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**SPECIFICATION AND SCHEDULE
OF
STRUCTURAL REPAIRS
TO
THE TIGER,
122 HIGH STREET
LINDFIELD
WEST SUSSEX**



TENDER ISSUE

Client: PCC All Saints Church Lindfield
The Tiger Office
122-122a High Street
Lindfield
Haywards Heath
West Sussex RH16 2HS

Prepared by: The Morton Partnership Limited
Old Timber Yard House
55 The Timber Yard
Drysdale Street
London N1 6ND

Date: July 2026

Reference: EJM/CH/SPEC/20560~spec rev 4

CONTENTS:**Preamble****1.0 Structural Timber Specification****2.0 Schedule of Work****APPENDICES:****A Drawings****B Photographs****C Risk Assessments**

Rev	Comments	Engineer	Date
0	Issue to Tom Bosence for comments	EJM	24/08/2025
1	Updated with minor comments from Tom Bosence	EJM	02/09/2025
2	Drawings updated to reflect tender issue	EJM	21/10/2025
3	Reports updated following roof strip out	AN	07/07/2026
4	Reports updated following contractor's comment	AN	13/07/2026

- A The following specification and schedule of works have been commissioned for predominantly roof repair works to The Tiger, 122 High Street, Lindfield, West Sussex. A structural survey has been carried out and this report should be reviewed along with the photographs for further context.
- B The Contractor is made aware that certain restrictions have been made, related to site arrangements and working areas and full account of these should be taken when pricing the works.
- C The building is Grade II* Listed of Historic or Architectural Interest with the list description, taken from Historic England's Heritage List for England repeated below, although these are not always completely accurate.

TQ 3426 LINDFIELD HIGH STREET (east side) 6/209 No 122 (formerly listed 10.9.51 as "Church House") GV II Parish room, formerly the Tiger Inn. Probably C14 jettied open hall, ceiled over in C16 and with later C16 L-wing added to rear, the front part refronted in early C19 and restored C20. West front red brick on brick plinth, the roof has tiled upper courses and Horsham stone slab lower courses. 2 storeys. 5 windows. 5 mid C19 sashes (some tripartite) with horns and cambered heads. Built out mid C19 doorcase retaining cornice brackets and Tuscan pilasters. Sawtooth brick cornice. Late C16 large multiple filleted brick chimney stack on ridge at front and cruciform type at end of each wing. North elevation has exposed close-studding near the street and square framing to the late C16 wing, which has been further extended with sandstone facing to a timber-framed interior. 2 tripartite mullioned windows. The interior of the west wing contains massive jowled posts and tie beam on the 1st floor, a sooted chamfered crownpost about 9 inches in diameter with quadripartite bracing, and on the ground floor a fine inserted roll moulded ceiling of the early C16 to the former open hall, dragon beam and large fireplace having wooden bressummer with run out stops. The north wing contains on the 1st floor a late C16 stone 4 centred arched fireplace with quatrefoil stops and there is much exposed square framing with lambs tongues stops. The building is recorded as having been in the ownership of the Michelbourne family in the C15.*

- D Barbara and David Martin have prepared a more detailed report and below is an abridged statement of key points prepared by Malcolm Simmonds for the consents and repeated here.

The front range is a 5 bay timber framed hall house (2 bay open hall) dated mid-late C.15th and possibly built in two phases, the 2 southern bays being later and with the hall being infilled probably early C.16th. A mid-late C.16th addition to the east was added (possibly abutting another earlier range to the east of this).

Circa 1600 the present chimney stacks were inserted/rebuilt from earlier ones in both ranges. The east range was extended further east mid-late C.17th in sandstone which included rebuilding the south wall of the first phase of the eastern addition to form a wider footprint.

The principal High Street frontage was underbuilt in brick late C.18th/early C.19th and further mid-late C.19th alterations were carried out internally, notably considerable structural alterations to the stack and to the rear of this range.

Following the purchase of the building by the Parish Council in 1916 further alterations were carried out but these are not clearly recorded, however, by 1939 it is believed internal ground floor partitions to the front range had been removed and the rear eastern addition attic storey removed and double height volume created.

The eastern wing was further extended in 1966, removing the C.17th gable end, continuing the double height roof void. It is not clear whether the roof structure over the Tiger Hall was replaced in the first or second phase of C.20th alterations but machine made softwood rafters are used throughout and at a slightly different pitch to the retained historic truss rafters between the stack and front range.

Further alterations were carried out to the rear of the front range in the late C.20th and a porch added to the north end of the building.

- E Included with this schedule is the following drawings:

- 20560/01 Rev A Topographical Survey Existing
- 20560/02 Rev A Basement Plan Existing
- 20560/03 Rev A Ground Floor Plan Existing
- 20560/04 Rev A First Floor Plan Existing
- 20560/05 Rev - Second Floor Plan Existing
- 20560/06 Rev A Roof Plan Existing
- 20560/07 Rev A External Elevations 1&2 Existing
- 20560/08 Rev A External Elevations 2&3 Existing
- 20560/09 Rev A External Elevations 4&5 Existing
- 20560/10 Rev A Sectional Elevations 1&2 Existing
- 20560/11 Rev A Sectional Elevations 3&4 Existing
- 20560/12 Rev A Ground Floor Internal Elevations 1-17 Existing
- 20560/13 Rev A First Floor Internal Elevations 1-22 Existing
- 20560/20 Rev A Part Roof Plan Proposed Re-Roofing
- 20560/21 Rev A Part Attic Plan Proposed Re-Roofing
- 20560/22 Rev A Section A-A Proposed Re-Roofing
- 20560/24 Rev B Existing Section through North Bay 5
- 20560/25 Rev A Existing Eaves Details
- 20560/26 Rev B Repair Details Sheet 1
- 20560/27 Rev B Repair Details Sheet 2
- 20560/28 Rev B Repair Details Sheet 3
- 20560/29 Rev B Repair Details Sheet 4

- G Whilst we have tried to specify the works as accurately as possible it should be accepted that the full scope of repairs may evolve through the course of the works on site and the Client should ensure that an appropriate contingency is made available for all such additional works or changes of repairs which become obvious. Further consultation with the Conservation Officer at the Local Planning Authority will be required at this time and suitable time allowance should be made in the programme for this and the full repairs to be confirmed.
- H Please note that a sperate scaffolding specification has been prepared including design drawings prepared by a scaffolding designer. Reference should be made to that document, the General Conditions and Preliminaries and other information prepared by Bosence Associates in addition to this specification and schedule of structural works.
- I It should be noted that the appointed Quantity Surveyor will utilise the Structural Schedule of Works, as well as information from Bosence Associates, to prepare a pricing document which will take precedence over this document.

1.0 SPECIFICATION**G20 CARPENTRY/ TIMBER FRAMING****GENERAL INFORMATION/ REQUIREMENTS**

120 REPAIR PHILOSOPHY - This summarises the repair philosophy and approach to repairs to be followed when determining the scope and method.

- Generally, and in line with accepted practice the policy of minimal intervention will be followed, retaining as much as possible of the original historic fabric where repairs are deemed necessary.
- Wherever possible, existing historic infill panels to be retained and consolidated. Where disturbed by repairs or missing allow for infilling will new fill to match existing adjacent to Surveyor's details. Infill should be consolidated prior to any repairs to the frame.
- Repairs to principal structural members will be designed on a case by case basis, and approved by CA for adequacy.
- Timber for all repairs will be undertaken in oak of similar moisture content when dry, i.e. seasoned oak to reduce the risk of warping and shrinkage. Second hand or re-claimed oak cannot be used unless for wedges etc. Where smaller face patches, slip tenons and wedges are required to repair joints in secondary members, dry oak will be used and coach screwed.
- Otherwise, the condition of the timbers will be respected, in order to conserve as much of the surface as possible; loose frass from decayed areas will be removed carefully, whilst not attempting to remove all evidence of the general condition of the timbers as found.
- All steel fixings in green oak will be stainless steel bolts or coach screws, the nuts or bolt heads to be counterbored flush to the face of the timber and pelleted or concealed unless otherwise agreed.
- Timber to timber repairs are preferred but in isolated positions a steel repair may be deemed preferable to a carpentry repair to allow greater retention of historic fabric. All steel will be stainless steel, and designed to suit each situation. This to be agreed with the Surveyor and Conservation Structural Engineer.
- Carpentry or steel repairs will be considered on a case by case basis treating each member on its merits, bearing in mind authenticity, cost effectiveness, aesthetic appeal, structural requirements and the maximum retention of the historic fabric.
- Accurate records of all repairs and intervention will be made by the Contractor and registered with the Surveyor and Structural Engineer for the benefit of recording all repairs.

150 STRENGTH GRADING OF TIMBER

- Grader: Any company currently registered under a third party quality assurance scheme operated by a certification body approved by the UK Timber Grading Committee.
- Grading and marking of timber:
 - Timber of a target/finished thickness less than 100 mm and not specified for wet exposure: Graded at an average moisture content not exceeding 20% with no reading being in excess of 24% and clearly marked as 'DRY' or 'KD' (kiln dried).
 - Timber graded undried (green) and specified for installation at higher moisture contents: Clearly marked as 'WET' or 'GRN'.
 - Structural timber members cut from large graded sections: Re-graded to approval and marked accordingly.

TYPES OF TIMBER

210 GRADED SOFTWOOD FOR STRUCTURAL USE GENERALLY

- Stress graded to BS 4978 or other national equivalent and so marked.
- Strength class to BS EN 519 or EN 338:C24 (SC4)
- Slow grown Douglas Fir from North America or Canada – 3 year air dried.
- Surface finish: sawn generally, regularised for ceiling joists.
- The following required:
- Tie beams, half ties, dragon beams, dragon ties, principal rafters, and hip rafters to be boxed heart with the heart to be located as close to the centre as possible.
- Live knots may not exceed 50% of any face.
- Small sound dead knots allowed < 50mm diameter, not allowed in the middle 50% of the length

- of beams and bending members.
- Slope of grain typically 1:8 (12%) and not to exceed 1:5 (20%).
- Sap is allowed on arrises but will account for no more than 15% of face or edge.
- On larger section tie beams sap or wane may occur on all four corners.
- Wane not to exceed 10% of face or edge.
- Fungal attack shall not be allowed.
- Small heart shakes are allowed, but should not extend beyond 25% of the radius of the beam in any direction.
- Ring shake shall be graded out.
- Surface fissures not to exceed half the length of the piece.
- Bow should be less than 3mm per metre run.
- Surface finish: New Sawn.
- Treatment: No finish.
- Moisture content at time of erection: As clause 450.
- Inspection: Structural timber to be inspected at timber yard by CA or Structural Engineer prior to delivery to site. Timber to be free from defects which in the opinion of the CA or Structural Engineer render it unsuitable for its purpose.
- For any sections less than 50mm provide kiln dried timber.
- To be sourced from renewable source with FSC Certificates or Chain of Custody Certificates to be provided.

260 GRADED HARDWOOD

- Species and origin: European Oak, *Quercus robur*.
- Grading standard: Equivalent to or exceeding good quality THB (BS 5756:2007), to a minimum strength class D30 with the following qualifications
 - Carriage beams to be boxed heart with the heart to be located as close to the centre as possible.
 - Braces and other curved members to be cut from appropriate curved stock.
 - Live knots may not exceed 30% of any face.
 - Small sound dead knots allowed < 50mm diameter, not allowed in the middle 50% of the length of beams and bending members.
 - Slope of grain typically 1:8 (12%) and not to exceed 1:5 (20%).
 - Sap is allowed on arrises but will account for no more than 15% of face or edge.
 - On larger section tie beams sap or wane may occur on all four corners.
 - Wane not to exceed 10% of face or edge.
 - Fungal attack shall not be allowed.
 - Small heart shakes are allowed, but should not extend beyond 25% of the radius of the beam in any direction.
 - Ring shake shall be graded out.
 - Surface fissures not to exceed half the length of the piece.
 - Bow should be less than 3mm per metre run.
- Surface finish: New Sawn with arrises generally taken off with a draw knife or similar and with timber checked to reduce likelihood of splinters.
- Note some timbers are chamfered with stop ends.
- Moisture content at time of erection: As clause 450.
- Inspection: Timber to be free from defects which in the opinion of the CA or Structural Engineer render it unsuitable for its purpose. Structural timber may be requested to be inspected at timber yard by CA or Structural Engineer prior to delivery to site.
- To be sourced from renewable source with FSC Certificates or Chain of Custody Certificates to be provided.

315 SCREWS:

- Material: Stainless steel.
- Grade: 304
- Type: Wood screws to BS 1210.
- Sizes: Various as detailed in specification or on drawings.

316 BOLTS and TIE BARS:

- Material: Stainless steel.
- Grade: 304.
- Type: Hexagonal head to BS 3692.
- Sizes: Various as detailed in specification or on drawings.

317 WASHERS:

- Material: Stainless steel.
- Grade: 304.
- Type: Gauge to BS 4320.
- Sizes: Various as detailed in specification or on drawings.

318 PLATES, BRACKETS ETC:

- Material: Stainless steel
- Grade: 304.
- Type: Fabricated from standard plate.
- Sizes: Various as detailed in specification or on drawings.

WORKMANSHIP GENERALLY**400 SEQUENCE OF WORK**

- Where new oak structure indicated work to be carried out in a sequence to allow use of traditional mortice and tenons at both ends of members as opposed to slip tenons or alternative jointing.

401 CROSS SECTION DIMENSIONS OF STRUCTURAL SOFTWOOD AND HARDWOOD TIMBER

- Dimensions: Dimensions in this specification and shown on drawings are target sizes as defined in BS EN 336.
- Tolerances: The tolerance indicators (T1) and (T2) specify the maximums permitted deviations from target sizes as stated in BS EN 336, clause 5.3:
 - Tolerance class 1 (T1) for sawn surfaces.
 - Tolerance class 2 (T2) for further processed surfaces.

420 WARPING OF TIMBER

- Bow, spring, twist and cup: Not greater than the limits set down in BS 4978 or BS EN 519 for softwood, or BS 5756 for hardwood.

430 SELECTION AND USE OF TIMBER

- Timber members damaged, crushed or split beyond the limits permitted by their grading: Do not use.
- Notches and holes: Position in relation to knots or other defects such that the strength of members will not be reduced.
- Scarf joints, finger joints and splice plates: Do not use without approval.

450 MOISTURE CONTENT

- Moisture content of timber and wood based products at time of installation: 3 year air dried. 18% or less.

451 MOISTURE CONTENT TESTING

- Procedure: When instructed, test timber sections with an approved electrical moisture meter.
- Test sample: Test 5% but not less than 10 lengths of each cross-section in the centre of the length.
- Test results: 90% of values obtained to be within the specified range. Provide records of all tests.

- 500 RECORD DRAWINGS:** On completion of the works the Contractor shall provide the CA with a set of record drawings. The drawings are to include, plans and details of all works.

510 PROTECTION

- Generally: Keep timber dry and do not overstress, distort or disfigure sections or components during transit, storage, lifting, erection or fixing.
- Timber and components: Store under cover, clear of the ground and with good ventilation. Support on regularly spaced, level bearers on a dry, firm base. Open pile to ensure free movement of air through the stack.

520 EXPOSED END GRAIN

- Components: Seal exposed end grain of the following before delivery to site: all timbers.
- Sealer: clear end grain sealer.

540 CLEAR FINISHES

- Structural timber to be clear finished: Keep clean and apply first coat of specified finish before delivery to site.

550 EXPOSED TIMBER

- Prevent damage to and marking of surfaces and arrises.

JOINTING TIMBER**580 JOINTS:**

- Finish joint surfaces to all scarfs, splices and finger joints so that adjoining surfaces are in full contact over the whole of the surface of the joints.
- Cut all mortice and tenons so that adjoining surfaces are good fit with maximum cumulative gap in one direction of 5mm.
- Pre-drill pilot holes in timbers.
- All to be traditional joints with mortices and tenons being draw bored and oak pegged.
- Joints which will be concealed upon fabrication and erection to be painted for protection.

630 BOLTED JOINTS

- Bolt spacings (minimum): To BS 5268-2, table 81.
- Holes for bolts: Located accurately and drilled to diameters as close as practical to the nominal bolt diameter and not more than 2 mm larger.
- Washers: Placed under bolt heads and nuts that would otherwise bear directly on timber. Use spring washers in locations which will be hidden or inaccessible in the completed building.
- Bolt tightening: So that washers just bite the surface of the timber. Ensure that at least one complete thread protrudes from the nut.
- Inspection: Inspect all accessible bolts at the end of the Defects Liability Period and tighten.

640 STUDDING:

- Pre-drill holes in timber to specified stud diameter.
- Cut studding to correct length.
- Position studding and pass through timber, where necessary assist with blows from a hammer with a block of timber to threaded end to prevent damage.
- Apply washers, and / or tooth plate connectors, and gully tighten nuts.
- Where threaded length extends past nuts, these should be cut to a length of 10mm $\square$ 3mm.
- Clean cut ends to remove all loose or sharp material.

750 MODIFICATIONS/REPAIRS

- Defects due to detailing or fabrication errors: Report without delay.
- Rectification: Obtain approval of proposals before starting modification or remedial work.
- Defective/damaged components: Timber members/ components may be rejected if the nature and/or number of defects would result in an excessive amount of site repair.

760 TEMPORARY BRACING

- Provision: As necessary to maintain structural timber components in position and to ensure complete stability during construction.

775 BEARINGS

- Timber surfaces which are to transmit loads: Finished to ensure close contact over the whole of the designed bearing area.

COLLECTION

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2.0	SCHEDULE OF WORKS		
	For the purpose of the specification, The Tiger is considered to be have its front elevation facing west with directional notations taken in relation to this convention. The Western Roof, where works are proposed has been sub-divided into 5 No Bays from south to north and as indicated on 20560/20.		
	Photographs are provided in appendix B for reference. The Contractor should not rely on these at tender stage and should visit site to inspect the building and structure.		
2.1	<u>General</u>		
2.1.1	The structural specification and schedule of works sets out the philosophy and anticipated scope for the roof repairs and provides typical details for repair typologies. Only once the roof covering is removed will the full extent of works be identified.		
2.1.2	Removal of roof finishes should be done equally to both pitches to avoid unequal loading on the structure. As this proceeds allow for any temporary stability works and bracing particularly related to racking action as the battens are removed.		
2.1.3	Allow to prepare a detailed method statement for the works with associated programme. This should include the sequence of work, stripping of the roof coverings, protection, timber repairs and re-roofing.		
2.1.4	The Contractor's nominated site person will provide a bi-weekly report to the Client and Contract Administrator on progress of works completed, including progress photographs, and also intended works for the forthcoming weeks. This should be reviewed in a short meeting with the Client's nominated person on site on a Monday morning on a bi-weekly rotation where any forthcoming site activities will be discussed. The Contractor should advise the Contract Administrator of any such activities which they consider may affect their works. The bi-weekly reports will be used to update any volunteers positioned outside the working areas.		
2.1.5	Allow to survey and then temporarily disconnect any services disrupted by the works, and recording and tagging with red tape all services which are redundant. This may include electrics, alarms, CCTV, data, telephones, plumbing, heating etc. The use of all cables, pipes and similar need to be established prior to commencement, recorded, and where necessary the use continued through the course of the works including any temporary measures. All to be reinstated on completion subject to agreement with Client and Surveyor.		
2.1.6	Allow to remove all redundant services including disposing of from site.		
2.1.7	Allow to provide suitable and safe access for inspection over ceilings, noting that the spaces below will be in occupation. Include for any require temporary support and back propping. Refer to Surveyor about retention of any safe access for future maintenance.		
2.2	<u>Works – General</u>		
2.2.1	Allow for clearing out all roof voids of all debris, insulation, old materials etc including vacuuming to leave clear, including eaves areas voids etc. Any historic artefacts to be set aside for inspection by the Surveyor and should be cross-referenced to a plan for location. Not all vacuum's to use soft brush nozzles to avoid damage to any plaster nibs. Note the build-up is quite significant on ceiling backings in areas from past roofing works (see photographs 11 and 12).		
2.2.2	Allow to remove all redundant services from roof space upon agreement with Surveyor.		

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2.2.3	Allow for drilling of timbers to test for hidden decay with 8mm long drill piece at positions agreed with Surveyor. Record on drawings and provide 2 copies to Surveyor and 1 copy to Structural Engineer. Assume 30 No positions to be drilled and logged. [Indicate extra over / under rate per additional 5 positions £.....]		
2.2.4	Allow to check all fixings between common rafters and ridge, eaves plate, truss members, purlins etc and reinforce where loose with appropriate Timber Lok (A4 marine grade stainless steel) sized. Allow for carpenter for 4 working days. Include £400.00 for materials. All time and materials to be recorded and with details provided to the Surveyor.		
2.2.6	As part of 2.2.3 and 2.2.4 allow to identify any areas of structural decay, or structural concern and mark up locations on plan.		
2.2.7	Once roof stripped, roof cleaned, safe access boarding provided and plans provided as 2.2.6, allow for access for Surveyor and Conservation Structural Engineer to assess the exposed roof structure and to advise on repairs. Allow 7 working days for repair information to be provided following visit. Provide at minimum of 2 weeks' notice of date for inspection.		
2.2.8	The contractor to provide attendance for the inspection (clause 2.2.7) to include any local investigations requested. This to include provision of hand drills for testing timber decay.		
2.2.9	Include for sufficient time to prepare a cutting list and order the oak for repairs following inspection as 2.2.7.		
2.2.10	Where structural repairs are undertaken the contractor should provide all temporary support necessary to the existing structure to facilitate these.		
2.2.11	Accurate records of all repairs and intervention will be made by the Contractor and registered with the Surveyor and Conservation Structural Engineer. This should include scaled sketch drawings. Where repeat repairs are required or specified then a single sketch will be acceptable noting any variations where applicable and cross referenced to general arrangement plans in terms of positions. The record should also include a photographic log of repairs similarly cross referenced to sketches and general arrangement drawings.		
2.3	<u>Repair Works – Bay 5</u>		
2.3.1	To the northeast corner, there is decay to both the eaves plate to the east wall and also the gable tie beam to the north wall (see photographs 1 and 2). This relates to the valley above and is long standing and no longer active. The eaves plate has got an iron strap added alongside, which extends out and hooks around the storey post to the north west corner of the east range and is adequate, particularly as the eaves plate is supported by timbers below.		
2.3.2	However, to the tie beam, an additional purpose made fabricated strap is recommended to bridge across the junction between this and the eastern eaves plate. This should be 1200mm long and fixed to the tie beam and the eaves plate with 3No. 10mm coach screws at 180mm long and with the strap being 75mm wide x 10mm thick and this fabricated to allow for the 'out of alignment' of the two plates in the north south direction, as well as the eaves plate to the east range being at a lower level. Provide sketch of strap prior to manufacture for approval and after completion of stripping of roof.		
2.3.3	To the north end of the north range, to the east side, there is a section of roof up to the valley which has got added furring pieces over the existing rafters in a number of sections. Allow to remove all firings and be replaced with full length oak furring pieces		

		£	p
	110mm wide x up to 160mm deep and scribed to the deflected shape of the rafter and then fixed down with stainless steel coach screws at 250 staggered centres and a minimum penetration of 60mm into the existing rafters. This new furring will reduce in depth towards to the top.		
2.3.4	The purlin to the west front elevation is fractured at the centre (see photographs 3 and 4). Allow for a new 170mm wide x 10mm thick steel plate, 1m long, should be fitted to the top face centre over the fracture and fixed down with 8No. 12mm staggered coach screws and extending a minimum of 80mm into the purlin (see drawing 20560/26 Rev B).		
2.3.5	The added rafters (see photograph 5), we assume introduced when the west brick elevation was added and particularly below the purlin, have a number of blocking pieces (see photograph 6), whereas others have none, but have deflected. Allow to remove all existing blocking pieces and replace with 2 No. new 200mm long x 110mm wide oak blocking pieces per rafter, depth to suit and fixed through upper rafters with Timber Lok fixings with minimum 60mm penetration into blocking pieces, to provide additional support to upper rafters off the original. Repeat for rafters with no blocking pieces as above. Allow for this to all rafters in Bay 5 west elevation (see drawing 20560/26 Rev B).		
	[Indicate extra over/under cost per rafter £.....]		
2.3.6	On bay 5, the rafters have no ridge beam at the top of the pitch (see photograph 17). Provide new noggins to the top end of rafters, providing lateral stability. New noggins to match existing ridge beam sections.		
2.3.7	The rafter running along the gable wall on bay 5 is made up of multiple furring pieces (see photograph 18). Furring pieces to be replaced with a C24 softwood timber rafter section to match existing. Provide new collar ties 50x160mm dp. C24 softwood timber to the new rafter, along with blocking pieces and straps as specified in 2.3.5 and 2.3.9.		
2.3.8	Where existing collar ties have previously been damaged <i>or are missing</i> , provide a new softwood timber 47mm x 120mm dp with timber lock fixings through <i>new collars into rafters</i>		
2.3.9	At the interface between the main range and the east wing roof, a furring piece connects the rafters between both roofs. Support member to be replaced with a C24 softwood timber section, to match existing rafter members. (see photograph 19)		
2.3.10	To enhance lateral stability of the added rafters to the west elevation allow to strap outer rafter to existing inner rafters and added purlin every rafter (see drawing 20560/27 Rev B).		
	[Indicate extra over/under cost per strap per rafter £.....]		
2.3.11	Where braces dropped (see photograph 7) allow to wedge 2No. braces to the underside of the collar purlin with kiln dried oak wedges into end of open mortice, and which should be pinned in place with stainless steel nails to stop them 'popping'.		
2.3.12	To ceiling joists and spine beam junction allow provisionally to reinforce joints to spine beam (see photograph 13) with 70mm x 70mm x 55mm galvanised angle cleats fixed with minimum of 4 No. galvanised screws to each. Allow for 14 No. cleats and fixings (see drawing 20560/26 Rev B).		
	[Indicate extra over/under rate per angle cleat supply and fixings £.....]		
2.4	<u>Repair Works Bay 3 and 4</u>		

		£	p
2.4.1	To the two central bays where the crown post roof exists, the existing rear rafter has new rafters (see photograph 8), set between the earlier rafters, and which is now taking the load of the roof. This is supported by a purlin with struts down to tie beams and spine beams, and with blocking pieces as necessary. There are modern softwood collars running through, just above the level of the purlin, which additionally assist the structure.		
2.4.2	The added rafters, we assume introduced when the west brick elevation was added and particularly below the purlin, have a number of blocking pieces, whereas others have none, but have deflected. Allow to remove all existing blocking pieces and replace with 2 No. new 200mm long x 110mm wide oak blocking pieces per rafter, depth to suit and fixed through upper rafters with Timber Lok fixings with minimum 60mm penetration into blocking pieces, to provide additional support to upper rafters off the original. Repeat for rafters with no blocking pieces as above. Allow for this to all rafters in Bay 3 and 4 west elevation (see drawing 20560/26 Rev B).		
	[Indicate extra over/under cost per rafter £.....]		
2.4.3	In Bay 4 the ceiling joists span parallel to the west elevation and thus do not provide any tie to the roof (see photograph 14). Allow provisionally to provide 8 No. new galvanised steel flat straps 40mm wide x 8mm thick and to extend over 3 No. ceiling joists, with a welded threaded rod to the external end which is to be extended through rafters (including any firrings), with rafter notched for washer and nut. Strap to be fabricated with holes to allow screwing into each ceiling joist which will require softwood timber noggins fitted between and Timber Lok screwed to joists. These to be depth of ceiling joists less 20mm to avoid interference with plaster nibs (see drawing 20560/27 Rev B). 4 No. straps to tie front elevation and 4 No to tie rear elevation.		
2.4.4	In Bay 3 to enhance lateral stability of the added rafters to the west elevation allow to strap outer rafter to existing inner rafters and added purlin every rafter (see drawing 20560/27 Rev B).		
2.4.5	It is noted that to the west elevation iron rods extend through the roof at two positions, there is a bracketing arrangement, which relates to where the sign hangs out to the west side of the Tiger. Refer to Bosence Associates for cleaning and paint treatment.		
2.3.6	In these bays there is upper timber over the collar purlin with struts under a purlin below the ridge (see photographs 9 and 10). Wedges of blocking pieces are positioned to one side but some loose, and no blocking pieces to opposite side. Allow provisionally to re-fix all existing blocking pieces with Timber Lok. To opposite side allow to add new kiln dried oak blocking pieces to underside of rafter to lock in place. New section to be up to 150mm long x 75mm wide x depth to suit gap and fix with Timber Lok.		
	[Indicate extra over/under cost per new blocking piece £.....]		
2.3.7	To enhance overall stability of roof structure in these areas, provide timberlok fixing connecting the top of each rafters to the ridge beam, add timber noggins to stiffen rafters.		
2.6	<u>Repair Works Bays 1 and 2</u>		
2.6.1	The roof to the west side of the chimney in Bay 2 is of modern rafters of softwood, at least around the chimney. To the east elevation of the main chimney, there are some more historic rafters, which rise up and simply abut the chimney stack, but also some modern ones in softwood.		

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2.6.2	Beyond this the original roof with common rafters, collars and collar purlin can be seen (see photograph 15), and with outer rafters and blocking pieces between (see photograph 16). This space was not easily accessible. The ceiling to these bays is raised to a higher level above eaves with modern softwood joists.		
2.6.3	In bay 1, multiple discontinued rafters can be seen on the west side of the roof (see photograph 20). Replace all discontinued rafters with new C24 softwood members to match existing section size.		
2.6.4	Rafters by the chimney in bay 2 have drifted outwards, creating movement in the masonry. A gap can also be seen between the rafters and edge purlin (see photograph 21). Add twister strap tying rafters back to the edge purlin, with timberLok fixings through the rafter, connecting into the purlin for further rigidity.		
2.6.5	To enhance lateral stability of the added rafters to the west elevation allow to strap outer rafter to existing inner rafters every rafter (see drawing 20560/28 Rev B) with new oak blocking piece 100mm wide x 200mm long x width of rafter and fixed with Timberloks. Provide timberlok fixing connecting the top of each rafter to the ridge beam, add timber noggins to stiffen rafters. [Indicate extra over/under cost per strap per rafter £.....]		
2.6.6	The added rafters (see photograph 16), we assume introduced when the west brick elevation was added and particularly below the purlin, have a number of blocking pieces (see photograph 16). Allow to remove all existing blocking pieces and replace with 2 No. new 200mm long x 110mm wide oak blocking pieces per rafter, depth to suit and fixed through upper rafters with Timberlok fixings with minimum 60mm penetration into blocking pieces, to provide additional support to upper rafters off the original. Repeat for rafters with no blocking pieces as above. Allow for this to all rafters in Bay 1 and 2 west elevation (see drawing 20560/26 Rev B for diagrammatic detail). [Indicate extra over/under cost per rafter £.....]		
2.7	<u>Provisional Repairs</u>		
2.7.1	Allow provisionally for 1 No timber post splice details as 20560/28.		
2.7.2	Allow provisionally for cutting out decayed section of eaves plate 1.5m long with new half laps joints at either end as 20560/28 Rev B.		
2.7.3	Allow provisionally for cutting out decayed section of eaves plate 1.0m long with new half laps joints at either end as 20560/28 Rev B.		
2.7.4	Allow provisionally for 12 No. partner repairs to rafters assuming decay length of 1.0m from eaves plate as 20560/29 Rev B. [Indicate extra over/under cost per partner rafter repair £.....]		
2.7.5	Allow provisionally for stainless steel repairs to 6 No. eaves plates joints as 20560/28 Rev B. [Indicate extra over/under rate per plate repair £.....]		
2.7.6	Allow provisionally for 4 No face repairs, assumed decayed face 600mm long as per 20560/29 Rev B. [Indicate extra over/under cost per face repair £.....]		



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SCHEDULE OF WORKS