Demolition Code of Practice

Client Information Sheet: Basic information on demolition and BS 6187; 2011 Code of Practice for full and partial demolition

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Demolition

Demolition works involve many of the same hazards as construction works; however, demolition works also pose further and severe hazards such as explosives, asbestos, and dusts. Due to the increased risks demolition is the only industry specifically named in the Construction (Design and Management) Regulations 2015 [CDM 2015] (*HSE Publication L153*) as requiring a written Plan of Works or Method Statement.

This is laid out in **Part Four, Regulation 20**, which states the following:

Demolition or dismantling

(1) The demolition or dismantling of a structure, or part of a structure, shall be planned and carried out in such a manner as to prevent danger or, where it is not practicable to prevent it, to reduce danger to as low a level as is reasonably practicable.

(2) The arrangements for carrying out such demolition or dismantling shall be recorded in writing before the demolition or dismantling work begins.

This requirement is also found in Clause 5.2.3 of the British Standard 6187:2011 Code of practice for full and partial demolition; applicable if you are carrying out structural alterations or removals during refurbishment works.

Under CDM 2015 the producer of a method statement or plan of works is considered a designer and as such is subject to all legal duties and responsibilities as they are laid out in **Part Two, Regulation 9**. The term, "design", includes drawings, design details, specifications and bills of quantities (including specification of articles or substances) relating to a structure, and calculations prepared for the purpose of a design. (**Part 1, Interpretation 2**).

Risk of asbestos

With any demolition contract there is almost always the risk of asbestos, and so compliance must be met also in accordance with the ACoP, Managing and working with asbestos: Control of Asbestos Regulations 2012. (*HSE Publication L143*)

Demolition workers may come into contact with or disturb a number of Asbestos Containing Materials [ACMs]. Asbestos is classified as a category-1 carcinogen and causes around 5000 work-related deaths each year in the UK. Inhalation of asbestos fibres can cause mesothelioma, asbestos-related lung cancer, asbestosis, and pleural thickening; all fatal or serious and incurable diseases that take many years to manifest.

Asbestos

A refurbishment & demolition asbestos survey is required for all demolition works as per the HSE Publication HSG264 The survey guide. There is a specific requirement in Control of Asbestos Regulations 2012 [CAR 2012] covered within the HSE Publication L143 (2nd edition 2013) (**Regulation 7, Paragraph 190**) for all ACMs to be removed as far as reasonably practicable before major refurbishment or final demolition where it is reasonably practicable and does not cause a greater risk to employees than if the asbestos had been left in place.

NB: For further information see PERSES Client Information Sheet: Control of Asbestos.

CAR 2012 – Plan of Work

The Plan of Work must include the following information:

- the nature and probable duration of the work;
- the number of people involved in the work;
- the address and location where the work is to be carried out;
- the methods to be used to prevent or reduce exposure to asbestos, eg prevention and control measures, arrangements for keeping premises and plant clean and arrangements for the handling and disposal of asbestos waste;
- the type of equipment, including PPE and RPE, used for: protecting and decontaminating those carrying out the work;
- protecting other people present at, or near, the worksite.

Where necessary, the plan should include the site layout, a description of the location and nature of the asbestos present and which ACMs will be disturbed by the work. Arrangements should be made to ensure that work is carried out in accordance with the Plan of Work, and any subsequent changes made to it. Planning is a key requirement for all work with asbestos. The Plan of Work should be a practical and useful document, describing a safe working method for site staff to follow. Plans of Work should be drawn up by a suitably competent person, and must clearly describe how disturbance and spread of asbestos will be minimised or prevented.

A suitable and sufficient plan must be in a style and format that is easy for employees to use. Diagrams, flow charts, photographs and similar are very useful. The information about removal methods, controls and containment needs to be specified, so that it can act as a quick reference guide for those on site. Generic information about frequently used company procedures will not need to be in the site-specific plan. Such information may form part of general procedures or health and safety policy documents and should be available on site for reference. The plan of work should be suitable for the scale and type of work to be carried out.

Where removal of ACMs is time-consuming and resource-intensive and only involves lower-risk material such as textured decorative coatings containing asbestos, then removal before demolition or major refurbishment may not be reasonably practicable.

Obviously, full training in asbestos is required to achieve competence.

Waste

Waste should be considered within the following terms:

- Substance or object which the holder discards or intends to discard or is required to discard (Waste Framework Directive [3])
- Any material no longer required by the original owner and, in the case of demolition, any material that leaves the site boundary, is legally classified as "controlled waste" and is subject to the provisions of the Environmental Protection Act 1990 [5]

Under case law [R (Save Britain's Heritage) v. SSCLG 2010], any material no longer required by the original owner is classified as waste, regardless of whether it is sent for recycling or recovery, whether it has a commercial value and an end market, and whether or not it poses an environmental threat. This is important because demolition materials left on site for a period of time might need a permit to remain on site until a market is found. As a general rule, further use needs to be a certainty, not a possibility.

BS 6187:2011 Code of practice for full and partial demolition

BS 6187 came into force on the 1st of January 2011 replacing 2000 edition.

This document offers good practice recommendations for the demolition (both full and partial) of facilities, including buildings and structures. The standard is, therefore, applicable to demolition activities undertaken as part of a structural refurbishment. However, it is not applicable to all structural refurbishment activities only those involving partial demolition. The standard also considers Health and Safety, and issues that affect the protection of the environment at large.

Outline guide of the key elements within the BS 6187 ACoP:

Clause 4: Approaches to demolition

Helps to provide the options considered in a broader assessment, especially within an asset management context.

Clause 5: Planning and managing projects

Outlines key planning and managing considerations to run a demolition contract smoothly and correctly. This also includes risk management, and competencies and training.

Clause 6: Procurement

Covers obtaining professional advice, and the tender process.

Clause 7: Knowledge of the site

Covers desk top and site surveys. Acquiring and providing information and who is responsible for it.

Clause 8: Decommissioning procedures

Includes, mothballing, deleterious atmospheres, and time lag effects.

Clause 9: Identifying structural hazards

Is a vital and important section and covers the assessment on condition for a host of materials.

Clause 10: Health hazards

On contamination of sites, hazardous atmospheres, asbestos, pathogens, ionizing radiations, gasses, PCBs, etc.

Clause 11: Health and safety of people on or off site

Gives us P.P.E, site security, emergency procedures, risk-based approaches, and loan working, to name but a few.

Clause 12: Protection of people and the environment

Responsibilities for environmental management, Identification and management of sources of pollution, and waste management.

Clause 13: Safe working spaces and exclusion zones

Exclusion zones, assessment and design.

Clause 14: Structural demolition: Principles, mechanisms, and hazards outlines

Progressive fragmentation, and deliberated collapse mechanism.

Clause 15: Avoidance of unplanned structural collapses

Covers Achieving residual structural stability as demolition progresses, and designing safe deliberate collapse mechanisms, including pre-weakening.

Clause 16: Temporary structures for stability, support, and access

Auxiliary and temporary structures for stability or support such as façade retention and is crossed over against BS 5975:2008+A1:2011Code of practice for temporary works procedures and the permissible stress design of falsework.

Clause 17: Demolition techniques

Outlines: Explosives/Blasting, Bursting agents (gas, hydraulic and pyrotechnic bursting)

Expanding demolition agents, Hot cutting, Flame cutting with compressed gases, High-pressure water jetting, Demolition by hand

Partial demolition, Demolition by machine, High-reach machines, Tower and other high-reach cranes,

Demolition by rope pulling, cutting by drilling and sawing, Demolition by chemical agents

Clause 18: Materials handling and processing

Details the procedures that should be put in place for a variety of specific materials.

Clause 19: Typical demolition methods for various types of structures

Gives a list of the common structure types and the issues arising from the demolition of these types; this includes, post tensioned concrete, bridges, arches, and spires.

Clause 20: Completion of the works

Completion of the document.

Annex A (informative) Training and competencies

Annex B (informative) Legislation, statutory regulations, codes of practice and guidance relevant to demolition

Annex C (informative) Useful contacts for demolition work

Annex D (informative) Heritage

Annex E (informative) Demolition waste protocols

Annex F (normative) Hazards associated with pre-stressed materials