HSE

ABERDEEN
CITY COUNCIL

Scaffold Protocol

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Scaffold protocol

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SECTION 1: MISSION STATEMENT

1.0 Mission Statement

This protocol has been produced in consultation with Aberdeen City Council, the Health and Safety Executive (HSE) and construction professionals.

The aim of the protocol is to highlight the measures that should be taken to comply with the law during the erection and dismantling of scaffolding, with respect to protecting members of the public. The protocol does not replace any national HSE Information Sheet or HSE Guidance nor does it constitute a risk assessment or safety method statement.

The Protocol sets out a framework for contractors to adhere to in order that:

(i) dismantling and erection is properly planned;
(ii) scaffolding operatives are competent and have received sufficient training and instruction on the method and sequence of work; and that
(iii) there is segregation of the work, to protect the public.

The protocol is a working document which sets out a structured approach when undertaking work in densely populated areas. It aims to produce a consistent approach to permit application.

SECTION 2: PERMIT PROCEDURES

2.0 Introduction

When planning for, and making, an application for a scaffold permit, the person in control of the work being undertaken from the scaffold, e.g. the Client or Principal Contractor, should carefully read the following permit procedures.

2.1 Roads Authority requirements for hoardings and scaffolding

The safety of the public and operatives working in and around hoardings and scaffolds erected adjacent to or on the public highway should be protected at all times.

Aberdeen City Council is empowered under the provisions of the Roads (Scotland) Act 1984 to require the placement of a hoarding or scaffold on the public highway to have the appropriate permission.

2.2 Site meetings and inspections

Aberdeen City Council is responsible for the protection of the general public which includes pedestrians, drivers and the surface they are travelling on. As required, both inspections and site meetings are undertaken, depending upon the location, to ensure that the scaffold and/or hoarding complies with the permit issued by the authority.

Aberdeen City Council works in close liaison with the HSE. If it is identified that there is a potential issue with the safety of a scaffold or hoarding either during erection, dismantling or use of the structure, the matter will be brought to the attention of the contractor and in some cases also the HSE.

Developers, architects and contractors will appreciate that whilst the Council's general requirements for hoardings and scaffolds are contained in this protocol, additional discussions and site meetings may be necessary; particularly in the case of major building works, high risk/problematic areas, traffic sensitive locations, etc. to determine and agree the precise form of hoarding, etc. to be erected.

Pre-start site meetings **must** be attended by **both** the person in control of the work and the scaffold company licensed to erect the scaffold. The hoardings, fence or scaffold shall be erected, maintained, lit and removed in accordance with the provisions of the Roads (Scotland) Act 1984 and any other relevant statutory enactment. Every person who fails to comply with any of the provisions of these Acts, and associated permits shall be liable to a fixed Penalty Notice as allowed within the Transport (Scotland) Act 2005.

Further guidance on the issues to be considered during the planning, in particular, of any work is contained within the main part of this protocol (Sections 3.0 and 4.0).

2.3 Traffic management associated with the erection and dismantling of a hoarding and scaffold

Temporary footways

Unless otherwise agreed, a minimum 1.22 metres (4ft) width of footway, clear of all obstruction, must be left alongside the hoarding/scaffolding during erection and dismantling of the structure, to comply with Chapter 8 of the Road Traffic Regulations Act 1984 (the 'burgundy book') and the requirements of Disability Discrimination Act 2003.

Where such minimum width cannot be provided, and also in cases where a width of 1.22 metres (4ft) would be inadequate, a suitable platform may be required as an extension from the hoarding to serve as a footway, either wholly or as an addition to the remaining width of the permanent footway.

The platform must be properly constructed to provide a stable, unobstructed walkway of uniform level; particular care being taken, e.g. anti-skid protection, to prevent slips and trips in cases where the platform forms an extension of the permanent footway.

Well secured timber baulks or similar adequate protection shall be provided on the carriageway side of the platform to protect the walkway. If directed by Aberdeen City Council, a continuous anti-splash panel topped by a smooth handrail shall be provided behind the timber baulks or similar. These requirements should be consistent with the overall requirement to provide adequate pedestrian provision around hoarding and scaffolds at all times including during erection and dismantling, as detailed elsewhere in this guidance (see Section 3.6 and 4.1).

Where a temporary walkway surface is provided it shall be of suitable materials that provide a slip resistant surface.

Traffic control and road closures

Where hoardings or scaffolds, inclusive of any additional safety zone or temporary footways, restrict the highway to less than 6.75 metres (in the case of two-way traffic) or 3.25 metres (in the case of one-way traffic), additional traffic controls and/or road closures will have to be considered as part of the application.

In the event of a road closure, an **additional six weeks** notification is required. This time is required in order for Aberdeen City Council to advertise and seek legal agreement for the order.

Therefore it is essential that works that require such structures to be erected in sensitive, high-risk, problematic locations are planned in good time.

There is an **associated cost** for the processing and agreeing of road closures, as set by Aberdeen City Council.

Other miscellaneous costs

The granting of Hoarding and/or Scaffold Permit (or Skip Permit) on the public road will, on occasion - dependant on Aberdeen City Council issuing the permit and location of the hoarding and/or scaffold - result in potential loss of Parking Income associated with suspension of Pay and Display Control Parking Zones or yellow line restrictions (as authorised by the Road Traffic Act 1991).

On such occasions, Aberdeen City Council will agree levels of loss or compensation in addition to the Hoarding, Scaffold or Skip Permit Fee where appropriate.

Date, timing and duration associated with erection and dismantling

The date, timing and duration allowed for the erection and dismantling of the hoarding and/or scaffold shall be agreed with Aberdeen City Council and shall be contained within the Scaffold Plan, required as part of the application.

This will have to be in agreement with the emergency services in certain instances, such as at sensitive locations and areas highlighted as high-risk or sensitive locations.

Within Aberdeen City Council's boundary there will be certain highways and pedestrianised areas that are considered high risk, sensitive or problematic areas. This may be due to the volume of pedestrians and traffic associated with city, and local shopping centres or certain traffic sensitive streets, which at certain times of the day could cause problems for the timing of the erection and dismantling of scaffold and/or hoarding. Scaffold on traffic sensitive footways will require a minimum of 28 days notice. Additional considerations apply at the Christmas / New Year holiday period please contact the Street Occupations Unit for details.

In such circumstances, the method, timing and duration required to erect any scaffold and/or hoarding will require careful and adequate planning to ensure that the public road and the general public are not put at additional undue risk during such erection and dismantling.

In areas of high risk or sensitive locations, specific agreements on the erection and dismantling of the scaffold must be agreed in writing with Aberdeen City Council prior to erection.

Indemnity

The applicant shall indemnify and hold harmless Aberdeen City Council against all liability claims and demands whatsoever in connection with, or arising out of, the erection, maintenance, existence and/or removal of the hoarding, scaffold, fencing, platform, handrail, etc. referred to.

Highway considerations when placing scaffolds in and/or across the public road or pavement.

Sight lines and clearance

At street junctions where a hoarding and/or a scaffold could affect visibility, it may be necessary to splay the hoarding or to replace it with wire mesh to ensure adequate sight lines.

No part of any hoarding, overhead covering or fan shall extend over the carriageway except at a clear height of at least 6 metres. Below this height no part of the hoarding shall be nearer than 0.5 metres to a vertical plane based on the line of kerb.

Scaffold hoardings

Hoardings must be erected around scaffolds where these deny carriageway users the use of part of the width of a public road or pavement.

In cases where carriageway users are not allowed to pass between lines of scaffold poles, precautions must be taken to ensure that clips and other fittings are not placed so as to cause danger or annoyance. Suitable protection should be provided around scaffold components in close proximity of pedestrians.

In all other cases, hoardings must be a minimum of 2 metres high (Ref. HSG 151), close-boarded or faced with plywood, etc. to provide a smooth face and painted in a light uniform colour, unless otherwise agreed with Aberdeen City Council.

Where diagonal scaffold poles are required to be placed directly between lines of scaffold so as to cause obstruction, the remaining footway must be of adequate width to accommodate pedestrians, i.e. be no less than 1.22 metres (4ft). If the remaining footway is less than the required minimum, then a suitable temporary footway must be provided (as outlined elsewhere in this document). Alternatively, the scaffold should be designed so as not to contain such obstructions, especially in areas where a temporary footway could not be accommodated. Ideally this should be done by the erection of continuous panelling erected against the lines of poles to a height of at least 2.0 metres (6ft 6inches) and of a type and finish similar to that specified for hoardings. The panelling shall be erected on both sides of the lines of poles where pedestrians can walk outside the scaffold.

To protect pedestrians walking between lines of scaffold poles a substantial close-boarded overhead covering at least 2.44 metres (8ft) must be provided to protect persons below from spillage of materials. This covering should be suitable to support any loads to be placed above it or materials falling on to it from above.

Hoardings of a strictly functional character, erected solely to prevent the use of part of the street by pedestrians and sometimes comprising merely of ropes and stakes, scaffold poles or corrugated iron sheets will be permitted only for operations of very short duration (max. 2 days) and/or in areas where a superior or more robust form of hoarding or protection could not be constructed.

Use of fans, netting, sheeting and appropriate protection to ensure protection of the general public using the road and pavement

Overhead coverings, netting, sheeting or fans of adequate construction and projection and of a similar finish to the hoarding must be provided, where necessary, to protect the public and prevent materials falling onto the footway or carriageway. See Section 3.6, *Physical Protection.*

Research has shown that 'scaffold fans' are not as robust and able to break the impact fall of 'heavy' materials, and/or scaffold tubes, as is often assumed. If the work involves the handling of heavy concrete blocks or masonry where members of the public or passing vehicles are below then consideration should be given to the use of 'multiple fans' at a vertical spacing of 6m or thereabouts. Similarly, consideration may need to be given to the best location for lifting/lowering construction materials (and scaffold components) relative to 'publicly accessible areas'.

Gantries over Carriageway

Overhead platforms in the form of gantries across the carriageway must also be close-boarded and provide a **minimum** clearance of 6 metres unless otherwise agreed with Aberdeen City Council. Where these are essential for the works the scaffold arrangement and platform shall be specifically designed for the foreseeable loads involved. The potential effects of impact loads on scaffold standards shall be considered.

Surface water drainage, fire hydrants and utilities equipment, etc.

Proper precautions shall be taken to ensure that the surface water drainage of the carriageway is not interrupted by the platform or the hoarding and access to fire hydrants, lamp columns, manholes, junction boxes, etc. must be preserved.

Lighting

Hoardings and scaffolds must be adequately lit during the hours of darkness and wherever possible such lamps shall be electrically operated. They may be secured to the hoarding or scaffolding and must be regularly maintained.

Where highway users are required to pass under overhead coverings or gantries special lighting may be may be necessary to ensure their safety and convenience.

Hoardings and scaffolds must be adequately lit at all times between half an hour after sunset and half an hour before sunrise. See Section 3.8, *Guidance on Lighting for Scaffolds and Hoarding.*

Reinstatement of Public Road and Pavement

Upon the erection or removal of hoardings or scaffolds, or upon completion of the building operations which necessitated their erection, the highway must be adequately reinstated to the satisfaction of Aberdeen City Council.

Where permitted by Aberdeen City Council, slabs or other re-usable paving materials taken up from the street to allow hoardings or scaffolds to be erected shall be stored by the applicant, who shall maintain and keep safe the disturbed highway during the progress of the work and after removal of the hoarding or scaffold.

The permanent reinstatement of the disturbed carriageway and the making good of any damage to the road or pavement or other property belonging to Aberdeen City Council, caused by the erection and or dismantling of the scaffold and/or hoarding, will be carried out by the applicant of the permit to the satisfaction of Aberdeen City Council. Should the work fail to be carried out or fail to meet the standard required by Aberdeen City Council, a bill will be raised against the applicant with all remedial costs being charged. (NB. The repair of public road and pavement damage will not be carried out by the Council in unadopted streets).

The onus of proof that damage to the carriageway, or other property belonging to Aberdeen City Council, was not consequent upon the applicant's operations shall be upon the applicant.

Advertisements

The Town and Country Planning (Control of Advertisements) (Scotland) Amendment Regulations 1992, apply to the erection of advertisements on any building hoarding or scaffold.

No advertisement shall be placed on a scaffold or hoarding without such planning permission and the granting of a hoarding/scaffold license does not automatically give permission to erect such advertising. There will also be the requirement to gain a public road and pavement licence under the Roads (Scotland) Act 1984 for the advert to be placed on the public road and pavement. Where advertisements (larger than those used for professional nameplates) are to be fixed to scaffolding the scaffold designers agreement shall be obtained in advance. The fixing of advertising nets, 'printed' sheeting, screens etc is likely to require that the scaffold is specifically designed for that purpose.

Information to be displayed

The Principal Contractor, or person in control of the site, is required to make arrangements to ensure that the following information is made clearly visible at all times on site, in the form of an information board or sign:

- Aberdeen City Council with name of who has given the authority
- Name of Client
- Name of Principal Contractor and Scaffold Company
- Emergency 24 hr contact number
- Number of ties, where required

See Section 4.2, *Information to be displayed,* for an example of the information required. Along with this, displayed in a prominent position within a waterproof wallet should be a copy of the permit.

Street furniture

Where the erection of the scaffold is to encase, obscure or require the removal of any street furniture including bins, lighting, signs, seating, guard-railing, etc. then the costs of removal and reinstatement of furniture shall be borne **by the permit holder**. Street furniture will require to be securely stored and any costs associated with the loss or damage resulting in replacement shall also be borne by the permit holder.

2.4 Submitting a scaffold permit application

When planning for, and making, an application for a scaffold permit, the person in control of the work being undertaken from the scaffold, e.g. the Client or Principal Contractor, should carefully read the previous Permit Procedures.

Having read the Permit Procedures (Section 2), you should complete the Application Form (Section 2.5) and return it, with your Scaffold Plan and the appropriate Fee(s), to Aberdeen City Council (see address at Appendix 2).

When planning your work you should use the 'Pre-start checklist for the planning and procurement of scaffolding' (Section 3.1), as well as the guidance on:

- the hierarchy of protective measures (scaffold erection and falling objects) (Section 3.2);
- competence (Section 3.3); and
- inspection (Section 3.4).

Note that couplers should not be thrown or handled in a manner that places the public at risk. Consideration needs given to the requirements for the safe unloading and loading of components. Where unerected components cannot be safely stored at ground level advice should be sought from the scaffold designer as to the extent of materials that can be stored on the incomplete scaffolding, and how this can be done safely.

More detailed guidance is contained within Sections 3.5 to 3.10, 4.1 and also the Appendices. Please note that references to technical standards within this document are detailed in Appendix 4.

Aberdeen City Council forms will be periodically updated and published on the website www.aberdeencity.gov.uk It is your responsibility to ensure that you are using the current forms and standards.

2.5 SCAFFOLD APPLICATION FORM

2008_____/SC
PAID/ ACC £_____

NEIGHBOURHOOD SERVICES SOUTH
STREET OCCUPATIONS ROADS (SCOTLAND) ACT 1984

APPLICATION FOR PERMISSION TO OCCUPY TEMPORARILY A PORTION OF A ROAD FOR ERECTION OF SCAFFOLDING

To the Roads Authority for Aberdeen City Council

I/We* (Name and address of applicant)_____

Contact Telephone number _____Day_____ Email

Signature of Applicant _____

On behalf of (Name and address of any contractor / sub contractor) _____

_____

Contact Telephone number_____Day_____Email

am/are* applying for permission under section 58 of the Roads (Scotland) Act 1984 to occupy temporarily, for the purpose of erecting Scaffolding, so as to project over a portion of road in connection with operations (Please state):-

to the building at:_____

shown on the enclosed plan (Area_____m long,_____mm wide,_____m high)

From (date)_____/_____/_____ to _____/_____/_____on the said portion of road.

Type of Scaffolding:-_____

I attach a remittance of £_____ for the above permission (£80 (Up to 25m long), £106 (Over 25m long) for the first month thereafter £53 per month or part)

Signed _____ Date _____/_____/_____

Print Name _____ On behalf of _____

Qualifications _____

Notes

1. NOTICE PERIOD: 7 WORKING DAYS in the event of a road closure, an additional six weeks notification is required
2. This application will be accepted only if it is signed by a person whose qualifications, training and experience is deem acceptable by the Street Occupations Unit.
3. A new application must be supplied if any change is made to the scaffolding that was not detailed in the original application.
4. The applicant must inform the Street Occupations Unit immediately when the scaffolding is dismantled and removed.
5. Before putting the scaffold in to use a Certificate of Completion of Erection must be signed and returned to the Street Occupations Unit, and reasonable opportunity given for his staff to inspect the site prior to any occupation by the applicant or sub contractor.

Additional information

(these sections maybe handed into the Authority at a later stage of the operation)

a. Details of company completing this appendix . **Refer to section 1 of guidance.**

Company Name:
Address:

Postcode:

Telephone number:
Fax:
Email
Contact
(Name and number of person completing this appendix):

b. Name of scaffolding contractor **Refer to section 5 of guidance.**

Company Name:
Address:

Postcode:

Telephone number:
Fax:
Email
Contact
(Name and number of contact person):

c. Details of who is responsible for completion of weekly scaffold inspections **Refer to section 6 of guidance**

Nominated Name:
Address:

Postcode:

Telephone number:
Fax:
Email
Contact
(Name and number of contact person):

Section 2- Scaffold Details

1	**Scaffold Plan**	**Refer to guidance under heading scaffold plan - see section 7. The Plan should be appended to this Permit. If the scaffold has been specifically designed for this project then this should be stated along with the name of the company / designer involved.**	Details of other reference documents / drawings.
2	**Signage, lighting and guarding**	**See Section 1 – Roads Authority Requirements** **Refer to guidance under headings Scaffold Sign, Security Procedures, Physical Protection, Raising and Lowering of Materials, Lighting for Scaffold and Hoarding, Electrical Hazards.- see sections**	Details of other reference documents / drawings.
3	**Method to tie scaffold to structure / building** Including: details of type of ties and locations / number	**Refer to guidance under heading Stability, Bracing and Testing - Section 10, Scaffold Design - Section 9.** **The scaffold plan** MUST **clearly show the position of the ties**	Cross reference to drawings.

Section 3 - Confirmation of details

a. I hereby declare that the details in section 1, 2 and 3 are correct at the time of completion of this appendix.

Signature:		For and on behalf of:	
Print Name:		Date:	

RP02/(S)

OFFICE USE ONLY
PERMIT No
DATE OF RECEIPT
Invoice: £80

ABERDEEN CITY COUNCIL

SHELTER & ENVIRONMENT
NEIGHBOURHOOD SERVICES (SOUTH AREA)
STREET OCCUPATIONS

PERMISSION TO OCCUPY TEMPORARILY, A PORTION OF A ROAD FOR ERECTION OF SCAFFOLDING

ROADS (SCOTLAND) ACT 1984

The Aberdeen City Council as Roads Authority for the purpose of the Roads (Scotland) Act 1984 having considered the application by Aberdeen City Council Contracting Services.

Hereby grants permission under Section 58 of the Roads (Scotland) Act 1984 to occupy temporarily, for the purpose of erecting scaffolding, so as to project over a portion of road, in connection with operations (construction / maintenance / demolition) at the

Building at :

As detailed on the submitted application, but subject always to the general conditions and the additional conditions or exclusions numbered with particular reference to the safety of Road users, including Pedestrian Traffic, itemised in the conditions overleaf:

From (date): _____ to _____

Contact telephone numbers: 01224 215800(day) 01224 481993(night)

Signed_____ Date: (Street Occupations)

IMPORTANT NOTES

N.B. For the purposes of the Act, the definition of 'road' includes the footway and verge.

1 A copy of this permission must be displayed on the scaffold and the covering letter must be kept on site for inspection.
2 This permission does not warrant the scaffold as safe. The responsibility for the safety of the site lies with the scaffolder and user.

RP 02/4/1(S)

ROAD OCCUPATION PERMIT CONDITIONS

1. The scaffold will be close boarded at 2.4m above ground level to **allow the safe passage of pedestrians under the scaffold** and the scaffolding members will be so arranged as not to obstruct or unreasonably restrict such passage, all to the satisfaction of the Principal Engineer (Occupations).
2. **An information board should be displayed on the scaffold.** This board should be so placed that it does not obstruct footways or carriageways. The board must give the name of the organisation for which the works are being carried out, and a telephone number which can be contacted in emergencies. It may also contain other information such as a brief description of the works, the name of the Contractor and a message apologising for inconvenience or delays.
3. All handling of equipment / materials must be done within the permitted enclosed area utilising temporary cone / guard-rail barriers.
4. Adequate protection shall be provided for members of the public while works are in progress, to the satisfaction of the Principal Engineer (Occupations).
5. The hoisting and lowering of scaffold and building materials shall be carried out within an enclosed area.
6. The outer scaffolding shall not be less than 450 mm behind the kerb face, otherwise a timber baulk or other protection must be placed outside the scaffold at the discretion of the Principal Engineer (Occupations).
7. That all standards be adequately covered by padding up to a height of 2.4m so as to protect members of the public from injury.
8. ***That under no circumstances should any vehicle which is in connection with the scaffold erection, disassembly or any other related works be driven onto the footway.***
9. When works vehicles are unloading / loading on the road, they must be conspicuously coloured, have one or more roof mounted flashing amber beacons operating and display a "Keep Left / Right" sign to drivers approaching on the same side of the carriageway. During such operations, personnel working on or near the carriageway must be readily visible to all road users, by means of wearing a high visibility jacket to BS EN 471 – Class C and have a safe working zone.
10. A copy of the Permit must be displayed on the scaffolding in a clear "Permit Wallet", at all times for inspection.
11. Additional static signs may be required in heavy pedestrian/vehicular traffic, road junctions, bends, etc. In cases, reference must be made to the "Safety at Street Works & Road Works" – A Code of Practice, to confirm the appropriate Traffic management required then followed up at this office for confirmation.
12. The scaffold shall be designed and erected so as not to obstruct any private access, fixed sign or street light in its vicinity.

For the purpose of the Road (Scotland) Act 1984, the definition of "road" includes the verge, footway, cycle track & carriageway.

IMPORTANT:
A person who contravenes the Conditions of this Permit, will have their Permit withdrawn. A person who is without or otherwise than in accordance with, the written permission of the Roads Authority commits an offence, and is liable to a summary conviction, and on conviction, to a fine not exceeding Level 4.

MONITORING

The Authority will, under the requirements of the Roads (Scotland) Act 1984 and The Transport (Scotland) Act 2005 carry out monitoring of the Sites to ensure that the works are in compliance with the conditions of the Permit, and that the appropriate checking of the scaffold is taking place and being recorded in the F91.

Inspectors will be looking at the following criteria:

- **Safe passage of pedestrians**
- **An information board is displayed on the scaffold**
- **Handling, hoisting & lowering is carried out within enclosed area**
- **Adequate protection is being provided for members of the public**
- **Suitable protection for scaffold from vehicular traffic**
- **All sharp, protruding scaffold adequately padded**
- **No vehicles on footway**
- **Vehicles, operatives and traffic management in accordance with Chapter 8**
- **Permit has been Granted and is on display**
- **Scaffold has been erected by an approved scaffolder in accordance with the scaffold plan**
- **Inspection register has been completed**
- **Any obvious defects, subsequent modifications or obvious removal of ties**

Section 3: General Scaffold Guidance

In planning your work you should take into account the following guidance:

- Pre-start checklist for the planning and procurement of scaffolding
- Hierarchy of protective measures (scaffold erection and falling objects)
- Competence
- Inspection Sheets

3.1 Procurement checklist

Before completing your scaffold permit application, or erecting/dismantling scaffold, you should complete the following pre–start checklist for the planning and procurement of scaffolding as appropriate:

- Client/Principal Contractor
- Scaffold Contractor

Pre – start checklist for the planning and procurement of scaffolding

Before completing your scaffold permit application, or erecting/dismantling scaffold, you should consider the following:

Client/Principal Contractor

Planning

Have you been provided with a photograph of the site? ☐

Have you applied for a Scaffolding Permit? ☐

Have you consulted Aberdeen City Council concerning: traffic restrictions and/or road closures, hours of work, exclusion zones, etc. (Do not assume that a road closure will not be granted). ☐

Have you obtained information from the statutory undertakers and consulted them on any restrictions (particularly for overhead cables)? ☐

Do existing service tobies, inspection chambers or manhole covers limit where scaffold standards can be placed? ☐

Have you provided relevant structural survey information, including whether drilled ties or physical ties can be used (e.g. box or through ties)? ☐

Have you clearly defined ALL potential uses of the scaffold? Have identified the required scaffold loading and use to advise the scaffold designer? ☐

Do the site constraints and requirements suit a proprietary scaffold system or is a tube and fitting scaffold required? ☐

Is any ground preparation required? ☐ By whom? ☐

Prospective Scaffolding Contractor(s)

Can you demonstrate that you have selected a competent scaffolding contractor? ☐

Tenders/Pricing

Have you identified whether a specific scaffold design is required? ☐

Has the scaffold contractor been advised that a scaffold design is required? ☐

Has the scaffolding contractor been informed (preferably in writing) about the type and extent of work, including the required duty rating? What trades will be on site? ☐

Have you included, as appropriate, the following requirements in your contract documentation (e.g. bill of quantities, specifications):

- Design criteria, e.g. type of scaffold, duty rating, Standard (viz. TG20:08, BS EN 12811 etc. Note that BS 5973 is officially Withdrawn by BSI)
- Service information (below and above ground)
- Weather conditions
- Information relating to below-pavement basements, retaining walls, manholes, etc.
- Security, Hoarding and fencing (at least 2m high, unless specified otherwise)
- Lighting and earthing
- Parking and loading of vehicles
- Traffic management
- Signage (including the provision for advertising) Public protection, e.g. sheeting, debris netting, fans
- Exclusion zones
- Level of supervision
- Lifting and lowering of materials 'Attendances' (e.g. for the alteration of ties, etc)
- Debris chutes
- Stair towers
- Statutory inspections
- Site access and egress
- Welfare facilities and space to locate them
- Arrangements for ongoing statutory inspections of any scaffolding?
- Consider whether the final inspection prior to scaffold Handover can be carried out by someone who was NOT involved with the actual scaffold erection.
- A Handover Certificate stating the number of ties present at handover.

Have you informed the scaffolding contractor about **your** site rules? ☐

Pre-Contract

Have you reviewed the Scaffolding Contractor's proposed system of work, risk assessment and scaffold plan (method statement)? ☐

Have all emergency details been posted on the Information Board? ☐

Have you made arrangements for electrical testing, e.g. lighting? ☐

Pre-Start checklist for the planning and procurement of scaffolding

Before completing your scaffold permit application, or erecting/dismantling scaffold, you should consider the following:

Scaffolding Contractor

Tendering/Pricing

When pricing the work, have you: ☐

- visited site
- met the Client/Principal Contractor
- made an allowance for the requirements specified in the contract documentation, e.g. bill of quantities, specifications (see above)?
- considered whether the use of a proprietary scaffold system or tube and fitting is most suitable for the circumstances

Have you confirmed (preferably in writing) the type and extent of work, including the exclusion zone(s)?

Does the scaffold require a full structural design, e.g. by a competent scaffold designer? ☐

You **must** confirm the use and duty rating of the scaffold. ☐

Have you consulted any relevant statutory authorities concerning your proposed methods of work and any precautions required (particularly for overhead cables)? ☐

Pre-Start

Have you requested a pre-start meeting with the Client/Principal Contractor? ☐

Have you been informed about the Principal Contractor's Induction arrangements? ☐

Have you proposed a safe system of work and prepared a risk assessment and scaffold plan ('method statement')?☐

In selecting an appropriate type of tie, have you:

- assessed the integrity of the structure to which the tie will be attached ? ☐
- (for drilled ties) undertaken 'preliminary tie testing' (see NASC's TG4)? ☐

Have you prepared a sketch or drawing showing the proposed tie sequence? ☐

Is the job to be supervised by a competent scaffolder? ☐

Do you have a written policy for the testing of ties?☐

Is your testing equipment calibrated? ☐

Has the tester been properly trained? ☐

Are they familiar with the equipment? ☐

Does they know what to look for? ☐

Induction arrangements? ☐

Erection/Dismantling

You must ensure that the scaffold is appropriately set out to start with and set upon suitable and firm foundations. Prepare the ground if necessary, or ask for this to be done for you? ☐ Many problems start at this point.

You must confirm the duty rating of the scaffold on the Handover Certificate and state the number of ties installed.☐

Scaffold materials should be inspected as they are off-loaded or handled. Damaged or defective materials and scaffold boards should be set to one side for removal from site. ☐

Have you arrangements for briefing your operatives? Have they signed any relevant documentation? ☐

Do you maintain a record of competence and training for operatives and supervisors? ☐

Scaffolds should be free of loose debris and other materials prior to dismantling? ☐

3.2 Hierarchy of protective measures (Scaffold Erection and Falling Objects)

Risk assessment

A suitable and sufficient risk assessment must be undertaken before working at height to determine what health and safety measures are required. After determining whether or not the work can be done in a different way, e.g. from a mobile elevating work platform (MEWP) or 'scissor lift', you should seek to: eliminate the hazard, reduce the risk, provide information and introduce control measures.

You should consider: the activity, the equipment to be used, the location, e.g. near or over roads, under power lines, etc., the environment, e.g. weather, temperature, lighting, the duration of the work, and the condition and stability of the work surfaces.

In deciding what to do, you should adopt a hierarchical approach (see table 3.2). Where possible, eliminate the hazard. Where a risk remains, then steps should be planned and implemented in order to reduce or control that risk. The table gives examples of protective measures, which may be used in isolation or together.

Contact should be made with the Street Occupations Unit for permission and advice for erectors to adopt a procedure or system that utilises advance guardrails.

Scaffold Plan

A good Scaffold Plan (sometimes referred to as a method statement) will be clear and concise, and laid out following the guidance contained in Section 3.5, *Scaffold Plan.* It will identify the hazards, assess the risk and specify the precautions to be taken.

A plan should also cover labour levels, tools and equipment to be used as well as what happens when work needs to be modified, e.g. review arrangements (perhaps by a supervisor, engineer, site agent, etc.). It should, where possible, be self-contained but may cross reference other documentation, e.g. drawings and specifications, risk assessments, permits. This is to avoid repetition. Sketches are a useful way of disseminating information.

Table 3.2 Hierarchy approach

	Issue	Protective Measure(s)	Notes
Eliminate	*The following are examples* of *measures that may be used to prevent the risk* of *members* of *the public being hit by falling objects.*		
	Road closure(s)	Apply for and implement a road closure.	Do **not** assume that a road closure will not be granted.
		Apply for and implement a partial road closure.	
Reduce	*The following are examples* of *measures that may be used to reduce exposure to the risk* of *members* of *the public being hit by falling objects.*		
	'Off peak' working	Consider whether unloading / loading can take place 'off peak'. Undertake any erection and/or dismantling during hours where there are fewer members of the public, i.e. *'off* peak' working.	Work during *'off* peak' night time hours of darkness will need to take account of the hazard darkness
	Sheeting, Netting and Fans	Sheeting/netting should be used to enclose scaffolding on its public side to prevent loose materials from falling on to members of the public. Note that if sheeting or netting is subsequently introduced it may have a design implication requiring scaffold modifications. Fans should be erected on the scaffold to supplement the sheeting. Consider whether these should be progressive, up the height of the structure.	These measures are particularly important where the scaffolding fronts on to a public access way. The scaffold supporting any sheeting, netting or fan(s) must be able to support any additional load(s). Where work is carried out close to pedestrian or vehicular access, scaffolds that are sheeted down to hoarding level can minimise both the risk to the public and the area lost to public access.
	Tunnels	During quiet hours, erect a protective 'tunnel' (and/or fan(s)) to protect members of the public during any erection ongoing.	
Inform	*The following are examples* of *the planning and information that should be provided when working in areas where members* of *the public can be hit by falling objects.*		
	Planning	Undertake and disseminate a risk assessment and scaffold plan (method statement)	Ensure that workers understand what they have to do, when and where.
	Induction	Brief workers on site-specific issues, e.g. hazards, restrictions, etc.	
Control	*The following are examples* of *control measures that may be implemented to reduce further the risk* of *being hit by falling objects.*		

	Barriers	Provides barriers, e.g. edge protection, toe boards or mesh brick guards to prevent items from slipping or being knocked *off* the edge of a structure.	To prevent objects falling onto people a proper management system, with appropriate supervision, will be required.
	Storage	Ensure that there are no loose objects and that any tools are properly secured. Access to ladders should either be restricted or ready use limited.	All materials at height should be stored where they can not fall on to workers. Materials should be kept tidy and secure making sure that all access routes are kept clear. Working platforms should not be cluttered with stored materials, and adequate space must be maintained to allow safe access. All loose materials should be removed on an ongoing basis.
	Loose objects	Secure objects to the structure, e.g. lashing of scaffold boards.	
	Lifting and lowering	Use loading bays, mechanical hoists, etc.	Materials must be stored on platforms designed to take the applied loading, and not be placed in areas where the stored material itself becomes a hazard, e.g. not stored on working platforms so as to restrict safe access around the scaffolds.
	Waste chutes	Chutes should be used for discarding materials. The chute should extend down into a waste skip.	
	Weather	In windy weather, all loose materials should be removed or tied down to prevent them from falling.	
	Dropping material	Materials should never be thrown to/from scaffolding.	Materials may be 'hand balled' subject to an assessment of the required exclusion zone.
	Danger areas	Danger areas should be clearly marked with suitable safety signs. When employees are working at heights above other work areas, safety helmets should be provided and used to protect workers below against falling objects.	
	Signs	Attach warning tags and/or warning signs such as 'Keep Out - Falling Objects' and 'Danger - Incomplete Scaffolding' in obvious locations to warn persons of hazards.	

3.3 Competence

A competent individual is one with sufficient professional or technical training, knowledge and actual experience relative to the particular task in hand to enable them to:

- carry out their assigned duties at the level of responsibility allocated to them;
- understand fully any potential hazards related to the work and the equipment to be used;
- detect any technical defects or omissions in that work and equipment, recognise any implications for health and safety from those defects or omissions, and be able to take remedial action to deal with these.

All workers should be trained in safe working practices (including those to protect the public, and particularly children). Managers and supervisors need competence to deliver safety standards on site and effective training of scaffolders is probably the most important factor in preventing accidents. Numerous courses are available, e.g. those organised by national or local Federations, industry training boards, etc.

Competent companies

The law requires that you appoint a competent scaffold erection company. It is recommended that you:

- obtain written detailed evidence of a company's scaffolding competence, and
- judge the evidence against a set of criteria.

Criteria

In demonstrating (or checking) the competence of a contractor the following should, as appropriate, be considered. The extent and detail of any checks should be proportionate to the risk.

- What is their past experience and track record (in similar work)?
- Does the contractor use workers registered with a recognised training scheme (e.g. Construction Industry Scaffolders Record Scheme CISRS)?
- Are they a member of a trade association (e.g. NASC[1], or similar), or safety group?
- Are there appropriate levels of site supervision by those with practical experience and training; and is their skill level maintained?
- Are management and work systems subject to quality and safety audits?
- Are there procedures to ensure adequate design', checking (including conceptual errors) and 'change control'?

1 The National Access and Scaffolding Confederation (NASC) is a national representative employers' organisation for the access and scaffolding Industry, with members operating from locations throughout the UK.

- What procedures are in place for the checking and maintenance of equipment?
- Do they have, implement and review policies for establishing 'safe systems of work' (including procedures for hazard identification, risk assessment and control of the work)?
- How do they ensure the adequate allocation of resources (including time, money, plant and equipment)?
- Do they have knowledge of a range of equipment and techniques?
- Is design, erection, dismantling and alteration planned, managed and undertaken by appropriately qualified and experienced personnel?

Individuals

The law requires that individual operatives be competent in scaffold erection, dismantling and alteration. The easiest way to prove competence as a scaffolder is to be a holder of a Construction Industry Scaffolder's Record Scheme (CISRS) Card.

A CISRS card holder will be accepted as being competent to carry out scaffolding erection, dismantling and alteration as part of a scaffolding gang. Scaffolders should at all times carry, or have ready access, to their Card. They will be required to produce a valid CISRS card prior to a project commencing.

Supervision

When considering the direct supervision of a scaffolding gang i.e. a working foreman, leading hand etc, the operative in this role must be qualified to the grade of CISRS Scaffolder as a minimum requirement.

For more complex scaffold structures, a CISRS Advanced Scaffolder must undertake direct supervision of the gang.

Supervision of a Scaffolding project/site as a whole (liaising with client, deploying operatives, estimating, inspection, pricing, health and safety issues etc) must also be carried out by a competent person, however this may not necessarily be a CISRS qualified Scaffolder.

3.4 Inspection

Although not a record of inspection a signed scaffold hand over certificate and scaffold plan should be obtained from the scaffold contractor before the scaffold is taken into use. The certificate should be retained on site and kept with the inspection records. It should state the scaffold duty and number of ties installed.

The scaffold should be inspected in accordance with the requirements of the Work at Height Regulations 2005, Regulation 12.

The scaffold should be inspected:

- Prior to being taken into use for the first time;
- After any alteration or adverse weather;
- After any event likely to affect its stability;
- Regular intervals not exceeding 7 days.

The inspection record should be made available on site.

A system should be in place to communicate (such as a scaffolding tag procedure) whether the scaffold is safe for use, its duty rating/suitability, i.e. access, general purpose or heavy duty.

3.5 Security Procedures

Scaffold access should be secured when not in use to prevent unauthorised access onto scaffolding. Ladders should be kept in a storage compound or container.

Consider enclosing the base of the scaffolding to prevent climbing, especially near occupied premises.

Consider the environment particularly with respect to pedestrian and vehicle movements and during school holiday periods.

Debris chutes should be removed or protected either by providing lids or covers etc.

All tunnels should be adequately lit with an even surface.

Fence off the area and provide alternative routes, which are clearly signposted and avoid additional crossing of the road wherever possible.

The procedures should contain what arrangements are in place to maintain the measures in place for security.

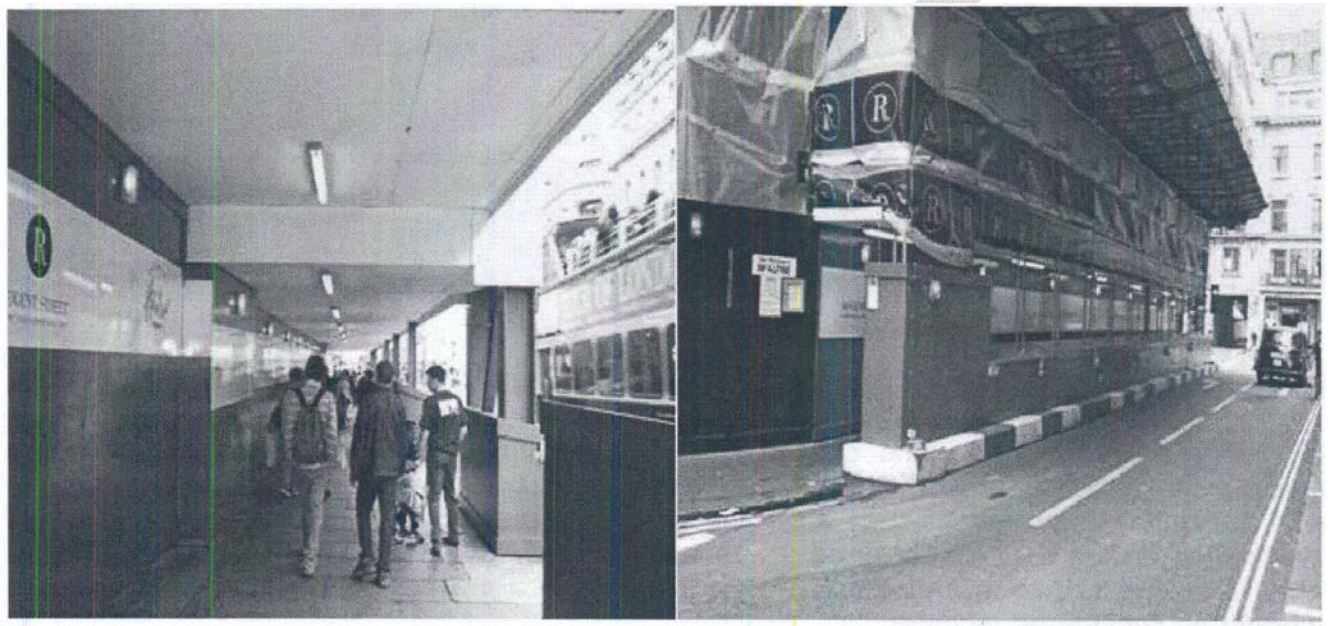
Examples of what are considered to be acceptable standards are shown below:

3.6 Physical Protection

Scaffolding operations and the use of scaffolding in public areas can present significant hazards to the general public and users of the highway. High standards of physical protection, effective systems of work and supervision are required. This section of the guide highlights some of the main physical protection measures that must be considered for scaffolding on the public highway or other public access areas (e.g. pedestrian streets, courtyards, public parks and gardens etc).

Vehicles

Consideration should be given to providing additional protection against impact damage by vehicles. For example: restricting the speed of vehicles and/or diverting traffic away from scaffolds; installing adequately anchored timber baulks as physical protection at vulnerable points. Care should be taken to avoid risk from projections at higher levels, taking account of the potential height of passing vehicles.



Scaffolding Operations

During the erection, altering and dismantling of scaffolding measures should be taken to exclude the public from the work area and where possible a distance around it. The principle hazards are falling materials as they are handled by the scaffolders and structural stability of the scaffolding during erection, altering or dismantle. The work should be adequately planned and the risks assessed to include all necessary measures to protect the public. The measures that should be considered include:

- Segregation of work area using barriers, fencing or hoarding.
- Temporary pavement or street closures (in accordance with the Roads (Scotland) Act 1984 and Aberdeen City Council requirements).
- Quiet hour working where pedestrians and vehicle traffic is reduced.
- The use of suitable pavement frames and protection fans so work can continue above.
- Warning signs
- Use of temporary traffic management controls during hazardous operations (traffic lights, stop/go boards, sentries etc.)

Some specific protection measures will be specified in the scaffold permit and must be strictly adhered to. The work should be adequately supervised to ensure that the measures agreed are implemented satisfactorily and maintained throughout the duration of the works.

Pedestrian Access, Frames and Gantries

Where pedestrian access is permitted beneath a scaffold the following measures need to be taken:

Visibility and access for persons with disabilities

Effective measures should be taken to ensure all elements of scaffolding that may be a hazard to pedestrians are clearly visible. There should be no projecting tubes or fittings that may constitute a risk to people or vehicles. It should be noted that persons with visual impairment are at greater risk, therefore measures should be taken to avoid these risks, e.g. provision of tapping boards at ground level where the scaffold creates a sharp change in direction of the pedestrian route. Tapping boards should also be provided at the kerbside. Wherever possible, walkways should be kept clear of obstructions and changes of level that would create hazards for wheelchair users.

Protruding tubes etc.

Ensure there are no protruding tubes or fittings that could cause pedestrians injury or damage to property, e.g. clothing. Use timber panelling (in accordance with the hoarding and panelling requirements), protective cladding, tube end-caps and thread caps on fittings, as appropriate. Where access proves hazardous, e.g. diagonal braces causing an obstruction, then access must be restricted with guardrails or other suitable barrier.

Head clearance

A minimum head clearance of 2.4 metres (8 feet) should be maintained. (Note that the maximum height of base lift for pedestrian access of a tied independent scaffold is 2.7 metres unless otherwise designed.)

Scaffold width

The minimum width of a scaffold base with pedestrian access beneath should be 1.1m unless otherwise agreed, however this is only suitable for areas with low pedestrian volume. In high pedestrian volume such as high streets and shopping areas this width may need to be up to 3.5metres. In such cases pedestrian frames and gantries to support structures or temporary office accommodation needs to be specially designed.

Scaffold Fan, Netting & Sheeting

Falling objects from scaffolding presents a significant risk of injury to the users of the highway. Suitable and sufficient physical protection measures need to be provided to prevent objects falling from scaffolding and protection of the public if there is risk of falling objects. See Section 4.3 *Scaffold Design* for information on Crash decking.

Protection Fans

The design of protection fans required will depend upon the nature of materials likely to fall (e.g. paint drips, masonry, scaffold components, construction materials etc.). Fans must be designed and constructed strictly in accordance with NASC Technical Guidance Note No.20: *2008 (TG20:08), Guide to Good Practice for Scaffolding with Tube and Fittings.* Unless otherwise stated in the design or scaffold permit, a double layer of scaffold boards with an impervious membrane between (e.g. heavy gauge plastic sheeting) should be used. Net fan systems used for personal protection and falling objects must be tested and installed in accordance with BS EN 1263 Parts 1 & 2 and must only be used for the purpose they are designed.

3.7 Raising and Lowering Materials

The methods used to raise and lower scaffolding components will be determined by the safe system of work, i.e. undertaking risk assessments and method statements and the extent and type of structure being worked on and the equipment available.

The methods available will generally fall into one or other of the following categories:

- Handballing (chaining)
- Light line (hand line)
- Gin wheel and rope
- Forklift truck
- Tower crane
- Goods hoist

Below is guidance for each of the methods. Legislation and company policies may dictate other methods.

Handballing

Sometimes called chaining, this is the method normally adopted on the first few lifts of a scaffold. The team will form a chain up the face of the scaffold and pass tubes and boards from one to another.

It is imperative that operatives wear a safety harness and are attached to a suitable anchor point via their lanyard when necessary during this operation. When passing the equipment both hands should be used at all times to maintain full control of the equipment. A good method of communication to use is for the person receiving the equipment to call *"my tube*

and board" when they are ready and in control.

Light line

Sometimes called a hand line, this is often used on scaffolds. Tubes, boards or sacks of fittings are tied (with a suitable hitch) to the lower end of a 13 mm fibre rope (suitably tested with relevant certificates) and then hauled up by hand. In addition, a safety harness and lanyard may need to be worn, suitably attached. It is essential to adopt a safe position when doing this. This involves using a standard for support, one leg being placed behind the standard to act as an anchor and prevent the lifter from overbalancing.

Knots

The main two types of knots used to secure equipment are the timber hitch (used to secure scaffold boards) and the rolling hitch (used to secure scaffold tubes).

Fitting Bags

All loose scaffold fittings should be raised or lowered in a fitting bag with the appropriate safe working load (SWL) marked on them and have appropriate certification regarding their testing and examination.

Gin wheel and rope

Commonly used to raise and lower materials which are tied to the end of an 18 mm diameter rope (suitably tested with relevant certificates) passed over a single wheel pulley. The gin wheel (pulley), suitably tested with relevant certificates, is fixed to a horizontal cantilevered tube. The material is then hauled up by the person on the ground to working level. Two types of gin wheel available are the ring type and the hook type. The ring type is designed to fit over a scaffold tube. The hook type only differs at the point of suspension; instead of a ring, the pulley is suspended by a hook.

The gin wheel is usually suspended from a cantilevered tube. This should be properly fixed with right angle couplers, preferably to two standards, approximately 2 metres above the landing place. If the cantilevered part of the tube is unsupported, the point of suspension should not extend more than 750 mm. Check fittings should be fixed either side of the suspension point to ensure that the gin wheel cannot move.

The fibre rope should have a minimum diameter of 18 mm and a stopper knot (usually a figure of eight knot) tied near the ends so that it cannot run through the gin wheel.

The maximum load that should be raised or lowered by a gin wheel at anyone time is 50 kg. The load imposed on the scaffold will be double that what is being lifted. Reference should be made to the Manual Handling Regulations.

Care should be taken particularly when lowering materials. If the weight is too great either the person lowering the load will weigh less than the load and will be pulled off their feet; or the complete assembly may collapse.

Fork lift truck

These are frequently used to raise and lower scaffold material to and from the scaffolding structure. It is essential that the fork lift truck driver is made aware of the mass of the load. He should also know the load bearing capacity of the scaffold (which should be designed).

When a fork lift truck is used for loading a platform, a second front ledger is sometimes fitted, in front of, and below the main front ledger to provide extra protection from impact and as a check fitting.

Materials should only be placed on platforms designed and intended for the purpose.

Tower crane

These are often used to raise and lower large loads of scaffolding material during the construction of multi-storey blocks. The driver should be made aware of the weights involved again and it is essential to ensure that the scaffold is capable of bearing the load.

Extreme care should be taken by the person receiving the load. The crane driver has only a limited control and the receiver can easily be knocked from the platform.

Materials should only be placed on platforms designed and intended for the purpose.

Goods Hoists

These should only be used to raise or lower material that can be safely contained within the area of the hoist platform. This rule generally restricts the scaffolder to very short tubes (transoms) and scaffold fittings, however see NASC Guidance Note SG26.05 for guidance on long tube hoists.

3.8 Lighting for Scaffolds and Hoarding

The council is empowered under the provisions of the Roads (Scotland) Act 1984 to require the erection of a hoarding at the site of building operations carried out in any street and, where necessary, the provision of a platform with handrail to serve as a temporary footway.

The following details lighting requirements:

- All scaffolds that are erected on the highway must be adequately lit, with the lights positioned at a height and spacing as agreed with Aberdeen City Council.
- Red lighting must be used on the corners and at changes of direction.
- If the scaffold is situated on a pedestrian walkway white lights must be used and if on traffic side (within 0.5 metres of the kerb face) amber lighting is to be used.
- A safe pedestrian walkway must be provided at all times.
- Clips and other fittings must be placed so as not to cause a risk to any pedestrians.
- All lighting must be maintained at all times and ensured that it is effective

particularly during hours of darkness.

3.9 Electrical Hazards

The nature of scaffolding operations greatly increases the risk of coming into contact with electric current from overhead electric power lines, lighting and alarm systems and lightning strikes.

Work near to or beneath overhead electric power lines should be carried out after the lines have been made dead, or otherwise made safe, to eliminate the risk of electric shock. Where this is not possible it should be recognised that scaffold structures erected underneath live overhead lines have increased risk because the safe clearances are reduced.

In cases where it is necessary to work near to or beneath live overhead lines, the owner[2] of the line(s) should be consulted about the proposed working methods and additional precautions will be required when erecting and dismantling to avoid the use of components that can reach high enough to contact the overhead line or going close enough to it to cause flashover.

Where lighting is fitted to scaffolds, then the metal parts of the scaffold should be bonded and earthed to prevent stray current paths. Use of low voltage equipment and supplies, wherever possible, is good practice and the low voltage lead should be the longer, with a short mains voltage lead connected to the nearest convenient supply.

All scaffolding structures that are at risk from lightning strikes should be properly earthed, particularly those on the roofs of high buildings. Butting on to the building surface is not adequate to ensure that the lightning will not pass through a person's body if he is in contact with the metal framework.

Scaffold associated with power line construction or adjacent to power lines or electrical transmission feeders must be earthed.

Advice is available in BS 6651: 1999 *'Code* of *practice for the protection* of *structures against lightning'* and NASC Guidance Note, SG3:02 *'Earthing* of *Scaffolding Structures'* and HSE Guidance Note GS6, *'Avoidance* of *danger from overhead electric power lines'.*

Advice on avoiding danger from underground services, whilst earthing, is available in HS(G)47, *'Avoiding danger from underground services'* (HSE, 2000).

3.10 Guidance on Scaffolding Works and Asbestos

An Ancillary Asbestos licence issued by the HSE, Asbestos Licensing Unit (ALU) will be required by the scaffolding organisation for the erection, modification, maintenance,

2 Normally the local Distribution Network Operator.

inspection or dismantling of a scaffold if:

- The scaffold will form any part of the framework or all of the support from which an asbestos enclosure will be built for the purposes of "working with asbestos".
- The scaffold is to provide access/egress (on asbestos or otherwise) where it is foreseeable that asbestos is likely to be disturbed by the scaffolding activities.

A licence will not be required for normal scaffold operations on a location that is likely to have asbestos present unless the work falls into the above criteria.

If the company is undertaking the scaffolding works **and** the asbestos related works, there is only a requirement to notify the enforcing authority **once**; stating both the scaffolding and the asbestos details.

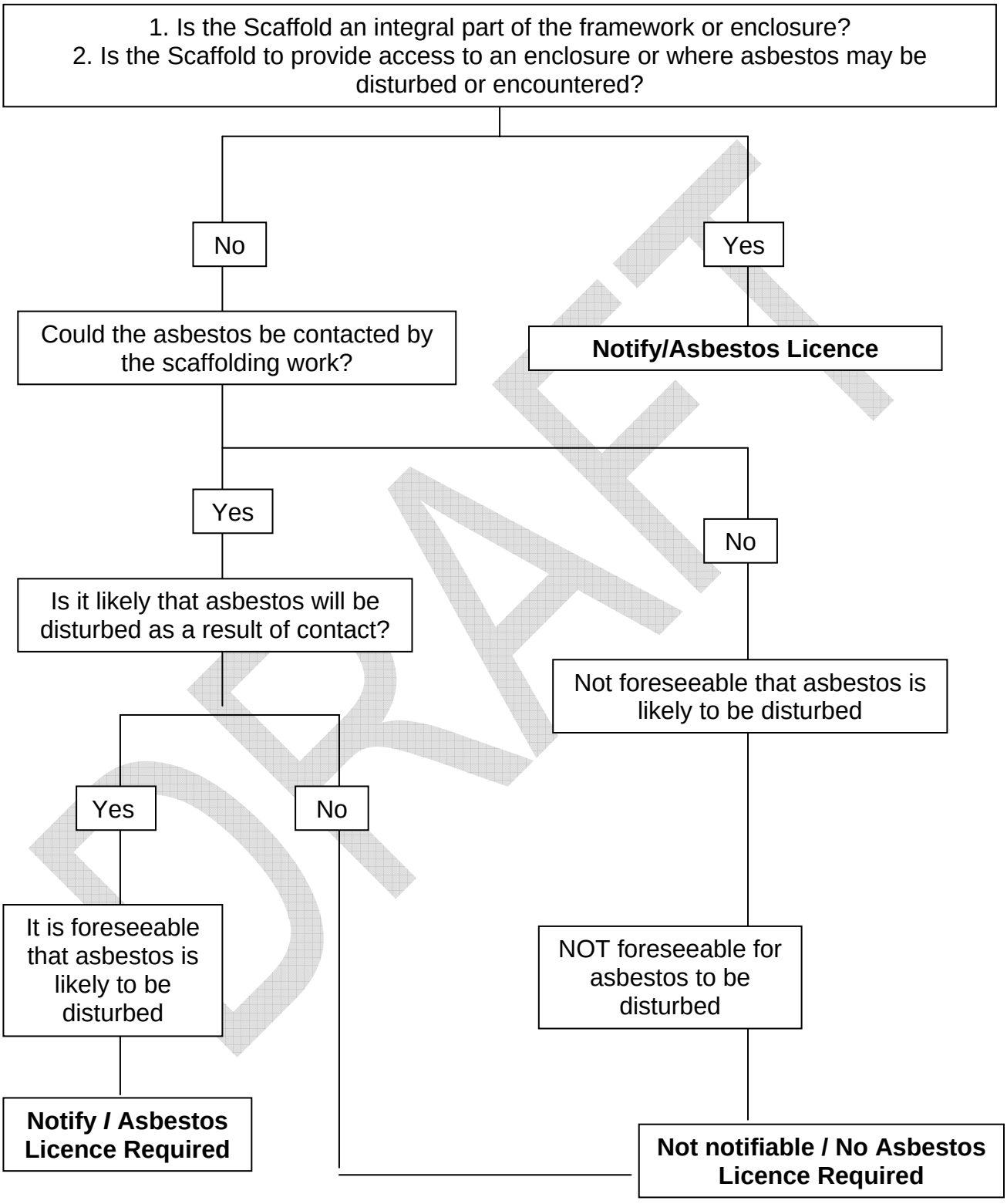
However, if the scaffolding company is acting as a sub-contractor providing the scaffolding **only** and it falls into the above criteria, they will need to notify the scaffolding works separately via an ASBS notification form.

Notification of scaffolding work must be given to the relevant enforcing authority **14 days prior to commencement**; documents to be included in the notification are the ASBS, Plan of work (method statement) copy of asbestos licence.

Asbestos Awareness Training

Clarification on Asbestos Awareness training can be sought by obtaining a copy of memo 3/03 from the Asbestos Licensing Unit (HSE) on the subject of Asbestos Licensed Scaffolders.

When to Notify?



Section 4: Scaffold Design And Detail

In planning your work you should take into account the following in conjunction with Section 3 *General Scaffold Guidance*:

- scaffold plan (often known as a method statement)
- scaffold sign
- scaffold design
- stability and testing

4.1 Scaffold Plan

In producing a scaffold plan you should identify any significant hazards, determining who can be affected and evaluate what risk the hazard pose in practice. This is called a risk assessment. The scaffold plan should take account of the risks identified by the risk assessment and communicate the safe system of work to those undertaking it (SG4 and SG23). The scaffold plan is an effective way of providing information to employees, about how work is expected to be done and precautions that should be taken.

The scaffold plan, which must be site-specific, should address the following issues:

- Name of the scaffold supervisor and/or person responsible for managing work
- Name of the person responsible for managing the site
- Who is to use the scaffold and for what
- Programme and sequencing of works to ensure a systematic and logical approach
- Delivery arrangements for materials
- Where to start erection of scaffolding
- Proposed working hours for erection and dismantling
- Local factors such as overhead cables, roadways, schools, work close to water, etc.
- Public protection
- Fall protection
- How the scaffold is to be stabilised
- Ground preparation
- Is scaffold to be sheeted? If yes who is responsible for design?
- Is scaffold to be used for advertisements? If so, who is responsible for design?
- Waste removal
- Inclement weather
- Emergency procedures, including out of hour telephone numbers
- Scaffolders' welfare arrangements

- Arrangements for handing over scaffold to use
- Pre-start briefing, so that the plan is communicated to all operatives

Your completed scaffold plan should be attached to the permit application form.

4.2 Information to be displayed

A suitable sign must be affixed to part of the scaffolding structure in a position that can be clearly read by pedestrians. The sign must include the following details:

- Aberdeen City Council with the name of who has given the authority
- Names of Client, Name of Principal Contractor and Scaffold Company
- Emergency 24 hr contact number
- Number of ties, where required

Logo etc. **Scaffolding Information**

CONTACT DETAILS
IN CASE OF EMERGENCIES

Site Owner	**Name:** **Tel No.**
Principal Contractor	**Name:** **Tel No.**
Scaffolding Contractor	**Name:** **Tel No.**
Aberdeen City Council	**Name:** **Tel No.**

Scheme Ref.			
Sign Reference	SCAFFOLD	'x'-height15.0	
Letter colour	BLACK	SIGN FACE	
Background	WHITE	Width	585mm
Border	BLACK	Height	515mm
Material	non- reflective	Area	O.30sq.m

4.3 Scaffold Design

The Work at Height Regulations 2005 require that scaffolds be designed and constructed to a generally recognised standard, or be designed and calculated to ensure that it is fit for the intended use, stable and of adequate strength. In simple terms, scaffolds must be erected in accordance with British and/or European standards, national industry guidance or manufacturers' instructions. Adequate planning should foresee whether it would be possible to conform to these generally recognised standards and, if this is not possible (or as the standard dictates), then appropriate design is required.

Consideration should be given to whether the use of one particular type of scaffolding rather than another is more appropriate for the particular situation and use required. Proprietary system scaffolding is made to suit specific 'module sizes' and this may not be the most appropriate solution to suit all design circumstances.

It should be appreciated that proprietary scaffolding systems that do not incorporate specific 'bracing tubes' may rely upon the integrity of the joints on the standards for stability. Under those circumstances the condition of the joints at the time of erection is very important and they should be visually checked for adequacy by the erector at that stage. Those charged with regular Inspection of the scaffold should be made aware of the importance of the joints for Inspection purposes.

Reference should also be made to BS 5975: 2008, Code of practice for temporary works procedures and the permissible stress design of falsework. The definition of Temporary Works is stated as:

> "parts of the works that allow or enable construction of, protect, support or provide access to, the permanent works and which might or might not remain in place at the completion of the works
>
> NOTE Examples of temporary works are structures, supports, Back propping, earthworks and accesses."

The content of this revised British Standard should therefore be borne in mind. Guidance is provided on many topics including basic wind speeds and ground bearing pressures.

A list showing the type of circumstances when a scaffold should be designed is included in the Appendix 3**.**

The level of design input required can very significantly; from full engineers' calculations and drawings and design checks for complex or unusual structures, to a sketch showing a simple design detail to confirm a minor variation from the recognised standard.

When selecting a scaffold design engineer a combination of engineering qualifications and scaffolding industry experience is required to be deemed competent.

Generally recognised standard

BS EN 12811, Part 1: 2003 *Temporary Work Equipment: Scaffolds Performance requirements and general design,* is a new standard within the UK and is geared towards system scaffold. Although BS 5973: 1993 is a well known standard for tube and fitting scaffolding it has now been withdrawn by the British Standards Institution.

The National Access and Scaffolding Confederation (NASC) has produced a new Technical Guidance Note on the use of BS EN 12811-1, TG20:08 - *Guide to Good Practice for Scaffolding with Tubes and Fittings.*

Proprietary system scaffolds (e.g. Kwikstage, Cuplok, Haki, Layher, etc) have to be designed and tested in accordance with BS EN 12810 and BS EN 12811: 2003. All manufacturers must provide detailed information for the safe erection and use of prefabricated scaffolding systems, usually in the form of instruction manuals and technical files. These instructions should include standard configurations and maximum loads that can be applied. Where the instruction can not be adhered to design advice should be sought from the manufacturer.

Design control procedures

Scaffolding contractors must ensure they make suitable arrangements to control the issue and use of drawings, manage variations to the design, competence of scaffolders and adequate supervision for the erection in accordance with the design and special arrangements for commissioning and handling over designed structures.

Designers' consideration of hazard and risk

Architects and designers must consider temporary access as part of their design considerations under the Construction (Design and Management) Regulations 2007.

To prevent debris falling from the scaffold into the pedestrian access below crash decking should be used. The lift above the pavement access, frame or gantry must be close-boarded for its full width and abut to the building/hoarding etc. The risks from falling objects need to be assessed when designing the fit for use scaffold, a double layer of scaffold boards with an impervious membrane between should be used (e.g. heavy gauge plastic sheeting). Hoard boarding or expanding foam may also be required to cover all smaller or odd shaped gaps. Drainage will also need to be considered. See also Section 3.6 *Physical Protection.*

4.4 Stability, Bracing and testing

Scaffolds are only rarely independent structures. General practice is to attach a tie every 4 metres on alternate lifts. The ties are coupled to the scaffold as close to the junction of standard and ledger (node point) as possible. As many ties as possible should be 'positive' or 'two-way', rather than 'simple friction' or 'one-way' ties which should be avoided where possible.

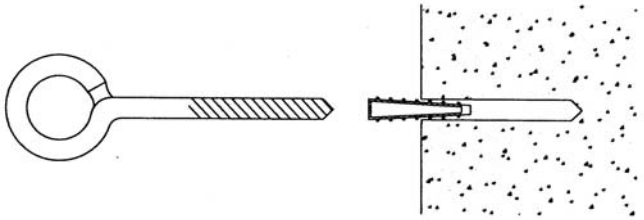
Selection of Ties

The stability of a scaffold structure is dependent, among other things, on the security of the anchors used to tie it back. In many instances the anchors are the crucial element for stability. The type of tie and anchor should be selected to suit the tying requirements and the nature of the building facade. Refer to TG4:04 - *Anchorage Systems for Scaffolding.*

Ties are a means of resisting inward and outward movement of scaffolds. They must be made using 'right angle couplers'. The strength of the structure being tied to must be established. This should be considered at the design stage.

Through ties

These are put through structure openings, such as windows. A vertical inside tube crossing the opening is attached to the scaffold by a transom and a crossing horizontal tube on the outside called a bridle tube. The gaps between the tubes and the structure surfaces are packed or wedged with timber sections, to ensure a solid fit. Safe working capacity, 6.25 kN.



Note: 100% proof testing is required with plastic inserts.

Box ties

These are used to attach the scaffold to suitable pillars or comparable features. Two additional transoms are put across from the lift on each side of the feature and are joined on both sides with shorter tubes called tie tubes. When a complete box tie is impossible an L-shaped *lip tie* can be used to hook the scaffold to the structure, to limit inward movement an additional transom. A *butt transom* is place hard against the outside face of the structure. Safe working capacity, 6.25 kN; Double tied: safe working capacity, 12.5 kN (two tubes and couplers).

Lip tie

This is an L-shaped arrangement to hook scaffolding behind building elements such as sills or lintels. Inward movement is resisted by a butting transom. Safe working capacity, 6.25 kN.

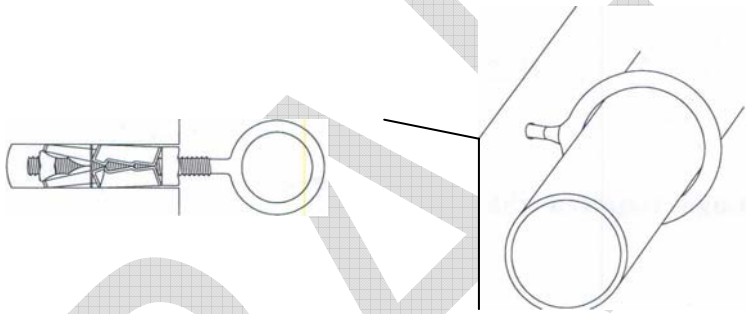
Reveal tie

This is the least 'invasive' tie. These use an opening in the structure but use a tube wedged horizontally in the opening. The reveal tube is usually held in place by a reveal screw pin (an adjustable threaded bar) and protective packing at either end. Transoms tie tube links the reveal tube to the scaffold. Reveal ties are not well regarded; they rely solely on friction and need regular checking so it is not recommended that more than half of all ties be reveal ties. Safe working loads: 3.25 kN (Friction); 6.25 kN (behind a load bearing feature).

Anchor ties

Also called *bolt ties,* these are ties fitted into holes drilled in the structure. A common type is a ring bolt with an expanding wedge which is then tied to a node point (Ref TG4:04, *Anchorage Systems for Scaffolding).*

- Provided by casting in, or drilling, and subsequently fixing a threaded anchor into the structure
- Attachment of the scaffold is by means of a ring bolt
- Dependent on the structural condition of the material
- Safe working capacity 6.25kN
- Useful at the design stage if further scaffolding is required during the life of the structure
- Screw ties in brickwork- take care to determine safe working load which may be less than 6.25 kN. (**If in doubt** consult screw fixing supplier and/or manufacturer)



Expanding Anchor

Considerations for the selection of anchors for tying scaffold structures:

- Type of linkage to the scaffold structure
- Base material and suitability of the structure
- Working load compare with allowable load
- The need for testing
- The way loads are transferred through the ties and the direction they are applied.

In some instances it is the 'base material' that will be the weak link in the overall design of the anchor. It should be noted that the strength of materials such as sandstone can vary significantly across a building face, particularly where part of the face has been severely weathered over the years.

ONLY where it is impossible to incorporate a safe number of the foregoing tie types should rakers be considered. These are single tubes attached to a ledger extending out from the scaffold at an angle of less than 75° and securely founded. A transom at the base then completes a triangle back to the base of the main scaffold. The outer end of the raker should preferably be clipped to a short vertical tube set into a concrete foundation or driven into competent ground. In some low rise scaffold situations it may be possible to connect the bottom of the rakers with a horizontal tube that will help spread any vertical loads.

Where a greater degree of stability is required for the scaffold 'projecting' loading bays can be considered. These should be suitably located and braced for stability.

A simple unconnected 'raker' tube with the tube end just penetrating the ground surface should not be relied upon.

Tie Patterns

The tie pattern will be determined by various factors such as the geographical location of the scaffold, the height of the scaffold, whether sheeting or debris net required, etc. Ties should be installed and tested progressively during the erection process.

The general rules for ties are as follows:

- Ties should be left undisturbed for the life of the scaffold
- *Moveable ties* should be replaced prior to moving
- Planning is essential as tie removal will make the scaffold less stable
- The spacing and number of ties should be specified in the design and stipulated in the scaffold plan
- Tie tubes should be clearly distinguishable e.g. painted or tagged.

Scaffold alterations should only be undertaken by, or under the supervision of, competent personnel who understand the scaffold and its design.

Bracing

Bracing should be constructed in line with the following:

- Bracing is essential to stiffen the structure wherever practicable, divided into a complete series of triangles by braces.
- Ledger bracing runs diagonally from ledger to ledger or standard to standard in zigzag fashion
- Facade bracing either runs across the face at 450 or zigzag fashion.
- For a long façade, bracing should return to the bottom of the scaffold. The number of un-braced bays should not exceed 4 in total.
- For long façades with many bays (greater than six bays) a plan brace must be introduced every four bays
- Bracing should be provided at a maximum of 30 m intervals
- Joints in bracing should be made with sleeve couplers
- If a scaffold cannot be tied on every standard at the tying level, plan bracing can be substituted
- Bracing should not be removed to allow passage of materials

The loads are generally in accordance with BS EN 12810-1, 2003 (guidance on which is provided in NASC's TG20). The maximum load capable of being carried should be drawn to

the attention of the Client prior to erection of the scaffold.

Note: due to the technical complexity of *the above, engineering advice must be sought at all times.*

Testing Anchors

Testing should be undertaken by a suitably competent person using calibrated equipment in accordance with (Ref TG4:04, *Anchorage Systems for Scaffolding).*

Site tests are needed for two purposes. Preliminary tests must be used to check the suitability of a particular fixing in the base material and to determine allowable loads. Proof tests are needed to check the quality of installation of the chosen anchors.

When undertaking proof tests, a sample of anchors to be used shall be tesyed to a load of at least 1.5 times the tensile load. A minimum of 3 ties must be tested and at least 5% (1 in 20) of the total job. If any anchors fail to satisfy this test requirement then the reason for failure should be investigated and the rate of proof testing at least doubled (at least 6 and 1 in 10 overall). If significant numbers of anchors fail this test then the overall safety margin is in doubt and the specification and installation method should be reviewed before the scaffold is passed for use.

1. Powers and Duties

Aberdeen City Council

Under the Roads (Scotland) Act 1984 Aberdeen City Council has the authority / power to:

- Approve scaffolding permits on roads and footways.
- Inspect and monitor scaffolding constructed on roads and footways.
- Instruct the removal of scaffolding if for example it poses a danger to public safety or if it is not constructed in line with the approved permit.

Aberdeen City Council is committed to continually improving its health and safety performance in the delivery of its services. It will take all reasonable practicable steps to provide and maintain a healthy and safe working environment for all its employees, clients and any other people affected by its activities.

Health and Safety Executive

Under the Health and Safety at Work etc Act 1974 and its relevant statutory instruments such as the Work at Height Regulations 2005 HSE Inspectors have powers to take enforcement action which includes:

- Prohibiting any work activity where there is a risk of serious personal injury either to workers or members of the public.
- Require that improvements are made where there is a contravention of the legal requirements.
- Recommend that those creating the risk or failing to comply with the legal standards are prosecuted.

The Health and Safety Executive is committed to ensuring that the relevant safety standards are complied with and that persons are not placed at risk through work activities.

2. Contact details

Submitting your application form and scaffold plan:

Aberdeen City Council
Neighbourhood Services (South Area)
Street Occupations Unit
2nd floor, St Nicholas House
Broad Street
Aberdeen
AB10 1BY
Tel. (01224) 522426
Fax. (01224) 523537

In the event of an emergency, the following contact numbers may prove useful:

Aberdeen City Council
Tel. (01224) 522426
Fax. (01224) 523537

Or

Aberdeen City Council – 24 hour contact centre
08456 080919

Health and Safety Executive

Health and Safety Executive
Lord Cullen House
Fraser Place
Aberdeen
AB25 3UB

Tel. (01224) 252500
hse.infoline@natbrit.com

HSE Health and Safety Executive

Scaffold information sheet

This information sheet is intended to clarify when scaffold design is required and what level of training and competence those erecting, inspecting and supervising the erection, alteration and dismantling of scaffolding are expected to have obtained.

Design and inspection issues

- All tube and fitting scaffolds should be designed, and have strength and stability calculations provided by a competent person, unless it is a 'Basic Scaffold' designed in accordance with NASC Technical Guidance TG20.
- System scaffolding should be designed, erected and stabilised in accordance with the manufacturers or suppliers Handbook.
- Any proposed modifications, or alterations, outside a system scaffolding manufacturer's guidelines should be designed by a competent person.
- Handover certificates should refer to any relevant drawings, working platform loadings, any specific restrictions on use.
- All scaffolding inspection should be carried out by a person whose training and competence reflects the complexity of the scaffold they are inspecting (ie a CISRS Scaffolder can inspect basic scaffolds and an Advanced Scaffolder can inspect basic and complex scaffolds).
- A non-scaffolder who has attended a suitable scaffold inspection course and has the necessary background experience would also be competent to inspect a basic scaffold (ie a site manager).
- The scaffold inspection register should note any defects and corrective actions taken, even when those actions are taken promptly as this assists with the identification of any recurring problems.
- To prevent use by unauthorised persons, all incomplete scaffolds must display warning signs identifying the areas where access is restricted and be suitably protected by physical means.

Competence and supervision issues

- All employees should be competent for the type of scaffolding work they are undertaking and should have received appropriate training relevant to the system they are working on.
- Employers must provide appropriate levels of supervision taking into account the complexity of the work and the levels of training and competence of the scaffolders involved.
- Every scaffold gang should contain a qualified CISRS Scaffolder as a minimum requirement.
- Trainee scaffolders should always work under the direct supervision of a qualified CISRS Scaffolder (i.e. a working foreman). Scaffolders are classed as 'trainees' until they have completed the approved training and assessment (VQ2) required to be deemed a qualified 'Scaffolder'.
- Erection, alteration and dismantling of complex designed scaffolding (e.g. suspended scaffolds, shoring, temporary roofs etc) should be done under the direct supervision of an Advanced scaffolder.

Scaffold structures that need to be designed

- Scaffolds that fall outside the scope of 'Basic Scaffolds' detailed in NASC guidance note TG20
- Dead Shores
- Flying shores
- Raking shores
- Cantilevered scaffolds
- Truss-out Scaffolds
- Access Birdcages
- Façade retention
- Access scaffolds with more than the 2 working lifts allowed with TG20 'Basic Scaffolds'
- Buttressed free-standing scaffolds
- Temporary roofs and temporary buildings
- Support scaffolds
    - Loading Bays founded on the ground
    - Mobile and static towers outside base/height limitations
    - Free standing scaffolds outside base/height Limitations
    - Temporary ramps and elevated roadways
    - Staircases and fire escapes
    - Spectator Terraces and Seating Stands
    - Bridge scaffolds
    - Towers requiring guys or ground anchors
    - Offshore scaffolds outside Offshore Contractors Association (OCA) handbook
    - Pedestrian footbridges or walkways
    - Slung and Suspended scaffolds
    - Protection fans, Nets and Pavement Frames
    - Marine scaffolds
    - Boiler scaffolds
    - Power line crossings
    - Lifting gantries and towers
    - Steeple scaffolds
    - System scaffolds outside users guide parameters
    - Sign board supports
    - Sealing end structures
    - Temporary Storage on Site
    - Masts, Lighting Towers and Transmission Towers
    - Advertising hoardings/banners

    Any scaffold structure subject to:
    - Vibration
    - High Loading
    - Long term duration
    - High risk areas
    - Loading from passenger/goods hoists

Note: The above list is not exhaustive and any scaffold that does not comply with manufacturers' guidelines as published in handbooks will require a specific design produced by a competent person.

4. References

Acts

Roads (Scotland) 1980

Road Traffic Regulations Act, 1984 (Chapter 8)

Disability Discrimination Act, 2003

Regulations

Town and Country Planning (Control of Advertisements) (Scotland) Amendment Regulations 1992

Work at Height Regulations, 2005

Construction (Design and Management) Regulations, 2007

Guidance

GS6, *Avoidance of danger from overhead electric power lines* (HSE)

HS(G)47, *'Avoiding danger from underground services'* (HSE, 2000)

HS(G)150(rev), *Health and safety in construction* (HSE, 2001)

HS(G)151, *Protecting the public: Your next move* (HSE, 1997)

HSE Information Sheets

CIS10 (rev 4), *Tower scaffolds* (HSE, 10/05), http://www.hse.gov.uk/pubns/cis10.pdf

Standards

BS EN 1263, Part 1: 2002, *Safety nets - safety requirements - test methods*

BS EN 1263, Part 2: 2002, *Safety requirements for erection of safety nets*

BS 6651: 1999, *Code of practice for the protection of structures against lightning*

BS EN 12810-1: 2003, *Facade scaffolds made of prefabricated components. Products specifications*

BS EN 12811-1: 2003, *Temporary Work Equipment: Scaffolds Performance requirements and general design*

BS 5975: 2008, *Code of practice for temporary works procedures and the permissible stress design of falsework*

Industry Guidelines

TG4:04, *Anchorage Systems for Scaffolding* (NASC)

TG20:08, *Guide to Good Practice for Scaffolding with Tubes and Fittings* (NASC)

SG4:05, *The use of fall arrest equipment when erecting, altering and dismantling scaffolding* (NASC)

SG23:03, *Safe System of Work when Erecting and Dismantling Birdcage* (NASC)

SG3:02, *Earthing of Scaffolding Structures* (NASC)

NASC Guidance Note SG26.05 entitled Scaffolding & Hoists.

Websites

Construction Industry Training Board (National Construction College), www.citb.co.uk/ncc

Health and Safety Executive, www.hse.gov.uk

National Access and Scaffolding Confederation (NASC), www.nasc.org.uk