NEBOSH Certificate NGC2/8
Construction activities - hazards and control

Suggested answers to revision questions

A1 When people speak of the 'construction regulations' they will be referring to:

- The Construction (Head Protection) Regulations 1989
- The Construction (Design and Management) Regulations 1994 (amended 2000)
- The Construction (Health, Safety and Welfare) Regulations 1996
- The Lifting Operations and Lifting Equipment Regulations 1998 *(in association with* The Provision and Use of Work Equipment Regulations 1998*)*
- The Work at Height Regulations 2005

A2 The most common causes of construction / demolition accidents involve:

- *falls*
- *falling material and collapses*
- *electrical shock and burns*
- *mobile plant*
- *manual handling*

In addition, the toll of illness and death from what we have called 'slow' accidents - noise, vibration, exposure to hazardous chemicals and so on, is more difficult to quantify but shockingly large.

A3 Rules you might adopt for working at height / the prevention of falls of workers include:

- *no work at height unless it is essential; if work at height is unavoidable ...*
- *ensure that the working platform, of whatever type, is safe and secure, checking that:*
  - » *it is strong enough to support the weight of worker(s) and equipment*
  - » *it is stable and will not overturn (scaffolding needs to be tied to a supporting structure)*
  - » *the ground is stable and will support the structure*
- *provide guard-rails, barriers, toe boards etc:*
  - » *at all openings on floors*
  - » *close to edges on roofs*
  - » *on working platforms*
- *platforms etc to be constructed so as to be free of any openings or traps through which people's feet could pass*
- *constructed so as to prevent material falling through; in particular:*
  - » *with a wire mesh floor, mesh should be fine enough to prevent materials slipping through*
- *kept free of tripping and slipping hazards*
- *kept clean and tidy*

in an answer to any question such as this, you would not go wrong including the hierarchy figure

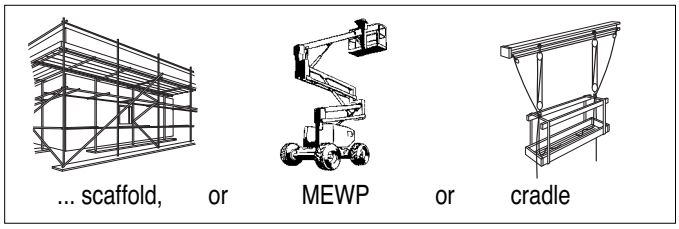
Remember that the above can be seen as another example of a control hierarchy with the first option being, as usual: 'if possible, avoid the problem completely'. Without this first option, no set of rules for working at height could ever be complete. In addition, in your answer to any 'work at height' question you should make mention of the 2005 Regulations. A risk assessment is needed for all work at height. Although the 2005 WAH Regulations no longer specify a 2 m height as the cut-off point, work above this height will always need guard rails or similar and work below 2 m will need sensible precautions.

A4 The answer to question 3 touched on preventing objects falling ('constructed so as to prevent material falling through ...') and your answer should have extended this to encompass:

- *appropriate storage of materials such as bricks at height*
- *enclosure by plastic sheeting of working areas when the work activities (shot blasting, water cleaning etc) inevitably leads to material being hurled around*
- *good housekeeping (a very useful catch-all phrase this - you can use it again and again in question after question)*
- *workers to be supplied with and use appropriate tool belts and tool pouches*

A5 In selecting an appropriate work platform, some of the factors that need to be taken into account include:

- *the length of time that the equipment is to be in use*
- *any risks to personnel during the building of the structure*
- *any maintenance problems it the platform will be up for a long period of time*



- *how many people will be using the equipment, and how often*
- *any problems securing the equipment to prevent the possibility of intruders, particularly children, climbing up*
- *at what stage in the construction programme the work platform will be bought into use*

A6 Safety of working platforms

Working platforms should be adequately supported and provided with guard rails or barriers and should be:

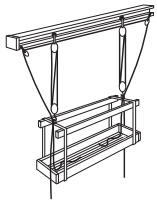
- *wide enough to allow people to:*
  - » *pass safely*
  - » *use any equipment or material needed for their work*
- *free of any openings or traps through which people's feet could pass*
- *constructed so as to prevent material falling through; in particular:*
  - » *if there is a wire mesh floor, the mesh should be fine enough to prevent materials, especially bolts and nails, from falling through*
- *kept free of tripping and slipping hazards*
- *kept clean and tidy (yes again!)*

If you think that this answer is rather similar to the answers to questions 3 and 4, then you are right for the simple reason that questions 3, 4 and 6 do overlap considerably. The temptation when faced with such a 'working at height / falls / platforms' question is to blaze away putting down everything you can think of. NEBOSH do not use negative marking in the Certificate so you would not loose marks by this 'elephant gun' approach but you would waste precious time; accordingly read the question very carefully and see precisely what it is that the examiners are asking.

A7 We refer you back to the study material for this element NGC2/8 for the characteristics of these two types of general access scaffolding; remember, you should know the nomenclature: zig-zag bracing, timber sole board, ledger etc. An independent tied scaffold will probably be used for work on an existing building - the scaffold being erected alongside the building and 'holding on' very firmly via the ties made through existing window openings etc. A putlog scaffold will grow upwards as a new structure is created.

A8 *Temporarily suspended access cradles and platforms precautions include:*

- *adequate guard-rails and toe boards and material cannot fall off*
- *it can be fitted close to the building which must be capable of carrying the loads placed upon it*
- *a secondary safety rope fitted with a fall arrest device is provided and used*
- *adequate operating instructions and technical support are available*
- *there is safe access into, and safe egress from, the cradle*



temporarily suspended access cradle

A9 *Ladders are a means of getting to a workplace. They may be used as a workplace in their own right for light short-term work only. If it is not possible to provide a better means of access and ladders have to be used, it is necessary to make sure that:*

- *the ladder(s) are in good condition*
- *the ladder(s) can be fixed to prevent running sideways or slipping away from the wall*
- *the bottom of the ladder is supported on a firm level surface, if possible making use of ladder 'feet'*
- *if the bottom of the ladder cannot be fixed then a second person should 'foot' the ladder, both to hold it firmly and as a look-out to stop people walking into it*
- *the ladder should extend a sufficient height above the landing place to ensure that workers can safely and comfortably transfer from and to the ladder*

All light tools should be carried in a shoulder bag or holster attached to a belt leaving both hands free; heavy or bulky loads simply must not be allowed.

As a rule of thumb, the ladder needs to be 'one out for every four up'.

Particular care is needed with step ladders which are so prone to overturn when subject to any kind of side loading, caused for example by over-reaching.

A10 *The five key parties are as follows:*

- *the client*
- *the designer*
- *the planning supervisor*
- *the principal contractor*
- *contractors and the self-employed*

A11 *The* health and safety plan *provides the health and safety focus for the construction phase of a project; it comprises a pre-tender health and safety plan (the responsibility of the planning supervisor). The health and safety plan for the construction phase is developed by the principal contractor and is the foundation on which health and safety management of construction work is based.*

The health and safety file *is a record of information for the client/end user, which tells those who might be responsible for the structure in future of the risks that have to be managed during maintenance, repair or renovation.*