

43 Hanson Road

Meltham

Structural Repairs

Introduction

Alterations and extension have recently been undertaken at the above property. Due to chemical contamination, structural problems have become apparent in the facing brickwork which also includes a retaining wall constructed to the rear boundary. It is necessary to take down the affected masonry and rebuild with new brickwork. The re-use of the bricks is not possible and these require disposal, with due notice if used as crushed material as having a high sulphate content which might compromise cement based materials.

Scope of works

Two Storey Extension & Dining Room Extension

- Remove all windows, doors and Juliet balcony providing temporary closure to all openings.
- Secure and isolate all electrical and plumbing fixtures located on the external wall affected by re-building works.
- Confirm suitability for re-use of all frames, window and doors due to possible distortions.
- **Provide stability to all wall panels as required to resist wind forces following the removal of the facing brickwork.** Proposals indicated on drawing 2015/1052/01 sht.3
- Remove all eaves fascia, and rain water goods and keep for re-use.
- Provide temporary protection to exposed eaves.
- Lift and keep for re-use adjacent external paving, break out and remove from site concrete/tarmac paving to side and front of property as indicated on drawing 2015/1052/01 sht.1. All paving to be reinstated as original following the completion of the works.
- Take down and dispose of all facing bricks as indicated on drawing 2015/1052/01 shts. 1-2.
- Remove all traces of contaminated mortar from walling, fixings and damp proof membranes.
- Confirm adequacy of all wall tie fixings and make good as required. This will entail the removal of all cavity insulation to be kept dry and protected for re-fixing.
- Confirm adequacy of all damp proof membranes - make good as necessary.
- Confirm adequacy of all lintels – review potential distortion of external leaf support leg.

- Re-construct the facing brickwork incorporating all necessary tying, insulation and damp proof membranes.
- Remove roof covering adjacent to gable pike to expose distortions in roof structure.
- Realign roof structure following re-construction of affected masonry and make good all coverings and rain water goods.
- Form movement joint within main gable blockwork. Saw cut joint from ground to underside of roof trusses and seal within the garage. Provide remedial wall ties each side of joint at 450mm vertical centres.
- Provide movement joint in new facing brickwork in accordance with brick manufacturer's recommendations.

External Retaining Wall

- Take down and dispose of all facing bricks. Total length of wall 28.5m x 0.9m average height.
- Remove all traces of contaminated mortar.
- Rebuild the brickwork using –
 - ***Class F2 bricks – suitable for severe exposure and active soluble salt content Category S2 in accordance with BS EN771-1.***
 - ***Water absorption to be $\leq 7\%$.***
- Provide free draining single size aggregate to rear of wall.
- Provide 50mm diameter weep holes at 900mm centres at 75mm above lower ground level.
- Provide movement joints through masonry at 6.0m maximum centres.

Masonry specification for rebuilding of facing brickwork

In accordance with BS EN1996-2:2006

cl.2.1.2.1.(3) – Micro conditions of exposure – MX3 – Exposed to moisture or wetting plus freeze/thaw cycle.

cl.2.2.2 – Masonry units to comply with EN 771-1 Clay masonry units.

cl.2.2.3.1 - Factory made mortars to conform to BS EN 998-2 based on the suppliers experience for intended use.

cl.2.2.3.(3) – Site made mortar shall be suitable for severe exposure.

Mortar designation (i) and (ii).

Mortar compressive strength below DPC level– M12 – 12 N/mm² @ 28 days

Mortar compressive strength above ground level– M6 – 6 N/mm² @ 28 days

Prescribed mortar – M12

Cement : Lime : Sand 1 : 0 to ¼ : 3

Cement conforming to: BS EN 197-1 Notation CEM I (Portland Cement)

Prescribed mortar – M6

Cement : Lime : Sand 1 : ½ : 4 to 4½

Cement conforming to: BS EN 197-1 Notation CEM I (Portland Cement)

Sand proportions: 4 - sands containing a higher proportion of fines.

4½ - sands containing a lower proportion of fines.

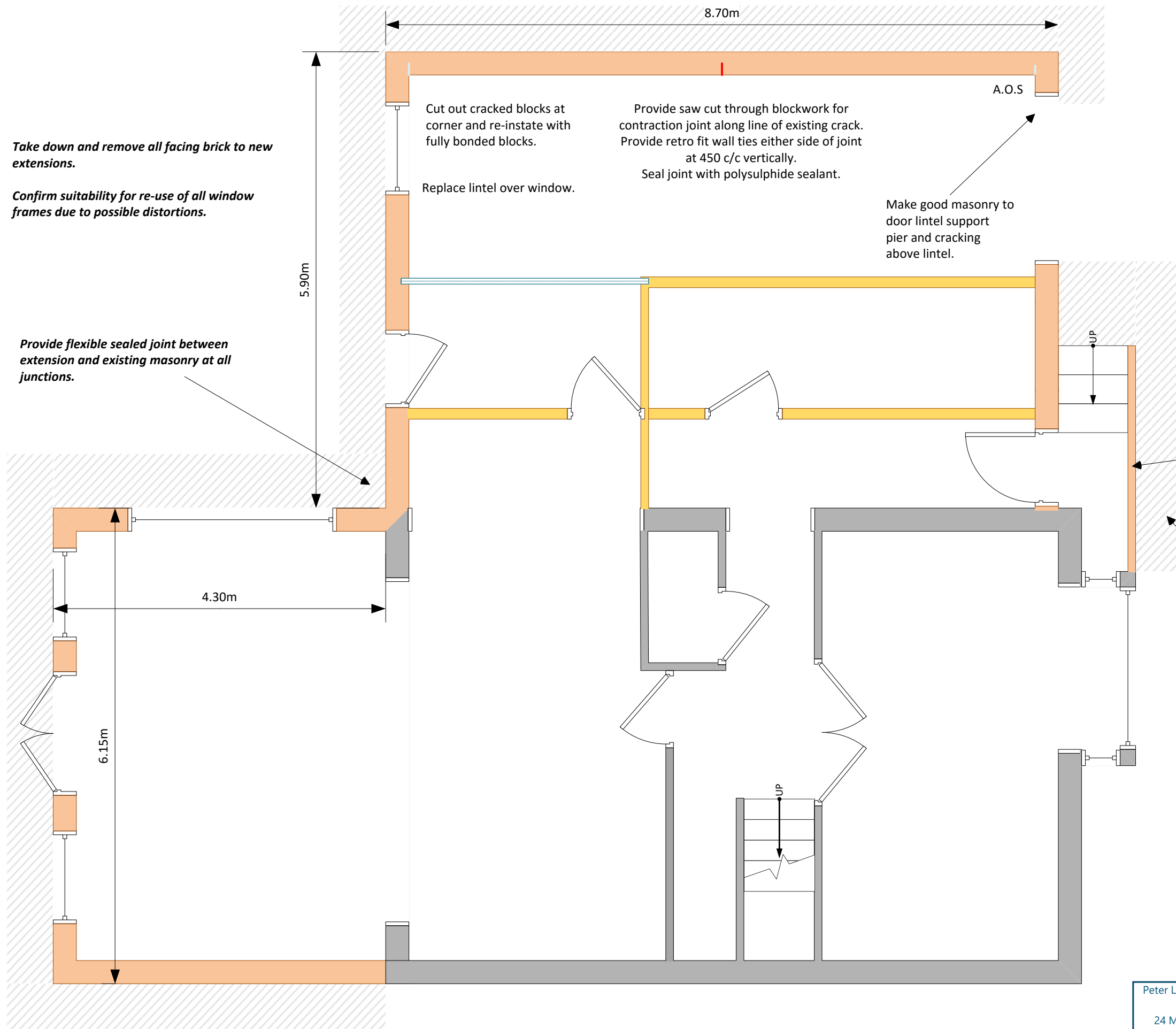
Proportions to be made by mass for batching – confirm comparable bulk densities on site.

Alternatively mixing using batching boxes as appropriate for volume.

New facing bricks to be Class F2 – suitable for severe exposure and active soluble salt content Category S2 in accordance with BS EN771-1.

Water absorption for the bricks used below ground level up to DPC course in the house and in the retaining wall to be =<7%.

Peter Lodge B.Eng C.Eng M.I.Struct.E



GROUND FLOOR PLAN

NOTES

- 1) Drawing to be read in conjunction with specification notes.
- 2) Contractor to ensure temporary stability of masonry during re-construction of external wall.
- 3) Method statement and programme of works to be provide for approval prior to work commencing.
- 4) Denotes facing bricks to be removed and reinstated.
- 5) Confirm adequacy of all window frames for re-use.

Take down and remove all facing brick to new extensions.

Confirm suitability for re-use of all window frames due to possible distortions.

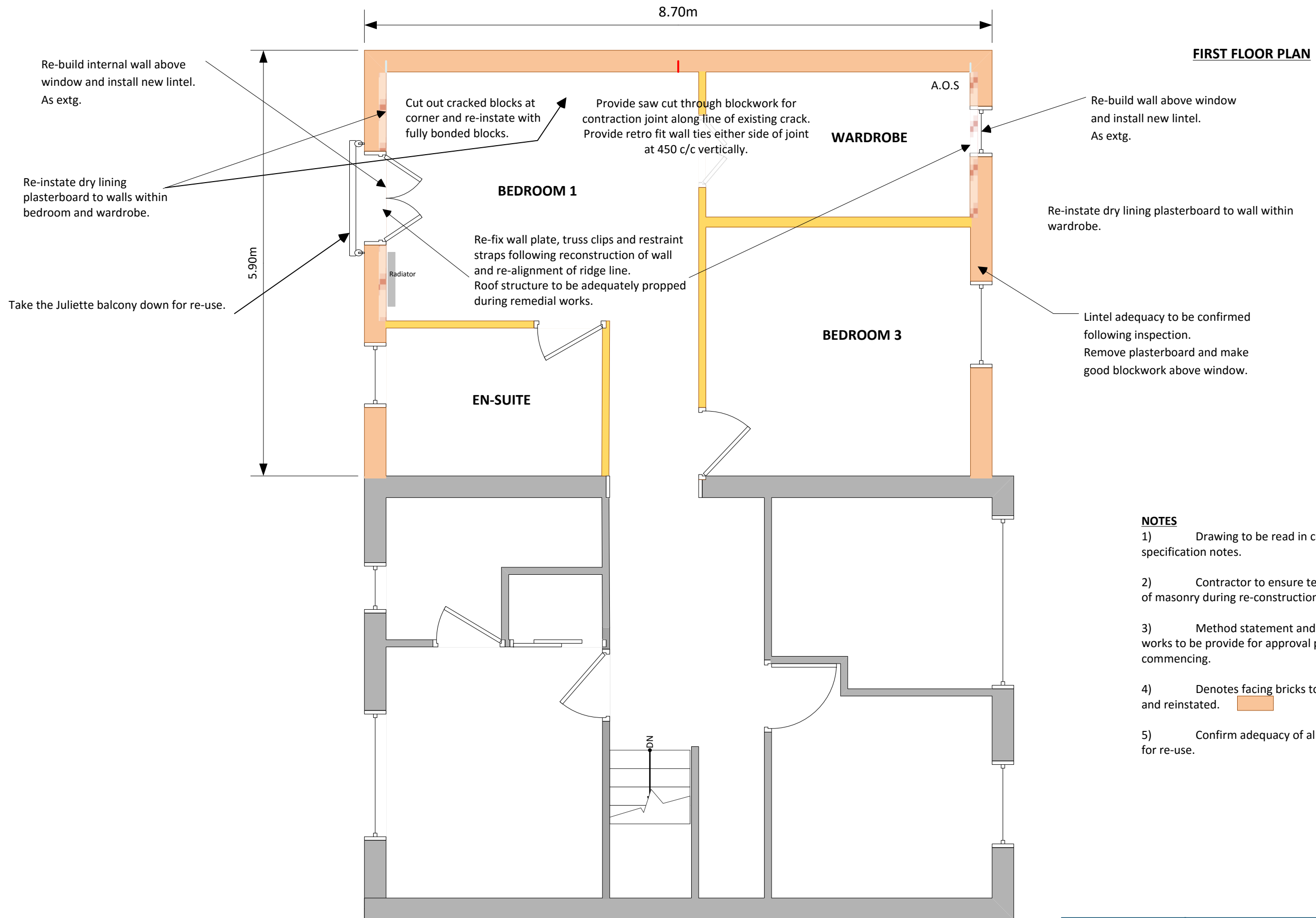
Provide flexible sealed joint between extension and existing masonry at all junctions.

Handrail to be taken down for re-use.

Denotes area of external paving to be broken out to allow removal of facing bricks.

Reinststate after re-construction of wall.

Peter Lodge Consulting Ltd 24 Moorlands Park Ripponden Road Denshaw		43 Hanson Road, Meltham		
Tel 07809 770748		Remedial works – Ground Floor		
info@peterlodgeconsulting.co.uk	SIZE A3	Contract No. 2015/1052	DWG NO 2015/1052/01	REV
SCALE 1:50	SHEET 1 OF 3			

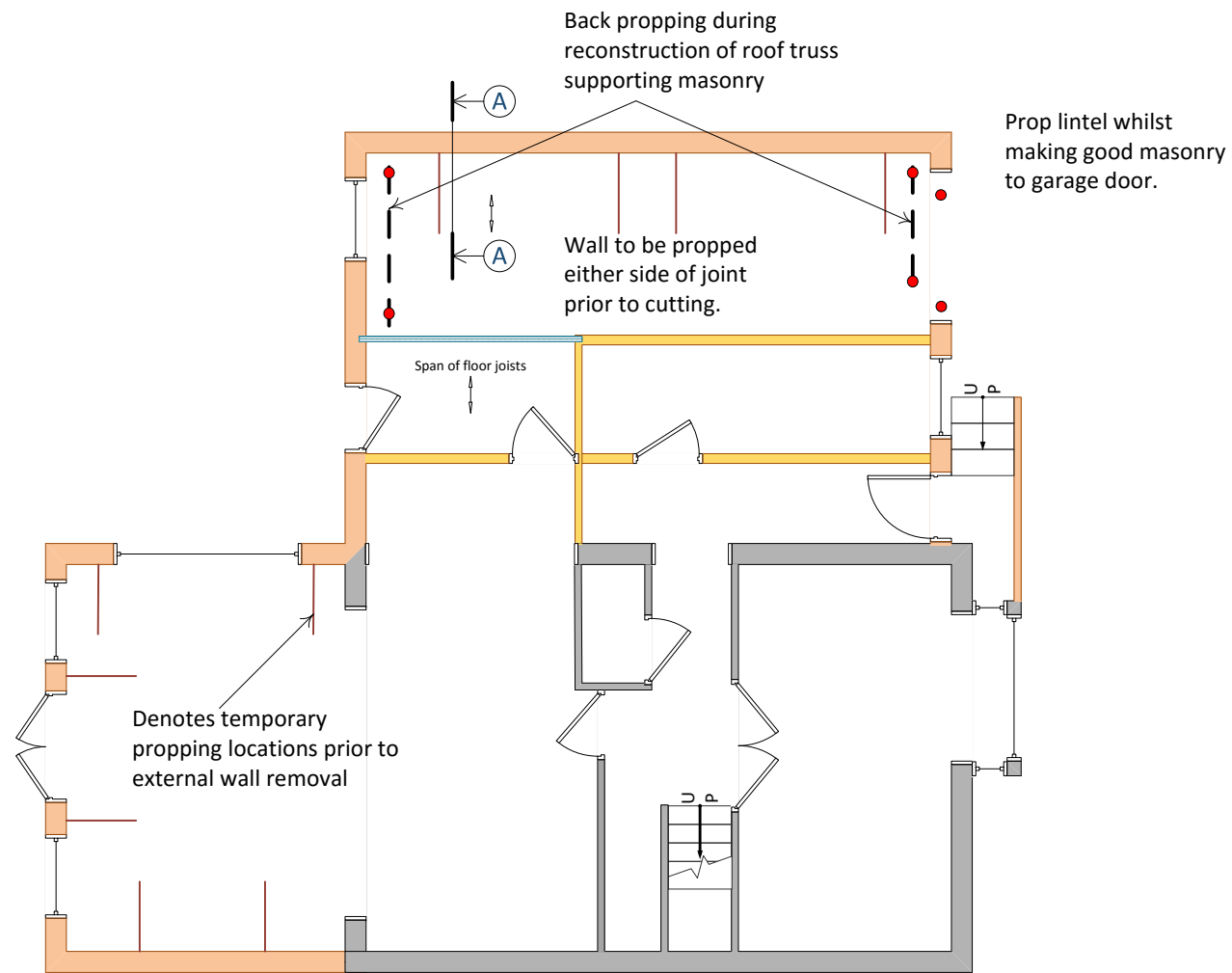


FIRST FLOOR PLAN

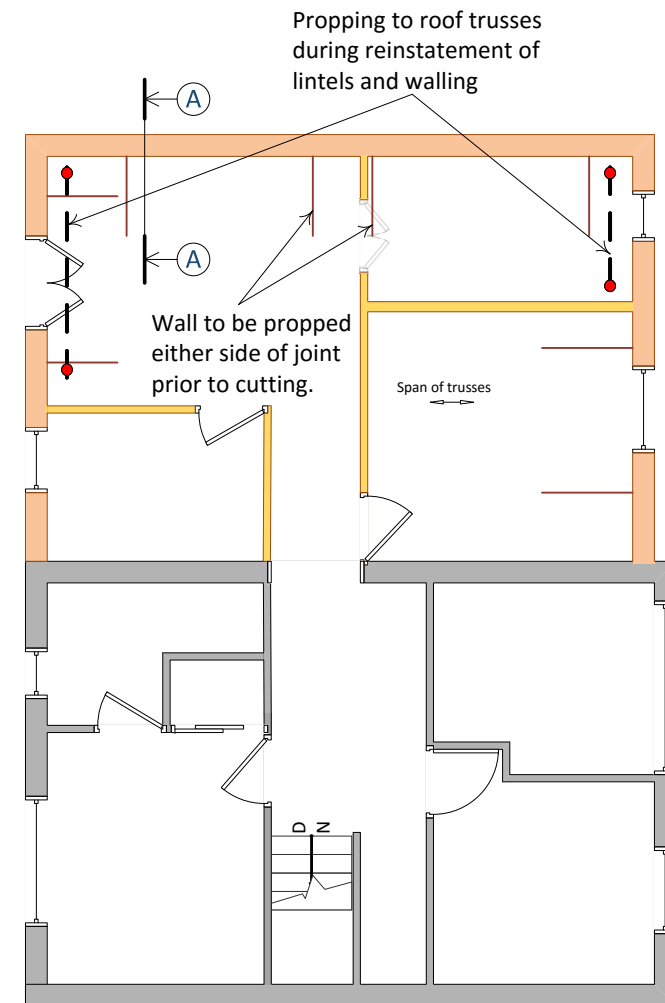
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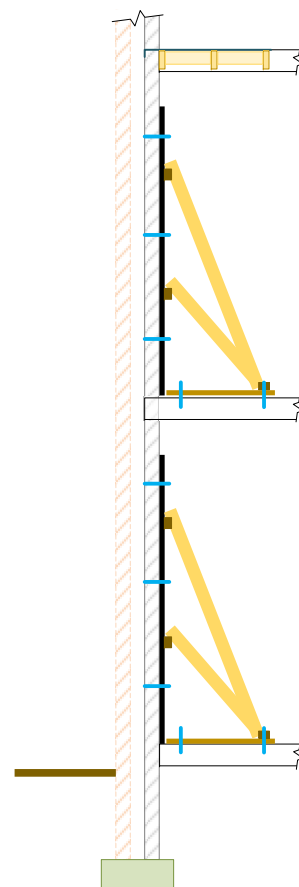
Peter Lodge Consulting Ltd 24 Moorlands Park Ripponden Road Denshaw		43 Hanson Road, Meltham		
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SCALE 1:50	SHEET 2 OF 3			



GROUND FLOOR.



FIRST FLOOR.



SECTION A ~ A.

Provide Bat straps and nogginns at 1200 c/c to bottom chord of truss if not present.

Temporary propping to inner blockwork prior to removal of outer leaf of wall. Formed from 100 x 50 C16 timber. M12 fixings as indicated to wall and floor.

NOTES

- 1) Drawing to be read in conjunction with specification notes.
- 2) Contractor to ensure temporary stability of masonry during re-construction of external wall. *Temporary propping indicated is a proposal subject to confirmation of demolition and re-building sequencing.*
- 3) Method statement and programme of works to be provide for approval prior to work commencing.
- 4) Denotes facing bricks to be removed and reinstated.

Peter Lodge Consulting Ltd 24 Moorlands Park Ripponden Road Denshaw		43 Hanson Road, Meltham		
		Remedial works – Temporary Propping		
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