





















































# A.D.SMITH

## FIRST CLASS THATCHING

By Fifth Generation Quality Craftsman  
Ornamental or plain ridging - repairs or complete overhauls

### Water Reed - Combed Wheat Reed

Brackens Close Norleywood Lymington Hants SO41 5RX

Tel- [REDACTED]

Email [REDACTED]

3rd August 2021

[REDACTED] Cooper  
Laurel Cottage  
Northover Lane  
Tiptoe  
Hants

Dear Russ

Ref - Re-thatch methodology.

After removing the old wire netting and all old ridge work, the water reed top coat work layer will be removed down to the historic base coat level only, this will preserve the layer of old historic thatch as needed for conservation purposes.

The new extension roof timbers will be cantilevered leaving a small gap between them and the old roof surface, this will reduce the weight on the existing rafter work, though a valley board will have to rest on the old thatch as lead work will be needed to make a vally to make the roof weatherproof, the new thatch and slate work will then form around this to complete the roof.

Kind regards

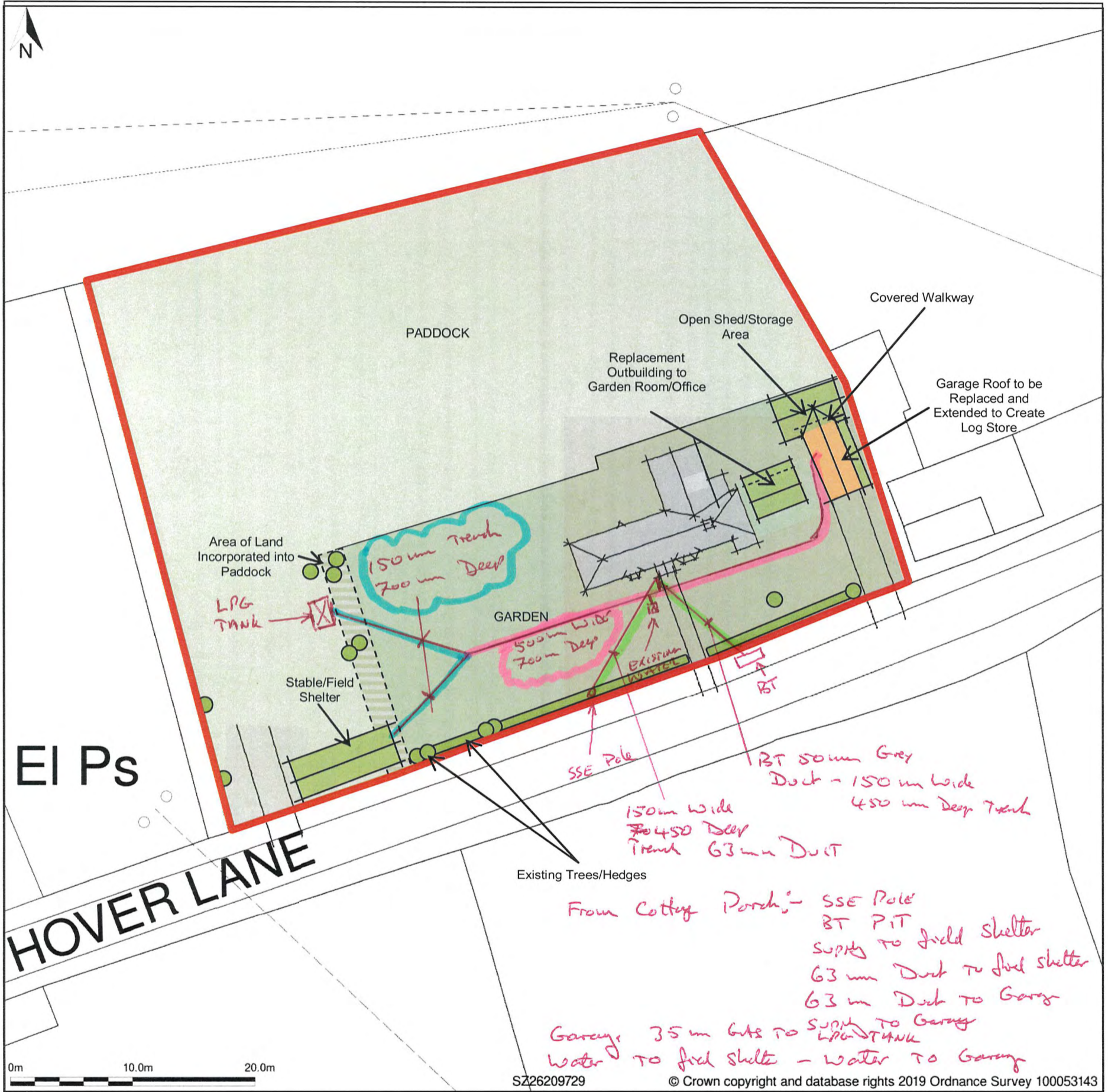
Adrian Smith



3/8/21

# BLOCK PLAN

Laurel Cottage, Northover Lane, Tiptoe, Hampshire, SO41 6FS



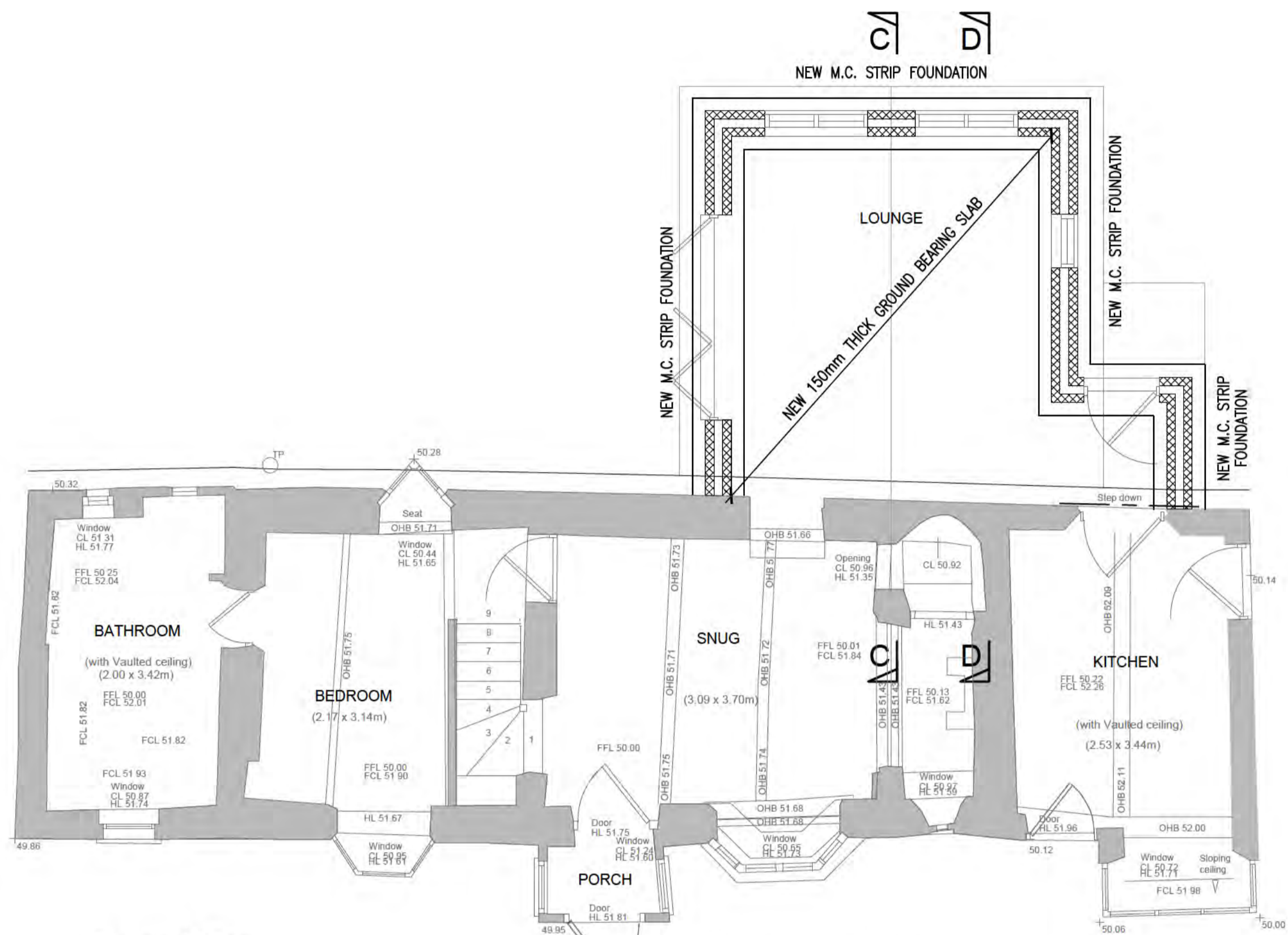
Block Plan shows area bounded by: 426161.95, 97250.98 426251.95, 97340.98 (at a scale of 1:500), OSGridRef: SZ26209729. The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.

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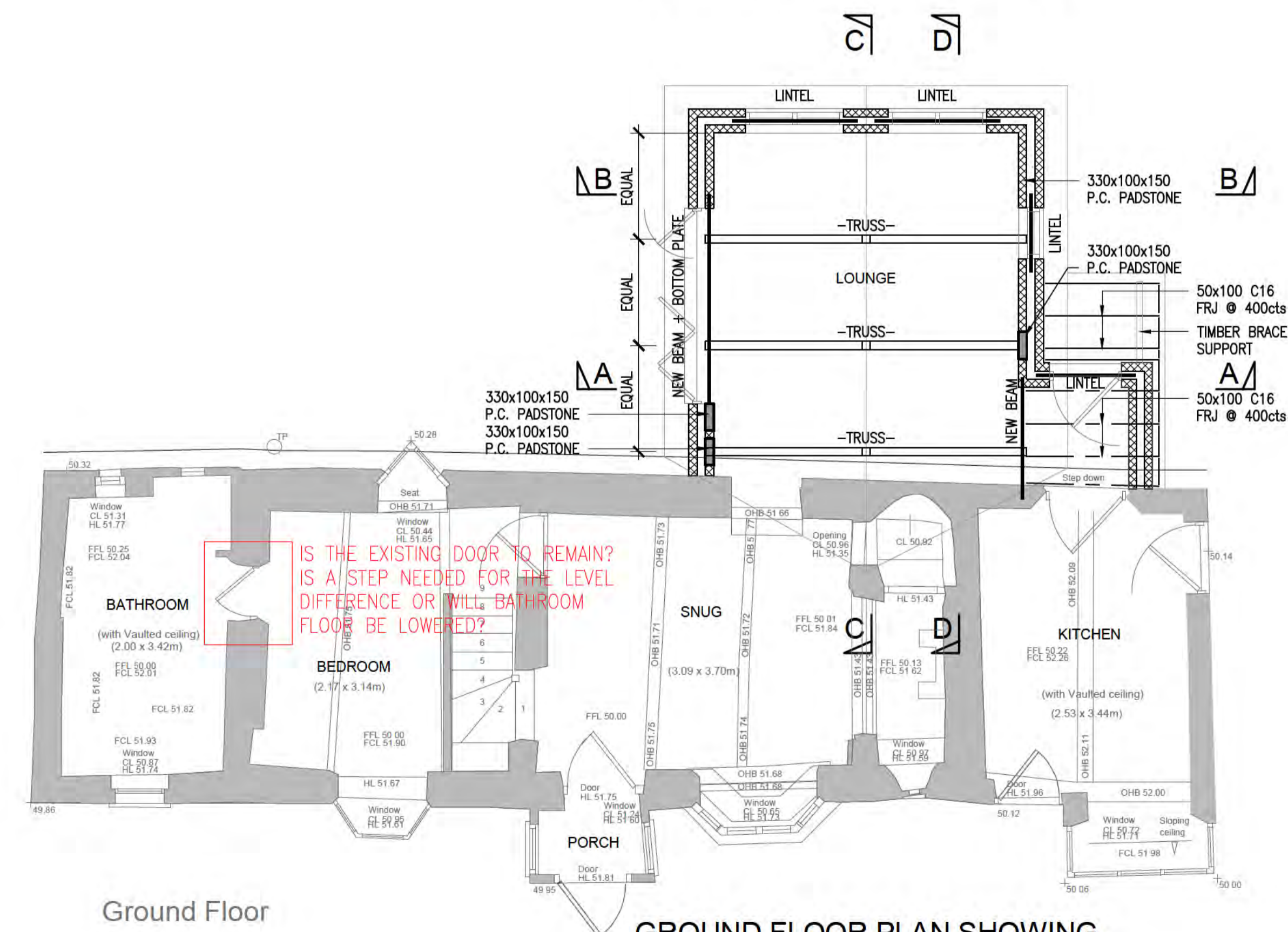
Plan No.: SC/0001/02





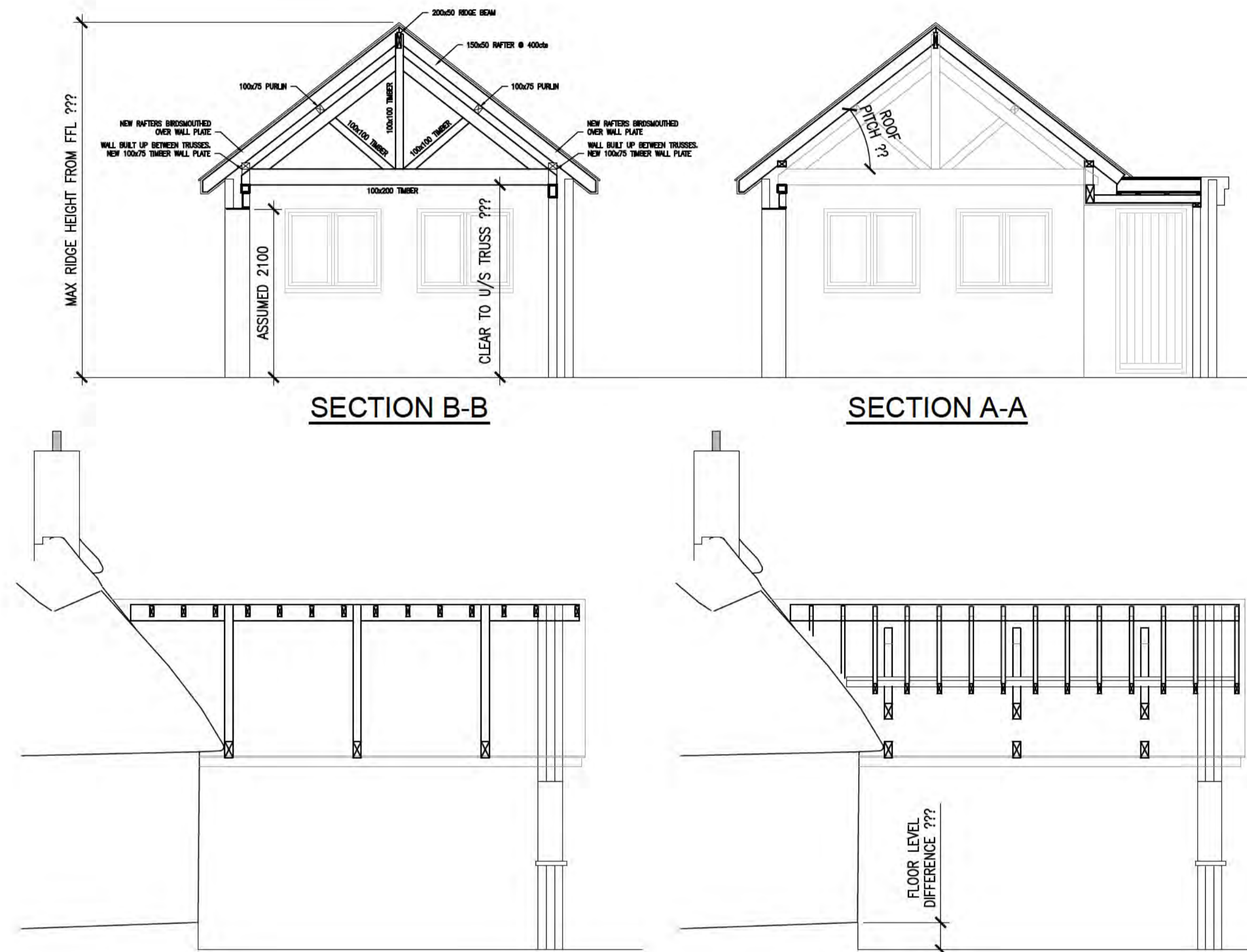
Ground Floor

**GROUND FLOOR PLAN SHOWING FOUNDATION CONSTRUCTION**



Ground Floor

**GROUND FLOOR PLAN SHOWING CONSTRUCTION OVER**

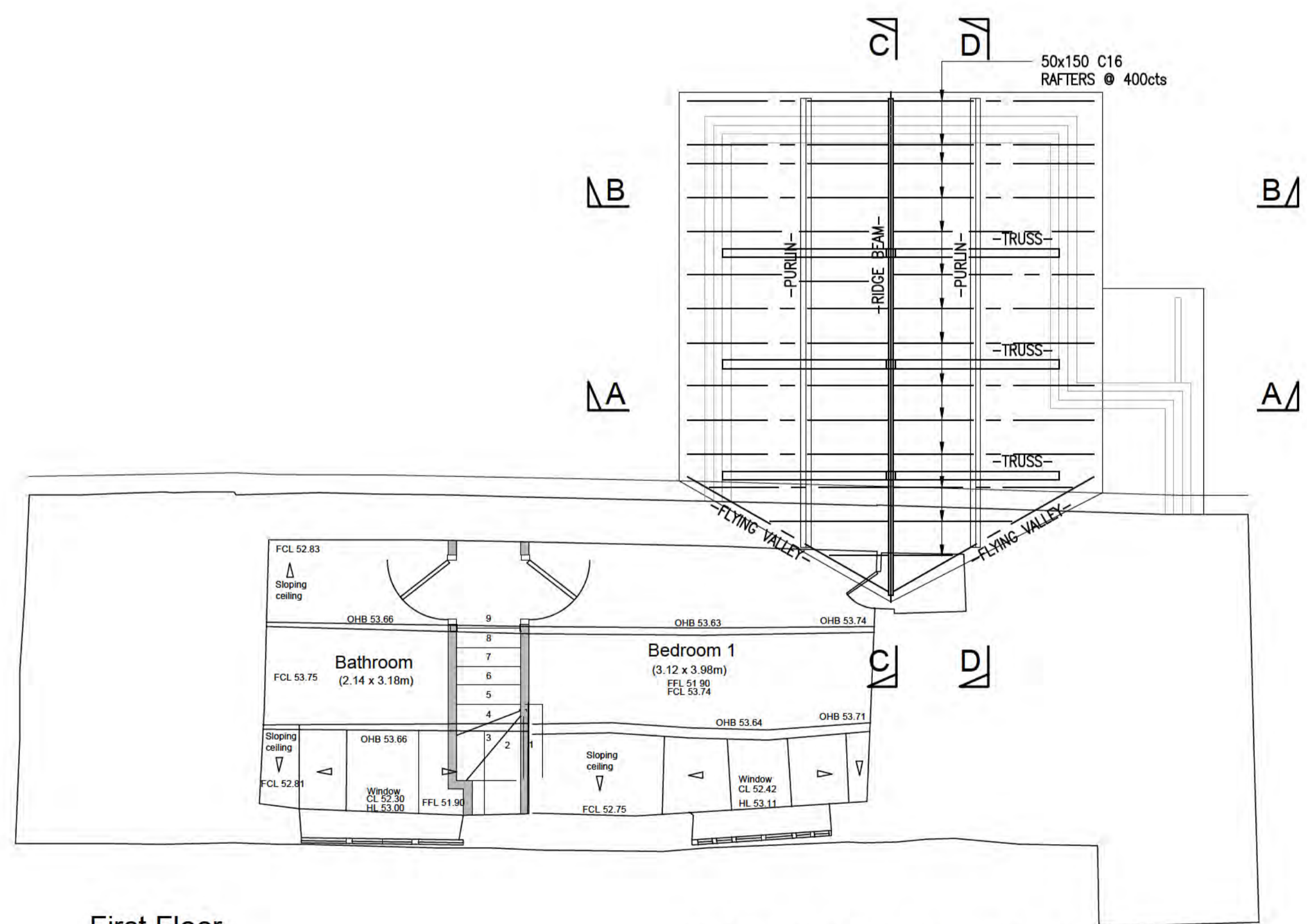


**SECTION B-B**

**SECTION A-A**

**SECTION C-C**

**SECTION D-D**



First Floor

**FIRST FLOOR PLAN SHOWING ROOF CONSTRUCTION**

- Notes
1. TIMBER SIZES INDICATIVE ONLY SUBJECT TO VERIFICATION BY CALCULATION.
  - 2.



**WARNING**  
THIS DRAWING IS NOT AN OFFICIAL ISSUE. ALL INFORMATION CONTAINED WITHIN THIS DRAWING IS TO BE CONSIDERED PRELIMINARY AND SUBJECT TO CHANGE.

Rev. Date Description by ckd

**LAUREL COTTAGE**  
NORTHOVER LANE  
TIPTOE, HANTS.  
SO41 6FS

**REAR EXTENSION**  
PROPOSED  
STRUCTURAL PLANS  
AND SECTIONS

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Scale (A1) 1:50 Drawn by ARH

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Status INFORMATION

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## **Lime Concrete for Floors, exposed aggregate / tamped finish**

### **Ingredients**

400 KGs NHL 5 per cubic metre of aggregates consisting of 1 part sharp sand: 2 parts 12 - 18mm aggregate and approximately 5 - 6 litres of water per 50 KG of lime.

### **Mixing**

Mix dry to achieve a uniform colour in a pan mixer or roller pan mill, slowly add clean water until semi dry, just sufficient to allow mix to bind when squeezed in hand. Free fall mixers can cause balling.

### **Substrate**

Lime concrete should be laid on a compacted sub base of clean 75-50mm screened aggregate (150mm minimum). The greater the thickness of the sub-base, the better the insulation properties. Damp proof membranes are not necessary. Lime concrete can be laid directly on to sub soils that contain clays that have had a 20mm layer of NHL 5 hydraulic lime rotovated into them and compacted (sub soils should be analysed before proceeding). Damp proof membranes are not necessary.

### **Laying**

The concrete is placed in a single layer of 50mm, or 2 layers of 50mm to make a 100 mm layer depending on purpose. 50 mm will be sufficient for normal foot traffic and 100mm for light vehicular traffic. It should be well rammed either by hand or with a mechanical compaction plate to the desired level. Form mechanical key between layers. Lay green on green (within 24 hours).

### **Finishing**

Exposed aggregate finish: after 24 hours the surface of the compacted and levelled concrete is brushed with a stiff yard broom initially, then a soft brush. On large areas it may be necessary to treat the surface of freshly compacted concrete with an inhibitor to hold back the set.

A trial panel should always be done.

### **Curing**

Light mist with clean water for 72 hours or more depending on conditions.

Never lay on a frosted or exceedingly hot surface. Protect from extreme heat, freezing, excessive wind, strong direct sunlight and rain. Ambient temperature range should be 5°C-30°C with low to average humidity.

### **Protection**

Foot traffic should be avoided for 7 - 10 days depending on the weather. Cover with protective walkways 12 hours after placing. These should remain in place for at least 2-3 weeks or longer if possible.

**For further Guidance, contact your St Astier Distributor.**

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## Natural Hydraulic Lime (NHL) Renders

The correct specification for any render should consider the nature and condition of the background, site exposure, time of the year (weather maps / rainfall and wind driven rain indices are available from the BRE) and type of finish required.

The success of a render depends on ensuring good background preparation and suction control, the correct choice of a mortar and its application. Sample panels should always be carried out.

The durability of a render depends on mortars that will adhere to the background, are able to breathe and resist harsh climatic conditions that can and do occur even in relatively benign climate zones. A good bond to the substrate and between all coats is essential to the soundness of the render structure. Bonding is both physical and mechanical:

- A physical bond is achieved by controlling the suction correctly, such that a suction bond develops. The natural surface condition can also offer a good key.

- Mechanical bonding is induced by the method of application. Ensuring good keying between layers, and especially the first coat, by casting/harling or spraying is by far the most successful method.

To avoid potential de-bonding and cracking each coat should be not be richer in binder or thicker than the preceding one (thicker base coats are applicable on thin stipple/scratch coats).

### Sands for renders.

In dubbing out, stipple coats and base coats the sands should be well graded, washed and free of clay/silt (particles below 0.075). Use sharp sands from 3 or 4mm, down to 0.075mm, with the bulk of the sand in the 1.18mm/0.6/0.3/0.15 range. Fine sands or monogranular sands (bulk in 1 or 2 grades only) are to be avoided.

In finishing coats, finer sands, still well graded, can be used for smooth finishes (avoid overtrawling). Particular attention will have to be paid to finishing coats with fine sands to avoid high shrinkage due to the high amount of water that fine sands absorb. The use of a wooden float, energetically applied in small circular motions, will help. Floating with plastic floats is not suitable. Sponge floats can be used after the wooden float work is completed to achieve a particular texture in the finish. Curing will also be important. Small hairline shrinkage cracks can be healed if treated in time with a light water mist.

**Note:** the finer sand particles are the ones mostly responsible for colour and therefore used for colour rendition. If the fines denote presence of clay (particles below 0.075) the NHL binder quantity should be reduced (clays are also binders!). A wet sieving analysis is recommended to check clay / silt content.

Check that any movement cracks are stable and where necessary ensure they are properly tied and if needed, grouted/pinned/pointed. Careful removal of existing renders will result in less remedial repairs prior to re-rendering. Removal of failed or inappropriate existing render or finishes, including many types of paint, may require the walls to be left to dry out properly before re-rendering and time should be allowed for this. Ensure all repairs to the background are completed and that loose pinning stones or defective bricks are repaired or replaced prior to commencement of any rendering. Partial or complete re-pointing / consolidation may be required. Remove all loose and friable materials, remove and treat all organic growth, use biocides where applicable, ensuring that they will not affect the mortar.

Newly built walls should be allowed to dry properly, usually 1 month. This will not take place readily in winter conditions.



**Repointing before rendering:** if this is necessary it should be done with a compatible mortar.

**Detailing:** inspect all details, i.e. copings etc. Check gutters and down pipes and all forms of roof drainage, ground drainage and general ground conditions. Make sure all the above items are functioning properly and where remedial action is required, ensure it is completed before proceeding with render work.

Rendering should never come into contact with soil. Renders should be kept clear of the ground or finish at the base of a wall into free draining gravel.

**Dubbing out:** on defaced surfaces or in areas with a large amount of damaged joints it will be necessary to apply a dubbing out coat to provide a level surface. In most cases this will be sufficient with mortar, however very deep joints or hollows should be pinned to reduce the mass of mortar. When a dubbing out coat is used, let it set sufficiently (8-10 hours) before scraping it and keying it. Apply the first coat after approx. 2 days (more if very deep recesses have been filled) and depending on weather conditions. Dubbing out should leave a relatively flat surface, keyed as necessary, on which to render.

**Suction control:** if needed, apply sufficient water to reduce excessive suction, especially on bricks and porous stone. Old bricks often require more water than new ones. On many occasions this is done the day before, if necessary several times with the last dampening just before application starts. Apply water starting at the top of the structure. Over saturation of the background will result in loss of bond. Never render backgrounds that have standing water on the surface. Always dampen preceding coats before applying next coat.

**It should be noted that in the presence of different suction levels the degree of dampening will vary accordingly.**

**Keying:** provide adequate keying between background and base coat and between each coat. Crisscross patterns are preferred to combing. Make sure that keying does not cut too deeply. Sometimes joints in brickwork are raked back (normally 10mm), this is not necessary with NHL renders if a stipple coat is applied cast on, harled or sprayed on.

### **Two coat work**

Two coat work is suitable for renders with an overall thickness of approx. 15 mm. on surfaces that provide adequate suction and a good key. On surfaces offering poor suction and keying, it is recommended to use a stipple coat (3-4mm thick) applied by casting on, harling or spraying. The main coat can be applied after sufficient hardening and finished as required. Alternatively use 3 coat work by applying a finishing coat. On two coat work the base coat will be the thickest (up to 10mm, more if applied in 2 passes) and with a binder: sand ratio of 1:1.5 or 1:2. Use mainly NHL 5 or NHL 3.5.

This can be laid on or preferably cast/sprayed on. Scour back and key after initial setting.

To ensure a flat and uniform surface see "Ensuring a level surface" under Undercoat in 3 coat work section.

**Curing:** check for initial shrinkage. If found, dampen surface lightly with water and tighten back and re-key. Repeated shrinkage is usually a function of poor quality sands, poor suction control or rapid drying.

**Finishing coat:** use NHL 3.5 (Chaux LC pure) or NHL 2 (Terechoux) (see individual product sheets) 5mm max. for smooth or light textured finishes, 7-8mm for coarse finishes (tyrolean, roughcast etc).



**Smooth and light textured finishes:** use finer well graded sands, 1-2mm down to 0.075mm. Add just enough water to obtain required workability. The more water is added the higher the risk of shrinkage. When the mortar is firm enough, proceed to float up with a cross-grained wood float. This is the most important phase of the finishing work and should be done diligently together with good curing and protection it is vital in obtaining a good finish. See "[Protecting Lime Mortar](#)".

**Coarse finishes:** use coarser sands if thick (rustic) granular finishes are required. The thickness of the coat depends on the final finish required. Some of these finishes, especially the ones requiring special skills such as cottage, scraped and travertine effects, could also be done by using the same type of sand as smooth and light textured (floated) finishes. In these and tooled renderings (patterned), if initial shrinkage takes place, lightly dampen the surface and re-float the area during the first day or two. Tooling is normally applied when the render is 5-7 days old.

**Dry dashing:** throw the chosen aggregate onto soft mortar and leave exposed. To speed up the work a plasterer throwing the aggregate can follow the laying on plasterer.

**Curing:** curing by water mist over 3 to 4 days, if necessary more than once a day, is essential when weather conditions would cause quick drying. See "[Protecting Lime Mortar](#)".

### **Three coat work**

Background preparation, sands, suction control, keying and dubbing out: as previously described.

**First coat:** has to provide sufficient bonding. Stipple or spatterdash can be used on all backgrounds, but especially on impervious and smooth background. Leave these coats rough to provide a key. Use richer mix (1:1.5 preferably). The normal thickness is between 3 and 5 mm. On soft or weak background use 1:2 or 2:5. Successive coats must be weaker than this coat. The thickness of the first coat depends on the nature of the background and the overall thickness required of the render.

A laid on scratch coat can be used on old bricks or surfaces providing a good key (greater care is required in application to ensure good bonding with the background). It will be scoured back with a cross grained wood float and keyed (crisscross keying pattern preferred) once initial stiffening has taken place.

**Second coat (straightening):** to be applied 2 days (or more, depending on weather conditions) after completion of first coat. Its strength should be less than the first coat. Thickness will vary according to the overall thickness required but it is normally between 10 and 15 mm. It must not be over 20 mm thick. If this is required it should be done in successive coats each not exceeding 20 mm. The thicker the intermediate coats, the longer the waiting time before each subsequent application.

**Ensuring a level surface:** to achieve a uniform and level surface fix vertical timber battens or dab's on the wall at 2-2.5 m. interval. If the wall is uneven use spacers and check that battens are straight with a plumb level. Fill out to screeds, if necessary in layers. Screed off excess mortar between battens with a wooden straightedge spanning between the battens. When battens are taken down, fill in strips with the same mortar.

An alternative is to make running screeds 100mm. wide at regular intervals.

Scour back and key as usual after initial setting. Check for shrinkage during the first 2 days and, if necessary, lightly dampen the relevant area, tighten back and re-key. In case of intermediate coats this would apply to each coat. Do not apply finishing coat until undercoat is adequately hardened.



**Finishing coat and curing:** as per 2 coat work.

### **Protecting NHL mortars and renders**

The setting properties of NHL mortars require protection against adverse weather conditions. Precautions are necessary and, if in doubt, your St. Astier Distributor will be able to advise further.

See "Protecting Lime Mortar".

**Early exposure to rain will cause some moisture absorption in the first few millimeters of a fresh render. If frost occurs, there might be damage. The figures given above refer, therefore, to a render that has not been subject to water penetration in its early life.**

The preferred form of protection is hessian covers that, with re-damping, will also contribute to curing the mortar. Hessian covers are essential to protect against frost. Plastic sheeting is effective against rain but should be kept clear of fresh work. If too tight it will generate condensation leading to unsightly staining. It will not protect against frost. Frost protection should be provided even if frost is not occurring at the moment of finishing the day's work but is forecast during the early days of a mortar. Work should not start in frost conditions or when frost is forecast or with temperatures below 5°C. In working with NHL 2 or in rendering with fine finishing coats, this should be 8°C. Protection from the quick drying effects of wind or direct strong sun should be provided by using shading sheets on scaffolding. See "Protecting Lime Mortar".

### **Good working practices**

In this document we have already discussed items such as background preparation, suction control, detailing, keying, protection and curing. A good and durable result depends mainly on these factors, the correct mortar mix, sand, dosages and workmanship. One item not to be overlooked is scaffolding. Where scaffolding is being used make sure that the scaffolding has adequate clearance from the face of the wall to allow application, avoiding unsightly lift lines. Scaffolding should project past all areas to be rendered to allow for protection of the new work against direct rainfall. Generally scaffolding should be capable of carrying the protective screens necessary to shade the work and prevent rapid uncontrolled drying and any covers needed to protect against frost. See "Protecting Lime Mortar".



## NHL Renders Diagnostics

<i>Defect</i>	<i>Causes</i>	<i>Remedies</i>
Shrinkage & Cracking greater than 2mm	General or partial movement of the background or the building.	Check if movement is still active. (Engineer to check). If building stable, repair cracks / areas.
Less than 2mm	Thermal movement. Poor workmanship. Render too thick. Too much water in mix. Over saturated backgrounds. Insufficient setting between coats.	Depending on extent, open out crack and fill with same mortar.
Hairline cracks	Bad preparation of background. Over saturated background. Too much binder. Too many fines in sand. Finishing coat too thick. Too much water in the mix. Rapid drying / lack of protection. Too much sun or wind during curing.	Either apply slurry fill if sound or remove and replace properly.
Loss of Bond	Poor background preparation. Poor suction control. Over saturated background. Background too smooth. Incompatibility with existing background. Insufficient strength in bonding coat. Background movement. Metal corrosion. Salt crystallisation. Excessive or late towelling.	Repair or replace as appropriate. Consolidation by grouting may be considered.
Bulging	Poor background preparation. Incompatibility with existing background. Metal corrosion. Frost damage during curing.	Depending on the extent of damage, either partial repair or total replacement. Neutralise and treat any rusting metal.
Powdering / Friability	De-calcification of render (loss of binder). Poor background preparation. Poor suction control. Rapid evaporation of water during application, ( prior to adequate set). Frost damage. Insufficient binder dosage. Variation in surface compaction / finishing. Poor sands.	Partial or total repair with correct mortar applying due protection and following best practice.
Water penetration.	Poor background preparation. Weak mortars. Bad detailing.	Partial repair. Light repairs with several coats of lime wash. Rectify detailing problems. Replace if necessary.