NBS Specification

C20: Demolition

5) Desk study/ survey

1. Scope: Before starting deconstruction/ demolition work, examine available information, and carry out a survey of: The structure or structures to be deconstructed/ demolished and The site on which the structure or structures stand.
2. Report and method statements: Submit, describing the form, condition and details of the chimney and walling to be rebuilt, the site and the surrounding area
   2.1. Identity and location of services above and below ground, including those required for the contractor's use, and arrangements for their disconnection and removal.
   2.2. Form and location of materials identified for reuse or recycling, and proposed methods for removal and temporary storage.
   2.3. Proposed programme of work, including sequence and methods of deconstruction or demolition.
   2.4. Arrangements for protection of personnel and the general public, including exclusion of unauthorized persons.
   2.5. Arrangements for control of site transport and traffic.
   2.6. Special requirements: Proposals for scaffolding on site
3. Format of report: One copy of report to be prepared and provided

10) Extent of deconstruction/ demolition – General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to level as required to omit bulge from East elevation, extent to be confirmed on site.

25) Location and marking of services – Services affected by deconstruction/ demolition work: Overhead cables to East elevation and within areas to have scaffolding to be retained and unaffected by the works

50) Workmanship

1. Standard: Demolish structures in accordance with BS 6187.
2. Operatives
   2.1. Appropriately skilled and experienced for the type of work.
   2.2. Holding, or in training to obtain, relevant Construction Skills certification of competence.
3. Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction and demolition to be used.

55) Site hazards

1. Dust: Minimize airborne dust by periodically spraying deconstruction and demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris
   1.1. Lead dust: Submit method statement for control, containment and clean-up regimes.
2. Site operatives and general public: Protect from health hazards associated with vibration, dangerous fumes and dust arising during the course of the works.

65) Structures to be retained

1. Extent: As noted on drawings
2. Interface between retained structures and deconstruction or demolition: Cut away and strip out with care to minimize the amount of making good needed

70) Partly demolished structures

1. General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
2. Temporary works: Prevent overloading due to debris.
3. Access: Prevent access by unauthorized persons.

85) Site condition at completion

1. Debris: Clear away and leave the site in a clean, tidy and secure condition.
2. Other requirements: Include window cleaning to all affected windows on completion

C41: Repairing/ renovating/ conserving masonry

Generally/ preparation

110) Scope of work

1. Schedule: Repairing and replacing eroded and damaged stones as drawings
2. Records of masonry to be repaired: Before starting work, use measurements and photographs as appropriate to record bonding patterns, joint widths, special features, etc.
3. Identification of masonry units to be removed, replaced or repaired: Mark clearly, but not indelibly, on face of masonry units or parts of units to be cut out and replaced. Transcribe markings to drawings/ photographs.

140) Record of work

1. General: Record work carried out to masonry clearly and accurately using written descriptions, sketches, drawings and photographs, as necessary.
2. Documentation: Submit on completion of the work.

Workmanship generally

150) Power tools

1. Usage for removal of mortar: Not permitted

160) Protection of masonry units and masonry

1. Masonry units: Prevent overstressing during transit, storage, handling and fixing. Store on level bearers clear of the ground, separated with resilient spacers. Protect from adverse weather and keep dry. Prevent soiling, chipping and contamination. Lift units at designed lifting points, where provided.
2. Masonry: Prevent damage, particularly to arrises, projecting features and delicate, friable surfaces. Prevent mortar/ grout splashes and other staining and marking on facework. Protect using suitable nonstaining slats, boards, tarpaulins, etc. Remove protection on completion of the work.

165) Structural stability

1. General: Maintain stability of masonry. Report defects, including signs of movement that are exposed or become apparent during the removal of masonry units.

170) Disturbance to retained masonry

1. Retained masonry in the vicinity of repair works: Disturb as little as possible.
2. Existing retained masonry: Do not cut or adjust to accommodate new or reused units.
3. Retained loose masonry units and those vulnerable to movement during repair works: Prop or wedge so as to be firmly and correctly positioned.

185) Adverse weather

1. General: Do not use frozen materials or lay masonry units on frozen surfaces.
2. Air temperature: Do not bed masonry units or repoint:
   2.1. In cement gauged mortars when ambient air temperature is at or below 3°C and falling or unless it is at least 1°C and rising, unless mortar has a minimum temperature of 4°C when laid and the masonry is adequately protected.
   2.2. In hydraulic lime:sand mortars when ambient air temperature is at or below 5°C and falling or unless it is at least 3°C and rising.
   2.3. In nonhydraulic lime:sand mortars in cold weather, unless approval is given.
3. Temperature of the work: Maintain above freezing until mortar has fully set.
4. Rain, snow and dew: Protect masonry by covering during precipitation, and at all times when work is not proceeding.
5. Hot conditions and drying winds: Prevent masonry from drying out rapidly.
6. New mortar damaged by frost: Rake out and replace.

Material/ production/ accessories

220) Recording profiles

1. Profiles: Take measurements from existing masonry units, as instructed, to allow accurate matching of replacements.
2. Recording in situ: If there are no suitable joints to allow use of inserts, seek instructions.
3. Drawings and templates: Prepare as necessary. Templates must be clearly and indelibly marked to identify use and location.

240) Stone

1. Standard: To BS EN 771-6
2. Type: Sandstone
3. Quality: Free from vents, cracks, fissures, discolouration, or other defects that may adversely affect strength, durability or appearance. Thoroughly seasoned, dressed and worked in accordance with shop drawings prepared by the supplier.
4. Finish: Tooled to match existing

245) Replacement stone units

1. Sizes and profiles: To match existing masonry. Maintain existing joint widths.
2. Sinkings for fixings, joggles and lifting devices: Accurately aligned and positioned in relation to existing masonry.
3. Marking: Mark each block/ dressing clearly and indelibly on a concealed face to indicate the natural bed and position in the finished work.

250) Stone orientation

1. Orientation of natural bed
   1.1. In plain walling: Horizontal.
   1.2. In projecting stones and copings: Vertical and perpendicular to wall face.

255) Ashlar blocks/ Dressings

1. Cutting and dressing stone: To true and regular surfaces, free from hollow or rough areas.

281) Fixings

1. Description: Where required, include dowels in cracked chimney stones
2. Standard: To BS EN 845-3, BS 8221-2, BS EN 1090
3. Type: Submit proposals.
4. Material: Austenitic stainless steel
5. Size, strength and number: As necessary to resist loads likely to occur during the life of the building, and to prevent lateral displacement or pulling apart of the construction.

Dismantling/ rebuilding

310) Dismantling masonry for reuse

1. Masonry units to be reused: Remove carefully and in one piece.
   1.1. Treatment: Clean off old mortar, organic growths and dirt, and leave units in a suitable condition for rebuilding.
   1.2. Identification: Mark each unit clearly and indelibly on a concealed face, indicating its original position in the construction. Transcribe makings to drawings/ photographs.

320) Rebuilding

1. Description: Chimney and stonework below
2. Replacement materials: Stone, as clause 240
3. Mortar: As section Z21.
   3.1. Standard: BS EN 998-2
   3.2. Mix: Masons Mortar prebagged General Purpose Lime Mortar – coarse, in full accordance with manufacturer's instructions – or equal and approved
4. Fixings: Dowels in cracked chimney stones as clause 281
5. Rebuilding: To match previous face and joint lines, joint widths and bonding. Adequately bonded to retained work/ backing masonry, as appropriate.
6. Joint surfaces: Dampen, as necessary, to control suction.
7. Laying masonry units: On a full bed of mortar; perpend joints filled.
8. Exposed faces: Remove mortar and grout splashes immediately.
9. Joints: To match existing

Replacements and insertions

405) Bonded dowels

1. Description: Concealed dowel fixing to cracked stone in chimneys where required
2. Standard: To BS EN 1090-1
3. Dowels: Austenitic stainless steel
4. Adhesive: Epoxy resin
5. Holes for dowels: Suitably sized and accurately aligned in masonry background and in rear of replacement/ insert stone; clean and dry.
6. Other requirements: Do not use adhesive to bond stones at joints unless instructed.

415) Stone pinnings for rubble stonework

1. Material for pinnings: Matching sandstone, closely spaced
2. Placing: Tamp pinnings firmly into fresh mortar. Ensure mortar is thoroughly compacted into voids and that levelling and load distribution functions of pinnings are retained.

420) Temporary distance pieces for joints in ashlar stonework

1. Material: Lead or stainless steel.
2. Removal: When mortar/ grout is sufficiently strong to take loading without compression.

Tooling/ dressing stone in situ

455) Descaling stone

1. Requirement: Carefully remove loose scaling and powdering from stones to the extent agreed.
2. Method: Suitable bristle brushes or carborundum blocks. Do not use wire brushes.

458) Redressing stone

1. Requirement: Carefully dress back stones to the extent agreed.
2. Method: Suitably graded carborundum blocks or tooling as appropriate.

Mortar repairs

510) Preparation for mortar repairs

1. Repair area: Scribe area of masonry to be removed using straight horizontal and vertical lines parallel to joints. Where repair area abuts joints, maintain existing joint widths and do not bridge joints.
2. Decayed masonry: Cut back carefully to a minimum depth of 20 mm to a sound background. Where the depth of removal exceeds 50 mm, seek instructions.
3. Precautions: Do not weaken masonry by removing excessive material. Do not damage adjacent masonry.
4. Top and vertical reveals of repair area: Undercut.

530) Proprietary mortar repairs

1. Description: To erdoded stones in Chimney
2. Mortar
   2.1. Standard: BS EN 998-2
   2.2. Manufacturer: Submit proposals
   2.2.1. Product reference Masons Mortar "MM.
   2.3. Undercoats: Use when total thickness of mortar repair exceeds limit for finishing coat thickness recommended by mortar manufacturer. Build up in layers as necessary, each layer not to exceed thickness recommended by manufacturer.
   2.4. Finishing coat: To match approved samples.
   2.4.1. Finished thickness: 7 mm
   2.5. Finish: Scraped back, as clause 550 or floated, as clause 555, to approval

540) Applying mortar

1. Surfaces to receive mortar: Clean, and free from dust and debris. Dampen to control suction.
2. Applying coats: Build up in layers to specified thickness. Apply mortar firmly, ensuring good adhesion with no voids. Form a mechanical key to undercoats by combing or scratching to produce evenly spaced lines.
3. Allow each layer to achieve an initial set before applying subsequent coats. Prevent each layer from drying out rapidly by covering immediately with plastics sheeting and/ or dampening intermittently with clean water.
4. Finishing mortar coat: Form accurately to required planes/ profiles, and finish flush with adjacent masonry.
5. Protection: Protect completed repairs from adverse weather until mortar has set.

550) Scraped finish to mortar repairs

1. Procedure: Finish final coat of repair mortar proud of existing masonry face. When mortar is set, but not too hard, scrape back to required face line using fine saw blade or other suitable means, to achieve required finish.

Crack repairs/ ties/ reinforcement

610) Mortar repair of cracks

1. Description: To cracked stones
   1.1. Standard: BS EN 998-2
2. Mortar: As section Z21.
   2.1. Mix: Masons Mortar prebagged General Purpose Lime Mortar – coarse, in full accordance with manufacturer's instructions – or equal and approved
3. Preparation: Clean out cracks to remove debris, dust and dirt. Dampen recesses, as necessary, to control suction.
4. Applying mortar: Press well into cracks so that they are fully filled. Ensure that mortar does not encroach upon exposed faces. Finish mortar flush with masonry face.

Pointing/ repointing

810) Preparation for repointing

1. Existing mortar: Working from top of wall downwards, remove mortar carefully, without damaging adjacent masonry or widening joints, to a minimum depth of 30mm
   1.1. Loose or friable mortar: Seek instructions when mortar beyond specified recess depth is loose or friable and/ or if cavities are found.
2. Raked joints: Remove dust and debris.

820) Pointing

1. Description: To newly installed stonework
2. Preparation of joints: As clause 810
3. Mortar: As section Z21.
   3.1. Standard: BS EN 998-2
   3.2. Mix: Masons Mortar prebagged General Purpose Lime Mortar – coarse, in full accordance with manufacturer's instructions – or equal and approved
4. Joint profile/ finish: Flush finished, brushed as clause 860.

840) Pointing with tools/ Irons

1. General: Press mortar well into joints using pointing tools/ irons that fit into the joints, so that they are fully filled.
2. Face of masonry: Keep clear of mortar. Use suitable temporary adhesive tape on each side of joints where necessary. Finish joints neatly.

860) Brushed finish to joints

1. Timing: After initial mortar set has taken place remove laitance and excess fines by brushing, to give a coarse texture. Do not compact mortar.

H71: Lead flashings

35) Cover flashings

1. Lead
   1.1. Type: Rolled to BS EN 12588
   1.2. Thickness: 1.75 or 1.80 mm (Code 4).
2. Dimensions
   2.1. Lengths: Not more than 1500 mm.
   2.2. End to end joints: Laps of not less than 100 mm.
   2.3. Cover: Overlap to upstand not less than 75 mm.
3. Fixing
   3.1. Top edge: Lead wedges into bed joint.
   3.2. Bottom edge: Clips as clause 80

52) Chimney flashings

1. Lead
   1.1. Type: Rolled to BS EN 12588
   1.2. Thickness: 1.75 or 1.80 mm (Code 4).
2. Front apron
   2.1. Dimensions
   2.1.1. Length: Width of chimney plus not less than 150 mm underlap to each side flashing.
   2.1.2. Upstand: Not less than 75 mm.
   2.1.3. Cover to roof: Not less than 150 mm.
   2.2. Fixing: Lead wedges into bed joint.
3. Back gutter
   3.1. Dimensions
   3.1.1. Length: Width of chimney plus not less than 100 mm overlap to each side flashing.
   3.1.2. Upstand: Not less than 100 mm.
   3.1.3. Gutter Sole: Not less than 150 mm.
   3.1.4. Cover up roof: Not less than 225 mm.
4. Back gutter cover flashing
   4.1. Dimensions
   4.1.1. Length: Width of chimney plus not less than 100 mm overlap to each side flashing.
   4.1.2. Cover: Overlap to back gutter upstand not less than 75 mm.
   4.2. Fixing: Lead wedges into bed joint.

60) Materials and workmanship generally

1. Lead production method: Rolled, to BS EN 12588
2. Identification: Colour marked for thickness/ code, weight and type.
3. Workmanship standard: To BS 6915 and latest editions of "Rolled lead sheet. The complete manual" published by the Lead Sheet Training Academy
4. Fabrication and fixing: To provide a secure, free draining and weathertight installation.
5. Marking out: Do not use scribers or other sharp instruments to mark out lead without approval.
6. Solder: Use only where specified.
7. Finished leadwork: Fully supported, adequately fixed to resist wind uplift but also able to accommodate thermal movement without distortion or stress.
8. Patination oil: Apply smear coating to all visible lead, evenly in one direction and in dry conditions.

77) Preparation of existing timber substrates

1. Remedial work: Adjust boards to level and securely fix. Punch in protruding fasteners, and plane or sand to achieve an even surface.
2. Defective boards: Give notice.
3. Moisture content: Not more than 22% at time of covering. Give notice if greater than 16%.

78) Fixing lead sheet

1. Top edge: Secured with two rows of fixings, 25 and 50 mm from edge.
2. Fixings
   2.1. Nails to timber substrates: Copper clout nails to BS1202-2 , or stainless steel (austenitic) clout nails to BS 1202-1.
   2.1.1. Shank type: Annular ringed, helical threaded or serrated.
   2.1.2. Length: Not less than 20 mm or equal to substrate thickness.
   2.2. Screws to concrete or masonry substrates: Brass or stainless steel.
   2.2.1. Diameter: Not less than 3.35 mm.
   2.2.2. Length: Not less than 19 mm.
   2.2.3. Washers and plastics plugs: Compatible with screws.

80) Clips

1. Material
   1.1. Lead clips: Cut from sheets of the same thickness/ code as sheet being secured.
   1.2. Copper clips: Cut from 0.70 mm thick sheet to BS EN 1172, temper R220 (soft) or R240 (half hard) depending on position, dipped in solder if exposed to view.
   1.3. Stainless steel: Cut from 0.38 mm sheet to BS EN 10088-1, grade 1.4301(304), terne coated if exposed to view.
2. Dimensions
   2.1. Width: 50 mm where not continuous.
   2.2. Length: To suit detail.
3. Fixing clips: Secure each to substrate with either two screw or three nail fixings not more than 50 mm from edge of lead sheet. Use additional fixings where lead downstands exceed 75 mm.
4. Fixing lead sheet: Welt clips around edges and turn over 25 mm.

83) Wedge fixing into joints/ chases

1. Joint/ chase: Rake out to a depth of not less than 25 mm.
2. Lead: Dress into joint/ chase.
   2.1. Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
3. Sealant: BLM Lead Pointing Sealant
   3.1. Application: As section Z22.

85) Wedge fixing into damp-proof course joints

1. Joint: Rake/ cut out under damp proof course to a depth of not less than 25 mm.
2. Lead: Dress into joint.
   2.1. Fixing: Lead wedges at not more than 450 mm centres, at every change of direction and with at least two for each piece of lead.
3. Sealant: BLM Lead Pointing Sealant
   3.1. Application: As section Z22.

98) Welted joints

1. Joint allowance: 50 mm overlap, 25 mm underlap.
2. Copper or stainless steel clips: Fix to substrate at 450 mm centres.
3. Overlap: Welt around underlap and clips and lightly dress down.

F30: Chimney Pots

96) Chimney pots

1. Manufacturer: Existing chimney pots to be reinstated, with new Hepworth flue terminals to be installed
   1.1. Product reference: Hepworth Terracotta fluvent Ventilation Terminal or equal and approved
2. Placement: Bed solid in mortar specified for chimney stack. Strong mortar mix 1:3. Terminal bedded on bead of mortar

H62: Natural slating

3) Roof slating

1. Description: Replacement of missing/damaged slates where shown on drawings
2. Substrate: Existing timber sarking and underlay on existing rafters
3. Slates
   3.1. Supplier: Reclaimed Scottish slate – contractor to provide sample and specification for approval.
   3.2. Size: To match existing. All slates sorted by thickness, to match existing course thickness on each course
   3.3. Head-lap (minimum): Head-lap (minimum): To BS 5534
   3.4. Fixing: Two nails each slate.

20) Removing existing slating

1. General: Carefully remove slates, battens, underlay, etc. with minimum disturbance of adjacent retained slating.
2. Undamaged slates: Set aside for reuse.

35) Slate fixing

1. General: Fix slating and accessories to make the whole sound and weathertight at earliest opportunity.
2. Setting out: To true lines and regular appearance. Lay slates with slightly open (maximum 5 mm) butt joints. Align tails.
3. Slate thickness: Consistent in any one course. Lay with thicker end as tail.
4. Ends of courses: Use extra wide slates to maintain bond and to ensure that cut slates are as large as possible. Do not use slates less than 150 mm wide.
5. Top course: Head-nail short course to maintain gauge.
6. Fixing: Centre nail each slate twice through countersunk holes 20-25 mm from side edges.
   6.1. Nails: Copper clout to BS 1202-2 or aluminium clout to BS 1202-3.
   6.2. Nail dimensions: Determine in accordance with BS 5534 to suit site exposure, withdrawal resistance and slate supplier's recommendations.

Z21: Mortars

Lime:sand mortars

310) Lime:sand mortar mixes

1. Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

320) Sand for lime:sand masonry mortars

1. Type: Sharp, well graded.
   1.1. Quality, sampling and testing: To BS EN 13139.
   1.2. Grading/ Source: As specified elsewhere in relevant mortar mix items.

360) Making lime:sand mortars generally

1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
2. Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
3. Contamination: Prevent intermixing with other materials, including cement.

400) Making hydraulic lime:sand mortars

1. Mixing hydrated hydraulic lime:sand: Follow the lime manufacturer's recommendations for each stage of the mix.
   1.1. Water quantity: Only sufficient to produce a workable mix.
2. Working time: Within limits recommended by the hydraulic lime manufacturer.

Ω End of Section

Z22:Sealants

Products

310) Joints

1. Description: At chases at junctions between leadwork and masonry
2. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

Execution

610) Suitability of joints

1. Presealing checks
   1.1. Joint dimensions: Within limits specified for the sealant.
   1.2. Substrate quality: Surfaces regular, undamaged and stable.

620) Preparing joints

1. Surfaces to which sealant must adhere
   1.1. Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
   1.2. Clean using materials and methods recommended by sealant manufacturer.
2. Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
3. Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
4. Protection: Keep joints clean and protect from damage until sealant is applied.

630) Applying sealants

1. Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
2. Environmental conditions: Do not dry or raise temperature of joints by heating.
3. Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
4. Sealant profiles
   4.1. Butt and lap joints: Slightly concave.
   4.2. Fillet joints: Flat or slightly convex.
5. Protection: Protect finished joints from contamination or damage until sealant has cured.

Notes

For best results when viewing this drawing in PDF format the 'Smooth line art' option in the PDF reader should be unticked (Edit>Preferences>Page display).

Revisions

Sheet A1	Drawing Category	PLANNING

Project
Lylestone House
14 Bedford Place
Alloa

Drawing
Specification Notes

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Scale AS	Date October 2023	By SW	
Job no 23-024	Drawing no 12	Rev	