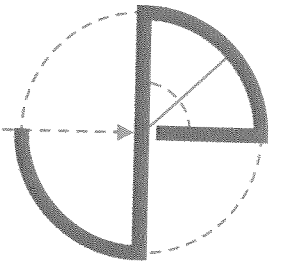


JP Chick & Partners Ltd
Consulting Civil & Structural Engineers



Lime Kiln House
Old Ipswich Road
Claydon
IP6 0AB

Structural Calculations

SUFFOLK: Registered Office: 7 Museum Street Ipswich Suffolk IP1 1HQ T 01473 280699 F 01473 280701 E ipswich@chick.co.uk (Registered No: 4806356)

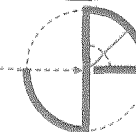
ESSEX: 8 Atlantic Square Station Road Witham Essex CM8 2TL T 01376 503020 E witham@chick.co.uk

NORFOLK: 23 St Stephens Road Norwich Norfolk NR1 3SP T 01603 619093 F 01603 619840 E norwich@chick.co.uk

PRE-CONSTRUCTION/DESIGN INFORMATION

JOB NO: IG23/317 JOB ADDRESS: Lime Kiln House, Old Ipswich Road, Claydon Client: Clare Kempkens

JP Chick & Partners Ltd
Consulting Civil & Structural Engineers



Project Description: Internal Repairs to floor above existing cellar

JPC Design element: Beams, columns, and grout repair

Who is Principal Designer? Principal Contractor Name: TBC

JPC Engineer: OCMV Signed off by:

Single Contractor:
Multi Contractor:
Domestic Client:
Commercial Client:

Specialist Considerations Demolition Asbestos Listed Building Choose an item. Choose an item.	Is the Party Wall Etc., Act required	<input type="checkbox"/>	Has there been a ground investigation if so include with design.	<input type="checkbox"/>	Specialist Design: Temporary Works Choose an item. Choose an item. Choose an item. Choose an item.
	Will Building Regulations be required	<input checked="" type="checkbox"/>	Results /comments on ground investigation:		
	Are there any planning conditions	<input type="checkbox"/>			

Relevant British Standards, Codes of Practice and Design Standards referred to in this design

EN1990 EC-0 – Basis of Structural Designs	<input checked="" type="checkbox"/>	EN1991 EC-1/BS6399 - Actions on Structures	<input checked="" type="checkbox"/>	EN1993 EC-3/BS5950 - Design of Steel Structures	<input checked="" type="checkbox"/>
EN1996 EC-6/BS5628- Design of Masonry Structures	<input type="checkbox"/>	EN1992 EC-2/BS8110 - Design of Concrete Structures	<input checked="" type="checkbox"/>	EN1995 EC-5/BS5268 – Design of timber structures	<input type="checkbox"/>

CDM DESIGN CONSIDERATIONS: *This design has been considered under CDM 2015 - To show how we have eliminated and reduced hazards so far as is reasonably practicable within our design and to provided information regarding residual risk.*

Activity/Design Element affecting your design	Potential Hazards	Who is at Risk Contractor C Occupier O Visitors V Public P	Design measures to Eliminate/Mitigate Hazards and reduce risks	Residual Risk/information (to pass to Client/contractor) – Are you including a sequence of operation?	Hazard triangle placed on drawings and sketches	Action Date:	Engineer Initials
Temporary Works	Movement of Beams	C	Beams to be temporarily propped during installation.	Note added to drawing	✓	08/12/23	OCMV
Manual Handling	Heavy Steels	C	Contractor to adopt appropriate lifting mechanism/procedure	Note added to drawing	✓	08/12/23	OCMV
Services	Risk of injury	C	Contractor to locate, protect and divert services as required.	Note added to drawing	✓	08/12/23	OCMV
Working at Height	Risk of falls	C	Contractor to adopt all necessary procedures when working at height.	Note added to drawing	✓	08/12/23	OCMV

All Dimensions referred to within these calculations are for design purposes only – Contractor to undertake site measurements for fabrication as necessary. These calculations shall be for the private and confidential use of the client for whom they were undertaken and should not be reproduced in whole in part or relied upon by 3rd parties for any use without the express written authority of J P Chick & Partners Limited

PRE-CONSTRUCTION/DESIGN INFORMATION

JOB NO: IG23/317 JOB ADDRESS: Lime Kiln House, Old Ipswich Road, Claydon Client: Clare Kempkens

JP Chick & Partners Ltd
Consulting Civil & Structural Engineers



Project Description: Internal Repairs to floor above existing cellar

JPC Design element: Beams, columns, and grout repair

Who is Principal Designer? Principal Contractor Name: TBC

JPC Engineer: OCMV Signed off by:

- Single Contractor:
- Multi Contractor:
- Domestic Client:
- Commercial Client:

CDM DESIGN CONSIDERATIONS: *This design has been considered under CDM 2015 - To show how we have eliminated and reduced hazards so far as is reasonably practicable within our design and to provided information regarding residual risk.*

Activity/Design Element affecting your design	Potential Hazards	Who is at Risk Contractor C Occupier O Visitors V Public P	Design measures to Eliminate/Mitigate Hazards and reduce risks	Residual Risk/information (to pass to Client/contractor) Are you including a sequence of operation?	Hazard triangle to be included on drawings and sketches	Date:	Engineer Initials
Confined Space	Getting trapped Asphyxiation	C	Contractor to ensure access / egress is maintained at all times. Area to be fully ventilated during hazardous works (Dust etc)	Note added to drawing	✓	08/12/23	OCMV

All Dimensions referred to within these calculations are for design purposes only – Contractor to undertake site measurements for fabrication as necessary. These calculations shall be for the private and confidential use of the client for whom they were undertaken and should not be reproduced in whole in part or relied upon by 3rd parties for any use without the express written authority of J P Chick & Partners Limited

REINFORCING STEELWORK - LENGTH = 4.2m

LOADING (WORST CASE)

SPAN

SLS

ULS

CONCRETE FLOOR - $24.0 \text{ kN/m}^3 \times 0.21 \times 1.1 \text{ m}$
(210mm DEEP)

7.7

10.3

DOMESTIC 1.50 kN/m^2

1.1m

1.7

2.5

TOTAL

9.4

12.8 kN/m

$E_w = 37.0 \text{ kN}$ $F_{act} = 78.5 \text{ kN}$ $m = 20.3 \text{ kNm}$ $\alpha = 8.4 \text{ mm}$

$$I_{xy} \text{REQ} = \frac{5}{384} \times \frac{9.4 \times 4.2^4}{210 \times 10^6 \times 8.4 \times 10^3} \times 100^4 = 2159.1 \text{ cm}^4$$

PROVIDE: 152 x 152 x 37 UC - GALVANISED

$I_{xy} = 2210 \text{ cm}^4 > 2159.1 \text{ cm}^4$ OK ✓

$m = 20.3 \text{ kNm} > 20.3 \text{ kNm}$ OK ✓

COLUMN C1 - HEIGHT = 2.0m

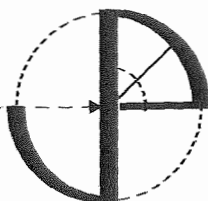
AXIAL LOAD = 18.5 kN $m_y = 2.7 \text{ kNm}$

PROVIDE 90 x 90 C = 6.3 SHS

$$\frac{18.5}{597} + \frac{2.7}{22.8} = 0.15 < 1.0$$
 OK ✓

BRICK KILN COTTAGE

JP Chick & Partners Ltd
Consulting Civil & Structural Engineers



Designed

OCMV

Checked

M.

Date

NOV 23

Job No.

IG23/317

CALCULATION SHEET

7 Museum Street Ipswich Suffolk IP1 1HQ

Tel: (01473) 280699
www.chick.co.uk

Fax: (01473) 280701
ipswich@chick.co.uk

SHEET NO. 01

PAD FOUNDATION P1

AXIAL LOAD (UNFACTORED) = 13.2 kN

PROVIDE: 450 x 450 x 500 DP PAD FOUNDATION OF GEN3
CONCRETE SUBJECT TO BUILDING CONTROL

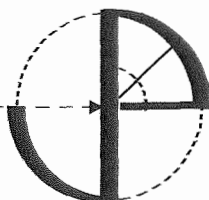
APPROVAL

Δ OVEN BURDEN = + 0.6 kN

$$\frac{13.8}{0.44 \times 0.44} = 68.1 \text{ kN/m}^2 < 100 \text{ kN/m}^2 \text{ OK}$$

BRICK KILN COTTAGE

JP Chick & Partners Ltd
Consulting Civil & Structural Engineers



Designed

OCMV

Checked

M.

Date

NOV23

Job No.

IG23/317

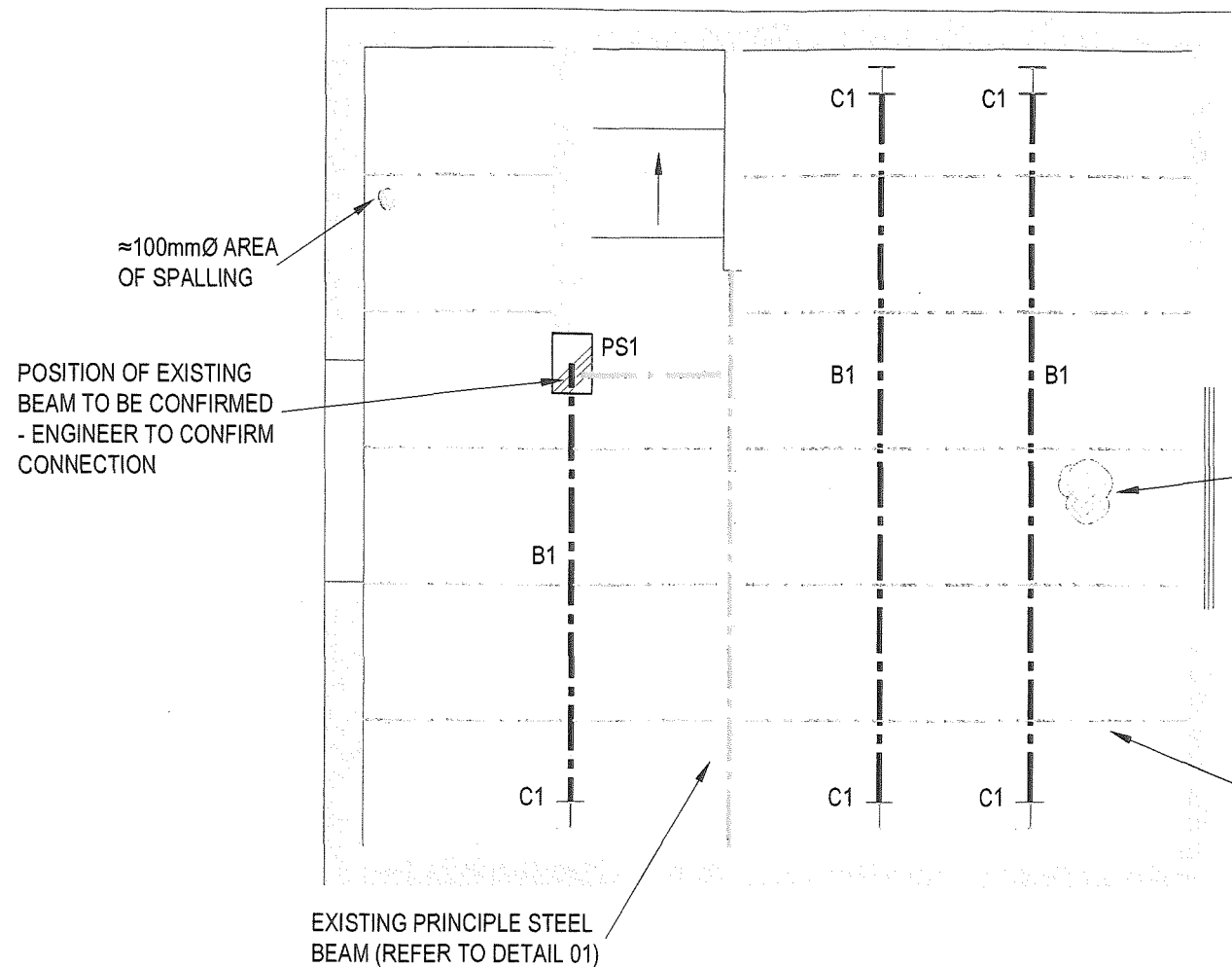
CALCULATION SHEET

7 Museum Street Ipswich Suffolk IP1 1HQ

Tel: (01473) 280699
www.chick.co.uk

Fax: (01473) 280701
ipswich@chick.co.uk

SHEET NO. 02



LEGEND
 PS1 - 330mm LONG x 215mm WIDE x 215mm DEEP CLASS B ENGINEERING BRICK PADSTONE
 B1 - 152 x 152 x 37 UC GRS355 BEAM
 C1 - 152 x 152 x 23 UC GRS355 COLUMN (REFER TO DETAIL)
 NOTE: ALL STEELWORK TO BE GALVANISED

HEALTH & SAFETY INFORMATION

IN ADDITION TO THE RISK NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DESIGN, NOTE THE FOLLOWING SIGNIFICANT RISKS AND INFORMATION

CONSTRUCTION RISKS:

- EXCAVATIONS - CONTRACTOR TO ADOPT ALL NECESSARY PROCEDURES WHEN EXCAVATING FOR FOUNDATIONS
- ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
- CONFINED SPACES - PRINCIPLE CONTRACTOR TO ENSURE ACCESS / EGRESS FROM CONFINED SPACE IS MAINTAINED AT ALL TIMES. AREA TO BE FULLY VENTILATED DURING HAZARDOUS WORKS (DUST ETC)
- MANUAL HANDLING - CONTRACTOR TO ADOPT APPROPRIATE LIFTING MECHANISM / PROCEDURE FOR HANDLING BEAMS
- WORKING AT HEIGHT - CONTRACTOR TO ADOPT ALL NECESSARY SAFETY PROCEDURES WHEN WORKING AT HEIGHT

THE DESIGN TEAM HAVE HIGHLIGHTED UNUSUAL AND SIGNIFICANT RISKS ONLY THAT MAY NOT BE OBVIOUS TO A COMPETENT CONTRACTOR. THEY ARE TO ASSIST WITH RISK REDUCTION ONLY AND ARE NOT NECESSARILY COMPREHENSIVE. IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING TO AN APPROPRIATE RISK ASSESSMENT AND METHOD ON SITE

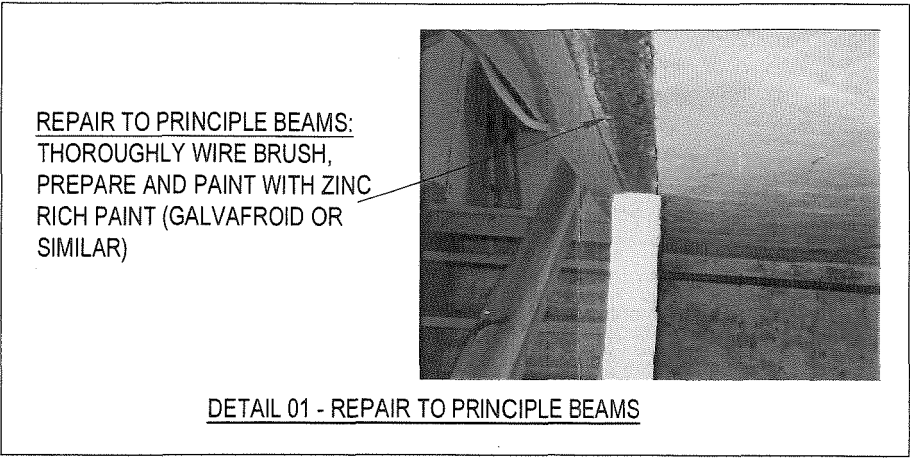
Notes

GENERAL

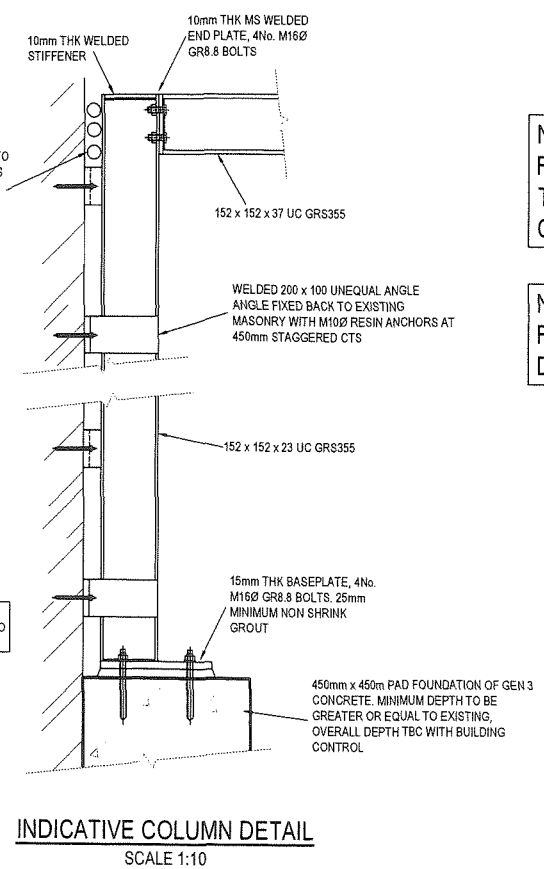
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORKS.
- ALL WORKMANSHIP AND MATERIALS ARE TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT EUROCODES, CODES OF PRACTICE AND GOOD BUILDING PRACTICE.
- ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL AUTHORITY.
- SETTING OUT DETAILS ARE SHOWN ON THE ARCHITECTS DRAWINGS UNLESS NOTED OTHERWISE. ENGINEERS DRAWINGS INDICATE STRUCTURAL ELEMENTS ONLY.
- DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE BEFORE CARRYING OUT ANY WORKS.
- ALL EXISTING DETAILS AND DIMENSIONS INDICATED ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF EXISTING STRUCTURES AND THE WORKS AT ALL TIMES DURING CONSTRUCTION.
- ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
- THIS DRAWING IS FOR THE PRIVATE AND CONFIDENTIAL USE OF THE CLIENT FOR WHOM IT WAS UNDERTAKEN AND IT SHOULD NOT BE REPRODUCED IN WHOLE OR IN PART OR RELIED UPON BY THIRD PARTIES FOR ANY USE WITHOUT THE EXPRESS WRITTEN AUTHORITY OF JP CHICK AND PARTNERS LIMITED.

STEELWORK

- ALL MATERIALS ARE TO COMPLY WITH MATERIAL (STEEL) BS EN 10025, FABRICATION & ERECTION BS EN 1090-2, 2008 (EXECUTION CLASS 2), BS EN 1090-3, 2008 (ALUMINIUM) TECHNICAL REQUIREMENTS FOR THE EXECUTION OF STEEL STRUCTURES.
- ALL STRUCTURAL STEEL TO CONFORM TO BS EN 10025 GRADE S355 UNLESS SPECIFIED OTHERWISE. HOLLOW SECTION HOT FINISHED TO BS 10210.
- ALL NUTS AND BOLTS TO BE SHERALISED AND OF STRENGTH GRADE 8.8 UNLESS NOTED OTHERWISE.
- THE STEELWORK CONTRACTOR IS TO FULLY ACQUAINT THEMSELVES WITH THE SITE CONDITIONS, DETAILS AND DIMENSIONS PRIOR TO THE FABRICATION OF ANY STEELWORK.
- FABRICATION DRAWINGS FULLY ILLUSTRATING ALL ASPECTS OF THE ERECTED STEELWORK TOGETHER WITH CONNECTION CALCULATIONS ARE TO BE SUBMITTED TO THE ENGINEER FOR COMMENTS PRIOR TO ANY FABRICATION.
- ALL STEELWORK SHALL BE BLAST CLEANED TO BS EN ISO 8501-1:2007 PREPARATION GRADE Sa2½ TO REMOVE ALL GREASE, DIRT, RUST AND MILL SCALE etc.
- INTERNAL STEELWORK TO BE PAINTED WITH ZINC PHOSPHATE EPOXY PRIMER DRY FILM THICKNESS 80 MICRONS
- STEELWORK BELOW GROUND LEVEL OR WITHIN MASONRY WALL CAVITY TO BE SITE PAINTED WITH 2 COATS OF BITUMINOUS PAINT. STEELWORK BELOW GROUND TO HAVE A MINIMUM OF 100mm CONCRETE ENCASUREMENT.
- GALVANISED STEELWORK TO BE ACID PICKLED AND HOT DIPPED GALVANISED TO BS EN ISO 1461 WITH MINIMUM AVERAGE COATING 85 MICRONS.
- THE FINISH OF ANY VISIBLE STEELWORK MUST BE AGREED WITH THE ARCHITECT AND SUBSEQUENTLY THE FABRICATOR MUST ENSURE PRIMER USED IS COMPATIBLE WITH SUBSEQUENT COATINGS.

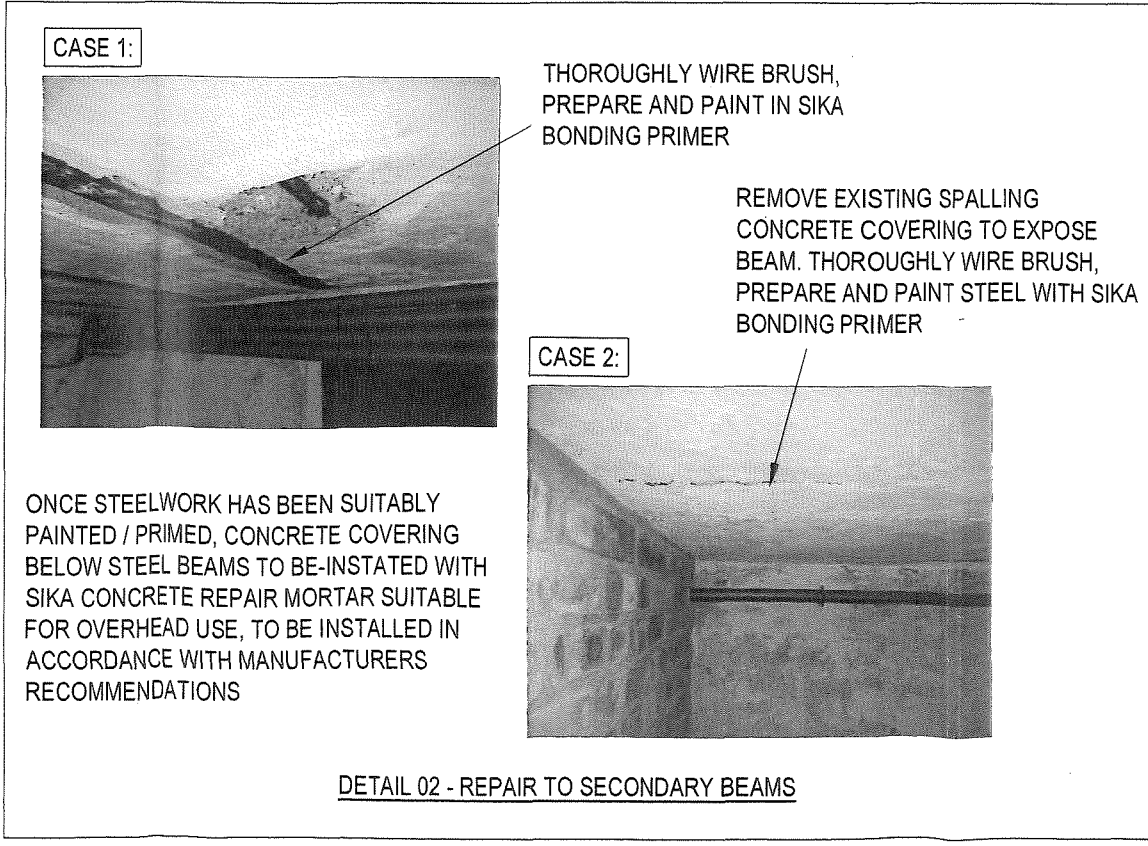


GROUND FLOOR LAYOUT SHOWING STRUCTURE OVER SCALE 1:20



NOTE: FINAL ARRANGEMENT OF REPAIRS TO BE CONFIRMED BY LISTINGS OFFICER PRIOR TO WORKS

NOTE: FIRE PROTECTION TO BE DETAILED BY OTHERS



DETAIL 02 - REPAIR TO SECONDARY BEAMS

Rev.	Date	By	Amendment	Chk	App
Status					
PRELIMINARY					
JP Chick & Partners Ltd Consulting Civil & Structural Engineers					
7 Museum Street, Ipswich, Suffolk, IP1 1HQ. T: (01473) 280699 W: www.chick.co.uk F: (01473) 280701 E: ipswich@chick.co.uk					
Also at: 8 Atlantic Square, Station Rd, Witham, Essex, CM8 2TL. T: (01376) 503020 23 St Stephens Road, Norwich, Norfolk, NR1 3SP. T: (01603) 619093 F: (01603) 610840					
Client					
CLARE KEMPENS					
Project					
LIME KILN HOUSE, OLD IPSWICH ROAD, CLAYDON					
Drawing Title					
GROUND FLOOR REMEDIAL WORKS					
Scale	AS SHOWN @ A1	Checked	M	Date	
Date	DEC 2023	Drawn By	LH	Rev	
Drawing Number	IG23-317-100	Rev	P1		
THIS DRAWING IS COPYRIGHT					