SPECIFICATION AND SCHEDULE OF WORKS

Hay Barn
Dakin Farm, Wormhill

Renewal of Roof Coverings,
Roof Structure Renewal and Stone Repair
Provision of Steel Stonework Pier Support

Architects:

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1.0.0 PRELIMINARIES

1.0.1 Employer:

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Ecologist:

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1.0.2 The site of the works is at Dakin Farm, Hargatewall, Wormhill SK17 8SJ

Access:

The site can be accessed off adopted roads and lanes; the 3 bay open fronted barn has large concrete hard standing in front; subject to agreement with the farmer over work and storage areas the general logistics of the site are not difficult for low loaders or deliveries by lorry

1.0.3 The Contractor is advised to visit and inspect the site prior to tender as no claim will be allowed on the grounds of lack of knowledge of the conditions under which the works will be executed.

1.0.4 The works will consist:

1. **The removal and disposal of asbestos cement gutters and down pipes; working in proximity to asbestos sheet.**
2. **Repairs to a 2 truss 3 bay barn provision of softwood roofing joists, battens and re-covering with new Welsh slate.**
3. **Limited structural repairs and re-pointing of the stonework.**
4. **Provision of new cast down pipes and guttering. The downpipes are to be newly located at the south east elevation in order to avoid tractor damage. Investigation of existing below ground surface water drainage system and reinstatement if required to ensure an efficient system is provided and maintained.**
5. **Provision of two steel columns to provide secondary support to open trussed roof structure.**

1.0.5 The drawings referred to in this specification are as follows:

Architect's Drawings:

Z28-01 site location
Z28-02 Existing Plans, Elevations, Sections
Z28-03 Proposed Plans Elevations, Sections and Details

1.1.0 THE CONTRACT

JCT MINOR WORKS BUILDING CONTRACT 2011

1.1.1 ARTICLES 1-8

Article 7 subject to Article 6 will apply. Should dispute arise the appointer of the arbitrator will be the President or Vice President of the Royal Institute of British Architects.

1.2.0 CONTRACT PARTICULARS

The Works may be commenced on or not later than 4 weeks after acceptance of the tender, subject to Listed Building Consent where appropriate.

2.8 Liquidated damages:

£250/per week or part of a week.

2.10 Rectification period: 3 months

4.3 Retention percentage: 5 %

4.4 Penultimate certificate percentage: 97.5%

4.8.1 Final Certificate:
Period for supply of documentation: 3months

4.11 and Schedule 2 Fluctuations:
Do not apply.

Injury or damage to property
Insurance cover to be not less than 5 Million for any one occurrence or series of occurrences arising out of one event

Insurance of the Works:
Clause 5.4B will apply.

Joint fire code:
Clause 6.3FC.1 does not apply.

Materials, goods and workmanship shall be of the best quality of their respective kinds, and those for which there is a British or European Standard or Code of Practice (referred to herein as BS or BSEN and/or CP respectively) shall comply therewith unless otherwise stated. Preambles and descriptions of materials, goods and workmanship given in any one section or trade shall apply throughout this specification unless otherwise described.

The Contractor shall carry out everything necessary for the proper execution of the works, whether or not shown on the drawings or described in the specification, provided same may reasonable be inferred there from. The Contractor, in pricing, is to allow for all this work, whether shown or inferred.

Figures dimensions shall be followed in preference to scaled dimensions and all dimensions and particulars shall be taken from the actual work where possible. Check all dimensions on site.

Work for which provisional quantities are specified will be measured and dealt with in the manner stated in the Conditions of Contract for provisional sums.

1.2.2 The Contractor shall prepare programme and progress charts in conjunction with the Architect and shall record progress throughout the execution of their work.

1.2.3 The Contractor shall provide at all times during the execution of the works and the defects liability period proper means of access with ladders, gangways, etc, and the necessary attendance to move and adapt same as directed for the inspection or measurement of the works by the Architect, Engineer or their representatives.

1.2.4 All expenses in connection with the unloading, storing and return of packings of goods and materials shall be allowed for by the Contractor.

1.2.5 The Contractor shall before starting work submit to the Architect documentary evidence for insurances which are required to be taken out under the terms of the Agreement.

1.2.6 The Contractor shall provide and install all necessary hoists, ladders, scaffolding, staging, tackle, tarpaulins, tools, vehicles and other plant (mechanical and otherwise) and allow for altering, adapting and eventually removing and making good. All scaffolding poles to have plastic end caps fitted. All scaffolding to comply with Local Authority byelaws. All necessary permits must be applied for.

1.2.7 The Contractor shall provide and maintain all necessary protective and safety clothing and equipment for the operatives and site staff.

1.2.8 The Contractor shall set out and level the works and he shall provide all instruments and

attendance required by the Architect for checking this work.

1.2.9 The Contractor shall allow for all on and off site management costs including a person in charge.

1.2.10 The Contractor shall allow for the general attendance of one trade upon another.

1.2.11 The Contractor shall allow for all payments due from him/her under the National Insurance and Redundancy Payments Acts (and including any pension scheme) and any amendments and for all costs and expenses incurred in connection with the costs as described.

1.2.12 The Contractor shall allow for all costs incurred by guaranteed time.

1.2.13 The Contractor shall allow for all costs incurred by the operation of the annual and public holidays with pay schemes.

1.2.14 The Contractor shall allow for all costs incurred by incentive and bonus payments.

1.2.15 The Contractor shall allow for all costs incurred by non-productive time and all other expenses in connection with overtime.

1.2.16 The Contractor shall allow for travelling time, expenses, fares and transport of workpeople, site staff, materials, goods, plant, etc.

1.2.17 The Contractor shall allow for any other costs arising from the employment of labour.

1.2.18 The Contractor shall keep all persons (including those employed by sub-contractors) under control and within the boundaries of the area allocated to him/her. He/she will be held responsible for the care of the existing premises and of the works generally until their completion including all work executed and materials, goods and plant (including those of sub-contractors and suppliers) deposited on site, together with all risks arising from the weather, carelessness of workpeople, damage or loss by theft or any other cause; and he shall make good at his own expense all such damage and loss other than by fire, etc, and the other risks described in Clause 5.4B of the JCT Minor Works contract document.

1.2.19 The Contractor shall maintain and protect public and private carriageways, footways, kerbs, pipes, ducts, sewers, service mains, overhead cables, landscape vegetation, etc, and keep approaches to the site clear of mud throughout the execution of the works and make good or pay for the reinstatement of any damage caused thereto directly or indirectly by the execution of the works.

The Contractor shall allow for taking all reasonable precautions to ensure the efficient protection of all streams and waterways against pollution arising out of or by reason of the execution of the works.

1.2.20 The Contractor shall allow for all necessary watching for the security of the works and the protection of the public including shelter and fuel for any watchmen so required. All ladders to be removed from site when building are not being worked on.

1.2.21 No work shall be executed outside normal working hours or at weekends without the prior consent of the Architect.

1.2.22 The Contractor shall have use of water services on site for the works by arrangement with the property owner. Provide temporary plumbing and storage, pay all charges, and alter, adapt and maintain temporary work as necessary and remove and make good at completion.

1.2.23 The Contractor shall have use of electricity on site by arrangement with the property owner. Provide necessary artificial lighting for the execution and security of the works and for protection, temporary wiring and fittings, etc, pay all charges, and alter, adapt and maintain the

temporary work as necessary and remove and make good at completion.

1.2.24 The Contractor shall insure all tools brought to and deposited on the site against loss or damage by fire, also plant, scaffolding, temporary buildings, etc, if so required.

1.2.25 The Contractor shall allow for a suitable board, to be fixed in a position to be agreed with the Architect, for the display of minimum 3no standard name board's dimensions 1200mm x 300mm and a self adhesive sign to be collected from *Loughborough University..grant giving bodies...professionals main contractor***. Please allow for a board size of 1200mm x 1800mm constructed from 19mm thick external quality plywood, painted white and properly fixed to the scaffold with purpose made scaffold clips. To be located at the end of the old farm drive adjacent to the main road.**

1.2.26 The Contractor shall cover up and protect the works from the weather and suspend all operations during weather conditions, which, in the Architect's opinion, would be detrimental to the works.

1.2.27 The Contractor shall take down and clear away all plant and temporary works. The Contractor shall remove all rubbish and debris and surplus materials from the site as they accumulate and at completion, and shall clean all surfaces, including those affected portions of the existing premises, internally and externally, remove stains and touch up paintwork, polished work and glazing, and leave the works clean and to the satisfaction of the Architect at completion of each section.

1.2.28 The Contractor shall inform the Architect without delay of any defects in existing work and obtain an instruction before proceeding with any work which may:

- **I. Cover up or otherwise hinder access to the defective construction, or**
- **II. Be rendered abortive by the carrying out of remedial work.**

1.2.29 The Contractor shall inform the Architect of any visits to site made by the Building Inspector or representatives of the gas, water or electricity services, and report any requirements made.

1.2.30 Any discrepancy between drawings and specification or schedule of works is to be brought to the attention of the Architect prior to tendering or whilst the works are being constructed.

1.2.31 The Employer does not bind him/herself to accept the lowest or any other tender. The tendering procedure will be in accordance with the principles of the "Code of Procedure for Single Stage Selective Tendering" 1977. The tender will be a fixed price to be held for acceptance for a minimum of 12 weeks.

1.2.32 Provisional sums are for work by the Main Contractor, which cannot be defined or estimated at the time of tender, or for work by a named sub-contractor to be appointed. Include in the tender without addition or subtraction and expend at the Architect's direction.

1.2.33 The priced specification/schedule of work must be submitted within three days of request.

1.2.34 Do not assign or sublet any part of the contract without written consent.

1.2.35 All maintenance instructions and guarantees provided by product and equipment manufacturers to be handed over to Architect on or before practical completion.

1.2.36 To match existing means use products, materials and methods to match as like for like, wherever possible, and with the approval of the architect, all visual characteristics and features of the existing work.

1.2.37 Insurance before starting work on site, submit to the Employer, via the Architect, documentary evidence for insurances, which are required to be taken out by the Contractor.

1.2.38 Site Meetings - hold regular site meetings as necessary for the proper management and co-

ordination of the contract and as required by the Architect. Minutes will be taken and distributed by the Architect.

1.2.39 Adverse weather - use all reasonable and approved building aids and methods to prevent or minimise delays during adverse weather conditions.

1.2.40 Person in Charge - keep a competent person in charge on site at all times. Written or verbal instructions given to this person by the Architect shall be deemed to have been issued to the Contractor, verbal instructions will be confirmed in writing by the Architect.

1.2.41 Samples - where approval of products, materials, finished work, is requested, submit samples to Architect for approval. Allow for 3no., of each; allow time for approval and retain samples on site for comparison with the works.

1.2.42 Uncovering Decay - if any structural defect or dry rot is uncovered during the course of opening up existing work, it is to be reported immediately to the Architect, who will make an inspection before any further work is carried out.

1.2.43 Stability - the contractor is responsible for the stability and structural integrity of the works during the contract, and support as necessary. Prevent overloading.

1.2.44 Noise - Comply with statutory requirements. Transistor radios and cassette recorders will not be permitted on site.

1.2.45 Moisture - Prevent the work from becoming wet or damp where this may cause damage. Dry out the works thoroughly. Control the drying out and humidity of the works and the application of heat to prevent excess movement, blistering or damage due to trapped moisture.

1.2.46 Rubbish - Remove rubbish and debris from time to time and keep the site and works clean and tidy. No fires are allowed on site.

1.2.47 Deliveries - All skips, lorries and other delivery vehicles to be met upon arrival and guided by the Contractor. Any damage caused to be immediately reported and upon agreement made good at Contractor's expense.

1.2.48 Fire precautions - Take all reasonable precautions to prevent loss or damage from fire. No inflammable materials to be stored within the building. Provide a properly maintained 9-litre water type extinguisher on site at all times.

Devise and implement a safety plan
Implement a hot-work permit system
Clear rubbish from site regularly
Store materials safely away from fire hazards
No smoking except in designated areas
No bonfires
Check fire extinguishers regularly
Have at least two escape routes out of building
Make sure all subcontractors have insurance cover for value of project

1.2.49 Bats and Owls all bats and owls and their roost sites are protected by law. If bats and owls are discovered or their presence suspected the Architect is to be notified immediately. No work is to take place, which in any way is detrimental to bats and owls or their habitat.

If bats are found stop work in that area and call Jeremy Truscott Ecologist and request attendance on site to provide advice on relocation.

1.2.50 Setting out check the levels and dimensions of the site against those shown on the drawings and record the results on a copy of the drawings. Notify the Architect in writing of any discrepancies and obtain instructions before proceeding. Inform Architect when overall

setting out is complete and before commencing construction.

1.2.51 INLAND REVENUE'S CONSTRUCTION INDUSTRY SCHEME (CIS) Registration

or certification to the CIS will be required of all contractors.

No payment may be made without visible evidence of registration or certification to the CIS, including payment to any sub-contractors.

1.2.52 Construction (Design and Management) Regulations 2007 and Welfare Facilities:

> Section 1: Pre – tender Health and Safety Plan Relevant sections of this document.

> Section 2: Outline Construction Phase Health and Safety Plan. This should be put together by the Principal Contractor for inspection by the Health and Safety Planning Co-coordinator (PC) prior to works commencing on site and added to as works progress. Just before practical completion, it should be handed over to the PC.

> Section 3: Guarantees and maintenance information. Formulated by the PC formulated by the PC using information contained in section 2.

> Section 4: "As Built" drawings. Formulated by the PC using the information contained in section 2 and all designers (as defined by the Construction (Design and Management) Regulations 2007 (CDM) regulations).

The Health and Safety Executive Board at Nottingham has been notified of this project.

1.2.53 Provide a clean area for eating food, hot and cold running water, necessary WC and sanitary facilities and secure materials storage; provision may be negotiated with the Farm Business. Allow for all costs.

2.0.0 TRADE PREAMBLES

2.1.0 STONEWORK

2.1.01 Ensure the mortar consistency is such that it will not spread on the facing rubble stone faces. Lightly brush away accidental smears as soon as the mortar takes its first set. Joint the work as soon as the mortar has stiffened sufficiently. Tool or brush off the face of the joint as sample panel as agreed with the conservation officer and architect.

2.1.02 Take precautions to prevent damage due to unfavourable weather. Cease exposed bricklaying in all except very light rain. As soon as freezing conditions occur or are anticipated consult the Contract Administrator before recommencing bricklaying when the air temperature is at or below 3°c.

2.1.03 The stone is to be laid on bed.

2.1.04 All preparatory work in raking out joints in the stonework and cutting out stones is to be approved and passed by the Architect before pointing is done or before the new stones are inserted unless otherwise instructed.

2.1.04 The preparation for the pointing shall be that the joint is to be raked out to a depth of 25mm by raking out <u>all</u> the old mortar to this depth by hand but only where soft and loose.

Note particularly that the mortar is to be raked out and that the use of a bolster and hammer will not be permitted, nor the use of any kind of power tool.

Loose and dusty stone on the arris and in the joints is to be removed by the use of a stiff bristle brush (a scrubbing brush is quite suitable) A wire brush should not be used.

2.1.05 4:9 mix 3.5 Hydraulic Lime (Castle Cement): sand mortar will be specified as a general mix. Sand type to be varied to match existing mortar.

The lime shall be as specified by the Surveyor/Architect to suit the location.

Powdered Lime: 3.5 hydraulic lime may be obtained from the supplier given or other approved supplier:

Castle Cement Ltd
Park Square
3160 Solihull Park Way
Birmingham Business Park
B37 7YN
Tel: 0845 600 1616

Lime putty must comply with BS 890: 1995 and BS 6463: 1987. Hydrated non-hydraulic lime is not to be used unless specified.

Hydraulic lime shall comply with EN-459, also available from Singleton Birch (Lincolnshire) HL2 natural hydraulic lime or similar approved. Suitable grades available NHL 2, NHL 3.5 and NHL 5.

Pozzolanic material, where specified, will be brick dust from low-fired bricks (below 900°C) and crushed to <75 microns. Meta Star china clay may be used as a substitute for the brick dust with approval of the Surveyor/Architect.Additives of any sort shall not be incorporated in the mortar except in very special circumstances, with written instructions from the Surveyor/Architect.

2.1.06 The mortar is to be dry mixed and wet mixed with great care with the amount and quality of the water used.

2.1.07 **The sand will need to be carefully selected to give a matched colour and texture between the new and old mortars. The lime will be in the form hydraulic lime as supplied by Castle Cement or similar approved.**

2.1.08 **Mortar used in fine work for mullions, jambs, ashlar work or similar is to have fine sand mix is to be used for 3mm joints.**

2.1.09 **The mortar joint is to be wiped clear of the stone edges, and then tamped with a soft bristle brush when nearly dry.**

2.1.10 **All mortar is to be kept clear of the face of the stone and all cleaned on completion.**

2.1.11 **No work is to be done on a falling thermometer at 5°C, and all works are to be protected from wet and frost as the work proceeds.**

2.1.12 **All stainless steel cramps, pins and ties are to be of approved quality (Austenitic stainless steel) BS 144/P and 2,302/304**

2.2.0 **STRUCTURAL STEELWORK**

NOTE: Hot Work Restrictions may apply to this section of work.

Structural steelwork, if designed by the contractor or sub-contractor, must comply with BS 5950 where applicable unless stated otherwise, and is to satisfy loading requirements specified or otherwise calculable from the information given.

The following design parameters have been assumed:

All steel to be grade 43

All bolts to be grade 8.8

2.2.1 **Design constraints: Unless required or permitted otherwise, comply with the following if required to undertake the design and detailing of the work:**

a) **End craters to be excluded when calculating lengths of welds.**
b) **Bolts not to be less than 12 mm diameter.**

c) **NOT less than two bolts to be used in any connection.**

2.2.2 **Drawings etc.: Before preparing detailed fabrication drawings, submit calculations for all major connections and general arrangement drawings with individual steel members identified.**

2.2.3 **Proposals for erection: At least 7 days before starting erection of steelwork, submit details of method and sequence of erection, type of carnage and temporary guys and bracing proposed for use during erection.**

Materials generally to be to BS 5950 unless specified otherwise.

Expanding bolts and nuts to be Hilti or similar approved of size and reference specified or shown on drawings.

2.2.4 **Galvanised finish to bolt assemblies to be to BS 729, applied by fastening manufacturer and passivated when no additional coatings are specified. Nuts to be tapped after galvanisng.**

2.2.5 **Fabricate steelwork to BS 5950, ensuring compliance with design and performance proprietary requirements. Cut, shape and assemble parts to ensure accurate erection. Use components to manufacturer's recommendations.**

Start fabrication: Inform the Contract Administrator when fabrication is due to start. Do not fabricate steelwork for which the drawings have not been checked.

Storage and handling of fabricated steelwork to be clear of the ground and kept clean. Handle and store carefully to avoid damage to steelwork and any protective coatings. Identification marks to be visible when members are stacked.

Marking: Submit details of proposed methods of identifying and recording materials and components to ensure current use and location in the structure. Marks to be placed in positions which can be checked after erection.

2.2.6 Marking of steel which is to be shot blasted, pickled, metal sprayed or galvanized to be by an Approved method which cannot be obliterated.

2.2.7 End connections: Ensure that angle cleats, if used, project beyond ends of simply supported Members.

Finishing: Remove surface laminations, shelling, cracks, crevices, inclusions, and other surface flaws by chipping and/or grinding. Do not exceed the limits specified in BS 4360, clause 10. If excessive grinding is required, obtain approval before proceeding. Remove burrs and sharp edges by grinding. Carefully dress welds to remove slag and remove weld splatter by grinding.

2.2.8 Welding generally to comply with BS 5135 unless specified otherwise, using consumable which give a weld deposit and mechanical properties not less than the minimal specified for the parent metal.

Welding on site is not permitted under any circumstances. Any work that requires alteration is to be removed from site.

2.2.9 Welders:

a. Provide evidence of welders' competence to undertake specified work. Welders must have been tested to BS 4871: Part 1 as appropriate, using same electrodes class and welding positions which will be used in the work.

b. Welders if instructed by the Contracts Administrator, test welders to BS 4871: Part 1 or BS 4872: Part 1 as appropriate, using thickest plate specified and/or electrodes of appropriate class and/or welding positions approved for use in the work.

2.2.10 Addition welds: Do not place any welds (including tack welds) not shown on drawings, without approval.

Butt welds: Use run on and run off plates to ensure full throat thickness at ends of butt welds and as follows:

- **a. Materials for plates to be of same grade as material being welded.**
- **b. Prepare plates in same manner as parts being joined.**
- **c. After completion of welding, remove plates by cutting and grind smooth the surfaces where they were attached.**
- **d. Retain and identify plates for inspection.**

2.2.11 Align bolt holes carefully to prevent distortion or enlargements when using drifts. Report any misalignment of holes to Contract Administrator. If faulty member is not rejected,

ream hole to correct position.

2.2.12 Tapered washers: In addition to the requirements of |BS 5950 : Part 2, use suitably tapered
Washers under bolt heads and nuts which bear on sloping surfaces. Prevent from turning from when tightening.

Load indicating washers:

1. **When placed under bolt head, prevent bolt turning when tightening.**

2. **When placed under nut, protect nibs with a hardened washer and prevent both washers from turning when tightening.**

2.2.13 Before commencing erection and not less than 10 days before proposed start date, check foundations and other structures to which steelwork will be attached for accuracy of setting out, and holding down bolts for this position, protruding length, condition and slackness.

Report any inaccuracies and defects to Main Contractor and Contract Administrator without delay.

To collection £
Obtain permission of Contract Administrator to commence erection.

Erect steelwork as set out and erect to BS 5950: Part 2. Provide all temporary erection bracing necessary to ensure stability of the building during erection. Remove when it is safe to do so, timing to be agreed with the Main Contractor. Do not distort steelwork and do not exceed stress limits during erection unless otherwise approved.

2.2.14 If steelwork requires modification inform Contract administrator of any defects due to detailing or fabrication errors. Obtain approval of methods of rectification before starting modification or remedial work.

Inspection: Permit the Contract Administrator and/or an independent inspection agency appointed by them to inspect the work at all reasonable times and at all places where it is being carried out. Provide all facilities, hand tools, lighting etc. as necessary to ensure adequate inspection.

2.4.0 CARPENTRY AND JOINERY

2.4.1 Generally
All timberwork to be carried out in highest grade northern European softwood preferably slow grown from the Baltic region unless otherwise specified. Resin rings to be tightly and evenly spaced throughout the timbers 'cross section'.

Comply with BS1186

Fix timber work including new roof battens with stainless steel nails.

Roof battens to be 50mm x 25mm rough sawn 'Tanalised' softwood.

2.4.2 Timber to be properly seasoned, straight and free from any defects, natural or otherwise, making it unsuitable for its function in the works. Moisture content of joinery shall be such that the joinery will be free from contraction or expansion, or other movement, which will detract from the function of appearance of the joinery article, in the position in which it is fixed.

2.4.3 Preservation of timber to be Sovereign Sovaq FLX Micro Emulsion with Flurox or similar as approved by Natural England (Natural England Technical Information Note

TIN092) as suitable for use in bat roosts, to be used on retained timbers that have been either effected by wet rot or insect attack.

2.4.4 Dimensions given for joinery items are for finished sizes unless otherwise stated.

2.5.0 NATURAL SLATE ROOFING

This section shall comply with BS No. 5534:2003 and Slating and Tiling, subject to any qualifications given below:

Natural Slate Roofing – Penrhyn Heather Blue natural Welsh slate specifying 7mm thick slate 465 x 310 mm 2.977 tons per 1000; covering 58.5 m^2 to match the existing in size and colour like for like.

Penrhyn have particularly long manufacturing and supply lead times for their Welsh slate

Natural slates as specified to BS EN 12326-1:2004. To be British Welsh slate.

Holes in slates to be of uniform size and position, formed from the bed to the back of the slate without excessive spalling and located at the centre or at the thinner end of the slate to suit the method of nailing but not less than 25 mm from edges.

Holing of centre nailed slates to be the 'slating gauge + head lap + (8 – 15mm) from the tail of the slate'.

Preparation for random slating where specified - sort the slates into lengths and/or widths to ensure there are sufficient slates to maintain a satisfactory diminishing bond and/or random width over the whole roof area. Calculate the batten gauge accordingly.

Cut slates to form clean straight junctions. If the splay cutting of any slate would reduce it to a narrow edge, cut from a wider slate. Form mitre on cut joint if natural slate is mitred. Where necessary to form clean straight junctions. Do not cut any slate so that its width is less than half the width of a slate; nor must any slate be cut so that it is less than its full length along one side

The minimum width for cut slates at verges or abutments is 150 mm.

For mitre cuts ideally no slate should be used if the top edge is less than 100 mm wide (with an absolute minimum of 50 mm). To maintain a half bond of the mitred slate with the adjacent slates (It depends on the roof pitch, slate size and head lap) run of fixed width (wider) slates up the hip and the bond closed with laterally adjacent wide slates cut to width. Minimum widths for the cut slates will need to be specified to ensure adequate side lap.

Do not nail through plumbers metalwork.

Securely fix 50 x 38 mm 'Tanalised' battens (over roof felt if specified) to the background using fully stainless steel nails of appropriate length. Batten ends must be fully supported at valleys and hips.

Lay slates as follows to roof slopes, with spalled edges uppermost:

Twice centre nail with standard 19mm copper clout nails every slate. Slate nails should have a 10mm diameter head. This can be achieved with off-the-shelf 3.35 mm shank
diameter nails. However these can sometimes be difficult to drive into treated battens and specially ordered 3.0 mm nails with 10 mm heads can be used instead

Lay close jointed with straight vertical and horizontal joints, vertical joints centred over the slate below (or a minimum of 50 mm from edge of slate below in random width slating). Roofs should be set out allowing for a 5mm gap between slates. This allows for variations in the slates' width and for water to drain freely. Perp lines should be struck up the roof to keep the
slating straight.

Use slates of the same thickness in any one course and fix with thinner end uppermost see also 1.9.10 above.

At eaves and above roof openings, lay a double course of slates. Under course of short slates head nailed to the bottom batten and should be laid dressed edge downwards. Fix with bottom edges in line and projecting over fascia or opening.

At the eaves where the necessary tilt lifts the slates away from the battens longer nails or thicker battens should be used to ensure adequate nail penetration.Thin additional strips should not be fixed on top of the battens to achieve this as they are liable to split and will provide no pull out resistance.

At verges, bed slates in the specified mortar mix with an under cloak of slates fixed to rafter and not bargeboard, ensure the underlay extends to the verge line. Lay extra wide slates in alternate courses bedded in mortar and finished flush with under cloak. Do not use cut slates at verges. Brush off mortar at verges at time of set to produce rough surface in keeping with the vernacular building. Do not strike neat and profiled.
At ridges gauge the slating if specified so that a full lap is maintained in the top course. Additionally it is important that the ridge tile (or lead ridge) gives the maximum achievable overlap over the penultimate slates, that is, the top edges of the slates should butt up closely to the ridge borad. Finish slating at top; ensure that the underlay capping strip is in position. Back-bed the specified units in mortar tightly to the roof covering. Fill and gallet exposed ends and cut mitred joints at hip intersections.

Ridges to slating should be back-bedded and not pointed along their bottom edges (they can be haunched and pointed at their butt joints). Ridges should have a slightly smaller angle than the ridge of the roof so that their long edges sit flush on the slates and hence all the bedding mortar is out-ofsight.

Lead valleys to be undertaken in accordance with good practice and described in the appropriate section of the specification and to fully comply with the lead Sheet Associations recommendations and standard details.

Finish slating with short course to maintain gauge when abutting top edge. Cut slates

and dress flanges between tiling to pipe slates and flashings. Underlay: laid in the

approved manner. Qualifications given below:

Lead roll ridges and hips etc., slate roll and wing ridge/hips and mitred hips to be carried out as directed by the Architect in lieu of the above.

Laced valleys, swept valleys and lead valleys etc., to be carried out in lieu of the above as directed by the Architect.

Layboards should be fixed alongside valleys and hips.

WORKMANSHIP

Workmanship to comply with BS8000 on building sites
Part 6 slating and tiling

2.7.0 REPLACEMENT OF CAST- IRON WORK HOPPERS AND DOWNPIPES MATERIALS

Rainwater goods to be set out and adjusted to ensure a steady gradient with no low points.

1. **Cast-iron rainwater pipes, fittings and accessories shall be eared and shall comply with BS 460 (medium weight) and have the joints made in red and white lead putty.**

2. **Fixing of cast-iron pipes shall be 25mm clear of walls with gas barrel distance pieces (non ferrous coach screws of a suitable length screwed into plastic plugs.**

3. **The cast iron rainwater and gutter systems shall comply with the dimensional requirements of BS460, and conform to a British Board of Agrément certificate (where applicable i.e. standard half round gutter and fittings, and circular down pipe systems).**

   The cast iron rainwater and gutter systems shall be manufactured under a BS EN ISO 9002 quality assurance scheme.

   The cast iron rainwater products should be manufactured in the UK and:

   - **The cast iron rainwater goods shall be supplied to site protected with a black primer coating, ready for on site painting. Follow the manufacturers' painting instructions. It is the responsibility of the installer to examine and repair any coating damage prior to further primer coats being applied. Final coatings should be applied prior to installation by the installer/purchaser*. A 4-coat system should be considered an absolute minimum protection for an external system, i.e. 1 primer, 1 grey undercoat and 2 finishing coats of black matt micaceous iron oxide paint, giving a minimum coating of 90 microns.**
   - **Where pipes and gutters are cut on site, the ends shall be cut clean and square with burrs removed. All cut ends shall be made good/re-coated strictly in accordance with manufacturer's recommendations.**
   - **Support gutter systems with black painted stainless steel rise and fall brackets**
   - **The cast iron goods to be from Saint Gobain Pipelines "Classical" or Longbottoms of Holmfirth or from The Alumasc range or the Tuscan range of cast iron rainwater products or similar approved.**
   - **The metal used for the manufacture of cast iron rainwater pipes, gutters and fittings shall meet the requirements specified for cast iron in BS1452 Grade 150**
   - **The cast iron rainwater goods shall be installed in accordance with the relevant health and safety regulations, to standard of workmanship BS 8000**

Manufacturers:

J & J W Longbottom Ltd,
Bridge Foundry,
Holmfirth, Huddersfield. Tel. 01484-682141
Classical Rainwater
Sinclair Works
PO Box 3
Ketley
Telford
Shropshire
TF1 5AD

Tel. 01952 262500

Alumasc Exterior Building Product Ltd
White House Works
Bold Road
Sutton
St Helens
Merseyside
WA9 4JG
Tel. 01744 648400
Fax. 01744 648401

E-mail : info@alumasc-exteriors.co.uk

CAST-IRON:

Downpipes and hoppers: 3" (75mm) diameter Shoes
(with ears)
Union Socket (with ears)

FIXINGS:

Non-ferrous screws: approx length 100mm.
Cast iron or stainless steel bobbins: approx 30mm diameter, lengths cut to suit site conditions.

DECORATION:

Prime, new cast-iron work. Decorate all cast-iron, iron and steel components with 1 coat of primer, 1 coat of grey undercoat and 2 no. finishing coats of matt black (gutters, hoppers and downpipes) micaceous iron oxide paint.

Fix to stonework into mortar joints. Allow for touching up paintwork after fixing to paint over any knocks or scratches.

A high build finishing or undercoat containing micaceous iron oxide. A dilute solvent blend permits firmer bonding to many existing paints (Seal (diluted), prime, undercoat & 2no. top coats). The MIO content gives excellent barrier protection to exposed ironwork. Conforms to BS 5493 type FU2B&C.

Firwood Paints Ltd

Tel.01204 525231

INLAND REVENUE'S CONSTRUCTION INDUSTRY SCHEME (CIS) Registration

or certification to the CIS will be required of all contractors.

No payment may be made without visible evidence of registration or certification to the CIS, including payment to any sub-contractors.

HEALTH AND SAFETY FILE: the health and safety file will comprise of the following sections:

> **Section 1: Pre – tender Health and Safety Plan Relevant sections of this document.**

> **Section 2: Outline Construction Phase Health and Safety Plan. This should be put together by the Principal Contractor for inspection by the Health and Safety Planning Co-ordinator (PC) prior to works commencing on site and added to as works progress. Just before practical completion, it should be handed over to the PC.**

> **Section 3: Guarantees and maintenance information. Formulated by the PC formulated by the PC using information contained in section 2.**

> **Section 4: "As Built" drawings. Formulated by the PC using the information contained in section 2 and all designers (as defined by the Construction (Design and Management) Regulations 2007 (CDM) regulations).**

The Health and Safety Executive Board at Nottingham has been notified of this project.

3.0.0	SCHEDULE OF WORKS	COST £
	Please refer to drawing ASAP LLP Z28-01, 02 and 03; allow costs for all described works, supply and fix all materials. Please refer to the Structural Engineers Report; Ward Cole Consulting Engineers Job No:24/822 A Dempster 7th May 2013; Appendix A	
	All works to be carried out in full accordance with the Construction (Design and Management Regulations) 2007; this project will be subject to a F10 HSE notification. • Provision of site file • Fully compliant scaffold • Provide fully supported walk ways across the asbestos sheet roofs that adjoin the Hay Barn • Fully equipped and serviced welfare facilities either provided within a site cabin or within accommodation provided by the client	
3.1.0	Scaffolding	
3.1.1	Provide all necessary external and internal scaffolding in order to carry out the scheduled repairs; fully comply with CDM Regulations 2007 and HSE workplace regulations and local authority bylaws. Provide full scaffold to two elevations and an internal bird cage scaffold for the renewal of rafters, purlins, and ridge beams roof.	
3.2.0	Removals and Demolition	
3.2.1	Removals	
	Test existing fibre cement roof sheeting that adjoins Hay Barn and the guttering and downpipes for the presence of asbestos. Remove asbestos guttering and downpipes in full accordance with current asbestos regulations. Do not break up. No works are proposed or should take place in relation to the adjoining barn asbestos cement roofs. All personnel handling the sheets must have received HSE asbestos awareness; provide disposable overalls, gloves and an asbestos dust face mask that is manufactured in full accordance with HSE current practice and standards for asbestos removal. All work personnel to be clean shaven when wearing asbestos dust masks.	

	Remove and dispose of asbestos products to a certified landfill site to comply with all regulations concerning the handling of low grade asbestos waste. Allow all costs. *If the asbestos is found to be medium/high grade risk additional expenditure may be required should a specialist contractor need to be employed.*	
3.2.2	Allow for the removal of all of the roof timbers apart from the King Post Trusses which should be supported as necessary	

3.2.3	**Allow for removing all loose debris from within the barn. All other stored materials will be removed by the Employer** **1. Allow for stripping and removing of the remaining Welsh slates from site. The existing slates are in poor condition - delamination has set in, and they are unusable.** **2. Install new softwood rafters alongside existing 19th century rafters, replace ridge beam as scheduled, lay in new purlins alongside existing bolt fixed as scheduled, replaced beams 1, 2 and 3 as scheduled; ensure support for trusses T1 and T2.** **3. Wall plate to northwest wall head to be installed.** **4. Ensure all of the existing electrical wiring is isolated during the works; allow for re-commissioning IEE compliant systems.** **5. Remove all redundant, unrepairable, rusted and broken metal fixings. Any complete fixings (hinges, latches to be retained and cleaned/treated for re use.** **6, New roof timberwork to be sized as schedule of works and in accordance with the structural engineers report. Timber to be FSC approved Scandinavian, Russian or Canadian resinous pine heartwood.** **7. Replace and renew the asbestos cement rain water goods in cast iron and reinstate the below ground surface water drains.** **8. Carefully removing blue clay overlapping ridge tiles (all remain) and carefully store for reuse**	
3.2.4	**Terms; Allow for all costs for the disposal of materials at National Government licensed landfill site.** • **Tipping on agricultural land is prohibited** • **The Employer may wish to retain certain materials on the farm. If this should occur a deduction should be given for any associated disposal costs.** • **Local burning of timber waste can only occur if this is lawful.**	

3.3.0	**Carpentry and Joinery** **(referring to as existing and as proposed drawings Z28 02A and 03A)**	
	With reference to Ward Cole Structural Engineers Report and Recommendations dated 7th May 2013. Item 3.02 The rafters and purlins show signs of significant deflection which has caused roof spread. The ridge board is not structurally supportive and has signs of deflection. To prevent as much disturbance and to retain as much of the existing 19th century timbers, new timbers are to be installed to strengthen the roof structure.	
3.3.1	**Supply and fix new 75 x 25 grade C16 timber rafters (450 mm centres) alongside of all the existing rafters nailing them together.**	
3.3.2	**Strengthen existing undersized purlins by supplying and fixing 225 x 50 grade C16 timber members alongside of the existing purlins and bolting them together with M16 bolts and toothed washers @ 600 centres**	
3.3.3	**Supply and fix new 280 x 100 or 300 x 75 grade C16 timber ridge beams are installed below the existing timber ridge plates, which should be packed down firmly to the new members. The ridge beams can be fixed to the tops of the posts of the king post trusses using galvanised or stainless steel joist hangers**	
3.3.4	**Supply and fix 280 x 63 grade C16 timber eaves beams across openings 1-3.**	
3.3.5	**Supply and fix 150 x 50 grade C16 timber wall plates for the full length of the northwest wall (14.5 metres) installed between the gable walls and across the truss ends. These should be anchored down into the wall using 600mm long, 12mm diameter stainless steel resin anchored rods @ 1m centres drilled vertically down from the top of the wall.**	

3.4.0	**Stonework**	
3.4.1	**Northwest Elevation**	
3.4.2	**Towards the right hand and left hand sides of the elevation there are old stepped crack patterns extending from just below roof level down towards ground level. Deep repoint with natural hydraulic lime mortar.**	
3.4.3	**Patches where open joints are evident with some voids within The masonry; allow for 30 sq. metres of deep repoint with natural hydraulic lime mortar.**	

3.4.4	**To the top right hand corner of the south west gable, the dressed stone quoin has become dislodged, causing a weakness to the stonework and roof in this area. An anchor point has been screwed into this wall for an electric cable, the force from which appears to have caused the stone to become dislodged. Re set the dislodged stone using 2no 19mm threaded stainless steel rod set into the wall by 100mm and the stone by 100mm. Fix with resin and bed stone on natural hydraulic lime mortar.** **Re-fix the associated cable.**	
3.4.5	**Above roof level of Building 1 to the south west gable there is a small window opening with dove holes just below ridge level. A large proportion of the mortar joints externally are open with voids being evident in places, particularly just below verge level.**	

	Deep repoint the entire verge and gable top allow for 10 sq. metres of natural hydraulic lime pointing.	
3.4.6	**The mortar flaunching to the south west farm buildings roof is in poor condition and has come away. Precautions must be taken both in terms of the asbestos sheet and the safety of personnel when working in this area.** **Without disturbing the asbestos cement roof and with the provision of safe access remove the cement flaunching and replace with polyester thread reinforced natural hydraulic mortar. Use strength grade 5 in place of standard strength grade 3.5 NHL. Polyester thread is used in preference to a natural animal hair as it is more durable in this exposed external position.**	
3.4.7	**The section of wall within the adjoining south west farm building has been partly plastered and painted and there is a door opening at the junction of the wall with the rear elevation of the adjoining barn. No work required in this area.**	
3.4.8	**Southeast Elevation**	
3.4.9	**The north east gable is entirely within the adjoining steel frame barn structure that adjoins.**	
3.4.10	**The dressed stone masonry (quoins) to the front edge of the north east gable is showing signs of distortion as a result of probable vehicle impact at some time. The pointing throughout the full height of this exposed decorative stone section is in poor condition with open joints being evident.** **Allow for resetting 3no stones and for deep repointing the entire height of the end gable southeast stone quoin blocks; full width and returning to a depth of 900mm on either side. Approx. 10 sq. metres.**	

3.4.11	A section of the right hand pier facing the south east elevation has undergone some distortion as a result of vehicle impact in the past. Approximately eight of the middle courses are out of position and there are some significant vertical gaps between the stone masonry units. Reconstruct the stone pier from base to truss and re-point in natural hydraulic lime mortar; provide all necessary support.	

3.5.0	Welsh Slate Roofing	
3.5.1	Provide new natural Penrhyn Welsh heather blue slates to match the existing. One size 7mm thick slate 465 x 310 fixed with copper nails, double fixed at head. Battens to be 50mm x 25mm fixed with stainless steel nails.	

	Lay slate strictly in accordance with the Preamble 2.5.0 Treated SW slating 50 x 25mm battens of a suitable gauge (to comply with current BSEN and CoP; manufacturers specifications and recommendations) for double lapped British Welsh slates, to be fixed to rafters with stainless steel nails. Provide double slate eaves with throw to centre of new cast iron guttering.	
3.5.2	Ensure that the minimum head lap is achieved (65mm). Each slate to be fixed with a minimum of 2No copper nails.	
3.5.3	Relay existing overlapping blue clay ridge tiles on natural hydraulic lime mortar; point in overlap joints; do not point long joints to slate roof	

3.6.0	Steel stone Pier Supports	
	With reference to Ward Cole Structural Engineers Report and Recommendations Item 5.02. The stone piers are vulnerable to impact damage and provide the only support to the front of the roof support structure. To ensure the piers are strengthened/supported vertical steel columns are to be installed behind them.	
3.6.1	Install 203 x 203 x 46kg steel columns on concrete footings behind the stone piers in order to resist impact and provide secondary support to the king post roof support timber trusses; see detail on drawing Z28- 03A.	

	If upon excavation of the floor surface to dig out and install the concrete footings it is found that the floor is covered with stone slabs, carefully remove only those which need to be disturbed, and retain in order to be replaced; once the footings are installed and the steel columns fixed below ground level to ensure the reinstatement of the stone slabs laid upon compacted earth/gritty sand mix (50mm)	

3.7.0	**Cast Iron Rainwater Goods**	
3.7.1	**The rainwater goods, which are in generally poor condition, appear to be asbestos cement with a single downpipe on each roof pitch**	
3.7.2	**Renew the guttering and down pipes with British/European manufactures cast iron gutters and down pipes. Matt black painted. Gutters to be 125mm wide and downpipes 100mm diameter. Downpipes to go straight to ground without a shoe; provide 'eared' brackets at 900mm centres to downpipes and matt black painted stainless steel rise and fall gutter brackets at 900mm centre.**	
3.8.0	**Surface Water Drainage**	
	The downpipes should discharge into properly designed underground surface water drainage systems and should not be allowed to discharge directly to ground adjacent to the walls or piers. This is considered to be bad building practice and may cause problems to occur with the wall foundations in future years.	

3.8.1	**Reinstate existing southwest outfall to front elevation; install heavy duty back inlet gulley and connect to existing drain via heavy duty concrete ring inspection chamber; top to be heavy duty bolted down black painted steel (circular) cover; provide all necessary benching to inspection chamber and gully.**	
3.8.2	**Reinstate existing northeast outfall to rear elevation; install heavy duty back inlet gulley and connect to existing drain via heavy duty concrete ring inspection chamber; top to be heavy duty bolted down black painted steel (circular) cover; provide all necessary benching to inspection chamber and gully.**	
	Allow provisional sum for concrete ring soak away chambers of	**£1000**

4.0.0 SUMMARY SHEET

1.0.0	PRELIMINARIES	
2.0.0	PREAMBLES	
3.0.0	SCHEDULE OF WORKS	
3.1.0	Scaffolding	
3.2.0	Removals and demolition	
3.3.0	Carpentry and joinery	
3.4.0	Stonework Repairs	
3.5.0	Welsh Slate Roofing	
3.6.0	Steel Stone Pier Supports	
3.7.0	Cast Iron Rainwater Goods	
3.8.0	Surface Water Drainage	
	Provisional sum for soak away chambers	£1000
3.9.0	10% Contingency (including construction works cost and preliminaries)	

TOTAL

APPENDIX A

Bat Survey JT Ecology Doc July 2013 (PDF)

APPENDIX B

Ward Cole Structural Engineers Report 24/822 7th May 2013 (PDF)

MP/ASAP LLP/July 2013 Revision 1