

## :: Basic Health and Safety :: BAJR Advice ::

### Introduction

It is essential that all field and office work is carried out safely, and that everyone is aware of any potential problems and the site-specific health and safety issues.

These guidelines are a basic level of health and Safety requirements, if you feel that you are working in conditions you feel are unsafe, then you are fully entitled (and required) to bring this to the attention of the site director/manager or senior figure. Request to see the Health and Safety Manual, as every legitimate Contractor should have one. We are well past the day of the COWBOY - you are now a PROFESSIONAL.

Never think that a Health and Safety issue can be ignored! In 2002 in England alone, 105 people died and over 4500 were severely injured on building sites, the statistics rise to over 10,500 of people that sustained an injury that was bad enough to keep them off work for over a week.

It is NOT worth the risk. ->--**KEEP SAFE** !!! -<-

### Excavations

An excavation is a lot like a working building site and very often is located in one. Many of the rules that apply to the building trade apply to you as well. Watch out for dangers such as - moving machines - loose ladders - dodgy barrow runs - tools - electric cables and of course deep trenches.

Think about what type of soil you are working in, a sand section is a lot less stable than clay sided one, a rubble section has the added danger of falling debris. Always access the safety of your trench before going in - it is **your** life. I know personally of a digger who died in a trench only 1m deep.. So be smart! You may need shoring after only 80cm - there is no specified depth now. The situation of a trench may change depending on weather, size of spoilheap, heavy machinery passing by.

Sites, must have a plan, which should detail all of the health, safety and sanitary services on site - if you are on a site that does not have a document explaining the Health & Safety, and at least a rudimentary induction with Risk Assessment, then ask why.... it is your right. (worried about losing your job?... Then give the **BAJR Hotline** a call! 0787 6528 498 – or [info@bair.org](mailto:info@bair.org) )

Make sure you are trained in all the tools you are expected to use, which might be a pickaxe, a mattock, a wheelbarrow or whatever... you would be amazed at the number of people who use a pickaxe in the wrong way (and often too close to their fellow workers... believe me a pick axe hurts when you are hit with one!!). It is very easy to use a shovel in a way that means you will spend the REST of your life with a damaged back. Mind your knees as well... You only get one body... look after it. (I have ripped lower back muscles and ruined knees.. believe me it is NOT funny!)



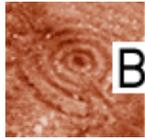
Spoil heaps should not be allowed to creep ever closer to the edge of your trench. Just think about the weight pressing down on that section; if you want a collapse then that's a good way to go about it. Debris and stones will also roll off the spoil heap and straight into your trench - a Hard Hat only protects your head (tell me you are wearing a Hard Hat!!). Make sure the spoil heap is secure.

If you are asked to use machinery - whether that is a jack-hammer or a generator, make sure that you are trained in their use. It is never good enough to think you know how to operate a tool because you once watched someone use it. The same is true for mechanical plant - Trained personnel only, just because you drove to site in a Mini Metro does not mean you can operate a mini digger!

- Protective clothing that may be required:
- Hard Hats (recommended)
- Gloves (good idea)
- Waterproof clothing (good idea)
- Steel toe capped footwear (recommended)
- Hi-Viz Vests (good idea on a building site)
- Tough clothing (good old army & navy) (essential)
- Change of socks (hey... I like warm dry feet!)

If you are on a site, you should have access to both shelter (from either the sun or from rain - it is the UK after all) AND toilet facilities. If you have an onsite toilet remember that you need one for males AND one for females. It is important that you keep any onsite shelters, huts and toilets clean and tidy (see Working in Offices below) and follow all recommended guidelines for each structure. Adequate fire-fighting appliances must be maintained in places where gas is in use - such as cooking facilities and heaters. It is also useful to have a place to wash your hands, this is for general hygiene and to allow the trained First Aider to use the First Aid Kit in sterile conditions - as grubby hands tend to cause more damage when smeared across open wounds!

Know where the First Aid Kit is (which should contain a number of sterile adhesive dressings, eye pads and coverings, triangular bandages, safety pins, various sizes of sterile unmediated dressings, disposable gloves, an advice card, and at least 300 ml of sterile water/saline) and who is trained to use it - it can be useful to have an idea where the nearest doctor or hospital A&E is located (including the phone number)



## Field survey

Many of the hazards to be encountered on survey are the same as those encountered on excavations and many of the same safety rules apply. Additional points to remember concerning field survey are: i) wear stout footwear; ii) wear appropriate clothing (eg. long trousers in thorny scrub country); iii) always keep within a reasonable distance of the next fieldwalker, and in any case within shouting distance; iv) each survey group, when in the field, must carry a First Aid kit with them; v) always be aware of the nature of the terrain and exercise appropriate caution.

### Skin protection

Excessive sunburn and heat stroke can be avoided by reducing the exposure of untanned skin to hot sunlight, and by regularly applying high factor sun-cream. Skin irritation is caused by chemical agents such as petrol, paraffin, some solvents, tar and pitch, lubricating oils, and cement dust. It can be avoided by washing regularly, wearing proper gloves, using appropriate barrier creams, and antiseptic hand cleansers and clean towels.

In some cases, cuts and scratches to the skin may lead to infection and even to tetanus, which has been known to be fatal. All site personnel should therefore undertake a course of anti-tetanus injections; and all personnel should ensure that any cuts and abrasions to the skin are well covered by a suitable dressing before they start work.

### :: Office Work ::

Rooms in which people work should not be overcrowded (as a general rule, each person working in an office needs 3.7 sq.m. of clear space). A reasonable temperature must be maintained in every room (defined as not less than 16 degrees Celsius, which must be achieved after the first hour of working).

Effective means of ventilation by the circulation of fresh air must be provided, as must suitable and sufficient lighting.

If you normally work sitting down, you must be provided with seats, which are suitable in design, construction and dimensions for both the worker and the kind of work done.

At the end of each working day non-essential electrical appliances are to be switched off and their wall socket plugs removed.

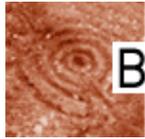
Fire doors must be kept closed at all times and must not be jammed or wedged open.

(This article is based on Archaeology: An Introduction - 4th Edition 2002 by Kevin Greene available online at <http://www.staff.ncl.ac.uk/kevin.greene/wintro/> ) The base content has been altered and enhanced with permission, and many thanks to Kevin Greene for this.

### Additional Material:

<http://www.hse.gov.uk/pubns/indg163.pdf>

5 steps to Risk Assessment – HSE



## Risk Assessment

**Step 1.** List **hazards** specific to your area of study

Look only for hazards which you could reasonably expect to result in significant harm e.g. slipping/tripping, falling masonry, cliffs etc.

**Step 2.** Who might be **harmed**?

Think of the people or the individuals doing similar work or being in the same place (e.g. the general public) who may be affected by your actions. List those at risk from 1.

**Step 3.** Is the **risk** of injury adequately controlled?

Have you taken precautions to reduce the risks from the hazards listed above as far as is reasonably practical?.

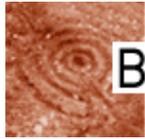
**Step 4.** List controls to these hazards in the following order of effectiveness:

- a) Removed risks:
- b) Prevention of access/reduction of exposure to hazard
- c) Use of protective equipment/first aid kit

**Step 5.** Continually review the situation to deal with changing circumstances

### Risk Assessment Documents from the IFA :

- [Risk Assessment Template - Guidance Notes](#) (Document in Word format)
- [Risk Assessment: Minor works](#) (Document in Word format)
- [Risk Assessment: Larger Projects](#) (Document in Word format)



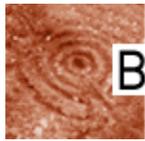
Start by identifying hazards in categories:

- a) mechanical
- b) electrical
- c) substances
- d) fire and explosion.

## **Hazard prompt list** (this is only a start!)

*During work activities could the following hazards exist? ...*

- a) slips/falls on the level*
  - b) falls from heights*
  - c) falls of tools, materials etc from heights*
  - d) inadequate headroom*
  - e) hazards associated with manual lifting/handling of tools, materials etc.*
  - f) hazards from plant and machinery associated with assembly, commissioning, operation, maintenance, modification, repair and dismantling*
  - g) vehicle hazards, covering both site transport and travel by road*
  - h) fire and explosion;*
  - i) no safety barrier around trenches ; unsafe trenches*
  - j) substances that may be inhaled*
  - k) substances or agents that may damage the eye*
  - l) substances that may cause harm by coming into contact with or being absorbed through the skin*
  - m) substances that may cause harm by being ingested (i.e. entering the body via the mouth)*
  - n) inadequate washing facilities*
  - o) work-related upper limb disorders resulting from frequently repeated tasks (ie whitefinger)*
  - p) inadequate thermal environment, i.e. too hot or too cold !*
  - q) lighting levels*
  - r) slippery, uneven ground/surfaces*
  - t) contractors' activities.*
- Etc etc



## RISK LEVEL ESTIMATION

Estimated risk level is based on the potential severity of the harm and the likelihood that the harm will occur. Estimating the potential severity of harm

When attempting to establish the potential severity of harm two main issues need to be considered.

i) The affected parts of the body in term of either acute trauma injury (eg. burn, cuts, amputations etc) or chronic ill-health effects (eg. emphysema, musculoskeletal disorders, cancer etc.)

ii) The nature of harm. This can range from slightly to extremely harmful:

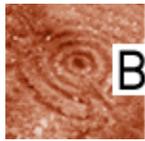
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- **Slightly harmful**, eg. minor cuts and bruises, mucuous membrane and eye irritation from dusts; nuisance and irritation, eg. headaches, eye strain, temporary discomfort.
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- **Harmful**, eg. lacerations, minor burns, minor concussion, minor fractures; temporary deafness, dermatitis, work-related upper limb disorders, ill-health leading to temporary disability.
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- **Very harmful**, eg. deep laceration, serious concussion, serious sprains; severe dermatitis, ill-health leading to permanent disability, permanent deafness, asthma.
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- **Extremely harmful**, eg. amputations, major fractures, loss of sight (total or partial), poisoning, fatal injuries; life-shortening diseases, eg. occupational cancer, fatal diseases.

## Estimating the likelihood of the harm occurring

Likelihood is a combination of many factors and these include:

- Number of people exposed to potential harm.
  - *(ie. Number of people who use ladder)*
- Frequency of exposure to risk.
  - *(ie Number of times ladder is used per day)*
- Duration of exposure to risk.
  - *(ie length of time spent on ladder)*
- Potential failure of services and protective control measures.
  - *(ie chance of ladder securing material failing)*
- Use of personal protective equipment.
  - *(ie PPE equipment protecting user against fall from ladder)*
- Human behaviour, eg. deliberate or intentional unsafe acts.
  - *(ie carrying equipment up ladder leaving only one hand free to climb)*

When estimating risk one must consider all the people who can be exposed to the harm created by the hazard. Therefore any hazard is more serious if it affects a greater number of people.



## Deciding tolerance to the risk

Once the potential severity and likelihood have been considered it is necessary to decide on tolerance to the risk.

Tolerance is concerned with setting priorities and resources commitment

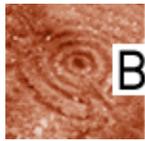
Tolerable means either the risk is estimated to be at a level which can be accepted for the time being and is not greatly over that which would be expected in normal daily life in general, or that it has already been reduced to the lowest level that is reasonably practicable.

**Table 1: Risk Level Decision** (score ranges from 1-8)

	1 Slightly Harmful	2 Harmful	3 Very Harmful	4 Extremely Harmful
1 Highly Unlikely	Trivial Risk	Trivial Risk	Tolerable Risk	Moderate Risk
2 Unlikely	Trivial Risk	Tolerable Risk	<b>Substantial Risk</b>	<b>Substantial Risk</b>
3 Likely	Tolerable Risk	Moderate Risk	<b>Substantial Risk</b>	<b>Intolerable Risk</b>
4 Very Likely	Moderate Risk	Moderate Risk	<b>Intolerable Risk</b>	<b>Intolerable Risk</b>

## RISK CONTROL DECISION

Once the risk level has been estimated and the relevant level of tolerance calculated, the table below can be used to provide guidance on the amount of time, effort, money and other resources which need to be allocated in providing or developing effective controls.



## Risk control decision table

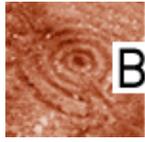
Risk Level	Action and Timescale
Trivial	No action is required and no documentary records need to be kept
Tolerable	No additional controls are required. Consideration may be given to a more cost-effective solution or improvement that imposes no additional costs burden. Monitoring is required to ensure that the controls are maintained
Moderate	Efforts should be made to reduce the risk, but the cost of prevention should be carefully measured and limited. Risk reduction measures should be implemented within a defined time period.  Where the moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
Substantial	<b>Work should not be started until the risk has been reduced. Considerable resources may have to be allocated to reduce the risk. Where the risk involves work in progress, urgent action should be taken</b>
Intolerable	<b>Work should not be started or continued until the risk has been reduced. If it is not possible to reduce risk with unlimited resources, work has to remain prohibited.</b>

## ACTION PLANNING BASED ON ESTIMATED RISK TO TOLERANCE

Once the assessment process has been completed, then required control measures. Can be implemented –

1. Prioritise the risks requiring control measures.
2. Set implementation dates.
3. Set performance standards which state:
  - *Who* is to carry out the implementation;
  - *What* needs to be done;
  - *Why* it needs to be done;
  - *When* it needs to be done by.

You will need to ensure that adequate resources are planned and monitor all aspects of the plan.



## HIERARCHY OF CONTROLS

When planning for the control of risks then the decision process for allocating the most appropriate control should be fairly formal. The list below provides the generally accepted 'hierarchy of control' for protecting health and safety. Starting at number one, those persons responsible for deciding the resourcing of control measure implementation, should only dismiss a higher level control if it is unacceptable or unreasonable in terms of cost, time, effort, impracticality or prevention of necessary activity.

### Hierarchy

1. **Elimination**, eg. eliminate hazard or combat risks at source.
  2. **Substitution**, eg. using less hazardous substances or machinery to achieve the same result.
  3. **Risk Reduction**, eg. by using auto-cutoff electrical applications.
  4. Independent controls that protect everyone.
  5. Independent controls that protect the individual, eg. local fume ventilation but not by using personal protective equipment.
  7. Develop safe working procedures and provide effective training instruction and information.
  8. Independent effective maintenance.
  9. Improve housekeeping.
  10. Provide Personal Protective Equipment but only **AS A LAST RESORT**.
- Any controls implemented need to be monitored for:

- Effectiveness.
- Usefulness.
- Usage.
- Improvements.

A well designed risk assessment is not created to make your life more difficult, but to keep you free of injury or even death – remember that.