



**SUSTAINABLE
CONSTRUCTION
GROUP**

**GUIDANCE
FOR
PROJECT SPONSORS
AND
PROJECT MANAGERS**

GUIDANCE NOTE 6:

**DEMOLITION, DISMANTLING,
RECOVERY AND REUSE**

May 2007



Central Procurement Directorate
"Helping The Public Sector Deliver Better Public Services"

Central Procurement Directorate

GUIDANCE NOTE 6: DEMOLITION, DISMANTLING, RECOVERY AND REUSE

This note deals with the demolition and dismantling of buildings and structures with the aim of minimising the quantity of waste being sent to landfill sites. The aim of this Guide is to promote where commercially viable (in accordance with the waste hierarchy).

- Dismantling and re-assembly elsewhere of buildings, structures and components.
- Efficient recovery and segregation of materials which can be re-used or recycled.

These objectives should be pursued while avoiding adverse impact on cost, damage to the environment and minimising transport (especially road transport of heavy materials) where feasible.

The Guide's procedures and practices require Employers, Project Managers and Contractors to adopt a different approach compared to previously established practice. In a similar way to construction projects tenders for demolition/dismantling will be compared on quality/price criteria and not solely on lowest price.

To enable maximum recovery of materials using the most cost effective opportunities adequate programme time must be allowed. For example, where it is envisaged that a mobile crusher will be used on site, an allowance for the time required to obtain a licence needs to be built into the overall programme.

6.1 THE PRESENT POSITION WITH DEMOLITION WORK

Demolition work has been characterised by: -

- Inadequate early identification of recoverable materials
- Inadequate identification of hazardous materials
- Short demolition programmes which allow little time to recover materials
- An under developed market for recycled/reused materials

Local Demolition Contractors have been used to working to 'Lump Sum' contracts. Under these contracts the Contractor will recover valuable items such as steelwork, steel reinforcement and architectural salvage. Local demolition firms are generally not used to working with Bill of Quantities type contracts.

6.2 ACHIEVING THE AIM OF MORE RECOVERY OF MATERIALS AT NO COST PENALTY OR DAMAGE TO THE ENVIRONMENT

This will require: -

- Identification of recoverable materials (See [Appendix 6.2 Potential Recovered Materials and Items for Re-use and Recycling](#))
- Identification of hazardous materials
- Longer programmes to allow recovery of materials
- Identification of any risks to the environment or local habitats
- Suitable forms of contract
- Advance specialist contracts are used to remove asbestos or other hazardous materials from the site
- Assessing the impact on biodiversity, for example, ensuring that the demolition/recovery work does not adversely affect nesting birds, bats and other

'listed' wildlife. (This may involve setting the programme outside 'nesting periods' and providing alternative roosting sites for use when the wildlife returns.) Special care also needs to be taken where work is carried out in a conservation designated area. The descriptions of the various conservation designated types are listed in [Appendix 6.4 - Description of Conservation Designations in Northern Ireland](#). For information and advice please contact the relevant body responsible for administering these sites.

In most cases the requirements listed above will be investigated as part of a Consultant's report.

(See [Appendix 6.1 - Checklist for a Pre-Demolition Works Survey](#).)

6.3 WHAT IS THE BEST PROCUREMENT ROUTE FOR DEMOLITION/RECOVERY CONTRACTS?

The form of contract should be based on allocating risk to the appropriate party, viz., the Contractor or the Employer. In some projects the extent of the '*knowns*' will be high and the risk should be allocated to the Contractor.

6.3.1 Risk allocated to the Contractor

A lump sum contract could be used such as

NEC3 Option A: Priced Contract with Activity Schedule;

'*Knowns*' would include:-

- the building/structure can be easily inspected on site;
- the materials and construction used is well documented;
- details of foundations and other 'hidden features' are available to tenderers; and
- no asbestos and other hazardous materials have been used on the site

In order to reduce the cost of time involved during the bid preparation period, Employers may wish to calculate quantities before inviting tenders and then issue a copy of the quantities list to tenderers. It must be made clear that the tenderer will have used the quantities and relied upon them entirely at the tenderer's own risk of their inaccuracy or incompleteness.

6.3.2 Risk allocated to the Employer

Where there are '*unknowns*' the risks attached to these should usually be allocated to the Employer.

The aim should be to reduce the risk to the Employer by surveys of the building/structure and tests of the materials used where there are no existing drawings of the building/structure. This work would be carried out by the Consultant who could for example: -

- Quantify the amount of steel reinforcement in the reinforced concrete elements.
- Quantify the extent of the concrete foundations and other hidden structural elements.

- Quantify the extent and location of any hazardous materials.
- Advise on the type of treatment used on timber elements and the quantities suitable for recycling.

The quantities of '*unknowns*' should be subject to re-measurement

A bill of quantities contract could be used such as:-

NEC3 Option B: Priced Contract with Bill of Quantities.

6.3.3 Demolition/recovery procured as part of a Contract incorporating other works

This type of contract could be used where there is extensive redevelopment work on the site. It has the advantage that the Contractor can identify recovered demolition material that could be used on site in the new construction. In a large site mobile crushers could be used provided that there will be no annoyance to neighbours.

The same considerations of an appropriate sharing of risks, which applied previously, (see 6.3.1 & 6.3.2) are relevant in the form of contract used.

6.3.4 Demolition/recovery procured with the Demolition Contractor as a member of an Integrated Supply Team

This approach would be advantageous where there is extensive redevelopment work on the site. As the Integrated Supply Team will be appointed early before feasibility there are big opportunities to identify the re-use and recycling of materials at an early stage. In a large site mobile crushers could be used provided that there will be no annoyance to neighbours.

6.4 ROLES AND RESPONSIBILITIES

6.4.1 Contracting Authorities and Centres of Procurement Expertise (Employers)

The main role and responsibilities of Contracting Authorities and Centres of Procurement Expertise are to ensure legal compliance with:-

- Health and Safety obligations as set out in the Construction (Design & Management) Regulations (Northern Ireland) 1995 and
- Waste Management Regulations

The Health and Safety obligations include inter alia:-

- Appointment of a competent Planning Supervisor
- Monitoring to ensure that the Planning Supervisor carries out all the duties of the Planning Supervisor as set out in the CDM Regulations and
- Monitoring to ensure that Designer(s) & Consultant(s) are competent and carry out all the duties of the Designer as set out in the CDM Regulations.
- Requirement to advise the Consultant of any known hazards before the Consultant carries out a Risk Assessment. Alternatively, a Risk Assessment of the existing site could be undertaken by the Employer's staff before appointment of the Consultant. This would be used to advise the Consultant of hazards, which could be encountered in surveying the site.

6.4.2 Project Managers

6.4.2.1 Pre-contract Stage

In preparing tender documentation and quality assessment of tender submission, take into account, inter alia. :-

- Waste Management
- Details of hazardous waste known to be on site
- Statement of 'Quick Wins' (as indicated by the WRAP tools or the Consultant's report) 'Quick Wins' that have been identified as the most effective cost neutral opportunities to recover materials and items.
- Consideration of appropriate use of Risk/Reward assessment to encourage recovery of materials above "baseline practice" (See [Annex A](#))
- Ensure that all notices to relevant authorities of demolition and recovery activities are given and the necessary licence permissions or authority required for the execution of the work have been obtained. (Notices and permissions will be required for the disconnection of utility services and fees for these will be paid by the Employer or allowed for in the Contract Sum.)
- Prepare specification clauses for demolition/recovery. (See [Appendix 6.3 - Generic Specification Clauses for Demolition, Deconstruction and Resource Recovery](#))
- Identify areas, which include features that have a protected status, e.g. trees, species or habitats, landscape or archaeological features. In areas, which are particularly sensitive, consider employing experts to maintain a watching brief during clearance activities. For protection measures see CIRIA's "*Environmental handbooks for building and civil engineering projects Part 3 Demolition & site clearance*" Issue S4.2.2 pp 54 & 55.
- Include as part of the tender documentation the site investigation results showing contamination of the site and records of the treatment undertaken so that the likelihood of unforeseen contact with residual contamination is kept to a minimum.
- Prepare a pre-tender Health & Safety Plan for the demolition works.
- For selection of tenders state the quality/price criteria by means of a prioritised list. For example this could require quality to be assessed inter alia on:
 - Technical competence and experience of operatives and management in carrying out the particular type of demolition/recovery work.
 - The tenderer's method statement and proposals for recovery of materials. Particular weight could be given to the maximum recovery of materials using the most cost effective neutral opportunities.
- Include the Environmental Protection Declaration as part of the tender documentation. [See [Sustainable Construction Group Guidance Note 3 \(PDF, 335KB\)](#)]

- Ensure sufficient time is allowed for recovery of materials in setting any programme.
- The PM should arrange a site visit for tenderers, individually if appropriate, to facilitate their inspection of the structures, site and surrounding area. The tenderers should be instructed to submit an outline method statement with their tender. This statement should cover the precautions to combat any hazards and their preferred demolition, deconstruction and resource recovery procedure.

If a Contract with an Activity Schedule is adopted, the PM should limit the number of activities, which he requires to be priced.

The tenderer will price the schedule and state the expected recovery of materials to be achieved. For some projects the tenderer will provide a detailed estimate of the quantities of materials and the % expected recovery for each type of material.

For some projects the Employer will provide an estimate of quantities of materials which will be used at the Contractor's own risk.

For a Bill of Quantities contract the PM will prepare a Bill. This will be priced by the tenderer and re-measured as required.

In a lump sum contract, the tenderer will calculate using drawings and/or site inspection information. Any additional work not shown on the drawings or visible from site inspection will be a compensation event.

6.4.2.2 Construction Stage

- Ensure the method statement for disposal of Construction, Demolition & Excavation waste is implemented [see Section 5 (Checking Up) of the [Waste Management Duty of Care Code of Practice](#) (Doc, 178KB)].
- Ensure that the Waste Management Duty of Care Code of Practice is followed.
- Ensure waste is properly described (European Waste Catalogue) See Appendix 3.1 of the [Sustainable Construction Group's Guidance Note 3](#) (PDF, 335KB) for some common construction wastes.
- Ensure that the Contractor prepares a Site Waste Management Plan and monitor its implementation.
- Ensure that the contractor has copies of the following documentation available for inspection:
 - Schedule of the waste that can be carried
 - All Waste management Licenses or Exemptions (e.g. Landfill sites, recycling and transfer stations)
 - Schedule of the Waste categories that can be accepted under the Waste Management Licenses
 - Receive copies and check Waste Transfer Notes. These must be kept for 2 years by the producer of the waste
 - Receive copies and check (if necessary) Consignment Notes for Hazardous Waste. These must be kept for 3 years by the producer of the waste.

- Check if site is exempt or licensed (EHS Tel. No. 028 9054 6422 or email wakeuptowaste@doeni.gov.uk)
- Check Effluent Discharge Consent where material is going to an exempt site (EHS Water Management Unit, Industrial Consent Section, Tel No 028 9025 4736)
- Ensure that the contractor follows the good practice guidance on wastewater and water-based pollution control on site. (See CIRIA's "*Environmental Handbooks for building and civil engineering projects Part 3*" Issue S4.6.2 page 63)
- Consult with the Contractor's Agent on plans for dealing with the unforeseen discovery of actual contamination or suspected contamination. **After demolition**, consider undertaking a post-demolition survey to establish the actual levels and areas of any residual contamination, to act as a basis for future action and development, and to ensure that there has been no unintentional cross-contamination of otherwise clean ground.
- Ensure that work does not commence on site, prior to the Principal Contractor's submission of a satisfactory Construction Phase Health & Safety Plan. (See *Construction Health & Safety Manual Section 8A Demolition* published by Construction Industry Publications Ltd for guidance and checklist for demolition method statement.)
- Ensure that the Health and Safety Plan is adhered to by all operatives on the site.
- Ensure that the Health & Safety - Buildsafe NI provisions are observed on site. These include:
 - Health and Safety Management Systems – third party accreditation
 - Health & Safety – Competency of Operatives (All site operatives must be in possession of a valid Health and Safety Competency identification (HSCI) card issued by an appropriate industry body)
 - Health and Safety Principal Contractor's Report. (The contractor will provide a written report to the PM detailing all measures being taken by the contractor to ensure safe working practices are observed on site. The report will include statistics on any accidents with full details in the event of a major accident on the site. The report will be in the format prescribed by the PM.)

6.5 IMPLEMENTATION

The requirements contained within this *Guidance Note* are to be implemented from 1st June 2007.

APPENDIX 6.1 – CHECKLIST FOR A PRE-DEMOLITION WORKS SURVEY

The purpose of this checklist is to help to ensure that those persons completing a pre demolition survey provide a report that maximises the sustainable recovery, reuse or disposal of construction materials.

In carrying out this check-list it is assumed that all necessary health and safety issues will be taken into consideration in any activities or recommendations.

Depending upon the nature of the demolition project the following document may require amendments, as necessary.

Gathering information

- 1 Survey all of the properties, structures, roads, footpaths and services etc to be demolished in sufficient detail to describe the materials and construction used.
- 2 Provide drawings in sufficient detail and scale to fully describe the site and where necessary adjoining sites and locate all services crossing under, over or on the site.
- 3 Provide photographic records, of all properties, structures, roads, footpaths and services etc adjacent to or crossing the demolition site in sufficient detail to record existing condition before the start of demolition activities.
- 4 Confirm the status of the proposed properties, structures, roads, footpaths, and services etc are for example; listed, scheduled, within a conservation area, area of townscape character or other protected areas etc and there are no trees with Tree Preservation Orders within the area for demolition or identify all relevant consents required before demolition.
- 5 Confirmation of the environmental status or any other legal obligations arising in connection with demolition activities.
- 6 Source a copy of the health and safety file prepared for the structures, works or buildings if available.

Considerations

- 7 Consider any effects of demolition on all surrounding land and building uses that may need to be mitigated.
- 8 Consider any preparatory works and required accesses and egresses to and from the site before demolition can proceed.
- 9 Consider the use of the site by the proposed demolition contractor and provide recommendations on those areas to be made available for demolition activities, storage and access and egress to and from the site and how the demolition should be conducted.
- 10 Consideration of all necessary tests of materials to ascertain the presence and toxicity of hazardous materials and all potential sources of pollution.
- 11 Consider any areas off the site required for demolition, for example; on or adjacent, to the site, needed to allow the safe demolition, recovery or storage to take place with recommendations on any consents required.
- 12 Consider the practicality, safety and economy of recovery of demolition materials by either on-site or off-site recovery processes.

- 13 Consider all foreseeable security and public safety issues including the potential use of explosives and detail all relevant risks.

Recommendations

- 14 Recommendations on foreseeable health and safety risks before, during and after demolition and recommendations on how these can be minimised, reduced or avoided.
- 15 Recommendations on any tests that are required to ascertain the presence or not of hazardous materials.
- 16 Recommendations on any consents that are required.
- 17 Recommendations on any temporary provisions to be made on site or adjacent to the site to enable the carrying out of the demolition works
- 18 Recommendations on the timely notification of relevant authorities of demolition and recovery activities to expedite the carrying out of the demolition.
- 19 Recommendations on the form of contract, content of tender documents and length of contract period.
- 20 Recommendations on the protection or making safe of services during demolition activities
- 21 Provide a schedule of indicative materials and quantities to be recycled on site, removed off site for recycling, sent for land fill etc (including for example estimates of steelwork or concrete to be recovered based on an activity schedule) in a format suitable to applying to Risk/Reward Assessment (See [Annex A](#))

ANNEX A - RISK/REWARD ASSESSMENT

The following materials are assessed as providing the baseline practice¹ for demolition recovery in this contract.

Structural steel	100% recovery
Reinforcement bar	100% recovery
Radiators	100% recovery
Metal window frames	100% recovery
Metal pipes	100% recovery

Plant

Tanks (smelting)	100% recovery
Pumps (recondition/smelting)	100% recovery
Elevators (recondition/smelting)	100% recovery

Architectural Features

Mantle pieces	100% recovery
Archways	100% recovery
Columns	100% recovery

In addition to the above baseline practice assessment, on the basis of your site inspection, list the most effective cost neutral opportunities (Quick Wins), together with approximate quantities of materials and items which you intend to recover.

This listing together with the tender price will be used in the assessment of the tender. This assessment will use the following formula to compare tenders.

$$\text{Assessment Value} = \text{Tender Price} - (\text{Quick Wins Tonnage}) \times \text{£}50^2$$

In the event that the Quick Wins tonnage is not achieved, then this will be regarded, as a compensation event priced at £50 per tonne for any shortfall greater than 10% of the Quick Wins tonnage.

¹ The PM will decide what baseline practice is for demolition recovery in a particular project from consideration of the Consultant's report and the most up to-date industry guidance. (e.g. WRAP) Baseline practice is regarded as the lowest level of recovered materials, which the industry would normally recover if allowed sufficient time.

² £50 is cited as an example. The PM can decide the most appropriate rate depending upon the particular project.

APPENDIX 6.2 - POTENTIAL RECOVERED MATERIALS AND ITEMS FOR RE-USE/RECYCLING

The amount of recovered materials or items for re-use or recycling will depend upon: -

- Their inherent value when new.
- Their ease of safe recovery on site.
- Their condition (e.g. have they suffered water, fire, insect damage).
- Have they been contaminated with other materials?
- Can they be recovered in reasonable lengths and quantities for resale or re-use?

Industry base line recovered materials

It is expected that the following materials in order of precedence will be recovered as part of a demolition contract.

- Steel/metal e.g. steelwork, curtain walling, air handling ductwork and equipment, reinforcing steel, copper pipes etc
- Timber e.g. studwork, built in furniture/kitchen units etc
- Plastics e.g. uPVC window frames, rainwater goods etc.

To a lesser extent quantities of the following materials may be recovered if economically advantageous: -

- Reinforced concrete or concrete, which in most cases will be crushed to provide, bulk inert aggregate.
- Asphalt
- Masonry/brick rubble
- Clay facing bricks (in lime mortar)
- Glass

Potential re-uses of materials & elements

This is governed by their life cycle performance and the other factors listed previously. The life expectancy to complete replacement of some common construction elements is shown below. The available 'life' of an element/component will determine (inter alia) if it can be re-used or recycled or sent to landfill etc.

Element system performance profiles

Foundations	100 years +
Superstructure	60 years
External cladding	40 years
Windows	20 years
Roof coverings	20 – 40 years
Rainwater goods	20 years
Internal partitions	20 – (40) years
Demountable partitions	10 – (60) years
Doors & Ironmongery	10 – (20) years
Finishings generally	20 years
Raised Floors	10 – (40) years
Floor coverings	10 years
Suspended ceilings	10 – (20) years
Fittings & furnishings	5 years
Mechanical services	20 years
Electrical services	20 – 40 years

Measuring Quantities and Quality

Weights can be calculated using the relevant density given in BS 648: 1964 *Schedule of weights of building materials* and the measured volume of the material. If the volume is measured after demolition on site (rather than from site survey drawings) bulking factors should be applied. The bulk volume = bulking factor x volume. For concrete and non-concrete masonry, (the major resource for the production of recycled aggregates), a bulking factor of 1.6 should be used.

AggRegain's "Demolition: Implementing Best Practice" gives useful guidance regarding demolition site layout planning, calculating storage space requirements and evidence of material recovery. (pp 19 – 24) For details see [AggRegain's website](#).

Concrete

For concrete that is crushed to provide aggregate it is probably easier to measure by volume and then calculate the weight using the expected density. If the crushed concrete aggregate is intended for use in concrete the guidance in Appendix 4.1 of the [Sustainable Construction Group's Guidance Note 4 \(PDF, 348 KB\)](#) should be followed. In addition it must comply with the [Quality Protocol for the Production of Aggregates from Inert Waste in Northern Ireland](#).

Asphalt

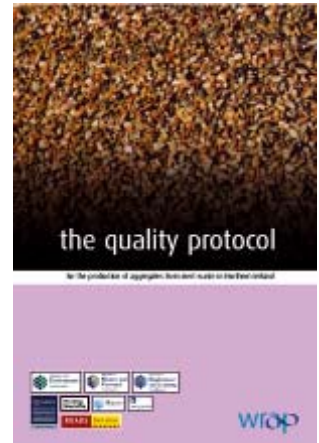
This could be obtained by planing the road areas and reprocessing the materials for re-use. The asphalt, which could be measured by volume and the weight, calculated using the expected density. It must comply with the *Quality Protocol for the Production of Aggregates from Inert Waste in Northern Ireland*.

Masonry/brick rubble

Masonry/brick rubble is to be crushed and the arisings stockpiled on site if possible. Different materials should be segregated as much as possible in order to yield a higher quality recycled product free of contaminants.

Where the masonry/brick rubble is to be used in concrete it should comply with the recommendations of Appendix 4.1 of the [Sustainable Construction Group's Guidance Note 4](#) (PDF, 348 KB) and also the *Quality Protocol for the Production of Aggregates from Inert Waste in Northern Ireland*.

Where the material is to be used as fill or unbound, pipe bedding it must comply with the *Quality Protocol for the Production of Aggregates from Inert Waste in Northern Ireland*.



Clay facing bricks (in lime mortar)

Where identified, re-use clay facing bricks removing the attached lime mortar.

Steel/metal

The Tenderer is to assess the most suitable options for reuse/recycling. If steelwork has been damaged by fire and is twisted/bent it is not suitable for re-use and should be sent for recycling.

Steelwork should be measured by weight.

The Consultant's report should assess the quality of steelwork, based on age of construction, existing drawings and condition when inspected.

Steel/metal should be stored in blue colour coded waste containers on site.

***The Quality Protocol
for the Production of
Aggregates from
Inert Waste in
Northern Ireland
(PDF 1,282kB)***

Timber

All good quality timber is to be segregated and processed for recycling. Timber subject to dry and wet rot is not to be used and should be sent to landfill. (See also clause [C20/336](#))

Good quality approved timber sections can be stored on site for future use.

If required for structural use timber can be visually stress graded by approved stress graders.

It is expected that some timber may be chipped for re-use in another application, e.g., animal bedding.

Wood should be stored in green colour coded waste containers on site.

Gypsum Plasterboard

There is currently no plasterboard recovery available in Northern Ireland although it is available in the Republic of Ireland. If a recovery centre is set up in Northern Ireland plasterboard should be segregated and sent for processing to this centre.

In the meantime, gypsum plasterboard should be segregated and sent to an appropriate landfill site, which has a separate cell to receive gypsum plasterboard.

The gypsum plasterboard should be stored in a white colour coded waste container on site.

Plastics

Plastic materials throughout the site are to be segregated and recycled/reprocessed at a specialist recycling facility. Locally, [Irish Polymers](#) will purchase most plastic waste materials; details are available from their website.

Glass

Glass should be segregated by the different types of glass and by the different colours. The glass should then be sent to a specialist glass recycling company.

ACTIVITY STAGE	MATERIALS/ITEMS	COMMENTS
Site clearing and securing the site	Cut down identified trees and branches	Chip for mulch and spread on identified areas on site or remove to recycling facility. (Identified trees are not protected nor have wildlife nesting.) See NBS clauses D20/170, 175 and 180.
	Remove interlocking brick/block roads/pavings	Re-use
	Septic tank	Licensed contractor to pump out & fill the septic tank with lean mix concrete. Contractor to mark location of old septic tank with a flag or marker.
	Asphalt road	Recycle - Plane off layer of asphalt road and car park areas where identified
	Underground tanks (oil)	Degassing by specialist
	Surface mounted tanks	Drain and degas if required
	Sectional tanks (steel, grp)	Drain and deconstruct, re-use or recycle depending upon condition
	Timber decking	Remove and re-use

ACTIVITY STAGE	MATERIALS/ITEMS	COMMENTS
Internal soft strip (Engineering Services)	Electric lights and fittings fluorescent tube lighting	Re-use? (dependent on age) Dispose off in accordance with WEEE Regulations
	Mercury switches	Dispose off in accordance with WEEE Regulations
	PCB ballasts	Dispose off in accordance with WEEE Regulations
	Computer flooring	Remove floor panels and re-use Re-use computer floor pedestals
	Sheet metal floor or ceiling ducting for electrics and other services	Re-use/recycle
	Electrical panel and boxes	Re-use or dispose according to WEEE Regulations
	Plumbing	Re-use/recycle
	Domestic type boiler	If non-compliant with present day Building Regulations – recycle (scrap material)
	Burglar alarm sensors and control box	Re-use
	White goods	Re-use if energy rating satisfactory with best present day standards otherwise dispose in accordance with WEEE Regulations
	Radiators	Drain and recycle
	Air ducting	Recycle

ACTIVITY STAGE	MATERIALS/ITEMS	COMMENTS
Internal soft strip (Fixtures & Fittings)	Suspended ceiling	Recycle ceiling grid Re-use/recycle ceiling panels
	Venetian blinds and fittings	Re-use or recycle
	Vertical blinds	Re-use or recycle
	Carpets and carpet tiles	Re-use/recycle if not too wet or stained
	Bath fixtures/cabinets	Re-use
	Kitchen fixtures/cabinets/ Appliances	Re-use
	Large mirrors	Re-use
	Doors – interior	Re-use
	Doors – exterior	Re-use if not subject to rot
	Windows (timber)	Re-use only if in good condition and compliant with present day standards otherwise recycle
	Windows (UPVC frame)	Recycle (plastic deteriorates with age and sunlight)
	Slingsby ladder loft ladder	Re-use

ACTIVITY STAGE	MATERIALS/ITEMS	COMMENTS
External strip of roof covering rainwater goods, etc, (domestic type construction)	Slating	This could be a time consuming operation to remove carefully, however, broken slates could be used in garden – paths and beds
	Traditional lead and copper roofing	Re-use
	Lead and copper flashings	Recycle
	UPVC rainwater goods	Recycle (plastic deteriorates in sunlight so re-use will not be an option)
	Metal rainwater goods	Re-use or recycle
External strip of roof governing rainwater goods, etc (Industrial type construction)	Asbestos cement roofing	Carefully remove and send to hazardous waste facility
	Translucent roof lights	Recycle
	Plastisol roof sheeting and side sheeting	Re-use or recycle. Note composite panels cannot be re-cycled or easily re-used
	Sheet metal steel gutters	Re-use/recycle if not sprayed with limpet asbestos Safety precautions required if painted with red lead paint
External deconstruction of conservatories	Glass panels	Recycle
	Translucent plastic roofing panes	Recycle
	Conservatory framework	Recycle
Deconstruct or demolition of roof (domestic)	Roofing felt	To landfill (unlikely to be recovered intact)
	Softwood battens	To landfill (could be used on site as spacer pieces for storage of recovered sheets, etc)
	Gypsum plasterboard and skim ceiling	To landfill
	Timber rafters and timber framing (disconnect holding down straps)	Re-use (denail on site)
	Timber ceiling joists	Re-use (if lengths >1.2 m)

ACTIVITY STAGE	MATERIALS/ITEMS	COMMENTS
Deconstruct or demolition of superstructure (domestic)	Gypsum plasterboard and skim wall to stud partitions	To landfill
	Timber stud partitions (non-load bearing)	Re-use (after denailing on site)
	Suspended timber (1st floor) Gypsum plasterboard and skim ceiling under	To landfill
	T&G flooring	Re-use (expect some waste) (bathroom area could have water damage)
	1 st floor joists	Re-use
	Blockwork partitions (unplastered)	Recycle (crush for aggregate)
	Blockwork partitions (plastered)	To landfill
	External cavity walling internal leaf plastered	To landfill
	Steel outside fire escape	Re-use or recycle
	Timber stud (external) walling	Re-use timber stud and plywood sheathing plasterboard to landfill

ACTIVITY STAGE	MATERIALS/ITEMS	COMMENTS
Deconstruct or demolition of commercial type superstructure	Steel portal frame buildings	Re-use or recycle , however, if painted in red lead paint observe H&S rules
	Uncased steel frame buildings	Re-use or recycle , however, if painted in red lead paint observe H&S rules. Intumescent (fire) coating to steel is difficult to remove. Avoid by re-using coated steelwork, if possible. [See also Historic Structural Steelwork Handbook (published by BCSA)]
	Reinforced concrete floors and stairs	Recycle reinforcement. Recycle concrete by crushing for aggregate if commercially viable.
	Encased concrete steel frame buildings	Recycle steelwork and reinforcement. Recycle concrete by crushing for aggregate if commercially viable.
	Reinforced concrete framed buildings	Recycle reinforcement and recycle concrete by crushing concrete if commercially viable
	Precast concrete cladding panels	Ensure concrete has acceptable chloride content. If acceptable recycle reinforcement
	Precast concrete floor and roof units	Ensure concrete:- has acceptable chloride content is not high alumina type If any of above send to landfill. If pre-stressed, steel may be not worth recovering

APPENDIX 6.3 - GENERIC SPECIFICATION CLAUSES FOR DEMOLITION, DECONSTRUCTION AND RESOURCE RECOVERY

These clauses are derived from the National Green Specification (NGS) and provided here as a useful starting point for writing appropriate clauses. Modifications are required if used with a JCT form of contract. (For example, for Project Manager (PM) use Contract Administrator (CA).)

An NEC3 version of generic clauses will be issued at a future date.

C20 Demolition

To be read with Preliminaries/General conditions

GENERAL REQUIREMENTS

120 EXTENT OF DEMOLITION

- General: Subject to retention requirements specified elsewhere demolish structures down to _____.

120A EXTENT OF DEMOLITION

- General: Subject to retention requirements specified elsewhere demolish structures down to ground floor/basement.

Break out the ground bearing slab, foundations and underground services

120B EXTENT OF DEMOLITION

- General: Subject to retention requirements specified elsewhere demolish structures down to ground floor/basement.

Keep existing foundations for reuse.

120C EXTENT OF DEMOLITION

- General: Subject to retention requirements specified elsewhere demolish structures down to ground floor/basement.

Break out the suspended ground floor slab, fill basements with layers of consolidated hardcore from the demolition recycle..

121 CONSTRUCTION, BUILDINGS & MATERIALS FOR POTENTIAL RECLAMATION

This site includes: _____

121A CONSTRUCTION, BUILDINGS & MATERIALS FOR POTENTIAL RECLAMATION

This site includes: Many old buildings predominantly multi storey building with load-bearing brickwork, pitched roofs and timber floors.

There are buildings which are scheduled to be listed and so contain features of historic, social or architectural importance or quality.

122 SOFT STRIP: SHARPS

Carefully inspect visually without touching, wearing appropriate Personal Protective Equipment to minimum hands and head, determine all locations of any deliberately placed sharps, blades and needles.

Use good mobile lighting to assist in finding their locations.

Possible locations: gripping surfaces: e.g. balustrades and handrails, leaning surfaces: e.g. window sills,

Remove all sharps using tools not hands, wearing appropriate Personal Protective Equipment to minimum hands and head.

Dispose of in appropriate sharps storage container in appropriate colours.

123 SOFT STRIP: HAZARDOUS MATERIALS

Carefully inspect visually without touching, wearing appropriate Personal Protective Equipment, determine all locations of any hazardous materials, e.g. asbestos,

Possible locations: underside of steel gutters (Limpet spray asbestos), pipe lagging

Inform Employer or his representative if any hazardous materials found.

124 SOFT STRIP: FURNITURE FIXTURES, EQUIPMENT & FINISHES

Ensure a schedule of conditions is complete and has been issued to the PM and agreed.

Protect and carefully remove any furniture, fixtures and equipment, for subsequent reuse on site or elsewhere by others, as Architectural Salvage or construction reclaim for sale and reuse, remanufacture or recycling.

Salvaged materials: segregate, carefully place on/in trailers, pallets, pallet boxes, crates; separate, package and protect for transport and label.

Protection must preserve the condition of a fitting for re-use, it may be prudent to describe minimum protection standards rather than take a risk.

Should damage render the fitting unsuitable for re-use then be liable for any additional cost incurred in repairing to same condition or replacing with new.

If and when required carryout repairs or replacement at own expense.

Cleaning: is not required.

See Design for Deconstruction by Buro Happold & Design Guide to using Reclaimed Equipment, components & Materials in Buildings (late 2005) by Buro Happold

125 SOFT STRIP ALIEN MATERIAL AND POTENTIAL CONTAMINATION OF RECYCLATE

Prior to commencement of the work and periodically during its execution, review the condition of the building's methods of construction, fixings and fastenings, materials, with the PM, in order to determine which materials need to be removed to ensure potential recyclate remains free from contamination which would otherwise prevent their potential recycling; materials that will render them contaminated and unusable or non-compliant with the Specification.

E.g. timber or plaster on masonry will spoil the recipe for reuse as hardcore, etc.

Submit proposals to PM and seek instruction to suit the Programme.

Carefully and thoroughly remove materials from building before demolition.

126 DECONSTRUCT IN PREFERENCE TO DEMOLISH

Prior to commencement of the work and periodically during its execution, review the condition of the remaining building's methods of construction, method of fixing and fastening, materials, etc. with the PM, in order to determine which parts shall be dismantled to facilitate recovery of further materials for re-use.

Submit proposals to PM and seek instruction to suit the Programme.

Once all soft stripping exercises are complete or

Once removal of as much alien materials as practical to allow recycling is complete.

Where instructed deconstruct building(s) to reclaim construction materials for reuse on and off the site.

Demolish any remainder for recovery for reuse or recycling. See [C20/511 - 580](#).

Where practical arrange for collection as deconstruction occurs, straight in/on to lorry, pallets, pallet boxes, crates or skips.

127 BOUNDARY BETWEEN DEMOLITION AND DECONSTRUCTION OR ALTERATION

Maintain a 300 mm. zone between any retained parts of masonry building and parts being deconstructed or demolished.

Carryout alteration work to masonry in this 300 mm. zone by hand and in accordance with the relevant work section.

See Work Sections C90 and C91.

128 PROTECTION OF ADJACENT RETAINED CONSTRUCTION

Protect retained construction from damage, particularly adjacent to pedestrian or materials handling routes.

Protect existing soft and hard landscape, from vehicles, plant and materials.

Provide a method statement describing proposals.

130 GROUNDWORKS

- General:
- Old foundations, slabs and the like: Break out where and to the extent stated.
- Contaminated material: Remove and carry out remediation required by the Enforcing Authority.

131 GROUNDWORKS: RETAIN AND REUSE FOUNDATIONS

Where indicated existing foundations are to be reused, take care to protect from disturbance, damage and undermining.

Prepare for and modify to suit to receive new works. See other NBS Work Sections E10 and F10.

132 GROUNDWORKS: CONTAMINATED EARTH: RETAIN AND REMEDIATE INSITU

Where indicated existing contaminated earth or backfill to be retained and treated insitu.

Do not permit excavation and removal from site.

Take appropriate precautions to avoid disturbance and control wind blown dust.

See NBS Work Sections D20 & D21.

133 GROUNDWORKS:CONTAMINATED EARTH; TREAT WASTE TO REDUCE HAZARD

Where indicated treat existing brownfield site contaminated earth/backfill insitu/exsitu, before/after removal from site and before returning to site/sending to landfill.

Take appropriate precautions to avoid unnecessary disturbance and control wind blown dust.

See NBS Work Section(s) D20 an D22

Reduce hazardous level to suit Waste Acceptance Criteria (WAC) of hazardous landfill site to be used or to suit proposed use of site.

DEMOLITION/DECONSTRUCTION RESOURCE RECOVERY & WASTE MINIMISATION

135 SEEK OUT OPPORTUNITIES TO REUSE OR RECYCLE MATERIALS TO AVOID EXPORTING FROM SITE

Seek out opportunities to avoid exporting building demolition rubble where possible. _____

Review pre-demolition audit about materials in existing building, showing which materials are to be reused on-site and which are not.

Ensure all enquiries via materials exchange website postings have been added to the last column of the table.

Determine what else remains and consider where they can be reused or recycled on site.

Determine if any materials need to be removed before dismantling to ensure contamination will not occur and materials can be reused or recycled on or off site.

E.g. gypsum plaster on brickwork is not suitable for reuse in hardcore.

Prior to commencement of the work and periodically during its execution, review the condition of the remaining building's methods of construction, method of fixing and fastening, materials, etc. with the PM, in order to determine what more can be done to facilitate recovery of further materials for re-use and recycling.

Consider for inclusion as part of an ongoing SWMP workshop processes.

Reuse masonry on site as: _____

Use site-won and recycled materials where available to the required specification or use imported secondary materials to avoid importing virgin aggregates for hardcore, etc. from off-site.

Submit proposals to the PM and seek instruction to suit the programme.

See [C20/520](#).

See [WRAP's AggRegain Website](#). Submit a priced proposal with the Tender as an Option or Alternative to be considered separately from the Tender submission.

Submit a unpriced proposal with the Tender as an Option or Alternative to be considered separately from the Tender submission.

Once in contract and following a SWMP workshop, submit prices against submitted proposal to PM for review and seek further instruction to suit the programme.

See [C20/520](#)

See [WRAP's AggRegain Website](#)

137 ON-SITE STOCK PILE RESOURCE EFFICIENCY

Temporary works item: Resource management of on-site stored materials:

Stock pile materials separately to maximise use potential and minimise mixing/contamination

Stand on well drained hard surfaces where practical,

Where not practical make a proposal in a Method Statement how to minimise fine material loss into course or soft base materials: e.g.

Use waste rigid or flexible sheet materials or geotextiles, spread over ground

Use fork-lift sacks for on-site storage of granular materials to minimise loss and maximise use.

138 COURSE & FINE MATERIALS FROM DAMAGED MASONRY MATERIALS

Reclaim brick and stone masonry materials, for reuse on or off site.

Save any damaged materials left after selection and set aside for reuse on site in other situations:

Brick and Stone: _____

140 BENCH MARKS

- Unrecorded bench marks and other survey information: Give notice when found.
- Do not remove or destroy.
-

150 FEATURES TO BE RETAINED

- General: Keep in place and protect the following: _____.

151 FEATURES TO BE RETAINED

- General: Keep in place and protect the following: Foundations: the design of the new superstructure/transfer permits the reuse of the old foundations.

SERVICES AFFECTED BY DEMOLITION

210 SERVICES REGULATIONS

- Work carried out to or which affects new or existing services: Carry out in accordance with the Byelaws or Regulations of the relevant Statutory Authority.

220 LOCATION OF SERVICES

- Services affected by the Works: Locate and mark positions.
- Mains services: Arrange with the appropriate authorities for location and marking of positions.
- Standard: In accordance with National Joint Utilities Group (NJUG) 'Guidelines on the positioning and colour coding of utilities' apparatus'.

230 DISCONNECTION - ARRANGED BY CONTRACTOR

- General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment prior to starting demolition.

231 DISCONNECTION - ARRANGED BY EMPLOYER

- General: The Employer will arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment prior to demolition as follows: _____.
- Timing: Do not start demolition until disconnections are completed.

232 DISCONNECTION - ARRANGED BY EMPLOYER AND CONTRACTOR

- Responsibility: The Employer will arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment prior to demolition as follows: _____.
- Arrange with the appropriate authorities for the disconnection of remaining services and removal of fittings and equipment.
- Timing: Do not start demolition until disconnections are completed.

240 DISCONNECTION OF DRAINS

- General: Locate disconnect and seal disused drain connections.
- Sealing: Within the site and permanent.

250 DRAINS IN USE

- General: Protect drains, manholes, inspection chambers, gullies, vent pipes and fittings still in use and ensure that they are kept free of debris.
- Damage: Make good damage arising from demolition work. Leave clean and in working order at completion.

260 BYPASS CONNECTIONS

- General: Provide as necessary to maintain continuity of services to occupied areas of the same and adjoining properties.
- Minimum notice to occupiers: 72 hours if shutdown is necessary during changeover.

270 SERVICES WHICH ARE TO REMAIN

- Damage: Give notice and notify service authority or owner of damage arising from the execution of the works.
- Repairs: Complete as directed, and to the satisfaction of the service authority or owner.

DEMOLITION WORK

310 WORKMANSHIP

- Standard: Demolish structures in accordance with BS 6187.
- Operatives:
 - Appropriately skilled and experienced for the type of work.
 - Holding or in training to obtain relevant CITB Certificates of Competence or registered with the Construction Skills Register as Demolition Operatives.
- Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of demolition to be used.

310A WORKMANSHIP

- Standard: Demolish structures in accordance with BS 6187.
- Operatives:
 - Appropriately skilled and experienced for the type of work.
 - Holding or in training to obtain relevant CITB Certificates of Competence.
- Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of demolition to be used.

Experienced in Deconstruction, resource recovery/salvage, storage, protection for reuse on and off-site,

Waste reduction/segregation/minimisation on and off-site

320 GAS OR VAPOUR RISKS

- Precautions: Prevent fire or explosion caused by gas or vapour.

330 DUST CONTROL

- Method: Reduce by periodically spraying demolition works with an appropriate wetting agent.

336 BURNING OF MATERIALS

Do not burn materials on site,

Do not burn without having means of heat recovery in place.

Do not burn materials which could otherwise be put to reuse or recycled

Do not burn packaging/protection, paper, cardboard, plastics or timber which could be recycled or reused,

Only burn plastics at controlled temperatures in appropriate kilns to avoid releasing toxins into the atmosphere,

Only burn preservative or fire treated, painted or stained timber at controlled temperatures in appropriate kilns, to avoid releasing toxins into the atmosphere,

Do not burn infected timber, separate from healthy wood and allow to dry, all growths should be allowed to die-off before burning or sending to appropriate landfill site.

Dispose of ashes in accordance with relevant regulations and in a manner approved by the Waste Regulation Authority.

340 HEALTH HAZARDS

- Precautions: Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

350 ADJOINING PROPERTY

- Temporary support and protection: Provide. Maintain and alter as necessary as work progresses.
- Damage: Minimize. Promptly repair.
 - Leave no unnecessary or unstable projections.
 - Make good to ensure safety, stability, weather protection and security.
- Support to foundations: Do not disturb.
- Defects: Report when exposed or becoming apparent.

350A ADJOINING PROPERTY

- Temporary support and protection: Provide. Maintain and alter as necessary as work progresses.
 - Damage: Minimize. Promptly repair.
 - Leave no unnecessary or unstable projections.
 - Make good to ensure safety, stability, weather protection and security.
 - Support to foundations: Do not disturb.
 - Defects: Report when exposed or becoming apparent.
- Protection to include thermal insulation to newly exposed party wall, behind the weather proof membrane to achieve U Value 0.1 W/m²°K.

360 STRUCTURES TO BE RETAINED

- Parts which are to be kept in place: Protect.
- Extent of work: Cut away and strip out with care to reduce the amount of making good to a minimum.

360A STRUCTURES TO BE RETAINED

- Parts which are to be kept in place: Protect.
- Extent of work: Strip out in a manner to maximise the materials that can be salvaged for reuse. Strip out in a manner to ensure removal of all material that could contaminate potentially recyclable materials and render them unsuitable

370 PARTLY DEMOLISHED STRUCTURES

- General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Keep safe outside working hours.
- Temporary works: Prevent debris from overloading.
- Unauthorised persons: Prevent access.

380 DANGEROUS OPENINGS

- General: Illuminate and protect. Keep safe outside working hours.

381 LIGHTING OF HOARDING, OPENINGS AND HAZARDS

- General: Illuminate and protect. Keep safe outside working hours
- Minimise wasting energy:
Use LED low energy demand lighting.
Use Green Tariff electrical supply.
Do not use battery powered lighting unless using rechargeable batteries and Green Tariff electricity recharging.
Do consider Photovoltaic recharging with rechargeable battery storage.
Ensure illumination is on if people are present i.e. use PIR detection,
Ensure illumination is off during daylight hours unless hazards or openings are in shadow or where high contrast light conditions may make it difficult to see.
Ensure illumination is off outside of working hours i.e. use time clock with PIR override to on and short time delay to off.

390 ASBESTOS CONTAINING MATERIALS

- General: These are known to be present in the structures to be demolished in the following locations: _____.
- Removal: By a Contractor licensed by the Health and Safety Executive and prior to other works starting in these locations.

391 ASBESTOS CONTAINING MATERIALS

- Discovery: Give notice immediately of suspected asbestos containing materials discovered during demolition work. Avoid disturbing such materials.
- Methods for safe removal. Submit details.

410 UNFORESEEN HAZARDS

- Unrecorded voids, tanks, chemicals, etc. discovered during demolition: Give notice.
- Methods for safe removal, filling, etc: Submit details.

420 OPEN BASEMENTS, ETC

- Temporary support: Leave adequate buttress walls or provide temporary support to basement retaining walls up to ground level.
- Safety: Make remaining sections of retaining and buttress walls safe and secure.
- Water movement: Make holes in basement floors to allow water drainage or penetration (depending on water table). Provide a hole for every 10 m², not less than 600 mm in diameter.

430 FILLING OF BASEMENTS, ETC

- Temporary support: Leave adequate buttress walls or provide temporary support to basement retaining walls up to ground level.
- Water movement: Make holes in basement floors to allow water drainage or penetration (depending on water table). Provide a hole for every 10 m², not less than 600 mm in diameter.
- Filling: Remove organic material and soil from basements and other voids. Fill and consolidate with _____.

430A FILLING OF BASEMENTS, ETC

- Temporary support: Leave adequate buttress walls or provide temporary support to basement retaining walls up to ground level.
- Water movement: Make holes in basement floors to allow water drainage or penetration (depending on water table). Provide a hole for every 10 m², not less than 600 mm in diameter.
- Filling: Remove organic material and soil from basements and other voids. Fill and consolidate with hardcore retrieved from demolition materials.

440 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site in a tidy condition.
- Other requirements: _____.

441 SITE LEVELS AT COMPLETION

- Levels: Grade the site to follow the levels of adjacent areas.

442 SITE SURFACE AT COMPLETION

- Levels: Grade the site to follow the levels of adjacent areas.
- Temporary surface: Cover the site with _____.

442A SITE SURFACE AT COMPLETION

- Levels: Grade the site to follow the levels of adjacent areas.
- Temporary surface: Cover the site with hardcore retrieved from demolition materials.

MATERIALS ARISING

500 WASTE CONTAINER, SACK, BIN & SKIP CAPACITY: DEMOLITION/ALTERATION

Determine by pre-demolition audit of existing building(s), the size and quantity of lorries, skips and/or bins required for the works, taking into account:

Building Floor area: Building footprint, number of floors,

Site area (opportunities for vehicle access and on-site segregation)

Building use type, and prior use (potential contamination, hazardous materials, etc.)

Construction to be retained,

Recovered Materials for reuse on or off site,

Opportunities for recovered materials reuse and recycling on site,

Surplus recovered materials not being reused or recycled,

Pallet or pallet boxes and packaging of recovered materials to leave site for reuse or recycling,

Materials,

Construction types,

Sequence of deconstruction,

Types of recovered materials and waste arising at different stages of the works: e.g. soft-strip:

hazardous materials, soft-strip: fixtures, furniture, MEP services; appliances, pipes, cables; doors, windows and stairs;

Soft-strip: potential contaminants in recyclable materials: insulation, plaster, plasterboard, wood,

Deconstruction: internal walls, floors, roofing and roof,

Dismantling: steel or timber frame,

Demolition: external walls and masonry, concrete,

Segregation and recycling proposal.

505 SITE LAYOUT

Propose a site layout that optimizes the ease of materials removal, sorting/separation, palleting and packing, reprocessing and storage of reclaimed, reprocessed and waste including access by any vehicles.

Consider types of storage, volume and quantity at different stages of the works.

Submit to PM for review.

510 CONTRACTOR'S PROPERTY

- Components and materials arising from the demolition work: Property of the Contractor except where otherwise provided.

- Remove from site as work proceeds.

-

511 EMPLOYER'S PROPERTY

- Components and materials to remain the property of the Employer: _____.

- Protection:

- Maintain until these items are removed by the Employer, reused in the Works or the end of the Contract.

- Special requirements: _____.

511A EMPLOYER'S PROPERTY DEMOLITION AND CONSTRUCTION CONTRACT:

- Components and materials to remain the property of the Employer: _____.

- Protection:

- Maintain until these items are removed by the Employer, reused in the Works or the end of the Contract.

- Special requirements: _____.

511B EMPLOYER'S PROPERTY SEPARATE DEMOLITION AND CONSTRUCTION CONTRACTS:

- Components and materials to remain the property of the Employer: _____.
- Protection:
 - Maintain until these items are removed by the Employer, reused in the Works or the end of the Contract.
- Special requirements: _____.

515 RECLAIMED MATERIALS FOR REUSE ON-SITE

Materials arising from soft-strip or deconstruction work: May be reclaimed for reuse elsewhere in the project, subject to compliance with the appropriate specification.

- Evidence of compliance: Submit full details and supporting documentation.
- PM's approval: Allow _____

516 RECLAIMED MATERIALS FOR REUSE OFF-SITE: PROVENANCE

- Materials arising from soft-strip or deconstruction work: May be reclaimed for reuse by other projects.

Provide sufficient information on material's origin as provenance to allow others to have a chain of custody and allow audit trail capability.

517 ACCOMMODATE ENQUIRY'S

Accommodate enquiry's for materials via the exchange Websites

Allow for attendance upon others during visits, inspections and collection.

Determine details of any collection/delivery requirements, accommodate within the programme or make arrangements for collection/delivery to maintain the Works on programme.

Allow for taking advance reservation(s) or order(s) and payment(s) for materials.

Update posting on Website to avoid unnecessary enquiry's.

Allow for crediting the value to the project.

520 RECYCLED MATERIALS

- Materials arising from demolition work: May be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification.
- Evidence of compliance: Submit full details and supporting documentation.
- Verification: Allow adequate time in programme for verification of compliance _____.

521 RECLAIMED MATERIALS FOR REUSE

Materials arising from demolition work: May be reused elsewhere in the project, subject to compliance with the appropriate specification.

See NBS Work Sections C42, F10, F20 – F22, G10, G20, H60 - H65, K45, K46, L10, L20, M40, N13, P21, etc.

Evidence of compliance: Submit full details and supporting documentation.

PM's approval: Allow _____

530 SEPARATION OF RECLAIMED MATERIAL

Provide separate lorries, pallets, pallet boxes, fork-lift sacks, skips etc. to suit material, Segregate all materials.

Identify any damaged materials and set aside for recycling. See [C20/570-580](#).

540 SEPARATION TO MINIMISE RISK OF FROST DAMAGE IN REUSE

Where materials are porous and prone to frost damage, separate out materials from elevations with different orientation for reuse in same orientation in the same project in buildings on the same site.

Palletize or crate; package and protect for safe and secure transport and storage; and label accordingly as the materials are collected to ensure correct labelling.

Ensure labels provide sufficient information to provide Provenance information for audit trails.

550 SEPARATION OF DISTINCTLY DIFFERENT MATERIALS

Where buildings have been constructed partially at different dates and materials are similar but not the same: Separate out different materials from different parts,

Separate out materials with distinctly different colours, textures, surface patterns or tooling,

Separate out distinctly older from distinctly newer materials,

Check Pre-demolition audit to check if materials are to be used on or off site and separate out accordingly.

Palletize or crate; package and protect for safe and secure transport and storage; and label accordingly as the materials are collected to ensure correct labelling.

560 STORAGE OF SALVAGED MATERIALS

If the site has no room for on-site storage move off site as soon as practical:

Arrange for collection or move to salvage yards or reuser's site as early as possible.

Move to safe secure suitable place for storage for returning to site to suit the program.

If the site has room for on-site storage keep salvaged materials on the site:

Store on well drained hard surfaces where practical.

Store away from site traffic routes to avoid splashing by rainwater, mud or cement slurry.

Store and protect from weather where appropriate.

Store and protect appropriately.

570 RECYCLED MATERIALS

Materials arising from demolition work: May be recycled and used elsewhere in the project, subject to compliance with the appropriate specification.

See Work Section(s): D20, Q20, R13.

Evidence of compliance: Submit full details and supporting documentation

PM's approval: Allow _____

580 SEPARATION OF MATERIAL FOR RECYCLING

Provide separate fork-lift sacks, skips etc. to suit material.

Segregate all materials.

Identify any contaminated materials and set aside for waste or hazardous waste disposal.

See [C20/590](#).

590 SEPARATION OF WASTE MATERIALS

Provide separate skips for all materials.

Segregate all materials and send to Waste materials recycling facility.

Identify any hazardous materials and set aside for hazardous waste disposal, place in the hazardous waste skip for treatment to reduce hazardous nature and disposal at hazardous waste landfill site.

APPENDIX 6.4 - DESCRIPTION OF CONSERVATION DESIGNATIONS IN NORTHERN IRELAND

Brief descriptions of some of the main types of conservation designation are provided in this section.

SPECIAL AREA OF CONSERVATION (SAC)

These sites are designated under the EC Habitats Directive by DOE, Environment and Heritage Service. They have been designated to protect the most threatened habitats and species, and must be designated as ASSIs before becoming SACs.

SPECIAL PROTECTION AREA (SPA)

These sites are designated under the EC Birds Directive by DOE, Environment and Heritage Service. They have been selected because of their international importance for breeding, over-wintering and migrating birds, and must be designated as ASSIs before becoming SPAs.

RAMSAR SITE

This is a wetland of international importance, mainly for waterfowl, as defined by the Ramsar Convention. Sites are designated by DOE, Environment and Heritage Service.

AREA OF SPECIAL SCIENTIFIC INTEREST (ASSI)

These sites are designated by DOE, Environment and Heritage Service, under the Environment (NI) Order 2002 (and before this, the Nature Conservation and Amenity Lands Order 1985) to protect areas of significant biological, geological and geomorphological interest. The sites are selected by scientific survey.

These sites will include the major peatland areas. These areas are subject to a government initiative on conserving peatland which is covered in a policy statement in June 1993.

NATURAL NATURE RESERVE (NNR)

These are areas of land, important for flora, fauna, geology or other specialist interest, that are owned or leased by DOE, Environment and Heritage Service. They are managed to protect and encourage wildlife and for scientific research.

AREA OF OUTSTANDING BEAUTY (AONB)

These sites are designated by DOE, Environment and Heritage Service, to protect special landscape areas.

LOCAL NATURE RESERVE

These are statutory sites declared by Local Authorities under Article 22 of the Nature Conservation and Amenity Lands (NI) Order (1985).

These sites are managed for their nature conservation interest, have public access and are used for environmental education and quiet recreation.

SITE OF LOCAL NATURE CONSERVATION INTEREST

These are sites of conservation interest that are designated by Planning Service through Area Plans. The designation is designed to protect the sites from development.

FRESHWATER PEARL MUSSEL SITE (PDF, 72KB)

Pearl Mussels, *Margaritifera margaritifera*, are a species protected under Appendix III of the Bern Convention and Annex V of the Habitats and Species Directive. They have a high conservation value and are vulnerable to disturbance of their habitat.

At the request of EHS this data set is restricted – consultees wishing to examine it should refer to EHS directly.

ARCHAEOLOGICAL SITE

These are sites which appear on DOE Environment Heritage Service, Built Heritage's State Monuments Records database.

ENVIRONMENTALLY SENSITIVE AREA (ESA)

These are areas of high landscape and/or wildlife value and are designated by the Department of Agriculture and Rural Development.

FOREST NATURE RESERVE (FNR)

Reserves are sited on land which is owned by the Forest Service of the Department of Agriculture and Rural Development.

ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB)

The Royal Society for the Protection of Birds owns or leases a number of reserves and manages them. In addition their survey work has identified sites which they deem to be important Breeding Wader Sites (BWS).

National Trust (NT)

This is land owned or leased by the National Trust.

ULSTER WILDLIFE TRUST (UWT)

These are reserves owned or leased by the UWT.

NATURE IN THE CITY SITE

These sites are exclusively in Greater Belfast and are listed on the Ulster Museum database

REGIONAL PARK

An area of public land managed by local councils and the Department of the Environment for landscape, amenity and conservation.