John Jordan Consulting Chartered Structural Engineer

STRUCTURAL CALCULATIONS

FOR

15 ALSFELD WAY, NEW MILLS

Ref: 1485 - CAL

The Institution of Structural Engineers

15 ALSFELD WAY, NEW MILLS

STRUCTURAL CALCULATIONS

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Appendix

The Institution of Structural Engineers

John Jordan Consulting
Chartered Structural Engineer
[redacted]

Project No : 1485		Sht No. / Rev 01	
Designer : JJ	Date : 04/02/2018	Checked :	
Project :	15 Alsfeld Way, New Mills	Item :	BC CALCS

1 LOADING:-

- DESIGN CARRIED OUT IN LINE WITH BRITISH STANDARDS

- ROOF:-

DEAD:
- CONC. TILES = 0.60
- INSULATION AND BATTENS = 0.10
- RAFTERS = 0.15
- CEILING & SERVICES = 0.25

1.10 kN/m^2 ON FLAT

- PLAN LOADING = 1.10 / cos 20 = 1.17 kN/m^2 ON PLAN

LIVE: - SNOW / ACCESS = 0.60 kN/m^2

- PERIMETER WALLS:-

DEAD:
- PLASTER = 0.36
- 100 BLOCK = 1.80
- 102 BRICK = 2.10

4.26 kN/m^2

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2 BEAM OVER OPENING IN REAR WALL OF EXTENSION:-

- BEAM CARRIES REAR WALL & ROOF OVER
- SPAN = 3.25 m
- UDL LOAD:
  - ROOF:

	DL	LL
DEAD = 1.17 x 2.00 =	2.34	
LIVE = 0.60 x 2.00 =		1.20

  - WALL:

	DL	LL	
DEAD = 4.26 x 0.50 =	2.13		
	4.47	1.20	kN/m

(SEE TECHNICAL LITERATURE EXTRACT THAT FOLLOWS)

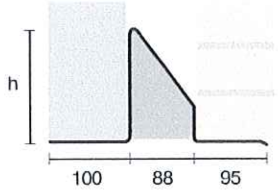
PROVIDE

- CATNIC CG90/100 LINTEL
  OVER REAR WALL OPENING OF EXTENSION
  SUPPORTING WALL & ROOF OVER

OPEN BACK LINTELS

- **90-105mm** cavity
- **100-115mm** inner leaf

Standard Duty



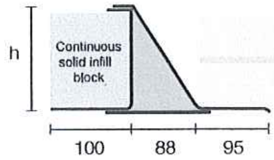
All ratios are shown inner to outer

CG90/100

Standard lengths (mm)	750-1500	1650-1800	1950-2100	2250-2400	2550-2700	2850-3600
SWL 1:1/3:1 (kN)	15	18	20	22	26	26
Weight (kg/m)	6.1	7.6	8.3	8.9	10.2	13.0
Nominal height 'h' (mm)	140	140	160	180	220	220

Standard lengths are available in 150mm increments up to 3000mm, 300mm at lengths from 3000mm to 3600mm.

Heavy Duty



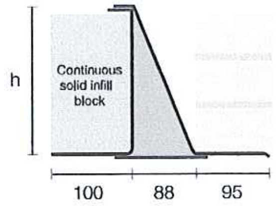
All ratios are shown inner to outer

CH90/100

Standard lengths (mm)	900-1800	1950-2100	2250-2400
SWL 1:1/19:1 (kN)	32	48	45
Weight (kg/m)	11.2	14.0	14.0
Nominal height 'h' (mm)	157	157	157

Standard lengths are available in 150mm increments.

Extra Heavy Duty



All ratios are shown inner to outer

CX90/100

Standard lengths (mm)	900-2700	2850-3000	3300-3900	4200-4800
SWL 1:1/19:1 (kN)	60	55	50	32
Weight (kg/m)	16.9	16.9	20.5	20.5
Nominal height 'h' (mm)	232	232	232	232

Standard lengths are available in 150mm increments up to 3000mm, 300mm at lengths 3000mm to 4800mm (including 4575mm, but excluding 4500mm).

The SWL (safe working load) is based on the total UDL (uniform distributed load) over maximum span using 150mm end bearings.

Concrete Floor Loads
When using the Catnic CH and CX Open Back ranges with concrete floors, always ensure that the blockwork is built tight against the inner vertical face of the lintel and that a mortar joint is added to the top of the blockwork so that the floor units have an even spread over the inner flange of the lintel. For guidance on installation refer to page 73.

Where CH & CX lintels are required to support greater loads than the figures published please contact our Technical Services Department on 029 2033 7900.

Note: To achieve the 'CH & CX' loading figures indicated, lintels must be built-in as illustrated, ensuring that the blockwork infill is well-jointed during construction and compatible with the strength of the masonry above.

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[redacted]

Project : 15 Alsfeld Way, New Mills

NOTES:
1. ALL SETTING OUT TO BE DETERMINED AND CONFIRMED ON SITE.
2. BEAMS TO HAVE MINIMUM 200mm LONG BEARING LENGTH AT ENDS, OR FULL WIDTH OF WALL, UNLESS NOTED OF SHOWN OTHERWISE.
3. ALL REQUIREMENTS FOR WATER AND DAMP PROOFING INCLUDING DMP & DPCs AND ALL FIRE PROTECTION REQUIREMENTS ARE TO BE IN LINE WITH DETAILS BY OTHERS.
4. DIAPHRAGM TO BE OF 12mm FINNISH BIRCH FACED PLYWOOD SCREW FIXED TO UNDERSIDE OR TOP OF ROOF RAFTERS / JOISTS WITH No. 10 SCREWS (45mm LONG) @ 250 C/C, TO ALL RAFTER, THROUGHOUT, WITH CUT OUTS FOR ROOFLIGHTS.

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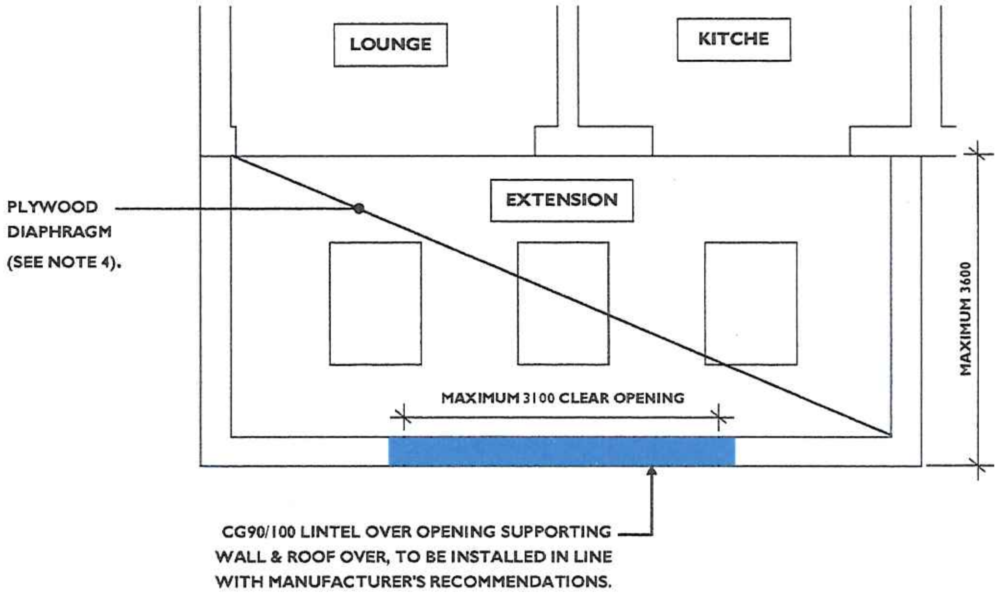
WALLS SUPPORTING BEAM ENDS ARE TO BE CHECKED ON SITE, BY OTHERS, TO VERIFY THAT THEY ARE OF LOAD BEARING MASONRY AND CONTINUE DOWN TO A SUPPORTING FOUNDATION.



ALL TEMPORARY WORKS TO BE DESIGNED & DETAILED BY OTHERS, WHO HAVE THE NECESSARY SKILL, KNOWLEDGE & EXPERIENCE TO CARRY THIS OUT.

GROUND FLOOR PLAN - SHOWING LOCATION OF BEAMS OVER

(DO NOT SCALE FROM THIS SKETCH)

ALL NEW BLOCKWORK TO BE CONSTRUCTED FROM SOLID CONCRETE BLOCKS WITH MINIMUM UNIT STRENGTH OF 7.3N/mm^2, UNLESS NOTED OTHERWISE.

15 ALSFELD WAY, NEW MILLS

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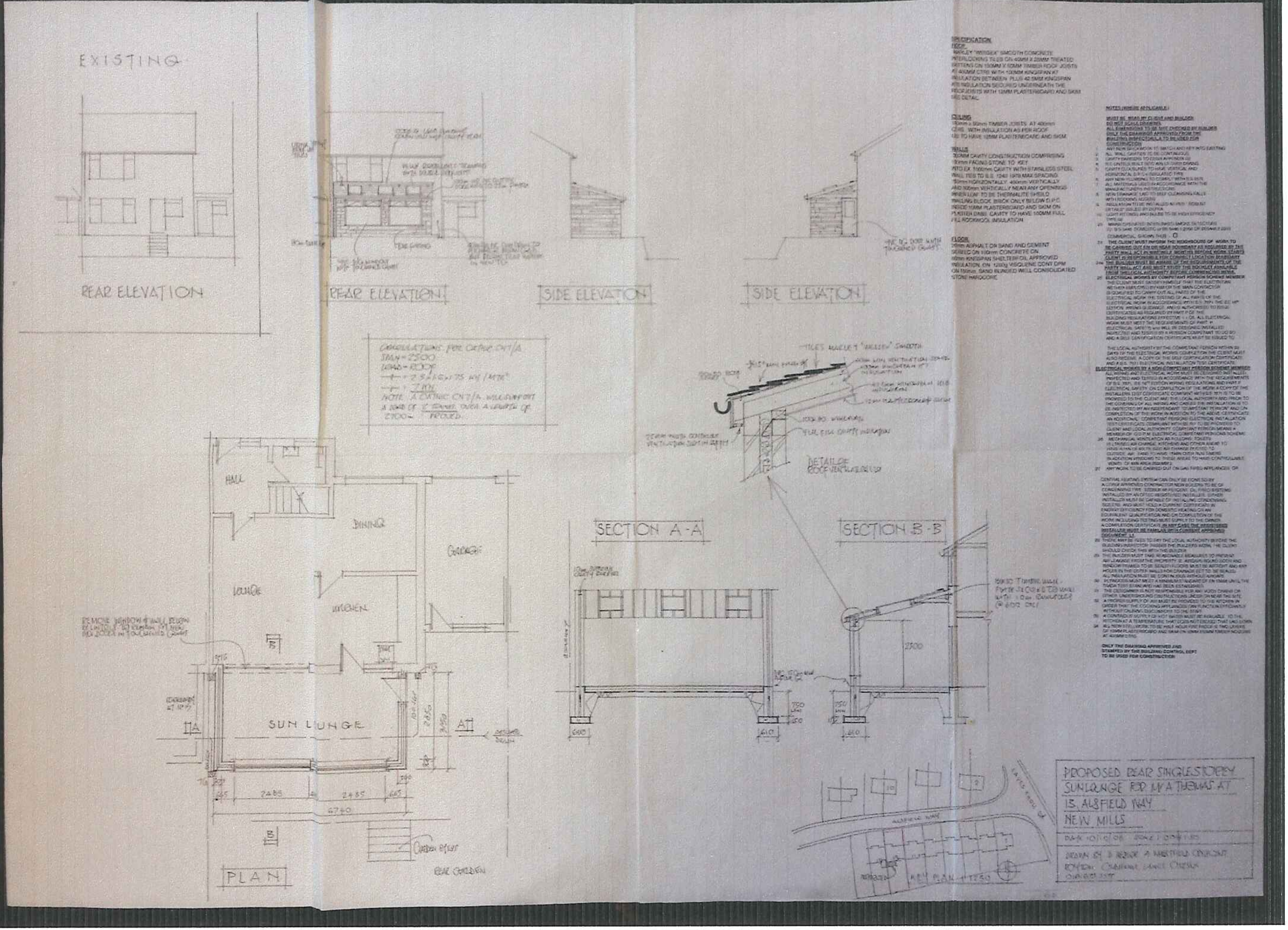
Appendix

Drawing for previous neighbouring property's extension



CALCULATIONS FOR CATNIC CN7/A
SPAN = 2500
LOAD = ROOF
NOTE A CATNIC CN7/A WILL SUPPORT
A LOAD OF 5 TONNES OVER A LENGTH OF
2700 PROVED

SPECIFICATION

ROOF

MARLEY "WESSEX" SMOOTH CONCRETE INTERLOCKING TILES ON 40MM X 25MM TREATED BATTENS ON 150MM X 50MM TIMBER ROOF JOISTS AT 400MM CTRS WITH 100MM KINGSPAN K7 INSULATION BETWEEN PLUS 42.5MM KINGSPAN K18 INSULATION SECURED UNDERNEATH THE ROOF JOISTS WITH 12MM PLASTERBOARD AND SKIM SEE DETAIL

CEILING

150mm x 50mm TIMBER JOISTS AT 400mm CTRS. WITH INSULATION AS PER ROOF U/S TO HAVE 12MM PLASTERBOARD AND SKIM

WALLS

300MM CAVITY CONSTRUCTION COMPRISING 100mm FACING STONE TO KEY INTO EX. 100mm CAVITY WITH STAINLESS STEEL WALL TIES TO B.S. 1243 1978 MAX SPACING 750mm HORIZONTALLY 450mm VERTICALLY AND 300mm VERTICALLY NEAR ANY OPENINGS INNER LEAF TO BE THERMALITE SHIELDWALLING BLOCK. BRICK ONLY BELOW D.P.C. INSIDE 10MM PLASTERBOARD AND SKIM ON PLASTER DABS. CAVITY TO HAVE 100MM FULL FILL ROCKWOOL INSULATION

FLOOR

20mm ASPHALT OR SAND AND CEMENT SCREED ON 100mm CONCRETE ON 60mm KINGSPAN SHELTERFOIL APPROVED INSULATION, ON 1200g VISQUEENE CONT DPM ON 150mm SAND BLINDED WELL CONSOLIDATED STONE HARDCORE

NOTES (WHERE APPLICABLE)

MUST BE READ BY CLIENT AND BUILDER
DO NOT SCALE DRAWING
ALL DIMENSIONS TO BE SITE CHECKED BY BUILDER
ONLY THE DRAWINGS APPROVED FROM THE BUILDING INSPECTOR/L.A TO BE USED FOR CONSTRUCTION

1. ANY NEW BRICKWORK TO MATCH AND KEY INTO EXISTING
2. ALL WALL CAVITIES TO BE CONTINUOUS
3. CAVITY BARRIERS TO [illegible]
4. [illegible]
5. CAVITY CLOSURES TO HAVE VERTICAL AND HORIZONTAL D.P.C [illegible]
6. ANY NEW FLOORING TO COMPLY WITH [illegible]
7. ALL MATERIALS USED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS
8. NEW DRAINAGE [illegible] SELF CLEANSING FALLS WITH RODDING ACCESS
9. INSULATION TO BE INSTALLED [illegible] DETAILS [illegible]
10. LIGHT FITTINGS AND BULBS TO BE HIGH EFFICIENCY TYPE [illegible]
[illegible]

COMMERCIAL SHOWN THUS - ⊙

23. THE CLIENT MUST INFORM THE NEIGHBOURS OF WORK TO BE CARRIED OUT ON OR NEAR BOUNDARY AS REQUIRED BY THE PARTY WALL ACT [illegible] BEFORE WORK STARTS CLIENT IS RESPONSIBLE FOR CORRECT LOCATION BOUNDARY

24a THE BUILDER MUST BE AWARE OF THE REQUIREMENTS OF THE PARTY WALL ACT AND MUST STUDY THE BOOKLET AVAILABLE FROM THE LOCAL AUTHORITY BEFORE COMMENCING WORK.

25. ELECTRICAL WORKS BY COMPETANT PERSON SCHEME MEMBER
THE CLIENT MUST SATISFY HIMSELF THAT THE ELECTRICIAN [illegible] IS QUALIFIED TO CARRY OUT ALL PARTS OF THE ELECTRICAL WORK [illegible] ALL ELECTRICAL WORK MUST MEET THE REQUIREMENTS OF PART P [illegible] AND A SELF CERTIFICATION CERTIFICATE MUST BE ISSUED TO THE LOCAL AUTHORITY BY THE COMPETANT PERSON WITHIN 30 DAYS OF THE ELECTRICAL WORKS COMPLETION THE CLIENT MUST ALSO RECEIVE A COPY OF THE SELF CERTIFICATION CERTIFICATE AND A B.S. 7671 ELECTRICAL INSTALLATION TEST CERTIFICATE

ELECTRICAL WORKS BY A NON COMPETANT PERSON SCHEME MEMBER
ALL WIRING AND ELECTRICAL WORK MUST BE DESIGNED INSTALLED INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF B.S. 7671 [illegible]

26. MECHANICAL VENTILATION AS FOLLOWS [illegible]

27. ANY WORK TO BE CARRIED OUT ON GAS FIRED APPLIANCES OR CENTRAL HEATING SYSTEM CAN ONLY BE DONE [illegible]

28. [illegible]
29. [illegible]
30. [illegible]
31. THE DESIGNER IS NOT RESPONSIBLE FOR ANY VOIDS DRAINS OR OTHER UNDERGROUND OBSTRUCTIONS UNDER OR NEAR THE SITE
32. [illegible]
33. [illegible]
34. [illegible]

ONLY THE DRAWING APPROVED AND STAMPED BY THE BUILDING CONTROL DEPT TO BE USED FOR CONSTRUCTION

PROPOSED REAR SINGLESTOREY
SUNLOUNGE FOR Mr A THOMAS AT
15 ALSFIELD WAY
NEW MILLS

[illegible]