

ROOF COVERING RENEWAL PROJECT - KING'S COLLEGE CHAPEL, CAMBRIDGE				
B04 BUILDING ELEMENTS TYPE				
REVISION: A01: Main Roof Over-boarding detail updated				
BUILDING ELEMENT	TYPE REFERENCE	LOCATION	GENERAL DESCRIPTION NOTE: This specification schedule is to be read with the NBS specification and drawings as a composite. This schedule will be updated as a live document as queries are raised and answered through the tender and pre-contract period.	NBS CLAUSE
	Tests, Trials and Samples		All to be formally submitted on submittal form for presentation to CA.	
	S.1	Main roof	Form a 2m wide by x3m sloping off-site panel to mimic main roof ridge, gutter apron and intermediate using timber details and substrate as specified: clad in lead sheeting also as specified and agree all details with CA prior to works commencing. To include all vent details; fixing posts and substrate materials. (Remove and recycle after PC when instructed by CA).	K20, H71
	S.2	Main roof	Quality control panel on the roof itself: in addition to off-site panel; contract to include a quality control reference panel on the roof itself; 5 bays wide and whole slope; including 2 steps of parapet gutter and parapet abutment detail. Leave 1m of flashing chase unpointed with lime mortar to review application of sealant at the rear of the joint. Once approved, quality control can be incorporated into the Works. Allow for adaptation as directed by CA.	G20, K20, H71, Z21
	S.3	Roof space	Trial area of internal plaster conservation up to 2m2 in location(s) to be agreed in advance with CA.	
	S.4	Roof space	Trial area of internal plaster renewal: up to 2m2 in location(s) to be agreed in advance with CA.	
	S.5	Roof space	Internal wall (brick or masonry) – raking out and re-pointing in two steps: raking out to be reviewed and signed off before re-pointing: up to 4m2 in location(s) to be agreed in advance with CA.	
	S.6	Parapet repairs	PR.T1 Rake out and repoint with lime mortar (standard)	C41
	S.7	Parapet repairs	PR.T2 Clean out and grout and repoint deep open joints.	C41
	S.8	Parapet repairs	PR.T3 Grout, point and cap delaminating/scaling face of ashlar stonework.	C41
	S.9	Roof space	Sample Fertan treatment to 1no tie bars within the roof space. Trial to include application by spray and brush.	
	S.10	Stair turrets	Redecoration of anti-climb spikes: Clean back and redecorate with zinc primer and top coats to match existing colour. Following approval to be maintained as control until completion.	
	S.11	Materials	Materials samples: refer to specifications. TO BE SUPPLIED WITHIN 1 WEEK OF TENDER ACCEPTANCE a. New stone for masonry repairs. b. New roof sarking boarding. Include for up to 10no staining trials to the soffit and edges to match in with adjacent boarding. c. New air-dried seasoned oak for new doors and hatches d. New structural timber to S/E specification e. New mortar patties for mortar mixes. f. New patties for internal render/plaster mixes. g. Paving brick for internal passageway repair h. Artificial wood for walkways	C41 K20 Z21
	S.12	Sample	PROVISIONAL SUM FOR OTHER SAMPLES: £2,500	

	Roof Types		<p>NOTE: No lead-burning to be undertaken within 7m of the building: all corners/boxings to be formed off site - include allowance for making formers and similar. Only the CA can sign off on hot-work permits for in-situ lead burning. Contractor must prepare applications for permits not less than 10 days in advance. Permits will only be issued for one day.</p> <p>For tender: contractor is to price for existing lead to be re-cast and returned, with chain of custody process, subject to metallurgical testing and report against relevant British Standard to the CA satisfaction. Programme and handling implications to be included within tender.</p>	
ROOF	RF.T1	(Main Roof)	<p>New hollow core roll, lead roof covering with swept ridge:</p> <p>Existing substrate: Softwood sarking boards to be assessed and repaired following removals. Provisional replacement of existing boards where decayed with new treated softwood boards to C51. Subject to approved sample, new boards to be stained on the soffit and side edges to match in with existing. All retained boards to be re-fixed with stainless steel screws.</p> <p>New substrate (over boarding): New layer of softwood over-boarding to K20 - best quality slow-grown Baltic whitewood to approved sample, penny jointed and diagonally fixed with stainless steel screws on 18mm x 50mm tanalised timber battens, also diagonally fixed (see dwg RF 201) . Diagonal direction to be changed and set out to suit board-length to be agreed with the CA. Boards to be recessed at the bottom of the slope to accommodate flush finish of flashing. Edges to be rounded to prevent damage or wear on the lead. Include for machined rounded profile EX 75x50 at ridge.</p> <p>Softwood fascia boards to parapet gutters drops, to form ventilation abutment as detail, with insect mesh. (read with requirements for metal finishes and timber treatment)</p> <p>Underlay: A1 Building paper laid continuously across the slope with min 250mm weather lap.</p> <p>Roof Covering: New hollow core roll, Code 8 sand-cast lead roof covering. Chalk slurry/chalk-rich paint preparation application to the underside of lead sheets (excluding laps). Rolls to be gusseted where taken over the ridge, and terminate at the bottom of the slope (not be turned into the parapet Gutter) with separate Code 8 sand-cast lead eaves flashing over code 8 vertical cladding to parapet gutter drops. Note: ventilation detail at parapet gutter upstand. Rolls to stop short at each corner of the roof to provide back gutter detail to be created around stair turrets.</p> <p>Included works: New Code 6 sand-cast lead flashings at all abutments including those around stair turrets. Note: existing joints in stonework to be used wherever possible to suit levels and re-cut for new flashings to an approved sample. Weatherings around roof penetrations: anchors for parapet bracing; fixing points for PV array.</p>	<p>C51</p> <p>K20</p> <p>G20</p> <p>H71</p> <p>H71</p> <p>H71</p>
PARAPET GUTTER	RF.T2	(Main Roof Parapet Gutter)	<p>Renewed parapet gutter incorporating ventilation detail at the roof upstand:</p> <p>Structure: Softwood (Accoya Class A) gutter structure, with cross-bearers; packed and shimmed firrings, set on DPC to separate from masonry all round. Levels to accommodate appropriate steps and falls to existing outlets. Note: these are to be set out to a modified form to ensure suitable upstands at the parapet abutments. All setting out to be prepared by contractor to be presented to CA for agreement. Min fall 1:65 unless otherwise agreed. Divergences from LCA best practice to be identified and documented for agreement.</p> <p>Substrate: Penny jointed softwood boarding laid to falls and to form upstand of ventilation detail.</p> <p>Underlay: A1 Building paper.</p> <p>Lead lining: Up to Code 9 sand-cast lead sheets with solid core rolls at high points. Chalk slurry/chalk-rich paint applied to the underside of lead sheets, except at laps.</p> <p>Included works: New Code 6 sand-cast lead flashings at all abutments including around stair turrets. Note: existing joints in stonework to be used wherever possible to suit levels and re-cut for new flashings to an approved sample. New Code 7 sand-cast lead sump traps. Sumps: to be allowed for adaptation AND costings to include for renewal. Provisional sum for new accessible s/s sump covers. Provisional allowances for adapting masonry or concrete found under gutters which impede levels and for making good to CA detail</p>	<p>G20</p> <p>K20</p> <p>H71</p> <p>H71</p> <p>H71</p>
ROOF	RF.T3	(Side Chapel and South Porch Roofs)	<p>New solid core roll lead roof covering to modified form to incorporate continuous ventilation. To be undertaken sequentially along the side chapels, with one full roof completed as a trial for review and approval before progressing.</p> <p>Existing structure (stone and timber): To be assessed for repairs following removals and opening up.</p> <p>New structure: Softwood (Accoya Class A to stressed graded to s/e requirements) above the original rafters to create modified roof form.</p> <p>Substrate: Penny jointed softwood boarding laid to falls.</p> <p>Ventilation: Nicholson Airtrak linear ventilators at the parapet gutter and top step.</p> <p>Underlay: A1 Building paper laid continuously across the slope with min 250mm weather lap.</p> <p>Roof Covering: New solid core roll, Code 8 sand-cast lead roof covering. Chalk slurry application to the underside of lead sheets.</p> <p>Included works: New Code 6 sand-cast lead flashings at all abutments. Note: existing joints to be used and re-cut for new lead flashings which are to be dressed over the stringcourse stones as existing.</p>	<p>G20</p> <p>K20</p> <p>H71</p> <p>H71</p> <p>H71</p> <p>H71</p>

PARAPET GUTTER	RF.T4	(Side Chapel Roofs Parapet Gutter)	As Main roof parapet gutter RF.T2 with: in addition: Nicholson pre-formed ventilation former. Note: existing joints to be used and re-cut for new lead flashings which are to be dressed over the stringcourse stones as existing. BWIC with forming new sump levels and outlet through parapet by mason.	
			NOTE: The expectation is that the existing lead will be taken off for recasting and reused subject to metallurgical testing. The Contractor must allow for this when planning the works and programme. All associated costs, including those for extra-over to accommodate thickness of new coverings and chain of custody to be included in the tender.	
PARAPET	Parapet Repair Types (Masonry)			
	PR.T1	Main roof Parapets	Rake out and repoint with lime mortar (standard).	C41
	PR.T2	Main roof Parapets	Clean out and grout and repoint deep open joints.	C41
	PR.T3	Main roof Parapets	Grout, point and cap delaminating/scaling face of ashlar stonework.	C41
	PR.T4	Main roof Parapets	Take down and cart away corroding mesh internally on the inside of the turret piercings. Replace with new grade 316 st/sl mesh, with washers and st/sl screws plugged into existing fixing holes. High level internal access scaffold will be required.	Z20
	PR.T5	Parapet gutter base	Subject to inspections, adaptation of gutter base to suit new levels and falls: removal of existing materials subject to CA instruction. Making good to be in new selected stone and/or brick and tile pinnings formed by mason to new levels agreed: all set in Feebly Hydraulic lime mortar and capped in lime-mortar screed up to 20mm.	Z20
			Mortar mixes for the above subject to approved samples.	Z21