Equipment Checklist

- Do NOT operate any workshop machine unless you are fully trained and conversant with it.
- Ensure that the work piece is properly secured.
- Guards MUST be in position before the machine is started.
- Protective clothing and eye protection MUST be worn.
- Rotating parts MUST NOT be touched.
- Properly fitted clothing MUST be worn.
- Long hair MUST be covered.
- Report all faults immediately.
- Machinery should be switched off when not in use.
- Keep the machine and surroundings clean and tidy.

Cartridge Operated Tools

103. In general, volunteers should not use cartridge operated tools; the use of such tools is only permitted by experienced persons. They will only rarely be encountered e.g. when making fixings to concrete and are best left to professionals. Only the exact number of cartridges required will be carried by the operative concerned. The holder of the box of cartridges must be a responsible person and be able to account for each cartridge used. The stock of unissued cartridges must be kept in a locked container, away from heat or sources of ignition.

104. Warning notices should be posted in the areas where the work is being carried out. These areas should, as far as is possible, be kept clear of all other personnel.

Portable Power Tools

105. Portable power tools are a source of hazard to the operators, who must be fully trained and to others on site who are at risk from trailing pipes and cables etc.

Power Tools Checklist

- Always ensure that air-operated and electrical portable power tools are in good condition.
- If the tool is electrical, ensure the power cable is in good condition. If pneumatic, ensure the correct hose and fittings are used and in good condition.
- Ensure you have an adequate length of hose/cable, for the job - DO NOT TRY TO STRETCH IT.
- Keep cables and hoses away from water, oil, heat and sharp edges.
- Ensure cables, and especially connections, are supported.
- Do NOT lift or drag power tools by the air hose or cable.
- Take special care not to drop portable grinding tools as the wheel could be damaged and break when in use.
- NEVER force a grinding machine against the work, as dangerous flat spots could develop on the wheel.
- Grinding wheels may only be fitted by competent persons.

Use of Compressors and Compressed Air

106. Compressed air, like all substances under pressure, can be dangerous. The pressure accumulators of compressors are subject to official testing and inspection. If your group participates in the IWA/WRG insurance scheme, such inspections can be arranged through the scheme. Thought should be given to the siting of compressors, both from the point of view of minimising noise on site and for residents, and of minimising pipe runs. Modern well-silenced compressors are preferred and air hammers should also be equipped with silencers. Eye and hearing protection should be worn by operators and others in the vicinity. Length of work periods should be carefully monitored; the vibration of compressed air tools can be damaging to the circulation in the hands and they are some of the more physically demanding pieces of equipment found on work sites. Leaders should be particularly careful about the choice of volunteers assigned to the use of full-size road breakers (‘pneumatic drills’).

107. The maintenance demands of compressors are high; they should be checked several times a day.

Compressed Air Checklist

- NEVER use compressed air to clean up dust, filings, or swarf.
- NEVER dust yourself down with compressed air, as this can lead to serious injury.
- NEVER indulge in “horseplay” with compressed air.
- Check pipes and connectors regularly.
- Check the condition of air tools regularly.
- Check the compressor oil levels regularly.
- Ensure that volunteers using the equipment are physically strong enough.

- Ensure that appropriate eye and hearing protection are worn.
- Ensure that operators have regular rest periods.

Use of Generators and Electricity on Site

108. Generators offer a good opportunity to reduce noise levels on site; one generator placed at a distance and well silenced (use straw bales if necessary, but beware of potential fire hazard from sparks and hot exhausts) can power a number of items and save several engines running. Take care with siting cable runs and ensure that all cables and connectors are suitable. If 240V supply is used, a Residual Current Device of 30mA rating must be fitted, but you are strongly recommended to avoid 240V supply. If a mains supply is used, a 'step down' transformer should be sited next to the supply outlet and all site wiring should be 110V. If 240V equipment must be used, site wiring should be 110V with a 'step up' transformer located as close as possible to the equipment to minimise the length of 240V cabling. Remember that 110V is much safer than 240V, but can never be completely safe and so equipment, cables and connectors must be checked regularly.

Electrical Equipment:

109. Only authorised experienced personnel are allowed to service and maintain electrical equipment. Before any work commences on electrically operated/driven equipment, it must be isolated from the electrical supply. ALWAYS assume that all electrical equipment is LIVE until physically checked.

110. Volunteers should report all damaged equipment immediately and MUST NOT use it.

Electrical Equipment Operation Checklist

- NEVER improvise a junction box, or jam wires into a socket with matchsticks or nails.
- NEVER run power tools from lamp sockets so that they are not be earthed.
- NEVER force a plug into a socket.
- NEVER hang cables on nails or leave them lying about where they can get damaged or wet.
- NEVER use equipment with the earth pulled out.
- NEVER use wrong size fuses.
- NEVER misuse an earthing clamp on electric welding sets.

111. See also HSE Construction Summary Sheet - Portable Electric Tools and Equipment

Gas and Electric Cutting and Welding

112. These operations are infrequently met with on restoration sites. If they are carried out, particular care must be taken as they are potentially very dangerous. Only experienced operators should be permitted to use this equipment.

Electric Cutting & Welding:

113. Arc welding is a safe operation when carried out under correct conditions and using appropriate equipment. Welding "eye flash" is a very painful condition caused by looking at welding arcs without suitable eye protection. Welding operations must be screened from other workers and the public.

Arc Welding and Cutting Checklist

- All the cables and connections are sound and of adequate capacity.
- The earth cable is firmly secured to the item being welded.
- The welding area is dry, secure and free from obstruction.
- Adequate hand and eye protection is in use.
- Provision is made to accommodate the electrode holder when not in use. Laying a live holder on the face screen or a pair of gloves is not recommended.
- DO NOT suspend the welding cable. A fully insulated holder or hook MUST be used.
- DO NOT drag the cables across hot plates or welds.

Gas Cutting & Welding:

114. Gas cutting and welding are more dangerous than electric welding. Operators should be trained and experienced. Gas cutting should be regarded as a last resort and should only be undertaken by experienced operators working under close supervision. It is cutting operations on materials of unknown composition which are likely to give rise to toxic fumes. It is particularly important that operators wear approved eye protection and that other volunteers on site are instructed not to look at the flame head during the operation.

115. In common with other welding and cutting processes, gas cutting and welding is safe if proper precautions are taken. Take particular care with the storage of gas cylinders and check the condition and serviceability of regulators and hoses.

Explosion Hazard Checklist

- Acetylene (ethyne) forms an explosive mixture with air in any proportion between 2% and 82%. Therefore, make sure the work area is well ventilated and the equipment is leak free.
- Acetylene cylinders may explode due to excess pressure even in the absence of air. DO NOT store or stand acetylene bottles in locations where they can absorb heat and over-pressure.
- Acetylene cylinders must only be used in the upright position. When in use the valve key MUST always be left in position.
- It is possible when a nozzle tip is partially plugged (with metal slag) for oxygen to feed back and carry ignition into the acetylene pipe and cylinder. KEEP the nozzle tip clear.
- Oxygen concentration in a confined space may increase due to unburnt cutting oxygen. If oxygen/gas burning is done in a confined space, adequate ventilation must be ensured throughout the operation.

- Flash back arresters must be fitted on both gas lines.
- For most cutting operations, propane is a safer and more readily available alternative to acetylene.

General Welding Safety

Burns:

116. Burns are almost invariably caused through lack of care, or through failing to wear proper protective clothing. The welder must wear oil-free protective clothing. It MUST be remembered that skin can be burnt by emissions from the arc as well as by contact with hot metal. Articles which have been welded will be very hot on completion and should be set aside or marked to avoid injury to others who may handle them. Skin burns should be treated immediately by cooling in clean cold water for at least 10 minutes.

Eye Injuries:

117. Radiation from a gas or electric welding operation can be sufficient to cause considerable discomfort to the eyes. Standard welding eye protection MUST be worn and precautions taken to protect others ins the vicinity from this and from flying slag by the use of protective screens.

Fume Risk:

118. Good ventilation MUST always be provided for gas welding. The fumes and cutting of parts that are galvanised, lead-coated or otherwise treated, may be injurious to the operator and extra precautions involving special ventilation or the use of breathing apparatus in confined spaces will be necessary.

Welding Screens:

119. Screens must be adequate in size and must be painted with a non-reflective or matt finish.

120. See also HSE Construction Summary Sheet - Flame Cutting and Welding with Compressed Gases. (ref: SS12)

Rotary Mowers and Strimmers

121. The site versions of this equipment are generally more powerful and more dangerous than the domestic equivalent. Leaders should ensure that all operators are properly trained; experience on the domestic equipment is unlikely to be adequate. When using this type of equipment volunteers should always wear substantial footwear, preferably with steel toecaps and leg protection, (i.e. trousers or jeans, to protect against flying sap, stones and other projectiles) and eye protection (preferably a full mesh face visor) and ear protection.

Safety Checklist

- ALWAYS remove the plug lead before cleaning under the machine or attempting to remove the blades or line.

- REMEMBER the cutting blades or line continue to turn after the motor has stopped.
- Erect signs warning the public of the hazards.
- Keep the public and others out of range of flying debris (at least 10 metres away).

Chain Saws

122. Generally, the use of chain saws on site is not recommended. If they are to be used, site leaders should ensure that operators are experienced and properly qualified and that all other personnel are kept at a distance greater than twice the height of the tree being felled. Many accidents are caused by chain saws, in particular to left-handed people, as the saws are designed for right-handed users.

123. Most accidents are serious and are caused by "kick-back", i.e. the tip of the blade touching the ground or other object and being thrown upwards. Only saws fitted with anti "kick-back" guards and "dead-hand" throttles should be permitted on sites.

124. The operator must always wear a full set of protective equipment. The minimum required protection is known as an "occasional user kit". It consists of:-

- Helmet with face shield and ear defenders
- Padded gloves
- Padded over trousers
- Padded spats.
- Boots with steel toecaps (or approved 'chain saw boots') must also be worn.

125. The padding should be 'KEVLAR' or similar mesh which is designed to tangle and stop the blades before they have cut far into flesh.

126. Chain saws should only be used by competent and experienced operators who are fully aware of the safety precautions and routine on-site maintenance required.

Disc Saws and Grinders

127. Disc saws are tools with an abrasive cutting disc, usually powered by a small petrol engine, for cutting stone, concrete and steel. Disc grinders are usually electric and can be fitted with cutting discs; these are generally used for steel fabrication and cutting. Operators must be trained and must wear hearing and eye protection. For some jobs, respiratory protection and foot protection may also be required.

Disc Saw Checklist

- Saws should only be used by experienced personnel who have been trained in their use and in the changing of discs.
- Make sure that the correct disc is fitted for the job; stone and steel discs have different properties.
- Goggles are mandatory for the user; a full face visor is preferable.
- When cutting stone, concrete or brick, a dust mask MUST be worn.

- Keep other workers and the public out of range of flying debris and dust.
- Take special care not to drop portable grinding tools as the wheel could be damaged and break when in use.
- NEVER force a grinding machine against the work, as dangerous flat spots could develop on the wheel.
- Grinding wheels may only be fitted by competent persons.

APPENDIX 1 - LIST OF TEXTS AND PUBLICATIONS REFERENCE IN PRH "HEALTH & SAFETY SECTIONS 1-4"

Note that texts are listed under the section of the guide in which they are primarily referenced but may also be referred to in other sections. It is recommended that these texts are obtained as they will assist greatly with Health and Safety planning.

Section 1 - Site Aspects

Code	Title	Available from
	HSE Construction Summary Sheets	
SS2(rev)	Safe Use of Ladders	HSE
SS3 (rev)	General Access Scaffolds	HSE
SS6	Portable Electric Tools and Equipment	HSE
SS8 (rev)	Safety in Excavations	HSE
SS11(rev)	Safe Use of Propane and other LPG cylinders	HSE
SS12	Flame Cutting and Welding with Compressed Gases	HSE
SS16	The Control of Substances Hazardous to Health	HSE
SS17	Construction site Health and Safety Checklist	HSE
SS26	Cement	HSE
SS28-35	Your Body at Risk: Are you Properly Protected?	HSE
SS50	Personal Protective Equipment: Safety Helmets	HSE
na	Noise in Construction	HSE
na	Construction (Working Places) Regulations 1966	HMSO
na	Carriage of Dangerous Substances in Packages Regulation	HMSO
na	Health and Safety at Work Act	HMSO

Section 2 - Personal Safety and Insurance

Code	Title	Available from
green book	Volunteers' Health and Safety Guide	WRG
B1510	Accident Record Book	HSE
IND(G) 84L	Leptospirosis - are you at risk?	HSE
SS18	Provision of Welfare at Transient Construction Sites	HSE
SS46	Provision of Welfare at Transient Construction Sites	HSE
SS51	Construction Fire Safety	HSE
na	Insurance Briefing notes (various)	IWA

Section 3 - Construction Design and Management Regulations

Code	Title	Available from
na	Construction, Design and Management Regulations 1994	HMSO
F10	Notification of project to HSE	HSE
C400	CDM Regulations - How the Regulations affect you!	HSE
SS17	Construction Site Health and Safety Checklist	HSE
SS40	The Role of the Planning Supervisor	HSE

SS44	The Health and Safety File	HSE
	Guide to the Provision and Use of Work Equipment Regulations 1998	HMSO
	Guide to the Lifting Operations and Lifting Equipment Regulations 1998	HSE
F91/CE	Lifting Appliances Record	HMSO
F91/A	Scaffolding Record	HMSO
F91/J	Lifting Gear Record	HMSO
F91/B	Dam Inspection Record	HMSO
F2202	Welfare Arrangements Record	HMSO
na	Volunteers Working Safely	BW

Section 4 - Control of Substances Hazardous to Health

Code	Title	Available from
	Legal Acts	
na	Control of Substances Hazardous to Health 1998 & 1994	HMSO
na	Health and Safety at Work Act, 1974, 1992	HMSO
na	Factories Act 1961 Revised	HMSO
na	Health and Safety Information, Employees Regulations 1989	HMSO
na	Highly Flammable Liquids and Liquified Petroleum Gases Regulations 1972	HMSO
na	Approved Code of Practice Control of Substances Hazardous to Health 1994 (ACOPS)	HMSO
	Health and Safety Executive Guidance Notes	
	Environmental Hygiene Series:	
EH17	Petroleum based adhesives in Building Operations	HSE
EH8	Arsenic: toxic hazards and precautions	HSE
EH9	Spraying of highly flammable liquids	HSE
EH16	Isocyanates: toxic hazards and precautions	HSE
EH22	Ventilation of Buildings	HSE
EH26	Occupational Skin Diseases: Health and Safety Precautions	HSE
EH40	Occupational Exposure Limits (Revised Annually)	HSE
EH42	Monitoring Strategies for Toxic Substances	HSE
EH43	Carbon Monoxide	HSE
EH44	Dust in the Workplace: general principles of protection	HSE
EH46	Exposure to Mineral Wools	HSE
	General Series	
GS5	Entry into Confined Spaces	HSE
GS29/4/	Health and Safety in Demolition Work. Part 4	HSE
GS46	In Situ Timber Treatment using Timber Preservatives; health and environmental precautions	
	Medical Series	
MS8	Isocayanates; medical surveillance	HSE
MS15	Welding	HSE

	Hazard Information Sheets	
No. 1	Cements 1985	HSE
No. 5	Solvents 1988	HSE
No. 7	Skin Hazards 1988	HSE
No. 8	Pesticides 1989	HSE
	Construction Summary Sheets	
SS15	Confined Spaces 1988	HSE
SS24	Chemical Cleaners	HSE
SS26	Cement	HSE
SS27	Solvents	HSE
SS36	Silica	HSE
	Respiratory Protective Equipment	
BS4275	Recommendations for the selection, use and maintenance of Respiratory Protective Equipment 1974	HSE
	Respiratory Protective Equipment (RPE): Legislative Requirements and lists of HSE approved standards and type approved equipment 1989	HSE
	Health Safety Leaflets	
	Introducing COSHH. A brief guide for all employers to the the requirements for controlling hazardous substances in the workplace	
	Introducing Assessment: a simplified guide for employers	
	Managing Health and Safety in Construction	
	Part 1: Principals and Applications to main contractor/ visiting group projects. HMSO 1988	
	Part 2: Management Contracting HMSO 1988	
	Hazard and Risks Explained	
	Control of Hardwood Dusts 1987	
	Health Hazards to Painters 1989	
	Miscellaneous Documents	
	A Guide to Safe Use of Chemicals in Construction	CIRIA
	Construction Safety Manual : Section 25	BEC/BAS
	Development of Contaminated Land; Dept. Of Environment Circular 21/87	DoETR
	COSHH In Construction : A BEC Guide	BEC
L101	Safe Work in Confined Spaces	HSE

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Health and Safety Executive
HSE Books
PO Box 1999
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HMSO
Any Local HMSO bookshop

Ciria
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