

LONDON BOROUGH OF BARNET
BUILDING CONTROL
BUILDING NOTICE APPLICATION

APPLICATION NUMBER: B12/19322

WARD: Woodhouse

ADDRESS: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Loft Conversion

CASE OFFICER: Nicholas Lees

SEWER ON SITE: Not Applicable

CONTAMINATED LAND: Not Applicable

STOR-A-FILE



F270358626

niceday

Send color

Inspections List

APPLICATION NO B/12/19322

Proposal: Loft Conversion
Address: 19 Woodside Grove London N12 8QT

Inspection Type	Inspection date	Officer
Historic Inspection Notes		

Inspection Type	Inspection date	Officer
Commencement	14 December 2012	NL
owner: Ricky baba 07813030104. Bldr: Karamjit Singh Bedi 07949 240040. nl		

Inspection Type	Inspection date	Officer
IN_SR	7 January 2013	LD
nl Insulation to roof slopes, walls and floor OK LD		

Inspection Type	Inspection date	Officer
Pre Commencement Inspection	19 November 2012	NL
work not started - left card with owner - to ring when floor beams & jopists in place		

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

B12/19322

Mr K Janjua
MCS Design
53 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 11/12/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT
PROPOSAL: Loft Conversion

With reference to your Building Notice under the Building Regulations, your plan has been examined, and the observations of the Council's Structural Engineers are as follows:

1. Please indicate on the plan the FB4 beam details for the spine wall beam at first floor level and confirm the internal pier is adequate.
2. Please confirm the internal wall is adequate for the trimmer T1 reaction.

Should you have any queries please contact my structural engineer Mr J. Farrell on 020 8359 4385 and quote reference number B/12/19322.

I shall be pleased to receive amended plans and details as soon as possible.

Yours faithfully

Nicholas Lees
Senior Surveyor Building Control

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design
53 Westmead
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SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 11/12/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT
PROPOSAL Loft Conversion
:

With reference to your Building Notice under the Building Regulations, your plan has been examined, and the observations of the Council's Structural Engineers are as follows:

1. Please indicate on the plan the FB4 beam details for the spine wall beam at first floor level and confirm the internal pier is adequate.
2. Please confirm the internal wall is adequate for the trimmer T1 reaction.

Should you have any queries please contact my structural engineer Mr J. Farrell on 020 8359 4385 and quote reference number B/12/19322.

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Yours faithfully

Nicholas Lees
Senior Surveyor Building Control

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design
53 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 14/11/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT
PROPOSAL: Loft Conversion

With reference to your Building Notice under the Building Regulations, your plan has been examined, and the observations of the Council's Structural Engineers are as follows:

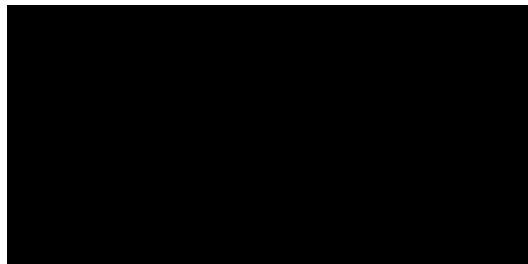
1. Please check the beam supporting the spine wall at ground floor for additional loft floor load.

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Yours faithfully

Nicholas Lees
Senior Surveyor Building Control



DocRefGen: B

Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP

INTERNAL MEMORANDUM

~~TO:~~ STRUCTURAL ENGINEERS - Mr J. FarrellMr J. Farrell

~~FROM:~~ BUILDING CONTROL

OUR REF: B12/19322

DATE: 04/12/2012

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Loft Conversion

Enclosed are copies of drawings and/or structural calculations concerning the above development.

I shall be pleased to receive your observations by the 18/12/2012.

Should you have any queries, please contact Nicholas Lees.

for BUILDING CONTROL MANAGER

See obs

11/12/12

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design
53 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 14/11/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL Loft Conversion

:

With reference to your Building Notice under the Building Regulations, your plan has been examined, and the observations of the Council's Structural Engineers are as follows:

1. Please submit drawings for the ground floor modifications for checking Beams FB1-FB3
2. Please check the beam supporting the spine wall at ground floor for additional loft floor load.

Should you have any queries please contact my structural engineer Mr J. Farrell on 020 8359 4385 and quote reference number B/12/19322.

I shall be pleased to receive amended plans and details as soon as possible.

Yours faithfully

Nicholas Lees
Senior Surveyor Building Control

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design
53 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 13/11/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT
PROPOSAL: Loft Conversion

I refer to your Building Notice deposited on 07/11/2012 under the Building Regulations. Your Building Notice has been examined and the following additional details and information are required.

1. NB Your plans have not been checked as you have submitted a building notice – it is your responsibility to ensure that all building works are carried out fully in accordance with the Building Regulations 2010 (as amended) and all associated legislature and the work is entirely at your own risk.
2. Door required to kitchen.
3. Structural observations to follow.
4. The work on site is entirely at your own risk.

Please be aware that this is not a full Building Regulation plan check.

I shall be pleased to receive amended plans and details by the 27/11/2012.

Yours faithfully


Nicholas Lees
Senior Surveyor Building Control

Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP

INTERNAL MEMORANDUM

TO: STRUCTURAL ENGINEERS - Mr J. Farrell

FROM: BUILDING CONTROL

OUR REF: B12/19322

DATE: 08/11/2012

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Loft Conversion

Enclosed are copies of drawings and/or structural calculations concerning the above development.

I shall be pleased to receive your observations by the 22/11/2012.

Should you have any queries, please contact Nicholas Lees.

for BUILDING CONTROL MANAGER

*see obr.
Rang
14/11*

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design
53 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 07/11/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT
PROPOSAL Loft Conversion
:

I acknowledge receipt of your Building Regulation application and payment of £655.20 which is receiving attention. Your application was deposited on 07/11/2012 and has been given the above reference number. This should be quoted in all correspondence.

If you have not already done so, please give us at least two working days notice in writing before works commence on site.

Please call 020 8359 4500 for enquiries and to book site inspections.

Please note a Completion Certificate is a very important document which may be required when you come to sell your house. Should you require a Completion Certificate, please either:

- Send a £35.00 cheque (Inc VAT)* payable to 'London Borough of Barnet' or
- Pay by debit/credit card by phoning 020 8359 4500

If a payment for the Completion Certificate has already been made, it will be sent to you

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr R Baba
19 Woodside Grove
London
N12 8QT

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 07/11/2012
OUR REF: B/12/19322

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT

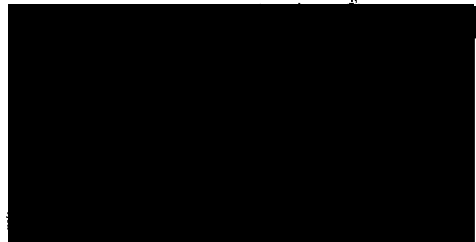
PROPOSAL Loft Conversion
:

I refer to the Building Notice submitted to us on 05/11/2012. Under the Building Notice procedure plans and particulars received in conjunction with an application are not examined in detail and formal approval is not issued. It is therefore extremely important that the constructional details of the works are discussed and established on site early in the process; preferably during our initial site visit. The list below covers the most common areas where agreement may need to be reached:-

- Fire safety requirements; including means of escape, fire doors and the fire alarm system
- Fire resistance of any dormer cheeks close to the boundary.
- Structural alterations, beams and bearings
- Staircase design; particularly landings and headroom
- Thermal insulation and ventilation to the roof and external walls
- Glazed windows/doors
- Sound insulation to separating walls and the new floor
- Drainage/plumbing alterations and testing
- Natural and mechanical ventilation
- Electrical work
- Any unusual or complex work
- Certificates or information that we may require before we can issue a completion certificate

Should you wish to discuss any aspect of this application please do not hesitate to contact me.

Yours faithfully



Nicholas Lees
Senior Surveyor Building Control

once a satisfactory final inspection and any other outstanding requirements have been fulfilled.

Yours faithfully



Nicholas Lees
Senior Surveyor Building Control

*Please note that the VAT rate and our charges are subject to change, the actual amount will be based on the prevailing rates at the time payment is received. A list of our current charges can be found at <http://www.barnet.gov.uk/building-control>.

www.barnet.gov.uk

06/11/2012

Dear Kaleem,

Thank you for the building notice application submitted for 19 Woodside Grove.
Just to confirm we are awaiting a fee of [REDACTED] Once received, we shall validate the application.

Regards

Miss Aarti Shah

Planning, Housing and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP

PAGE 1 OF 2

WORKSHEET 2 - AMENDMENTS/RECOMMENDATIONS

DATE: 08/11/2012

FILE REFERENCE NUMBER: B12/19322

DEPOSIT DATE: 07/11/2012

INTERNAL TARGET DATE: 28/11/2012

5 WEEK DATE:

2 MONTH EXTENSION OF TIME DATE:

APPLICANT: Mr R Baba

AGENT: Mr K Janjua

MCS Design

TELEPHONE NO.

PROPOSAL: Loft Conversion

LOCATION: 19 Woodside Grove, London, N12 8QT

WARD: Woodhouse

SEWERS ON SITE: Not Applicable

CONTAMINATED LAND: Not Applicable

OVERTIME HOURS: 0 OFFICE TIME HOURS: 0

USE CATEGORY: c CASE OFFICER: Nicholas Lees

CONSULTATIONS:

FPO PLANS: REQUESTED: RECEIVED:

CONSULTEES

DATE SENT:

REPLIES RECEIVED:

SE1

08/11/2012 13:30:58

DECISION RECOMMENDATION: (not applicable on Building Notice)

APPROVE/CONDITIONAL APPROVAL/REJECTION

SIGNED:

DATED:

IF CONDITIONAL APPROVAL/REJECTION LIST ITEMS BELOW:

1.

AMENDMENTS TO DEPOSITED PROPOSALS ARE LISTED OVER PAGE

DocBW2Y: B

PAGE 2 OF 2

FILE REFERENCE NUMBER: B12/19322

AMENDMENTS TO DEPOSITED PROPOSALS:

SIGNED: *M* DATE: 12/11/12

UNIQUE TEXT AS IT SHOULD APPEAR IN OUTGOING CORRESPONDENCE:

1. *Gen 14*
2. *Door upd to kitchen*
3. *Structural engineers observation to follow*
4. *Gen 2*

Planning, Housing and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP

WORKSHEET 1 - RECEPTION AND VALIDATION Date: 05/11/2012

FILE REFERENCE NUMBER: B12/19322 RECEIVED 05/11/2012

STATUS: REC

APPLICANT: Mr R Baba

AGENT: Mr K Janjua

MCS Design

CONTACT 53 Westmead

ADDRESS: Windsor

Berkshire

SL4 3NN

TELEPHONE No.

PROPOSAL: Loft Conversion

LOCATION: 19 Woodside Grove, London, N12 8QT

INITIAL VETTING:

Sewer on Site

YES [] NO []

NOT APPLICABLE [✓]

Contaminated Land

YES [] NO []

NOT APPLICABLE [✓]

WARD: Woodhouse

Deposit Charge Received -

Total: £0.00

Net: £0.00

VAT: £0.00

655.20

546.00

109-20 by dc 7/11/12 Mr R Baba 01

Receipt No:

Charge Type Code: DRO

Total Estimated Cost: £ 30000

Use Category: C

(All the amounts below should be excluding VAT)

Plan Charge Required

: £ 546.00 Paid

Charge Outstanding/or to be refunded : £ 546.00

Total Inspection Charge

: £

(N/A on Building Notice & Regularisations)

Completion Certificate Fee

: £ 29.17

CONSULTATIONS: (please tick those required)

CSS LTD.

Development Control

Environmental Health

Fire Prevention Officer

Licensing Section

Petroleum Officer

Residential Care Homes Unit

Structural Engineers ✓

Thames Water Utilities Ltd

Other (Specify) :

BUILDING CONTROL SURVEYOR (CASE OFFICER) RESPONSIBLE:

NL

Date: 6/11/12

Valid/Invalid

Initials: AS

OT hrs: Office hrs:

7/11/12

valid

BARNET

LONDON BOROUGH

Please return to:
Building Control, North London Business Park
Oakleigh Road South
London N11 1NP
Email: building.control@barnet.gov.uk

Statement

I/We hereby give notice in accordance with Building Regulation 12(2)(a) of my/our intention to carry out the building work or material change of use as described below.

Applicant's details (owner)

Mr/Ms/Ms Initials R Surname BABA
Address 19 WOODSIDE GROVE, NORTH FINCHLEY
Post Code N12 8QT Tel: [REDACTED] Email: [REDACTED]

Agent's details

Mr/Ms/Ms Initials K.A. Surname JANJUA
Company Name MCS DESIGN
Address 53 WESTMEAD, WINDSOR
Post Code SL4 3NN Tel: [REDACTED] Email: Kaleem900@hotmail.com

Builder's details

Mr/Ms/Ms Initials K Surname SINGH
Company Name H.S. WINDOWS
Address UNIT 15, HAMPTON FARM IND ESTATE, DOWNEY WAY
Post Code TW13 6DB Tel: [REDACTED] Email: hswhd@yahoo.co.uk

Address of building to which work relates

19 WOODSIDE GROVE, NORTH FINCHLEY
Post Code N12 8QT

Description of proposed works

LOFT CONVERSION UNDER LAMP DEVELOPMENT

If the proposed work involves Building Regulation Requirement P1: Electrical Safety, Please confirm whether you are intending to use an Authorised Competent Person. YES/NO

If no, please also submit form LBB/BC/Part P found on our website.

Use of building

1. If new building or extension please state the use: Bedroom
2. If existing building please state present use: RESIDENTIAL

Method of drainage (e.g. to public sewer, septic tank, cesspit)

1. Foul water PUBLIC SEWER
2. Surface water EXISTING WATER COURSE

Building notice charge

1. Internal floor area of proposed works 35 square metres
 2. Estimated 100% cost of the works £ 655.20
 3. Domestic charges £ 655.20
 4. Non domestic charges £ 655.20
- Total payable including VAT £ 655.20

Completion certificate

On completion of the works I require a completion certificate YES/NO

Please note

An additional charge of £25.00 (Plus VAT) will be made if a completion certificate is requested.

Signature

Applicant/Agent/Builder [REDACTED] Date 2/11/2012

Date Received:

6/12/19322

no charge

BUILDING NOTICE FORM

7/11/2012

To: London Borough of Barnet
Building Control
North London Business Park
Oakleigh Road South
London N11 1NP

Building Control Tel: 020 8359 4500
Email: building.control@barnet.gov.uk

Building Act 1984

Building Regulations 2010 (As amended)

Notice of Commencement
Building Regulation 16 (1)

This form is to be completed by the builder or person undertaking the works and returned to us two working days prior to the work commencing.

Building Control Ref No: B 12/19322
Address of the works: 19 WOODSIDE GROVE, NORTH FINCHLEY N12 8BT
Description of the works: LOFT CONVERSION WITH REAR DOORMAT
I hereby give notice that work will commence on the: 12/11/2012

Full name and address of builder or person undertaking the works:

Name and or Company Name: H.S. WINDOWS, UNIT 15
HAMPTON FARM IND ESTATE, BOLNEY WAY,
FRITHAM, #

Post code: TW13 6DB

Tel: [REDACTED]

Signature: [REDACTED]

Date: 2/11/2012

Please Note:

This commencement notice must be completed in full and received by us a minimum of two working days prior to the commencement of works

Ferrie, Jessica

From: Kaleem Janjua [kaleem900@hotmail.com]
Sent: 03 November 2012 09:06
To: Building Control; rickybaba@ymail.com
Subject: 19 Woodside Grove, North Finchley - Loft Conversion with Rear Dormer
Attachments: BUILDING NOTICE PG1.pdf; BUILDING NOTICE PG2.pdf; ELEVATIONS AND PLANS.pdf; LOFT FLOOR PLAN BREGS.pdf; SECTIONAL VIEW BREGS.pdf; SITE LOCATION PLAN.dot; Beam Calculations.pdf

Dear Sir/Madam,

Please find attached building notice application and accompanying plans for works to be carried out at the above site address.

The fee will be forwarded to you in due course.

Regards,

M C S DESIGN Architectural Services
Kaleem Janjua BArch, HNC (Civil Engineering)
Planning Consultant
53 Westmead
Windsor
Berkshire
SL4 3NN

<http://ukarchitecturalservices.co.uk/>

Tel/Fax: [REDACTED]

Mob: [REDACTED]

05/11/2012

Ferrie, Jessica

NL B/12/19322

From: Kaleem Janjua [REDACTED]
Sent: 28 November 2012 14:21
To: Building Control
Subject: 19 Woodside Grove, London - Ref: B/12/19322
Attachments: Loft 19 Woodside Grove rev 1 Barnet Council Query Response.pdf

To SEs

Dear Mr. Nicholas Lees,

Further to your recent structural engineer's enquiry, please find attached revised calculations as requested.

Regards,

M C S DESIGN Architectural Services
Kaleem Janjua BArch, HNC (Civil Engineering)
Planning Consultant
53 Westmead
Windsor
Berkshire
SL4 3NN

[REDACTED]
<http://ukarchitecturalservices.co.uk/>
[REDACTED]
[REDACTED]

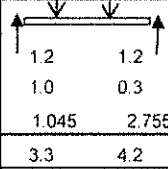
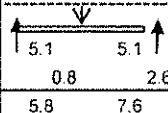
28/11/2012

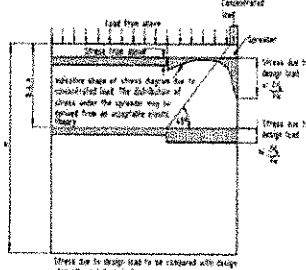
B/12/19322

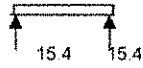
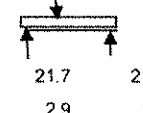
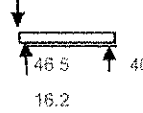
Project: 19 Woodside Grove, N12 8QT		27/11/2012	
Structural Calculations	Rev 1	Page	1 of 8
LOFT CONVERSION + SINGLE STOREY SIDE EXTENSION			
<u>STRUCTURAL CALCULATIONS</u>			
<u>General :</u>			
Structural Calculations based on BS 5950-1:2000 Volume 1 Member Capacity Tables			
Double up joists/rafters for all new studwork & around new window openings unless specified otherwise			
All new structural members to be at least 20mm clear of existing ceiling and at least 40mm clear of chimney flues.			
Beams to be enclosed in a minimum of half hour fire resistance.			
Steel Beam - Grade 43.			
Timbers- C16.			
To confirm assumed load bearing walls on site prior to commencement.			
<u>All dimensions to be checked on site prior to commencement. NO structural alterations to be made without Building Control Authority Approval</u>			
<u>Note: Typical Beam to Beam Connection to 90x90 10tk cleat and 6 M16 Gr 8.8 Bolts</u>			
<u>Barnet Council Building Control Query B/12/19322</u>			
1. Please check the beam supporting the spine wall at ground floor for additional loft floor load.			
<u>Please see page 6 of 8 for Beam FB4 Beam calculation highlighted red.</u>			

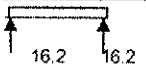
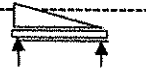
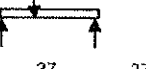
Project: 19 Woodside Grove, N12 8QT		27/11/2012	
Structural Calculations		Rev 1	Page 2 of 8
		Output	
Structural Loading			
Flat Roof			
Chippings	0.24		
Felt	0.09		
Boarding	0.19		
Joist	0.12		
Insulation	0.02		
P'Board & Skim	0.19		
Dead Load	0.85	KN/m ²	
Live Load	0.75	KN/m ²	
Total	1.5	KN/m ²	
Pitch Roof			
Dead Load of slope			
Tiles	0.62		
Felt and Battens	0.05		
Rafter	0.09		
Dead load	0.76		
Dead Load on Plan			
Dead Load plan	0.95	KN/m ²	
Live Load	0.75	KN/m ²	
Total	2	KN/m ²	
External Stud Wall			
Tiles	0.62		
Felt & Battens	0.05		
Studs	0.19		
Insulation	0.01		
P'Board & Skim	0.19		
Dead Load	1.06	KN/m ²	
External 215 Brick Wall			
215 brickwork	4.3		
Plaster	0.21		
Dead Load	4.51	KN/m ²	
Brick & Block Cavity Wall			
112 Brick skin	2.16		
100 Block skin	0.77		
Plaster	0.21		
Dead Load	3.14	KN/m ²	
Ceiling			
Ceiling Joist	0.13		
Insulation	0.01		
P'Board & Skim	0.19		
Dead Load	0.33		
Live Load	0.75	KN/m ²	
Total	1.08	KN/m ²	
Suspended Timber Floor			
Boarding	0.12		
Joists	0.19		
P'Board & Skim	0.19		
Dead Load	0.5		
Live Load	1.5	KN/m ²	
Total	2	KN/m ²	
Stud Partition			
Studs	0.19		
P'Board & Skim	0.38		
Dead Load	0.57	KN/m ²	
Block Partition			
Blockwork	0.77		
Plaster both sides	0.43		
Dead Load	1.2	KN/m ²	
External Block Wall			
225 Blockwork	1.72		
Plaster both sides	0.21		
Render	0.44		
Dead Load	2.37	KN/m ²	
Concrete Density	24	KN/m ²	
Brick Density	20	KN/m ²	
Block density	10	KN/m ²	
Soil Density	18	KN/m ²	

Project: 19 Woodside Grove, N12 8QT				27/11/2012	
Structural Calculations		Rev 1	Page	3 of 8	Output
Floor Joist		Max Span=	4 m		
200 x 50 @ 300 crs C16 Timbers					lxx= 33.33
Loading		Floor=	2x0.3= 0.6 KN/m		
		M=	0.6x4 ² /8= 1.20 KNm		
Bending Strength		fbc=1.2/0.33=	3.6 < 5.83N/mm ²	∴ OK	N.B: Inc mof factor
		δ=(5x0.6x4 ⁴)/(384x8800x33.33)=	6.8 < 0.003xL= 12	∴ OK	1.1 allowable fbc
Roof Joist		Max Span=	2.7 m		
150 x 50 @ 400 crs C16 Timbers					lxx= 14.06
Loading		Roof=	2x0.4= 0.8 KN/m		
		M=	0.8x2.7 ² /8= 0.7 KNm		
Bending Strength		fbc=0.7/0.19=	3.9 < 5.83N/mm ²	∴ OK	Zxx= 0.19
		δ=(5x0.8x2.7 ⁴)/(384x8800x14.06)=	4.5 < 0.003xL= 8.1	∴ OK	
Note: Existing Rafter if retained to be strengthened with 150x50 timber C16 bolted to existing rafters with M10 Bolts					
Flat Roof Joist 200 x 50 @ 400 crs C16 Timbers		Max Span=	4 m		
Loading		Roof=	1.5x0.4= 0.6 KN/m		
		M=	0.6x4 ² /8= 1.2 KNm		
Bending Strength		fbc=1.2/0.33=	3.6 < 5.83N/mm ²	∴ OK	lxx= 33.33
		δ=(5x0.6x4 ⁴)/(384x8800x33.33)=	6.8 < 0.003xL= 12	∴ OK	Zxx= 0.33
Trimmer T2 2 No. 200x 50 C16 timbers		Span	0.7 m		
Loading:		Floor=	2x2.7/2= 2.7		
		Stud Wall=	0.5x2= 1		
		w=	3.7 KN/m		
		M=3.7x0.7 ² /8=	0.23 KNm	R=	1.3 KN
Bending Strength		fbc=0.23/(2*0.33)=	0.3 < 5.83N/mm ²	∴ OK	lxx= 33.33
		δ=(5x3.7x0.7 ⁴)/(384x8800x2x33.33)=	0.020 < 0.003xL= 2.1	∴ OK	Zxx= 0.33
Trimmer T3 2 No. 200x 50 C16 timbers		Span	1.8 m		
Loading:		Floor=	2x1/2= 1		
		Stud Wall=	0.5x1.5= 0.75		
		w=	1.75 KN/m		
		M=1.75x1.8 ² /8=	0.71 KNm	R=	1.6 KN
Bending Strength		fbc=0.71/(2*0.33)=	1.1 < 5.83N/mm ²	∴ OK	lxx= 33.33
		δ=(5x1.75x1.8 ⁴)/(384x8800x2x33.33)=	0.408 < 0.003xL= 5.4	∴ OK	Zxx= 0.33
Trimmer T5 2 No. 200x 50 C16 timbers		Span	1.6 m		
Loading:		Floor=	2x3.0/2= 3		
		Stud Wall=	0.5x2= 1		
		w=	4 KN/m		
		Point T3=	1.6 KN @ 1m		
		M=(3.8x1)-(4x1 ² /2)=	1.80 KNm	R=	3.8 KN
		Equiv UDL=	5.625 KN/m		
Bending Strength		fbc=1.8/(2*0.33)=	2.7 < 5.83N/mm ²	∴ OK	lxx= 33.33
		δ=(5x5.6x1.6 ⁴)/(384x8800x2x33.33)=	0.818 < 0.003xL= 4.8	∴ OK	Zxx= 0.33

Project: 19 Woodside Grove, N12 8QT						27/11/2012				
Structural Calculations				Rev 1	Page	4 of 8		Output		
T4 Flitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts										
Loading:		Span		4 m						
		Floor=		2 @ 0.3m=		0.6 KN/m				
Point T2=		1.3 KN @ 0.9m		Point T5=		3.8 KN @ 2.7m				
		M=(4.2x1.3)-(0.6x1.3^2/2)=		4.95 KNm		R=		4.2 KN		
Equivalent UDL=		2 KN/m								
Trimmer T1		Span		2.2 m						
Flitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts										
Loading:		Point T4=		3.3 KN @ 1.7m						
		Floor=		2x3.6/2=		3.6				
		Stud=		0.5x2=		1				
				w=		4.6 KN/m				
		M=(5.8x1.2)-(4.6x1.2^2/2)=		3.65 KNm		R=		7.6 KN		
Equivalent UDL=		6 KN/m								
Use flitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts										
Beam members	length	depth	width	4000 mm	x 10 ⁴ mm ⁴	x 10 ³ mm ³	E N/mm ² mean	E N/mm ² min.	modular ratio	
timber	200	50	2	6666.7	666.7	8800	5300	23.9		
steel	200	12	1	800.0	80.0	210000				
P _{bc} timber		5.3 (gr.C16)		k ₇		1.046 (depth factor)		(175dp)		
K ₈		1.1 (sharing system factor)		k ₉		1.21 (mod factor to E _{timber})				
k ₃		1 (1.0 for floors)		(1.25 for roof)		P _{bc} timber		k ₃ x k ₈ x k ₇		
								6.1 N/mm ²		
Moment of resistance of flitched beams				(P _{bc} timber x Z _{xx} timber) + (P _{bc} timber x M _{ratio} x Z _{xx} steel)						
Mt. of Resistance (of flitched beam)				15.7 KN-M						
Applied moments				3.6 KN-M OK					Actual equivalent UDL	
									2 KN/M	
Deflection check				(5*w*L^4)/(384*E _{min} *k ₉ *(I _{steel} *MR + I _{timber}))						
I _{steel} * MR		190909091		actual def.		4.04		mm		
Allowable deflection (mm)				(due to DL + LL)					12.0 14	
FLITCHED BEAM USED				2 No 200x50 (C16) & 1 No. 200x12thk MS Plate						
				(bolted together M12 dia. at 450 mm crs. staggered)						
Flitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts										
Maximum opening to be cover with spreader beam =				2.4		m				
Loadings		Dormer stud=		1.0x2.0=		2.0				
		Flat roof=		1.5x4/2=		3.0				
		Loft Floor=		2x4/2=		4.0				
				9.00		KN/m				
M =9x2.4^2/8 =		6.5 KNm								
150x100 Timber (C16) Post for ridge beam reaction									Le=0.85x2.5= 2.1m	
R=15.4KN;		Applied stress= 15.4/(150x100)=		1.02666667		N/mm^2		150 1C0		
i=√IA=√(12.5x10^6/150x100)=		29		mm		K12 = 0.792		Iyy= 12.50		
λ=2100/29= 72 not greater than 180		E _{min} /(σ _c g _f x K3)= 5800/(6.8x1) = 852.9 and given λ= 72		σ _c g _f = 6.8N/mm^2		ac		ac g _f = 6.8N/mm^2		
Axial load capacity=		σ _c adm _f = σ _c g _f x K3 x K12=		6.8x1x0.792=5.39N/mm^2		E _{min} = 5800		K3= 1		
since 5.39>>1.03N/mm^2		∴ OK								

Project: 19 Woodside Grove, N12 8QT		27/11/2012	
Structural Calculations		Rev 1	Page 5 of 8
Output			
Check for beams T1 Loading onto existing brick work. Assume $f_k/\gamma_m = 0.42 \text{ N/mm}^2$			
Equivalent Characteristic Strength used=		1.3 N/mm ²	
For the Purposed this calculation Type 3 bearing is considered			
Wall is 100mm wide initial check done is to see if bearing is required, note continous wall plate is provided			
		$h = 2.5 \text{ m}$ $0.4h = 1 \text{ m}$ Loaded width = width of bearing + $1 \times 0.4h = 1.7 \text{ m}$ Loading 4" Brick Wall = $2.25 \times 2.5 = 5.625 \text{ KN/m}$ 4" wall = $2.25 \times 0.4h = 2 \text{ KN/m}$	
		Note: Continous wall plate fully fixed to spine Wall Design Load At Bearing Level = 8 KN Design Load At $0.4h = 5.625 + 2 + 8/1.7 = 12.35147059 \text{ KN/m}$	
Design Vertical Resistance = $\beta f_k/\gamma_m$		5628 cl 35 $\gamma_m = 3.1$	
Laterally restrained since tied back return wall take $L_e = 1L = 1 \times 2.5 = 2.5 \text{ m}$			
$h/t = 2500/102.5 = 24.4$		Note < 27 .ok $\beta = 0.53$ Assume $e = 0.05t$	
f_k required at $0.4h = (12.4 \times 3.1)/(0.53 \times 100) = 0.722445 \text{ N/mm}^2$		.ok	
f_k required at bearing = $(2f_k/\gamma_m)A_b = 2 \times (18 \times 1000 \times 3.1)/(2 \times 2 \times 11200) = 1.1 \text{ N/mm}^2$		.ok	
Note: To assume triangular stress distribution conservatively assume the stress is doubled			
$A_b = 112 \times 100 = 11200 \text{ mm}^2$		.ok 1.1 N/mm^2 is okay Note: additionally spread on wall plate	
Locally MS Bearing plate is provided $30 \times 100 \times 25 \text{ thk} \approx 300 \times 100$			
so therefore $(8 \times 1000 \times 3.1)/(1.25 \times 1.3) = 9073 < 30000$		.ok	
Spine Wall check for brick work. Assume $f_k/\gamma_m = 0.42 \text{ N/mm}^2$			
Equivalent Characteristic Strength used=		1.5 N/mm ²	
For the Purposed this calculation Type 1 bearing is considered Cl 23.1.2. 1.15 factor when single brick width used.			
$h = 2.5 \text{ m}$ height between lateral restraints considered to be provided by floor joists cl 28.3.1.1			
Loading			
4" Brick Wall = $2.25 \times 2.3 = 5.175$			
Loft Floor = $2 \times 6.7/2 = 7$			
1st Floor = $2 \times 8/2 = 3.5$			
R1 Equiv UDL = $15.4/3.3 = 5.454545$			
$w = 20.82965 \text{ KN/m}$			
Design Vertical Resistance = $\beta f_k/\gamma_m$		BS 5628 cl 35 $\gamma_m = 3.1$	
Laterally restrained since tied back and 1st floor Restraint and return wall take $L_e = 0.75L = 0.75 \times 2.5 = 1.90 \text{ m}$			
$h/t = 1900/102.5 = 18.5$		Note < 27 .ok $\beta = 0.77$ Assume $e = 0.05t$	
f_k required = $(20.5 \times 3.1)/(0.77 \times 100) = 0.838592 \text{ N/mm}^2$		.ok	

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Structural Calculations		Rev 1	Page	6 of 8	Output
Ridge Beam R1		Span Le =	5.4 m		
Loadings	Pitch Roof=	2x2.7/2=	2.7		
	Flat roof=	1.5x4/2=	3.0		
		w=	5.7 KN/m		
	M= (5.7x5.4^2/8)=	20.8 KNm	x(γ)1.5=	31 KNm	
	R=	15.4 KN			
Bending Moment Check 152UC37 From BS5950-2000-1 Member Capacities					
	M _b =	51.9 KNm >>>>	31 KNm	Le=7m.: OK	152UC37
	Shear Capacity=	214 KN >>>>	15.4 KN	∴ OK	I _{xx} = 22.1
Deflection Check					Z= 273
	δ _t =(5x5.7x5.4^4)/(384x0.21x22.1)=		13.6 mm<L/250=	21.6	∴ OK
	δ _{LL} = 70% x δ _t =		9.5 mm<L/360=	15.0	∴ OK
600x100x25thk MS Bearing Plate		15.4/(100xL)=	1.5x0.42	L=	244 mm ∴ OK
Bearing on 150x100 C16 Timber Post					
Beam LB1		Span =	5.7 m		
Loadings	Pitch Roof=	2x4/2=	4		
	Stud Wall=	1x0.7=	0.7		
	Floor=	2x2.9/2=	2.9		
		w=	7.6 KN/m		
	Point T4=	4.2 KN @ 1.7m			24.6 22.9
	M=(22.9x3)-(7.6x3^2/2)=	34.5 KNm>xγ1.5=	52 KNm		
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
	M _b =	79.8 KNm >>>>	52 KNm	Le=7m.: OK	203UC46
	Shear Capacity=	241 KN >>>>	0.0 KN	∴ OK	I _{xx} = 45.6
Deflection Check					Z= 450
	δ _t =(5x8.5x5.7^4)/(384x0.21x45.6)=		12.2 mm<L/250=	22.8	∴ OK
	δ _{LL} = 70% x δ _t =		8.5 mm<L/360=	15.8	∴ OK
450x250x215THK Padstone		25/(100xL)=	1.5x0.42	L=	391 mm ∴ OK
GROUND FLOOR MODIFICATIONS					
Beam FB4		Span =	3.4 m		
Loadings	Brick Wall=	2.25x2.3=	5.175		
	1st Floor=	2.5x 8/2=	10		
	Loft Floor=	2x 6.7/2=	6.7		
	R1 Post=	15.4/3.3=	5.5	w=	27.3 KN/m
	Point FB3=	16.2 KN @ End Reaction Only			
	M=(27.3x3.4^2/8)=	39.5	x(γ)1.5=	59 KNm	
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
	M _b =	79.8 KNm >>>>	59 KNm	Le=7m.: OK	203UC46
	Shear Capacity=	241 KN >>>>	62.7 KN	∴ OK	I _{xx} = 45.6
Deflection Check					Z= 450
	δ _t =(5x27.3x3.4^4)/(384x0.21x45.6)=		5.0 mm<L/250=	13.6	∴ OK
	δ _{LL} = 70% x δ _t =		3.5 mm<L/360=	9.4	∴ OK
1m 178x102UB19 Spreader Beam		47/(100xL)=	1.5x0.42	L=	737

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Structural Calculations		Rev 1	Page	7 of 8	Output
Beam FB3		Span Le =	4.1 m		
Loadings	100thk Brick=	2.25x2.5=	5.6		
	Floor=	2x2.3/2=	2.3		
		w=	7.9 KN/m		
M= (7.9x4.1^2/8)=		16.7 KNm	x(γ)1.5=	25 KNm	
Bending Moment Check 203x133UB30 From BS5950-2000-1 Member Capacities					
M _b =		33.2 KNm >>>>	25 KNm	Le=6m.: OK	203x133UB30
Shear Capacity=		218 KN >>>>	16.2 KN	∴ OK	l _{xx} = 28.96
Deflection Check					
δ _t = (5x7.9x4.1^4)/(384x0.21x28.96)=			4.8 mm<L/250=	16.4	∴ OK
δ _{LL} = 70% x δ _t =			3.4 mm<L/360=	11.4	∴ OK
Bolted into FB2 and Bearing on 200x100RHS10thk Post					
Beam FB1		Span=	4.4 m		
Loading	Floor=	2x2.3/2=	2.3		
	9" brick Wall=	4.3x2.5=	10.75		
	Flat Roof=	1.5x1.3/2=	0.975		
			14.025 KN/m		
Gable Wall=		4.3x2.5=	10.75 KN/m Triangular Load		
M=(46.6x2.2)-(20x2.2^2/2)=		46.86 KNm>x1.5γ	70.29 KNm		
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
M _b =		79.8 KNm >>>>	70 KNm	Le=7m.: OK	203UC46
Shear Capacity=		241 KN >>>>	46.6 KN	∴ OK	l _{xx} = 45.6
Deflection Check					
Equiv UDL=		19.4 KN/m			Z= 450
δ _t = (5x19.4x4.4^4)/(384x0.21x45.6)=			9.9 mm<L/250=	17.6	∴ OK
δ _{LL} = 70% x δ _t =			6.9 mm<L/360=	12.2	∴ OK
450x250x215THK Padstone		47/(250xL)=	1.5x0.42	L=	296 mm ∴ OK
Beam FB2		Span Le =	3.1 m		
Loadings	Dormer stud=	1.0x2.0=	2.0		
	Flat roof=	1.5x4/2=	3.0		
	Loft Floor=	2x4/2=	4.0		
			4.0		
1st Floor=		2x4/2=	4.0		
9" Brick=		4.3x2.5=	10.8		
		w=	23.8 KN/m		
Point FB1=		38.7 KN @ 0.7m			
M= (46x1.9)-(23.8x1.9^2/2)=		44.4 KNm	x(γ)1.5=	67 KNm	
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
M _b =		79.8 KNm >>>>	67 KNm	Le=7m.: OK	203UC46
Shear Capacity=		241 KN >>>>	66.9 KN	∴ OK	l _{xx} = 45.6
Deflection Check					
Equiv UDL=		38.2 KN/m			Z= 450
δ _t = (5x38.2x3.1^4)/(384x0.21x45.6)=			4.8 mm<L/250=	12.4	∴ OK
δ _{LL} = 70% x δ _t =			3.4 mm<L/360=	8.6	∴ OK
600x200x215THK Padstone		46+16.2/(200xL)=	1.5x0.42	L=	491 mm ∴ OK

Project: 19 Woodside Grove, N12 8QT		27/11/2012	
Structural Calculations	Rev 1	Page 8 of 8	Output
<u>Pier Check 900x250</u> [Assume $f_t=0.95$ for flattons/Lime Mortar]			
<u>Loading</u> Point Beam FB2+FB3= 61.9 KN Factored= 93 KN Laterally restrained since tied back return wall take $L_e = 1L = 1 \times 2.5 = 2.5m$ $h/t = 2500/250 = 10.0$ Note < 27 : OK $\beta = 0.95$ Assume $e = 0.05t$ $P_c = 0.95 \times 0.95 \times 900 \times 0.25 = 203.1$: OK			
<u>Foundation Check</u>			
<u>Assume Existing footing 450 deep and 45 degree spread</u>			
$w = 62 / ((2 \times (0.45) + 0.9) \times 0.6) = 57.3 \text{ KN/m}^2$ $< < 100 \text{ KN/m}^2$ so OK			
BS 6399-2	<u>Wind Loading</u> Wind pressure applied=	0.55	KN/m ²
<u>Lateral Stability Check of the Piers</u>			
<u>Lateral Load transfer assumed to be distributed between three pier supports via roof and wall respectively</u>			
take $\gamma = 1.4$ so therefore $= 1.4 \times 0.55 = 0.77 \text{ KN/m}^2$			
Take span of panel to be 6.9m long			
Conservatively assume 1/3 of the panel load comes onto the pier			
Design wind load $= 0.77 \times 6.9/3 = 1.8 \text{ KN/m}$ Per Pier			
Assuming simple support top and bottom			
Moment applied $= 1.8 \times 2.5^2/8 = 1.4 \text{ KNm}$			
Stress due to Vertical load $= 62 \times 10^3 / (900 \times 250) = 0.27 \text{ N/mm}^2$			
Characteristic flexural strength $N/mm^2 = 0.15$ (parallel) assume 250 N/mm^2 block			
Design Moment Resistance of pier $= ((0.15/3.1) + 0.27) \times 9.38 = 3.0 \text{ KN/m}$			
<u>Bearing at GC1 to be a 200x100x10thk column Bolted onto BB1 below</u>			
Length = 2.5 m			
Loading = Point FB3+FB4= 62.7 KN unfactored			
		94.1 KN factored	
Bending at top 2.5% axial load= 9.4 KNm		Effective length= $1.5L = 4m$	
<u>From BS5950-2000-1 Member Capacities</u>			
$M_t = 87.8 \text{ KNm}$		$P_c = 858.0 \text{ KN}$	
$\frac{9.4}{87.8} + \frac{94.1}{858.0} = 0.2 < 1$: OK			
<u>1mx1m square Pad foundation</u>		<u>Assume Safe Bearing Pressure = 100 KN/m^2</u>	
$\sqrt{63/100} = 0.8$: OK			

3/12/19322

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LOFT CONVERSION + SINGLE STOREY SIDE EXTENSION

STRUCTURAL CALCULATIONS

General :

Structural Calculations based on BS 5950-1:2000 Volume 1 Member Capacity Tables
 Double up joists/rafters for all new studwork & around new window openings unless specified otherwise
 All new structural members to be at least 20mm clear of existing ceiling and at least 40mm clear of chimney flues.
 Beams to be enclosed in a minimum of half hour fire resistance.
 Steel Beam - Grade 43.
 Timbers- C16.
 To confirm assumed load bearing walls on site prior to commencement.
All dimensions to be checked on site prior to commencement. NO structural alterations to be made without Building Control Authority Approval
Note: Typical Beam to Beam Connection to 90x90 10tk cleat and 6 M16 Gr 8.8 Bolts

Project: 19 Woodside Grove, N12 8QT		19/07/2012	
Structural Calculations		Rev 0	Page 2 of 8
		Output	
Structural Loading			
Flat Roof		Ceiling	
Chippings	0.24	Ceiling Joist	0.13
Felt	0.09	Insulation	0.01
Boarding	0.19	P'Board & Skim	0.19
Joist	0.12	Dead Load	0.33
Insulation	0.02	Live Load	0.75 KN/m ²
P'Board & Skim	0.19	Total	1.08 KN/m ²
Dead Load	0.85 KN/m ²		
Live Load	0.75 KN/m ²		
Total	1.5 KN/m ²		
Pitch Roof		Suspended Timber Floor	
Dead Load of slope		Boarding	0.12
Tiles	0.62	Joists	0.19
Felt and Battens	0.05	P'Board & Skim	0.19
Rafter	0.09	Dead Load	0.5
Dead load	0.76	Live Load	1.5 KN/m ²
Dead Load on Plan		Total	2 KN/m ²
Dead Load plan	0.95 KN/m ²		
Live Load	0.75 KN/m ²		
Total	2 KN/m ²		
External Stud Wall		Stud Partition	
Tiles	0.62	Studs	0.19
Felt & Battens	0.05	P'Board & Skim	0.38
Studs	0.19	Dead Load	0.57 KN/m ²
Insulation	0.01		
P'Board & Skim	0.19	Block Partition	
Dead Load	1.06 KN/m ²	Blockwork	0.77
		Plaster both sides	0.43
		Dead Load	1.2 KN/m ²
		External Block Wall	
		225 Blockwork	1.72
		Plaster both sides	0.21
		Render	0.44
		Dead Load	2.37 KN/m ²
External 215 Brick Wall			
215 brickwork	4.3	Concrete Density	24 KN/m ²
Plaster	0.21	Brick Density	20 KN/m ²
Dead Load	4.51 KN/m ²	Block density	10 KN/m ²
		Soil Density	18 KN/m ²
Brick & Block Cavity Wall			
112 Brick skin	2.16		
100 Block skin	0.77		
Plaster	0.21		
Dead Load	3.14 KN/m ²		

Project: 19 Woodside Grove, N12 8QT

19/07/2012

Structural Calculations

Rev 0

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Output
Floor Joist

Max Span= 4 m

200 x 50 @ 300 c/s C16 Timbers
Loading

Floor= 2x0.3= 0.6 KN/m

 M= 0.6x4²/8= 1.20 KNm

Bending Strength

 fbc=1.2/0.33= 3.6 <5.83N/mm² ∴ OK

 $\delta = (5 \times 0.6 \times 4^4) / (384 \times 8800 \times 33.33) =$

6.8 <0.003xL= 12 ∴ OK

Roof Joist

Max Span= 2.7 m

150 x 50 @ 400 c/s C16 Timbers
Loading

Roof= 2x0.4= 0.8 KN/m

 M= 0.8x2.7²/8= 0.7 KNm

Bending Strength

 fbc=0.7/0.19= 3.9 <5.83N/mm² ∴ OK

 $\delta = (5 \times 0.8 \times 2.7^4) / (384 \times 8800 \times 14.06) =$

4.5 <0.003xL= 8.1 ∴ OK

Note: Existing Rafter if retained to be strengthened with 150x50 timber C16 bolted to existing rafters with M10 Bolts

Flat Roof Joist 200 x 50 @ 400 c/s C16 Timbers

Max Span= 4 m

Loading

Roof= 1.5x0.4= 0.6 KN/m

 M= 0.6x4²/8= 1.2 KNm

Bending Strength

 fbc=1.2/0.33= 3.6 <5.83N/mm² ∴ OK

 $\delta = (5 \times 0.6 \times 4^4) / (384 \times 8800 \times 33.33) =$

6.8 <0.003xL= 12 ∴ OK

Trimmer T2 2 No. 200x 50 C16 timbers

Span 0.7 m

Loading:

Floor= 2x2.7/2= 2.7

Stud Wall= 0.5x2= 1

 $w = \frac{1}{3.7} \text{ KN/m}$

 M=3.7x0.7²/8= 0.23 KNm R= 1.3 KN

Bending Strength

 fbc=0.23/(2*0.33)= 0.3 <5.83N/mm² ∴ OK

 $\delta = (5 \times 3.7 \times 0.7^4) / (384 \times 8800 \times 2 \times 33.33) =$

0.020 <0.003xL= 2.1 ∴ OK

Trimmer T3 2 No. 200x 50 C16 timbers

Span 1.8 m

Loading:

Floor= 2x1/2= 1

Stud Wall= 0.5x1.5= 0.75

 $w = \frac{0.75}{1.75} \text{ KN/m}$

 M=1.75x1.8²/8= 0.71 KNm R= 1.6 KN

Bending Strength

 fbc=0.71/(2*0.33)= 1.1 <5.83N/mm² ∴ OK

 $\delta = (5 \times 1.75 \times 1.8^4) / (384 \times 8800 \times 2 \times 33.33) =$

0.408 <0.003xL= 5.4 ∴ OK

Trimmer T5 2 No. 200x 50 C16 timbers

Span 1.6 m

Loading:

Floor= 2x3.0/2= 3

Stud Wall= 0.5x2= 1

 $w = \frac{1}{4} \text{ KN/m}$

Point T3= 1.6 KN @ 1m

 M=(3.8x1)-(4x1²/2)= 1.80 KNm R= 3.8 KN

Equiv UDL= 5.625 KN/m

Bending Strength

 fbc=1.8/(2*0.33)= 2.7 <5.83N/mm² ∴ OK

 $\delta = (5 \times 5.6 \times 1.6^4) / (384 \times 8800 \times 2 \times 33.33) =$

0.818 <0.003xL= 4.8 ∴ OK

Ixx= 33.33

Zxx= 0.33

N.B: Inc mod factor

1.1 allowable fbc

∴ OK

Ixx= 14.06

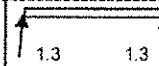
Zxx= 0.19

∴ OK

Ixx= 33.33

Zxx= 0.33

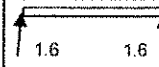
∴ OK



Ixx= 33.33

Zxx= 0.33

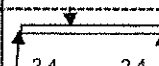
∴ OK



Ixx= 33.33

Zxx= 0.33

∴ OK



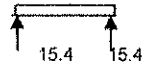
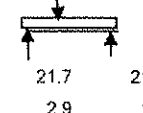
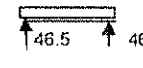
Ixx= 33.33

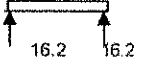
Zxx= 0.33

∴ OK

Project: 19 Woodside Grove, N12 8QT						19/07/2012			
Structural Calculations				Rev 0		Page 4 of 8		Output	
T4 Fitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts									
Loading:		Span		4 m				1.2 1.2	
		Floor=		2 @ 0.3m=		0.6 KN/m		1.0 0.3	
Point T2=		1.3 KN @ 0.9m		Point T5=		3.8 KN @ 2.7m		1.045 2.755	
M=(4.2x1.3)-(0.6x1.3^2/2)=		4.95 KNm		R=		4.2 KN		3.3 4.2	
Equivalent UDL=		2 KN/m							
Trimmer T1		Span		2.2 m					
Fitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts								5.1 5.1	
Loading:		Point T4=		3.3 KN @ 1.7m				0.8 2.6	
		Floor=		2x3.6/2=		3.6		5.8 7.6	
		Stud=		0.5x2=		1			
w=		4.6 KN/m							
M=(5.8x1.2)-(4.6x1.2^2/2)=		3.65 KNm		R=		7.6 KN			
Equivalent UDL=		6 KN/m							
Use fitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts									
Beam		length		4000 mm		x 10^4		x 10^3	
members		depth		width		nos.		I _{xx} mm^4	
timber		200		50		2		6666.7	
steel		200		12		1		800.0	
								80.0	
								210000	
P _{bc} timber		5.3 (gr.C16)		k ₇		1.046 (depth factor)		(175dp)	
K _s		1.1 (sharing system factor)		k ₉		1.21 (mod.factor to E _{min})			
k ₃		1 (1.0 for floors)		(1.25 for roof)		P _{bc} timber		k ₃ x k ₈ x k ₇	
								6.1 N/mm^2	
Moment of resistance of fitched beams				(P _{bc} timber x Z _{xx} timber) + (P _{bc} timber x M.ratio x Z _{xx} steel)					
Mt.of Resistance.(of fitched beam)				15.7		KN-M			
Applied moments		3.6		KN-M		OK		Actual equivalent UDL	
								2 KN/M	
Deflection check		(5*w*L^4)/(384*Emin*k ₉ *(I _{steel} *MR + I _{timber}))							
I _{steel}		I _{steel} *MR		190909091 actual def.		4.04		mm	
Allowable deflection (mm)		(due to DL + LL)		12.0		14			
FLITCHED BEAM USED		2 No 200x50 (C16) & 1 No. 200x12thk MS Plate							
				(bolted together M12 dia. at 450 mm crs. staggered)					
Fitch Beam 2 No 200x50 C16+12thk MS Plate bolted at 450crs staggered M12 Bolts									
Maximum opening to be cover with spreader beam =				2.4		m			
Loadings		Dormer stud=		1.0x2.0=		2.0			
		Flat roof=		1.5x4/2=		3.0			
		Loft Floor=		2x4/2=		4.0			
				9.00		KN/m			
M = 9x2.4^2/8 =		6.5 KNm							
150x100 Timber (C16) Post for ridge beam reaction								Le=0.85x2.5= 2.1m	
R=15.4KN;		Applied stress= 15.4/(150x100)=		1.02666667 N/mm^2				150 100	
i=√I/A=√(12.5x10^6/150x100)=		29		mm		K12 = 0.792		l _{yy} = 12.50	
λ=2100/29= 72 not greater than 180				Emin/(σ _{gl} xK3)= 5800/(6.8x1) = 852.9 and given λ= 72				σ _{gl} =6.8N/mm^2	
Axial load capacity=		σ _c adm= σ _c γ̄ _x K3xK12=		6.8x1x0.792=5.39N/mm^2				Emin= 5800	
since 5.39>>1.03N/mm^2				∴ OK				K3= 1	

Project: 19 Woodside Grove, N12 8QT		19/07/2012			
Structural Calculations		Rev 0	Page 5 of 8		
Check for beams T1 Loading onto existing brick work. Assume $f_v/\gamma_m = 0.42 \text{ N/mm}^2$		Output			
Equivalent Characteristic Strength used=		1.3 N/mm ²			
For the Purposed this calculation Type 3 bearing is considered					
Wall is 100mm wide initial check done is to see if bearing is required, note continuous wall plate is provided					
	h=		2.5 m		
	0.4h=		1 m		
	Loaded width=width of bearing+1x0.4h=		1.7 m		
	Loading		T1=		
	4" Brick Wall=		2.25x2.5=		
4" wall=		2.25x0.4h=	2 KN/m		
Note: Continuous wall plate fully fixed to spine Wall					
Design Load At Bearing Level=		8 KN			
Design Load At 0.4h= 5.625+2+8/1.7=		12.35147059			
Design Vertical Resistance = $\beta t f_k / \gamma_m$		5628 cl 35 γ_m =			
Laterally restrained since tied back return wall take $L_e = 1L = 1 \times 2.5 = 2.5 \text{ m}$		3.1			
$h/t = 2500/102.5 =$		24.4			
Note ≤ 27 .ok		$\beta = 0.53$			
Assume $e = 0.05t$					
fk required at 0.4h=		(12.4x3.1)/(0.53x100)			
		0.722445 N/mm ²			
fk required at bearing=		(2fk/ γ_m)Ab=			
		=2x(18x1000x3.1)/(2x2x11200)			
		1.1 N/mm ²			
Note: To assume triangular stress distribution conservatively assume the stress is doubled					
Ab=		112x100=			
		11200 mm ² .ok			
Locally MS Bearing plate is provided 30x100x25thk		=300x100			
so therefore (8x1000x3.1)/(1.25x1.3)=		9073 <<			
		30000 .ok			
Spine Wall check for brick work. Assume $f_v/\gamma_m = 0.42 \text{ N/mm}^2$					
Equivalent Characteristic Strength used=		1.5 N/mm ²			
For the Purposed this calculation Type 1 bearing is considered Cl 23.1.2: 1.15 factor when single brick width used.					
h=		2.5 m height between lateral restraints considered to be provided by floor joists cl 28.3.1.1			
Loading		4" Brick Wall=			
		2.25x2.3=			
Loft Floor =		2x6.7/2=			
		7			
1st Floor=		2x8/2=			
		3.5			
R1 Equiv UDL=		15.4/3.3=			
		5.454545			
		w=			
		20.82955 KN/m			
Design Vertical Resistance = $\beta t f_k / \gamma_m$		BS 5628 cl 35 γ_m =			
		3.1			
Laterally restrained since tied back and 1st floor Restraint and return wall take $L_e = 0.75L = 0.75 \times 2.5 = 1.90 \text{ m}$					
$h/t = 1900/102.5 =$		18.5			
Note ≤ 27 .ok		$\beta = 0.77$			
Assume $e = 0.05t$					
fk required =		(20.5x3.1)/(0.77x100)			
		0.838592 N/mm ²			
		.ok			

Project: 19 Woodside Grove, N12 8QT				19/07/2012	
Structural Calculations		Rev 0	Page	6 of 8	Output
Ridge Beam R1		Span Le =	5.4 m		
Loadings	Pitch Roof=	2x2.7/2=	2.7		
	Flat roof=	1.5x4/2=	3.0		
		w=	5.7 KN/m		
	M= (5.7x5.4^2/8)=	20.8 KNm	x(γ)1.5=	31 KNm	
	R=	15.4 KN			
Bending Moment Check 152UC37 From BS5950-2000-1 Member Capacities					
	M _b =	51.9 KNm >>>>	31 KNm	Le=7m.: OK	152UC37
	Shear Capacity=	214 KN >>>>	15.4 KN	∴ OK	l _{xx} = 22.1
Deflection Check					
	δ _t =(5x5.7x5.4^4)/(384x0.21x22.1)=		13.6 mm<L/250=	21.6	∴ OK
	δ _{LL} = 70% x δ _t =		9.5 mm<L/360=	15.0	∴ OK
600x100x25thk MS Bearing Plate		15.4/(100xL)=	1.5x0.42	L=	244 mm ∴ OK
Bearing on 150x100 C16 Timber Post					
Beam LB1		Span =	5.7 m		
Loadings	Pitch Roof=	2x4/2=	4		
	Stud Wall=	1x0.7=	0.7		
	Floor=	2x2.9/2=	2.9		
		w=	7.6 KN/m		
	Point T4=	4.2 KN @ 1.7m			
	M=(22.9x3)-(7.6x3^2/2)=	34.5 KNm >γ1.5=	52 KNm		
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
	M _b =	79.8 KNm >>>>	52 KNm	Le=7m.: OK	203UC46
	Shear Capacity=	241 KN >>>>	0.0 KN	∴ OK	l _{xx} = 45.6
Deflection Check					
	δ _t =(5x8.5x5.7^4)/(384x0.21x45.6)=		12.2 mm<L/250=	22.8	∴ OK
	δ _{LL} = 70% x δ _t =		8.5 mm<L/360=	15.8	∴ OK
450x250x215THK Padstone		25/(100xL)=	1.5x0.42	L=	391 mm ∴ OK
GROUND FLOOR MODIFICATIONS					
Beam FB1		Span =	3.4 m		
Loadings	Brick Wall=	2.25x2.3=	5.175		
	1st Floor=	2.5x 8/2=	10		
	Loft Floor=	2x 6.7/2=	6.7		
	R1 Post=	15.4/3.3=	5.5		
		w=	27.3 KN/m		
	M=(27.3x3.4^2/8)=	39.5	x(γ)1.5=	59 KNm	
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
	M _b =	79.8 KNm >>>>	59 KNm	Le=7m.: OK	203UC46
	Shear Capacity=	241 KN >>>>	46.5 KN	∴ OK	l _{xx} = 45.6
Deflection Check					
	δ _t =(5x27.3x3.4^4)/(384x0.21x45.6)=		5.0 mm<L/250=	13.6	∴ OK
	δ _{LL} = 70% x δ _t =		3.5 mm<L/360=	9.4	∴ OK
1m 178x102UB19 Spreader Beam		47/(100xL)=	1.5x0.42	L=	737

Project: 19 Woodside Grove, N12 8QT				19/07/2012	
Structural Calculations		Rev 0	Page	7 of 8	Output
Beam FB3		Span Le =	4.1 m		
Loadings	100thk Brick=	2.25x2.5=	5.6		
	Floor=	2x2.3/2=	2.3		
		w=	7.9 KN/m		
	M= (7.9x4.1^2/8)=	16.7 KNm	x(y)1.5=	25 KNm	
Bending Moment Check 203x133UB30 From BS5950-2000-1 Member Capacities					
	M _b =	33.2 KNm >>>>	25 KNm	Le=6m.: OK	203x133UB30
	Shear Capacity=	218 KN >>>>	16.2 KN	∴ OK	I _{xx} = 28.96
Deflection Check					Z= 280
	δ _t = (5x7.9x4.1^4)/(384x0.21x28.96)=		4.8 mm<L/250=	16.4	∴ OK
	δ _{LL} = 70% x δ _t =		3.4 mm<L/360=	11.4	∴ OK
Bolted into FB2 and Bearing on 200x100RHS10thk Post					
Beam FB1		Span=	4.4 m		
Loading	Floor=	2x2.3/2=	2.3		
	9" brick Wall=	4.3x2.5=	10.75		
	Flat Roof=	1.5x1.3/2=	0.975		
			14.025 KN/m		30.8
	Gable Wall=	4.3x2.5=	10.75 KN/m Triangular Load		38.7
	M=(46.6x2.2)-(20x2.2^2/2)=	46.86 KNm>x1.5y	70.29 KNm		
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
	M _b =	79.8 KNm >>>>	70 KNm	Le=7m.: OK	203UC46
	Shear Capacity=	241 KN >>>>	46.6 KN	∴ OK	I _{xx} = 45.6
Deflection Check		Equiv UDL=	19.4 KN/m		Z= 450
	δ _t = (5x19.4x4.4^4)/(384x0.21x45.6)=		9.9 mm<L/250=	17.6	∴ OK
	δ _{LL} = 70% x δ _t =		6.9 mm<L/360=	12.2	∴ OK
450x250x215THK Padstone		47/(250xL)= 1.5x0.42	L=	296 mm	∴ OK
Beam FB2		Span Le =	3.1 m		
Loadings	Dormer stud=	1.0x2.0=	2.0		
	Flat roof=	1.5x4/2=	3.0		
	Loft Floor=	2x4/2=	4.0		
	1st Floor=	2x4/2=	4.0		
	9" Brick=	4.3x2.5=	10.8		
		w=	23.8 KN/m		30
	Point FB1=	38.7 KN @ 0.7m			9
	M= (46x1.9)-(23.8x1.9^2/2)=	44.4 KNm	x(y)1.5=	67 KNm	67
Bending Moment Check 203UC46 From BS5950-2000-1 Member Capacities					
	M _b =	79.8 KNm >>>>	67 KNm	Le=7m.: OK	203UC46
	Shear Capacity=	241 KN >>>>	66.9 KN	∴ OK	I _{xx} = 45.6
Deflection Check		Equiv UDL=	38.2 KN/m		Z= 450
	δ _t = (5x38.2x3.1^4)/(384x0.21x45.6)=		4.8 mm<L/250=	12.4	∴ OK
	δ _{LL} = 70% x δ _t =		3.4 mm<L/360=	8.6	∴ OK
600x200x215THK Padstone		46+16.2/(200xL)= 1.5x0.42	L=	491 mm	∴ OK

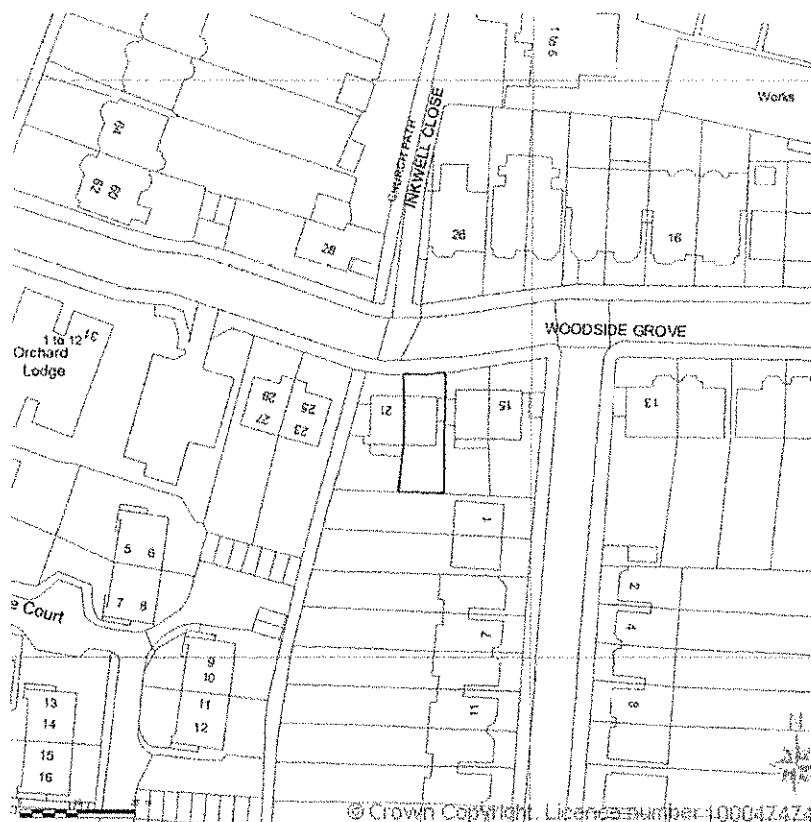
Project: 19 Woodside Grove, N12 8QT		19/07/2012	
Structural Calculations	Rev 0	Page 8 of 8	Output
Pier Check 900x250 [Assume $f_v=0.95$ for flettons/Lime Mortar]			
Loading Point Beam FB2+FB3= 61.9 KN Factored=		93 KN	
Laterally restrained since tied back return wall take $L_e = 1L = 1 \times 2.5 = 2.5m$			
$h/t = 2500/250 = 10.0$ Note < 27 .ok $\beta = 0.95$ Assume $e = 0.05t$			
$P_c = 0.95 \times 0.95 \times 900 \times 0.25 = 203.1$. OK			
Foundation Check			
Assume Existing footing 450 deep and 45 degree spread			
$w = 62 / ((2 \times (0.45) + 0.9) \times 0.6) = 57.3$ KN/m ² <<< 100KN/m ² so Ok			
BS 6399-2	Wind Loading	Wind pressure applied=	0.55 KN/m ²
Lateral Stability Check of the Piers			
Lateral Load transfer assumed to be distributed between three pier supports via roof and wall respectively			
take $\gamma = 1.4$ so therefore $= 1.4 \times 0.55 = 0.77$ KN/m ²			
Take span of panel to be 6.9m long			
Conservatively assume 1/3 of the panel load comes onto the pier			
Design wind load $= 0.77 \times 6.9/3 = 1.8$ KN/m Per Pier		Pier dimensions $b = 900$ $d = 250$ $Z_{min} = 9.38$	
Assuming simple support top and bottom			
Moment applied $= 1.8 \times 2.5^2/8 = 1.4$ KNm			
Stress due to Vertical load $= 62 \times 10^3 / (900 \times 250) = 0.27$ N/mm ²			
Characteristic flexural strength N/mm ² $= 0.15$ (parallel) assume 250 2.8N/mm ² block			
Design Moment Resistance of pier $= ((0.15/3.1) + 0.27) \times 9.38 = 3.0$ KN/m		. OK	
Bearing at GC1 to be a 200x100x10thk column Bolted onto BB1 below			
Length = 2.5 m			
Loading = Point FB3+FB4=		62.7 KN unfactored 94.1 KN factored	
Bending at top 2.5% axial load=		9.4 KNm	Effective length= 1.5L= 4 m
From BS5950-2000-1 Member Capacities			
$M_p = 87.8$ KNm $P_c = 858.0$ KN			
$\frac{9.4}{87.8} + \frac{94.1}{858.0} = 0.2 < 1$.OK			
1mx1m square Pad foundation		Assume Safe Bearing Pressure = 100KN/m ²	
$\sqrt{63/100} = 0.8$.OK			

5/12/19322

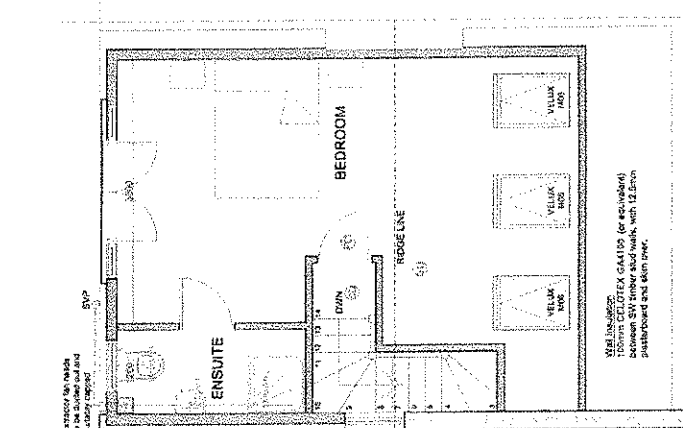


**SITE LOCATION PLAN
AREA 2 HA
SCALE 1:1250**

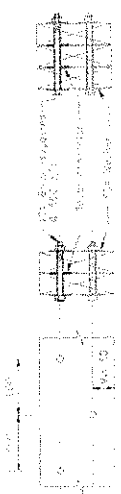
CENTRE COORDINATES: 526180, 193041



**SITE: 19 WOODSIDE GROVE,
NORTH FINCHLEY, N12 8QT.
PROPOSED: LOFT CONVERSION
WITH REAR DORMER UNDER
LAWFUL DEVELOPMENT**

[illegible]

PROPOSED: OCT 11 00R PL AN



MULTI-JOISTS CONNECTION

City	MURFREESBORO	State	MISSISSIPPI
Site Address	1400 E. GUYTON AVE NORTH FLOORS N1E 407		
Project Title	BANK OF AMERICA BLDG EXTENSION AND LOFT CONVERSION		
Specs	BUILDING REGULATION		
Drawn	JS	Checked	MS
Date	12/03/12	Date	1-30-08 AS
Issued for the APPROVED LOFT FLOOR CONSTRUCTION PLAN			
MSD No	11050018	Drawing No	PR-03

EXISTING SIDE ELEVATION

The architectural drawings show the 'L' shaped building from multiple perspectives. On the left is a side elevation of the long wing, showing a flat roof and a series of windows. To the right are two floor plans: the top one shows the layout of the long wing with several rectangular rooms, and the bottom one shows the layout of the shorter wing, also with rectangular rooms. The drawings are rendered in a simple line-art style.

PROPOSED SIDE ELEVATION

()

PROPOSED LOFT FLOOR PLAN

Q

2522

**LONDON BOROUGH OF BARNET
BUILDING CONTROL
BUILDING NOTICE APPLICATION**

APPLICATION NUMBER: B13/05737

WARD: Woodhouse

ADDRESS: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Single Storey Rear and Side Extension

CASE OFFICER: Nicholas Lees

SEWER ON SITE: Not Applicable

CONTAMINATED LAND: No

STOR-A-FILE



F270358712



Inspections List

APPLICATION NO B/13/05737

Proposal: Single Storey Rear and Side Extension
Address: 19 Woodside Grove London N12 8QT

Inspection Type	Inspection date	Officer
Drains Laid	22 July 2013	NL
Drain runs appear ok - connection to manhole still to be done.		

Inspection Type	Inspection date	Officer
O_S	21 June 2013	NL
07809675242. OS to side extn ok . Advised i think there should be an internal manhole on the main run as well as the os mh reqd by TW. Told them to ring pm - did'nt - DISCUSS WITH NICK LEN.		

Inspection Type	Inspection date	Officer
Beams and Structure	13 June 2013	NL
Bldr: hswltd@yahoo.co.uk beams appear as ok'd details except for hanging beam - requested details & calcs. Also requested drainage design - advised internal MH not to be removed.		

Inspection Type	Inspection date	Officer
General	12 June 2013	NL
MR bedi 07809675242 HK Am inspection		

Inspection Type	Inspection date	Officer
Damp Proof Course	22 May 2013	NL
0780 967 5242. DPC laid ok if outer leaf raised to 150mm above FGL, steels in posn & appear as unchecked details.		

Inspection Type	Inspection date	Officer
Excavation	9 April 2013	NL
07809675242. REAR EXC NOW OK APP 1.8 & 2.0M DEEP ON FIRM BROWN CLAY.		

Inspection Type	Inspection date	Officer
Excavation	5 April 2013	NL
07949240040. No further progress - rear exc to be min 1.8-2.0m deep due to leylandis.		

Inspection Type	Inspection date	Officer
Excavation	4 April 2013	NL
07949240040. rear exc to be min 1.8-2.0m deep due to leylandis.		

Inspection Type	Inspection date	Officer
-----------------	-----------------	---------

Foundation	28 March 2013	ASM
Mr Kai 07949240040 FM Inspected trial hole adj existing cast foundations 1.2m deep firm clay asm		

Inspection Type	Inspection date	Officer
Foundation	25 March 2013	LD
Mr [REDACTED] Foundations by existing garage at side of building. Rear extension foundations are cast and walls built. Any previous inspections?? Side foundations consist of 2no 3m long trenches with 3.0m between to be dug. Front trench planking and strutted. Rear trench has been divided into three lengthways, with shuttering with 4no 12mm dia steel bars for continuity steel. Centre 1.0m section is to be cast only. A tree in highway is 6.0m away but only 9.0m high and will be regularly trimmed (Highways tree, so 1.0m deep in clay OK. trench 1.2m deep. on firm brown clay.		

Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP

INTERNAL MEMORANDUM

TO: STRUCTURAL ENGINEERS - Mr J. Farrell

FROM: BUILDING CONTROL

OUR REF: B13/05737

DATE: 01/05/2013

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Single Storey Rear and Side Extension

Enclosed are copies of drawings and/or structural calculations concerning the above development.

I shall be pleased to receive your observations by the 15/05/2013.

Should you have any queries, please contact Nicholas Lees.

for BUILDING CONTROL MANAGER

No observations

*Joe, Please pull out
19, Woodside Grove & ring*

7/5/13

*to let him know if
OK or not.*

Nick

**Development & Regulatory Services
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design Architectural Service
54 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 23/04/2013
OUR REF: B/13/05737

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL Single Storey Rear and Side Extension

:

With reference to your Building Notice under the Building Regulations, your plan has been examined, and the observations of the Council's Structural Engineers are as follows:

1. Please check if there is any floor or roof load on the wall over beam C.
2. Please clarify how columns C1 and C2 are protected from corrosion.
3. Please confirm the existing foundation is adequate for column 3.

Should you have any queries please contact my structural engineer Mr J. Farrell on 020 8359 4385 and quote reference number B/13/05737.

I shall be pleased to receive amended plans and details as soon as possible.

Yours faithfully

Nicholas Lees
Senior Surveyor Building Control



**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

INTERNAL MEMORANDUM

TO: STRUCTURAL ENGINEERS - Mr J. Farrell

FROM: BUILDING CONTROL

OUR REF: B13/05737

DATE: 19/04/2013

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Single Storey Rear and Side Extension

Enclosed are copies of drawings and/or structural calculations concerning the above development.

I shall be pleased to receive your observations by the 03/05/2013.

Should you have any queries, please contact Nicholas Lees.

for BUILDING CONTROL MANAGER

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

INTERNAL MEMORANDUM

TO: STRUCTURAL ENGINEERS - Mr J. Farrell

FROM: BUILDING CONTROL

OUR REF: B13/05737

DATE: 18/04/2013

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL: Single Storey Rear and Side Extension

Enclosed are copies of drawings and/or structural calculations concerning the above development.

I shall be pleased to receive your observations by the 02/05/2013.

Should you have any queries, please contact Nicholas Lees.

for BUILDING CONTROL MANAGER

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design Architectural Service
54 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 20/03/2013
OUR REF: B/13/05737

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT
PROPOSAL: Single Storey Rear and Side Extension

I refer to your Building Notice deposited on 18/03/2013 under the Building Regulations. Your Building Notice has been examined and the following additional details and information are required.

NB Your plans have not been checked as you have submitted a building notice – it is your responsibility to ensure that all building works are carried out fully in accordance with the Building Regulations 2010 (as amended) and all associated legislature and the work is entirely at your own risk.

1. Full structural details and calculations required.
2. Amount of glazing appears excessive, please amend to comply or provide thermal calculations to prove compliance.
3. This is not a complete list and further items may become evident upon receipt of the above information and / or on site inspection.

Please be aware that this is not a full Building Regulation plan check.

I shall be pleased to receive amended plans and details by the 03/04/2013.

Yours faithfully



Nicholas Lees
Senior Surveyor Building Control

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr R Baba
19 Woodside Grove
London
N12 8QT

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 19/03/2013
OUR REF: B/13/05737

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT

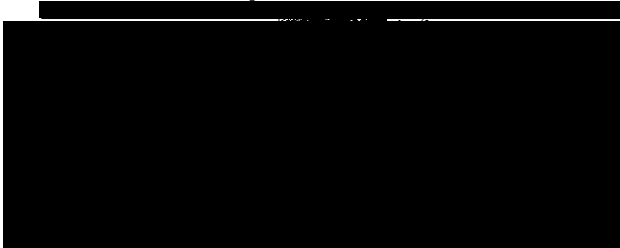
PROPOSAL Single Storey Rear and Side Extension
:

I refer to the Building Notice submitted to us on 12/03/2013. Under the Building Notice procedure plans and particulars received in conjunction with an application are not examined in detail and formal approval is not issued. It is therefore extremely important that the constructional details of the works are discussed and established on site early in the process; preferably during our initial site visit. The list below covers the most common areas where agreement may need to be reached:-

- Depth and type of foundations
- Damp proofing to the floor and walls
- Fire safety – including means of escape, fire resistance and position of windows/doors near the boundary
- Thermal insulation to the floor, roof and external walls
- Glazed windows/doors
- Sound insulation to separating walls
- Drainage/plumbing alterations and testing
- Natural and mechanical ventilation
- Electrical work
- Structural alterations, including details of the junctions between the extension and the existing building
- Any unusual or complex work
- Certificates or information that we may require before we can issue a completion certificate

Should you wish to discuss any aspect of this application please do not hesitate to contact me.

Yours faithfully



Nicholas Lees
Senior Surveyor Building Control

**Environment, Planning and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

Mr K Janjua
MCS Design Architectural Service
54 Westmead
Windsor
Berkshire
SL4 3NN

CONTACT: Building Control
Tel: 020 8359 4500
E-MAIL: building.control@barnet.gov.uk
DATE: 19/03/2013
OUR REF: B/13/05737

Dear Sir/Madam,

THE BUILDING ACT 1984, THE BUILDING REGULATIONS 2010

LOCATION: 19 Woodside Grove, London, N12 8QT

PROPOSAL Single Storey Rear and Side Extension

:

I acknowledge receipt of your Building Regulation application and payment of £655.20 which is receiving attention. Your application was deposited on 18/03/2013 and has been given the above reference number. This should be quoted in all correspondence.

If you have not already done so, please give us at least two working days notice in writing before works commence on site.

Please call 020 8359 4500 for enquiries and to book site inspections.

Yours faithfully



Nicholas Lees
Senior Surveyor Building Control

*Please note that the VAT rate and our charges are subject to change, the actual amount will be based on the prevailing rates at the time payment is received. A list of our current charges can be found at <http://www.barnet.gov.uk/building-control>.

12/03/2013 11:53:01 593

From: Ferrie, Jessica On Behalf Of Building Control (Building.Control@barnet.gov.uk)

Sent: 12 March 2013 11:52

To: [REDACTED]

19 Woodside, North Finchley, N12 8QT - Ref No: B13/5737

Hi Kaleem,

Thank you for the submission of a Building Notice for the above address.

There is an outstanding fee due on [REDACTED] which needs to be paid before the application can be made valid.

This can be paid by card by calling 020 8359 4500 or alternatively sending a cheque to the address below.

Kind Regards,

Jessica Ferrie Senior Technical Support Officer
Building Control & Street Naming and Numbering
Environment, Planning and Regeneration
London Borough of Barnet,
North London Business Park,
Oakleigh Road South,
London
N11 1NP
Tel: 020 8359 4500

Barnet Online: www.barnet.gov.uk

Please consider the environment - do you really need to print this email?

**Planning, Housing and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP**

PAGE 1 OF 2

WORKSHEET 2 - AMENDMENTS/RECOMMENDATIONS

DATE: 19/03/2013

FILE REFERENCE NUMBER: B13/05737

DEPOSIT DATE: 18/03/2013

INTERNAL TARGET DATE: 08/04/2013

5 WEEK DATE:

2 MONTH EXTENSION OF TIME DATE:

APPLICANT: Mr R Baba

AGENT: Mr K Janjua

MCS Design Architectural Service

TELEPHONE NO.01753869117

PROPOSAL: Single Storey Rear and Side Extension

LOCATION: 19 Woodside Grove, London, N12 8QT

WARD: Woodhouse

SEWERS ON SITE: Not Applicable

CONTAMINATED LAND: No

OVERTIME HOURS:0 OFFICE TIME HOURS: 0

USE CATEGORY: A CASE OFFICER:Nicholas Lees

CONSULTATIONS:

FPO PLANS: REQUESTED: RECEIVED:

CONSULTEES

DATE SENT:

REPLIES RECEIVED:

DECISION RECOMMENDATION:(not applicable on Building Notice)

APPROVE/CONDITIONAL APPROVAL/REJECTION

SIGNED:

DATED:

IF CONDITIONAL APPROVAL/REJECTION LIST ITEMS BELOW:

1.

AMENDMENTS TO DEPOSITED PROPOSALS ARE LISTED OVER PAGE

DocBW2Y: B

PAGE 2 OF 2

FILE REFERENCE NUMBER: B13/05737

AMENDMENTS TO DEPOSITED PROPOSALS:

SIGNED: *Mr* DATE: *20/3/13*

UNIQUE TEXT AS IT SHOULD APPEAR IN OUTGOING CORRESPONDENCE:

1. *Gen 14*

AI/i

LIB/A11

Gen 19

Planning, Housing and Regeneration
Building Control, North London Business Park, Building 4
Oakleigh Road South, London N11 1NP

WORKSHEET 1 - RECEPTION AND VALIDATION Date: 12/03/2013

FILE REFERENCE NUMBER: B13/05737 RECEIVED 12/03/2013

STATUS: REC

APPLICANT: Mr R Baba

AGENT: Mr K Janjua

MCS Design Architectural Service

CONTACT 54 Westmead

ADDRESS: Windsor

Berkshire

SL4 3NN

TELEPHONE No. 01753869117

PROPOSAL: Single Storey Rear and Side Extension

LOCATION: 19 Woodside Grove, London, N12 8QT

INITIAL VETTING: Sewer on Site YES [] NO [✓]
NOT APPLICABLE []
Contaminated Land YES [] NO [✓]
NOT APPLICABLE []
WARD: Woodhouse
Deposit Charge Received -
Total: £0.00 Net: £0.00 VAT: £0.00
655.20 546.00 109.20
Receipt No: No CHQ
Charge Type Code: DEX c/c 18/03/13
SEE ?
Total Estimated Cost: £ 30,000 VISA .
Use Category: A ?
(All the amounts below should be excluding VAT)
Plan Charge Required : £ 546.00
Charge Outstanding ~~or to be refunded~~ : £ 546.00
Total Inspection Charge : £
(N/A on Building Notice & Regularisations)
Completion Certificate Fee : £

CONSULTATIONS: (please tick those required)

CSS LTD.

Development Control

Environmental Health

Fire Prevention Officer

Licensing Section

Petroleum Officer

Residential Care Homes Unit

Structural Engineers

Thames Water Utilities Ltd

Other (Specify) :

Email sent to Agt. 12/03/13

BUILDING CONTROL SURVEYOR (CASE OFFICER) RESPONSIBLE:

Date: 12/03/13

Valid/Invalid

Initials: Jes

OT hrs: Office hrs:

19/03/13

valid

Jes

NL

DocRef: Y: B

Ferrie, Jessica

From: Kaleem Janjua [REDACTED]
Sent: 11 March 2013 14:11
To: Building Control; rickybaba@ymail.com; HS Windows
Subject: Building notice application for 19 Woodside, North Finchley, N12 8QT
Attachments: BUILDING NOTICE SIDE AND REAR EXTENSION.pdf; EXISTING ELEVATIONS.pdf; PROPOSED ELEVATIONS.pdf; EXISTING AND PROPOSED FLOOR PLANS.pdf; REAR AND SIDE EXTENSION - G.F PLAN & SECTION AA.pdf

Dear Sir/ Madam,

Please find attached Building Notice application and accompanying documents for the above site address.

The fee will be forwarded in due course.

Regards,

M C S DESIGN Architectural Services
Kaleem Janjua BArch, HNC (Civil Engineering)
Planning Consultant
53 Westmead
Windsor
Berkshire
SL4 3NN

[REDACTED]

11/03/2013

8/13/5737

BARNET

LONDON BOROUGH

Please return to:
Building Control, North London Business Park
Oakleigh Road South
London N11 1NP
Email: building.control@barnet.gov.uk

Statement

I/We hereby give notice in accordance with Building Regulation 12(2)(a) of my/our intention to carry out the building work or material change of use as described below.

Applicant's details (owner)

Mr/Ms/Ms Initials R Surname BABA
Address 19 WOODSIDE GROVE, NORTH FINCHLEY
Post Code N12 8DT Tel: [REDACTED] Email: [REDACTED]

Agent's details

Mr/Ms/Ms Initials K Surname JANJUA
Company Name MCS DESIGN
Address 53 WESTMEAD, WINDSOR
Post Code SL4 3NN Tel: [REDACTED] Email: [REDACTED]

Builder's details

Mr/Ms/Ms Initials K Surname SINSH
Company Name H.S. & WINDOWS
Address UNIT 15, HAMPTON FARM IND ESTATE, FELTHAM
Post Code TW13 8DR Tel: [REDACTED] Email: [REDACTED]

Address of building to which work relates

19 WOODSIDE GROVE, NORTH FINCHLEY
Post Code N12 8DT

Description of proposed works

SMALL SCOPY REAR/SIDE EXTENSIONS

If the proposed work involves Building Regulation Requirement P1: Electrical Safety, Please confirm whether you are intending to use an Authorised Competent Person. YES/NO
If no, please also submit form LBB/BC/Part P found on our website.

Use of building

1. If new building or extension please state the use: KITCHEN
2. If existing building please state present use: RESIDENTIAL

Method of drainage (e.g. to public sewer, septic tank, cesspit)

1. Foul water PUBLIC SEWER
2. Surface water EXISTING WATER COURSE

Building notice charge

1. Internal floor area of proposed works 16.99 square metres
 2. Estimated 100% cost of the works £.....
 3. Domestic charges £.....
 4. Non domestic charges £.....
- Total payable including VAT £ 655.20

Completion certificate

On completion of the works I require a completion certificate

☒ YES ☐ NO

Signature

Applicant/Agent/Builder

Date

11/3/2013

Date Received:

BUILDING NOTICE FORM

Ferrie, Jessica

B/13/5737

From: [REDACTED]
Sent: 03 July 2013 19:39
To: Building Control
Subject: Fwd: 19 WOODSIDE GROVE
Attachments: SIDE TO SIDE BEAM E.pdf; ATT880178.htm; 19WOOD~SIDE TO SIDE BEAM.PDF; ATT880179.htm

NZ

Nicholas Lees

020 8359 4638 - 9.00-10.00 or 4.00-5.00
Senior Surveyor, Building Control.

Sent email 9/7/13
asking for codes for the
'hanging' connection details.

NZ

Development and Regulatory Services.

London Borough of Barnet, North London Business Park, Oakleigh Road South,
London N11 1NP

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F/13/5734

SAUD AHMAD & ASSOCIATES
87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. [REDACTED]

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Made by S

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS Page 1

Job number: 05/0712

L.A. copy

* SuperBeam 4.60a 452054

19WOOD-1.SBW

Printed 3 Jul 2013 08:35

Beam: E (NEW SIDE TO SIDE BEAM)

Span: 1.9 m.

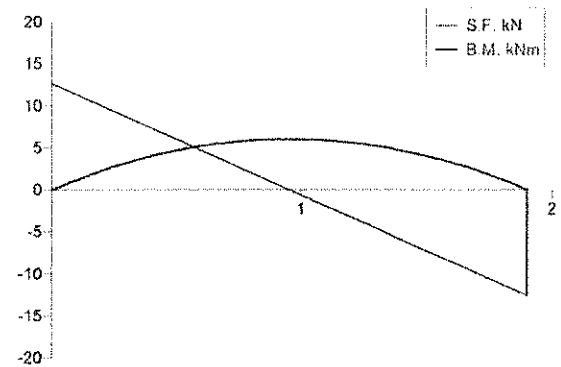
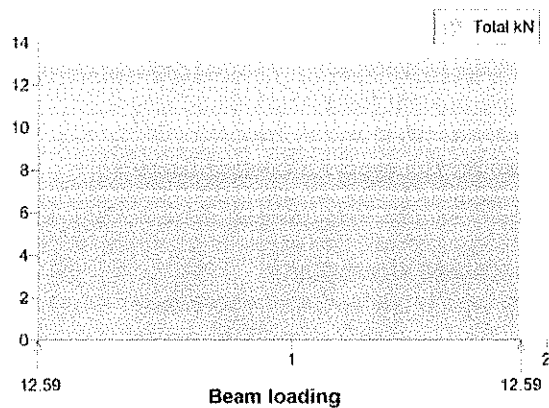
	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U T	o.w.	0.15	0		L	0.14	0.14
U T	Wall	2X2.5	0		L	4.75	4.75
U T	Floor	2X4.1/2	0		L	3.89	3.89
U T	Floor	2X4/2	0		L	3.80	3.80
						12.59	12.59

Total load: 25.17 kN

Load types: U:UDL T: Total (positions in m. from R1)

Maximum B.M. = 5.98 kNm at 0.95 m. from R1

Maximum S.F. = 12.6 kN at R1

Total deflection = $2.25 \times 10^{-8} / EI$ at 0.95 m. from R1 (E in N/mm^2 , I in cm^4)

Steel calculation to BS449 Part 2 using S275 steel

SECTION SIZE : 127 x 76 x 13 UB S275D=127.0 mm B=76.0 mm t=4.0 mm T=7.6 mm $I_x=473 \text{ cm}^4$ $r_y=1.84 \text{ cm}$ $Z_x=75.0 \text{ cm}^3$ $L_E/r_y = 1.90 \times 100/1.84 = 103$ D/T = 16.7Permissible bending stress, $p_{bc} = 139.7 \text{ N/mm}^2$ (Table 3a)Actual bending stress, $f_{bc} = 5.98 \times 1000/75.0 = 79.7 \text{ N/mm}^2$ OKMaximum shear in web, $f_s = 12.6 \times 1000/(4.0 \times 127.0) = 24.8 \text{ N/mm}^2$ OK

Check unstiffened web capacity with load of 12.59 kN

Bearing: $p_b = 210 \text{ N/mm}^2$ (Table 9); C1 = 22.1 kN; C2 = 0.840 kN/mmBuckling: $p_c = 149 \text{ N/mm}^2$ (Table 17a); C1 = 37.8 kN; C2 = 0.596 kN/mmUnstiffened web bearing capacity, $P_w = 22.1 \text{ kN}$; no minimum stiff bearing length requiredTotal deflection = $2.25 \times 10^{-8} / (205,000 \times 473) = 2.3 \text{ mm}$ (L/819) OKCombined bending and shear check (14.c): $(f_{bc}/p_{bc})^2 + (f_s/p_s)^2 = 0.325$ at 0.95 m. (≤ 1.25 OK)

SAUD AHMAD & ASSOCIATES

87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. 07930880404

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Made by S

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Page 2

Job number: 05/0712

L.A. copy

• SuperBeam 4.60a 452054

19WOOD-1.SBW

Printed 3 Jul 2013 08:35

Bearings

R1: User-entered

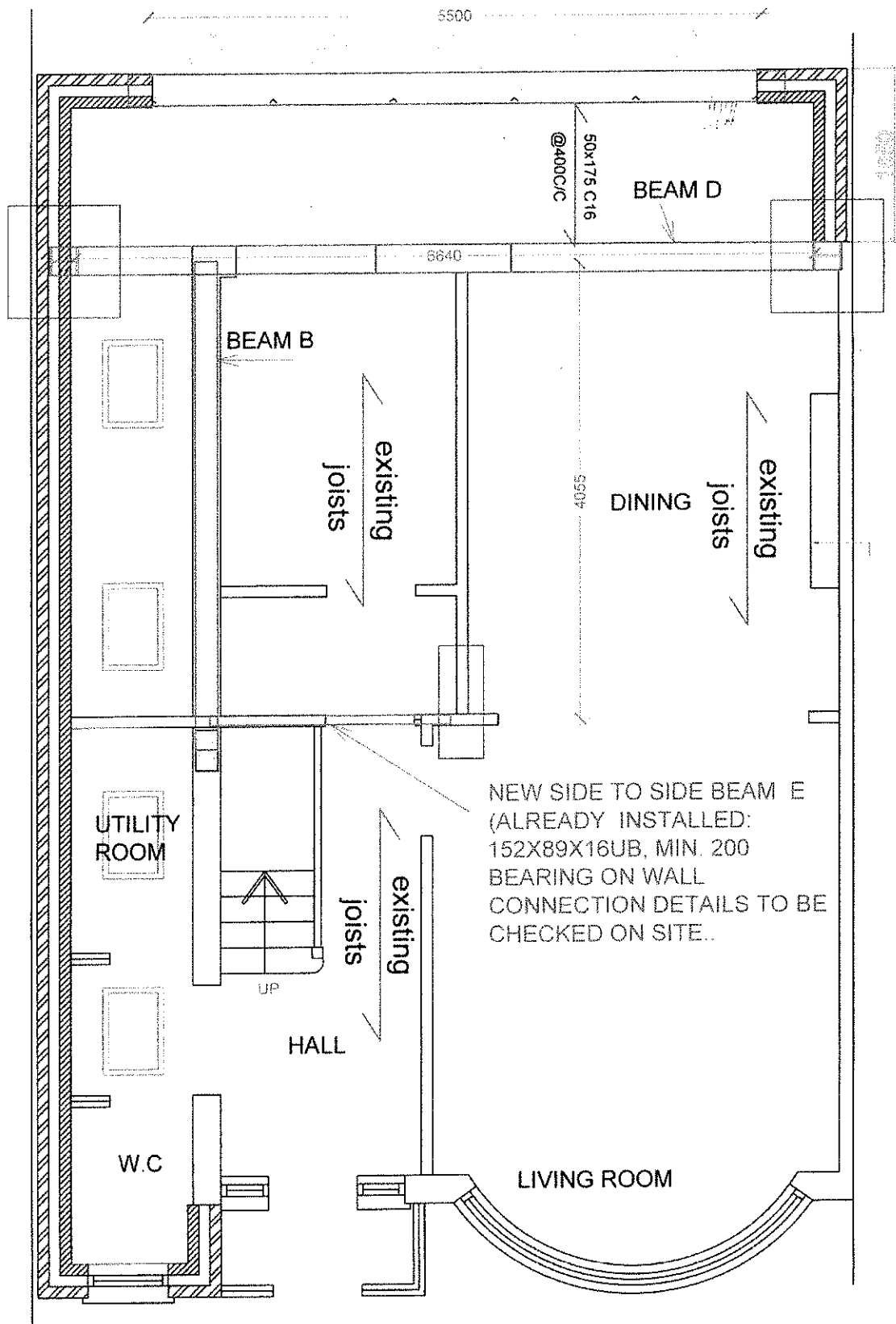
Factored reaction = $12.59 \times 1.55 = 19.51$ kN

CONNECTION DETAILS TO BEAM B TO BE CONFIRMED ON SITE.

R2: User-entered

Factored reaction = $12.59 \times 1.55 = 19.51$ kN

MIN. 200 BEARING ON LB WALL.



4/15/15 5737

B/13/5737

SAUD AHMAD & ASSOCIATES

87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO [REDACTED]

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Made by S

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Page 1

Job number: 05/0712

L.A. copy

SuperBeam 4.60a 452054

19WOOD-1.SBW

Printed 16 Apr 2013 10:02

SuperBeam 4 UK Project Summary

Project started 6 Jul 2012 by S

Site address: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS.

Client: H S WINDOWS.

Job number: 05/0712

ITEMS:

- 1: Beam: A, Over Bi-folding doors.

Span: 5.6 m. Reactions: R1: 9.79 kN R2: 9.79 kN

Use 203 x 133 x 25 UB S275

- 2: Beam: B

Span: 4.1 m. Reactions: R1: 30.65 kN R2: 30.65 kN

Use 2No 203 x 102 x 23 UB S275

Sections to be bolted together with tube spacers or suitable alternative connections at max 1.5m c/s

- 3: Beam: C

Span: 4.1 m. Reactions: R1: 12.81 kN R2: 12.81 kN

Use 203 x 102 x 23 UB S275

- 4: Beam: D

Span: 6.7 m. Reactions: R1: 82.54 kN R2: 80.74 kN

Use 305 x 305 x 97 UC S275

- 5: Steel column: C1 & C2.

Unfactored load = 82.5kN

Section: 203 x 203 x 46 UC Grade 43 on 225 x 225 x 5mm base plate

Sum of stress ratios = 0.103 OK

- 6: Beam: roof joist

Span: 2.0 m. Reactions: R1: 0.90 kN R2: 0.90 kN

Use 50 x 122 C16

- 7: Steel column: C3

Unfactored load = 12.8kN

Section: 90 x 90 x 3.6 SHS Grade 43 on 100 x 100 x 5mm base plate

Sum of stress ratios = 0.102 OK

SAUD AHMAD & ASSOCIATES
87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. 07930880404

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Job number: 05/0712

Made by S

Page 2

L.A. copy

SuperBeam 4.60a 452054

19WOOD-1.SBW

Printed 16 Apr 2013 10:02

Beam: A, Over Bi-folding doors.

Span: 5.6 m.

	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U	T	o.w.	0.35		L	0.98	0.98
U	T	roof	1.7x3.7/2		L	8.81	8.81
						9.79	9.79

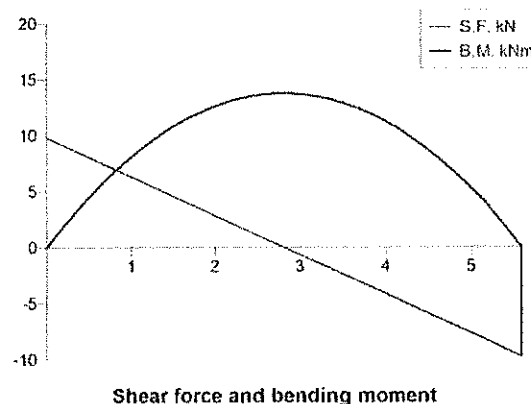
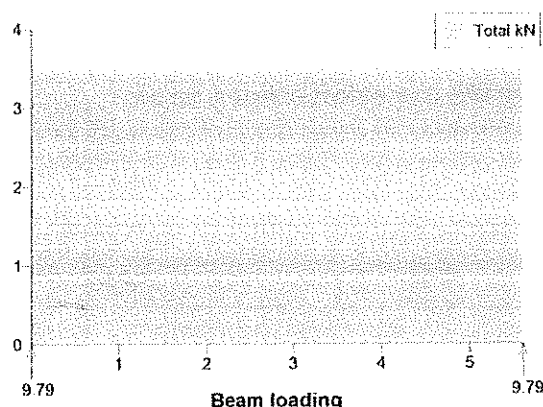
Total load: 19.57 kN

Load types: U:UDL T: Total (positions in m. from R1)

Maximum B.M. = 13.7 kNm at 2.80 m. from R1

Maximum S.F. = 9.79 kN at R1

Total deflection = $44.7 \times 10^{-6}/EI$ at 2.80 m. from R1 (E in N/mm^2 , I in cm^4)



Steel calculation to BS449 Part 2 using S275 steel

SECTION SIZE : 203 x 133 x 25 UB S275

$D=203.2$ mm $B=133.2$ mm $t=5.7$ mm $T=7.8$ mm $I_x=2,340$ cm⁴ $r_y=3.10$ cm $Z_x=230$ cm³

$L_E/r_y = 5.60 \times 100/3.10 = 181$ $D/T = 26.1$

Permissible bending stress, $p_{bc} = 78.3$ N/mm² (Table 3a)

Actual bending stress, $f_{bc} = 13.7 \times 1000/230.0 = 59.6$ N/mm² OK

Maximum shear in web, $f_s = 9.79 \times 1000/(5.7 \times 203.2) = 8.4$ N/mm² OK

Check unstiffened web capacity with load of 9.786 kN

Bearing: $p_b = 210$ N/mm² (Table 9); $C1 = 31.9$ kN; $C2 = 1.20$ kN/mm

Buckling: $p_c = 142$ N/mm² (Table 17a); $C1 = 82.0$ kN; $C2 = 0.807$ kN/mm

Unstiffened web bearing capacity, $P_w = 31.9$ kN: no minimum stiff bearing length required

Total deflection = $44.7 \times 1e8/(205,000 \times 2,340) = 9.3$ mm ($L/600$) OK

Combined bending and shear check (14.c): $(f_{bc}/p_{bc})^2 + (f_s/p_s)^2 = 0.579$ at 2.80 m. (≤ 1.25 OK)

SAUD AHMAD & ASSOCIATES
87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. 07930880404

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Job number: 05/0712

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SuperBeam 4.50a 452054

19WOOD-1.SBW

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Beam: B

Span: 4.1 m.

	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U T	o.w.	0.95	0		L	1.95	1.95
U T	Wall	4X2.5	0		L	20.50	20.50
U T	Roof	1.6X3.5/2	0		L	5.74	5.74
U T	f-ROOF	1.2X2/2	0		L	2.46	2.46
						30.65	30.65

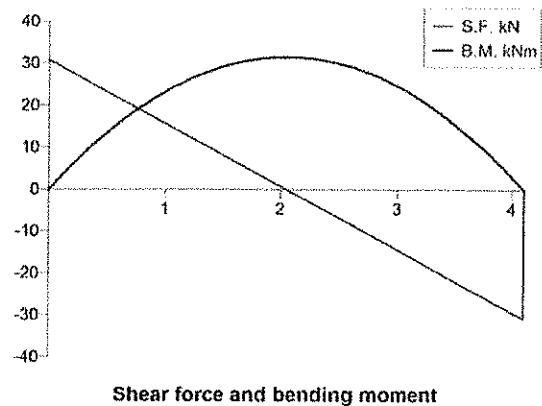
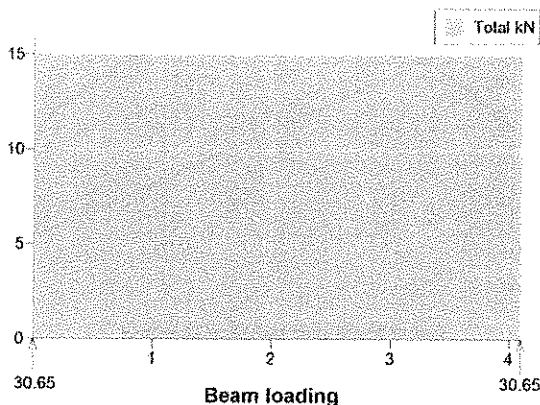
Total load: 61.29 kN

Load types: U:UDL T: Total (positions in m. from R1)

Maximum B.M. = 31.4 kNm at 2.05 m. from R1

Maximum S.F. = 30.6 kN at R1

Total deflection = $55.0 \times 10^8 / EI$ at 2.05 m. from R1 (E in N/mm^2 , I in cm^4)



Steel calculation to BS449 Part 2 using S275 steel

SECTION SIZE : 2No 203 x 102 x 23 UB S275

$D=203.2$ mm $B=101.8$ mm $t=5.4$ mm $T=9.3$ mm $I_x=2,110$ cm⁴ $r_y=2.36$ cm $Z_x=207$ cm³ (per section)

$L_E/r_y = 4.10 \times 100/2.36 = 174$ $D/T = 21.8$

Permissible bending stress, $p_{bc} = 87.8$ N/mm² (Table 3a)

Actual bending stress, $f_{bc} = 31.4 \times 1000/(2 \times 207.0) = 75.9$ N/mm² OK

Maximum shear in web, $f_s = 30.6 \times 1000/(2 \times 5.4 \times 203.2) = 14.0$ N/mm² OK

Check unstiffened web capacity with load of $30.65/2 = 15.32$ kN

Bearing: $p_b = 210$ N/mm² (Table 9); $C1 = 33.2$ kN; $C2 = 1.13$ kN/mm

Buckling: $p_c = 140$ N/mm² (Table 17a); $C1 = 76.6$ kN; $C2 = 0.754$ kN/mm

Unstiffened web bearing capacity, $P_w = 33.2$ kN; no minimum stiff bearing length required

Total deflection = $55.0 \times 1e8/(2 \times 205,000 \times 2,110) = 6.4$ mm ($L/645$) OK

Combined bending and shear check (14.c): $(f_{bc}/p_{bc})^2 + (f_s/p_s)^2 = 0.747$ at 2.05 m. (≤ 1.25 OK)

Sections to be bolted together with tube spacers or suitable alternative connections at max 1.5m c/s

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87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. 07930880404

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATION

Job number: 05/0712

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Beam: C

Span: 4.1 m.

	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U T	o.w.	0.25	0		L	0.51	0.51
U T	wall	2.4x2.5	0		L	12.30	12.30
						12.81	12.81

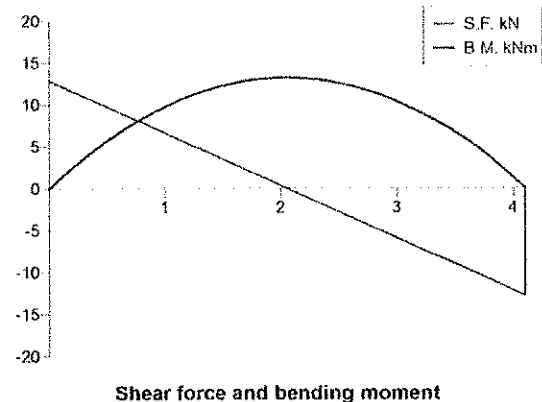
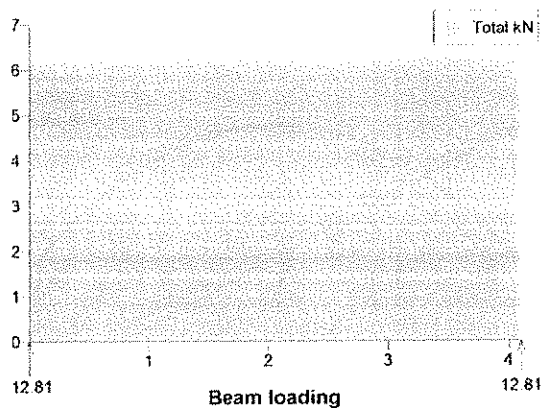
Total load: 25.62 kN

Load types: U:UDL T: Total (positions in m. from R1)

Maximum B.M. = 13.1 kNm at 2.05 m. from R1

Maximum S.F. = 12.8 kN at R1

Total deflection = $23.0 \times 10^{-6}/EI$ at 2.05 m. from R1 (E in N/mm^2 , I in cm^4)



Steel calculation to BS449 Part 2 using S275 steel

SECTION SIZE : 203 x 102 x 23 UB S275

$D=203.2$ mm $B=101.8$ mm $t=5.4$ mm $T=9.3$ mm $I_x=2,110$ cm⁴ $r_y=2.36$ cm $Z_x=207$ cm³

$L_E/r_y = 4.10 \times 100/2.36 = 174$ $D/T = 21.8$

Permissible bending stress, $p_{bc} = 87.8$ N/mm² (Table 3a)

Actual bending stress, $f_{bc} = 13.1 \times 1000/207.0 = 63.4$ N/mm² OK

Maximum shear in web, $f_s = 12.8 \times 1000/(5.4 \times 203.2) = 11.7$ N/mm² OK

Check unstiffened web capacity with load of 12.81 kN

Bearing: $p_b = 210$ N/mm² (Table 9); $C1 = 33.2$ kN; $C2 = 1.13$ kN/mm

Buckling: $p_c = 140$ N/mm² (Table 17a); $C1 = 76.6$ kN; $C2 = 0.754$ kN/mm

Unstiffened web bearing capacity, $P_w = 33.2$ kN; no minimum stiff bearing length required

Total deflection = $23.0 \times 10^{-6}/(205,000 \times 2,110) = 5.3$ mm ($L/771$) OK

Combined bending and shear check (14.c): $(f_{bc}/p_{bc})^2 + (f_s/p_s)^2 = 0.522$ at 2.05 m. (≤ 1.25 OK)

SAUD AHMAD & ASSOCIATES
87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. 07930880404

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Job number: 05/0712

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19WOOD-1.SBW

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Beam: D

Span: 6.7 m.

Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U T o.w.	2.7	0		L	9.05	9.05
U T F-Roof	1.2X1.5/2	0		L	3.01	3.01
R T Wall	4X2.5	1.2		L	22.57	32.43
R T Floor	2X4.1/2	1.2		L	9.26	13.29
R T Roof	1.65X4/2	1.2		L	7.45	10.70
P T Beam: B : R1	30.65 [B/F]	1.3			24.70	5.95
P T Beam: C : R1	12.81 [B/F]	3.3			6.50	6.31
					82.54	80.74

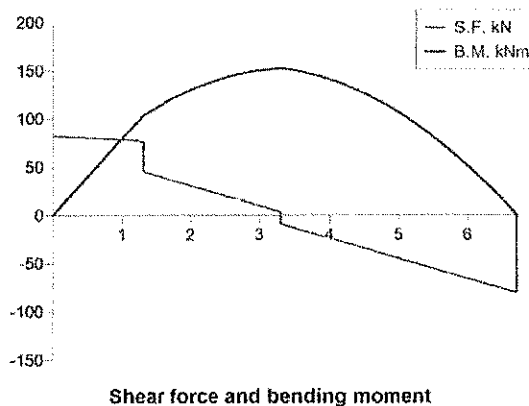
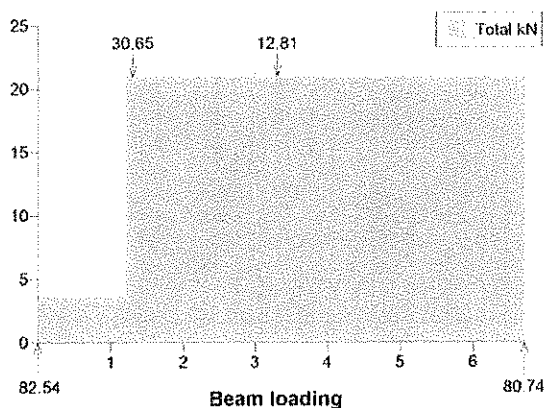
Total load: 163.28 kN

Load types: U:UDL R:Part UDL P:PL T: Total (positions in m. from R1)

Maximum B.M. = 153.1 kNm at 3.30 m. from R1

Maximum S.F. = 82.5 kN at R1

Total deflection = $703.1 \times 10^8 / EI$ at 3.29 m. from R1 (E in N/mm^2 , I in cm^4)



Steel calculation to BS449 Part 2 using S275 steel

SECTION SIZE : 305 x 305 x 97 UC S275

$D=307.9$ mm $B=305.3$ mm $t=9.9$ mm $T=15.4$ mm $I_x=22,300$ cm⁴ $r_y=7.69$ cm $Z_x=1,450$ cm³

$L_E/r_y = 6.70 \times 100/7.69 = 87$ $D/T = 20.0$

Permissible bending stress, $p_{bc} = 146.3$ N/mm² (Table 3a)

Actual bending stress, $f_{bc} = 153.1 \times 1000/1450.0 = 105.6$ N/mm² OK

Maximum shear in web, $f_s = 82.5 \times 1000/(9.9 \times 307.9) = 27.1$ N/mm² OK

Check unstiffened web capacities with loads of 82.54 kN and 80.74 kN

Bearing: $p_b = 210$ N/mm² (Table 9); $C1 = 110$ kN; $C2 = 2.08$ kN/mm

Buckling: $p_c = 148$ N/mm² (Table 17a); $C1 = 226$ kN; $C2 = 1.47$ kN/mm

R1: Unstiffened web bearing capacity, $P_w = 110$ kN: no minimum stiff bearing length required

R2: Unstiffened web bearing capacity, $P_w = 110$ kN: no minimum stiff bearing length required

Total deflection = $703 \times 1e8/(205,000 \times 22,300) = 15.4$ mm (L/436) OK

SAUD AHMAD & ASSOCIATES
87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. 07930880404

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATION

Job number: 05/0712

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Combined bending and shear check (14.c): $(f_{bc}/p_{bc})^2 + (f_s/p_s)^2 = 0.519$ at 3.22 m. (≤ 1.25 OK)

SAUD AHMAD & ASSOCIATES**87 HUNTERS GROVE, HAYES, UB3 3JF**

MOBILE NO [REDACTED]

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

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Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

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Job number: 05/0712

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*Steel column calculation to BS449 Part 2 using S275 steel***Location: C1 & C2.**

Length: 3.0 m.

Pos Load

A Beam: D : R1

Total kN

Total load

[B/F] 82.54

82.54

SECTION SIZE : 203 x 203 x 46 UC S275Gross area, $A_g = 58.7 \text{ cm}^2$ $B = 203.6 \text{ mm}$ $D = 203.2 \text{ mm}$ $T = 11.0 \text{ mm}$ $t = 7.2 \text{ mm}$ $r_x = 8.82 \text{ cm}$ $r_y = 5.13 \text{ cm}$ $Z_x = 450 \text{ cm}^3$ $Z_y = 152 \text{ cm}^3$ Major axis: $L_{Ex} = 1.0L = 3.00 \text{ m}$. Slenderness, $\lambda_x = 3.00 \times 100/8.82 = 34.0$ Minor axis: $L_{Ey} = 1.0L = 3.00 \text{ m}$. Slenderness, $\lambda_y = 3.00 \times 100/5.13 = 58.5 \leftarrow$ Compressive strength, $p_c = 136.5 \text{ N/mm}^2$ (Table 17a)

Member is axially loaded only:

Axial load = 82.54 kN

Compressive resistance = $58.7 \times 100 \times 136.5/1000 = 801.4 \text{ kN OK}$ **Baseplate calculation** *(considering axial load only)*

Factor load by 1.60 (user selected value): factored load on base = 132.068 kN

Concrete strength, $f_{cu} = 20 \text{ N/mm}^2$ Minimum area required = $F_c/0.6f_{cu} = 132.07 \times 1000/(0.6 \times 20) = 11,006 \text{ mm}^2$ K (min reqd proj) = 4.27mm Minimum base plate size = 212 x 213mmMinimum thickness = $K\sqrt{(3 \times 0.6f_{cu}/p_{yp})} = 1.54 \text{ mm}$ ($p_{yp} = 275 \text{ N/mm}^2$)

Use 225 x 225 x 5mm base plate

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87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. [REDACTED]

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Job number: 05/0712

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Beam: roof joist

Span: 2.0 m.

	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U	T o.w.	0.1	0		L	0.10	0.10
U	T roof	2x.4	0		L	0.80	0.80
						0.90	0.90

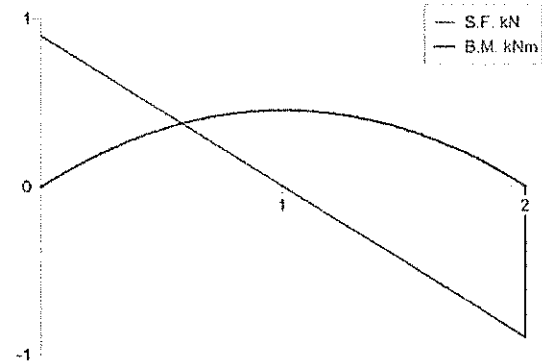
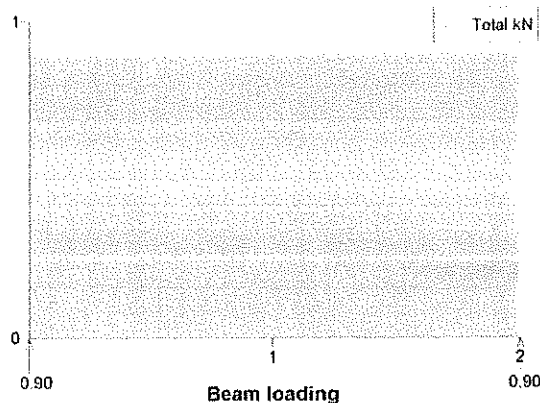
Total load: 1.80 kN

Load types: U:UDL T: Total (positions in m. from R1)

Maximum B.M. = 0.450 kNm at 1.00 m. from R1

Maximum S.F. = 0.900 kN at R1

Total deflection = $0.187 \times 10^8 / EI$ at 1.00 m. from R1 (E in N/mm^2 , I in cm^4)



Shear force and bending moment

Timber beam calculation to BS5268 Part 2: 2002 using C16 timber

Use 50 x 122 C16 2.3 kg/m approx

$z = 124.0 \text{ cm}^3$ $I = 757 \text{ cm}^4$

Timber grade: C16 4 members acting together: $K_8 = 1.1$

K_3 (loading duration factor) = 1.00 K_7 (depth factor) = 1.104 K_8 (load sharing factor) = 1.1

$E = 5,800 \times 1.24 = 7,192 \text{ N/mm}^2$ ($E_{min} \cdot K_9$)

Bending

Permissible bending stress, $\sigma_{m,adm} = \sigma_{m,g} \cdot K_3 \cdot K_7 \cdot K_8 = 5.3 \times 1.00 \times 1.104 \times 1.1 = 6.44 \text{ N/mm}^2$

Applied bending stress, $\sigma_{m,a} = 0.450 \times 1000 / 124.0 = 3.63 \text{ N/mm}^2$ OK

Shear

Permissible shear stress, $\tau_{adm,II} = \tau_{g,II} \cdot K_3 \cdot K_8 = 0.67 \times 1.00 \times 1.1 = 0.74 \text{ N/mm}^2$

Applied shear stress, $\tau_a = 0.900 \times 1000 \times 3/2 \times 50 \times 122 = 0.22 \text{ N/mm}^2$ OK

Deflection

Bending deflection = $0.187 \times 10^8 / (7,192 \times 757) = 3.45 \text{ mm}$

Mid-span shear deflection = $1.2 \times 0.450 \times 10^6 / ((E/16) \times 50 \times 122) = 0.20 \text{ mm}$

Total deflection = $3.45 + 0.20 = 3.64 \text{ mm}$ ($0.0018 L$) $\leq 0.003L$ OK

SAUD AHMAD & ASSOCIATES

87 HUNTERS GROVE, HAYES, UB3 3JF

MOBILE NO. [REDACTED]

Site: 19 WOODSIDE GROVE, NORTH FINCHLEY, N19.

Job: SINGLE STOREY SIDE & REAR EXTENSION WITH INTERNAL ALTERATIONS

Job number: 05/0712

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Steel column calculation to BS449 Part 2 using S275 steel

Location: C3

Length: 3.0 m.

Pos Load

A Beam: C : R1

Total load

Total kN

[B/F] 12.81

12.81

SECTION SIZE : 90 x 90 x 3.6 HF SHS S275 (9.66kg/m)

Gross area, $A_g = 12.3 \text{ cm}^2$ $B = 90.0 \text{ mm}$ $D = 90.0 \text{ mm}$ $T = 3.6 \text{ mm}$ $t = 3.6 \text{ mm}$

$r_x = 3.52 \text{ cm}$ $r_y = 3.52 \text{ cm}$ $Z_x = 34.0 \text{ cm}^3$ $Z_y = 34.0 \text{ cm}^3$

Major axis: $L_{Ex} = 1.0L = 3.00 \text{ m}$. Slenderness, $\lambda_x = 3.00 \times 100/3.52 = 85.2 \leftarrow$

Minor axis: $L_{Ey} = 1.0L = 3.00 \text{ m}$. Slenderness, $\lambda_y = 3.00 \times 100/3.52 = 85.2$

Compressive strength, $p_c = 101.8 \text{ N/mm}^2$ (Table 17a)

Member is axially loaded only:

Axial load = 12.81 kN

Compressive resistance = $12.3 \times 100 \times 101.8/1000 = 125.2 \text{ kN OK}$

Baseplate calculation (considering axial load only)

Factor load by 1.40 (user selected value): factored load on base = 17.937 kN

Concrete strength, $f_{cu} = 20 \text{ N/mm}^2$

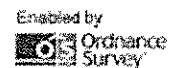
Minimum area required = $F_c/0.6f_{cu} = 17.94 \times 1000/(0.6 \times 20) = 1,495 \text{ mm}^2$

K (min reqd proj) = 0.363mm Minimum base plate size = 91 x 91mm

Minimum thickness = $K/(3 \times 0.6.f_{cu}/p_{yp}) = 0.131 \text{ mm}$ ($p_{yp} = 275 \text{ N/mm}^2$)

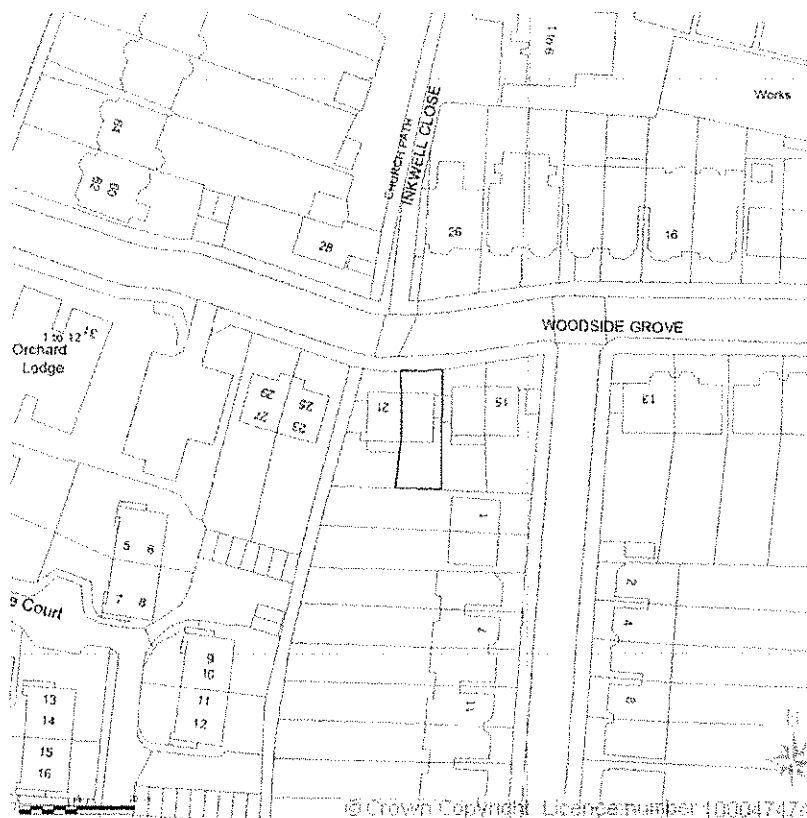
Use 100 x 100 x 5mm base plate

3/12/19322



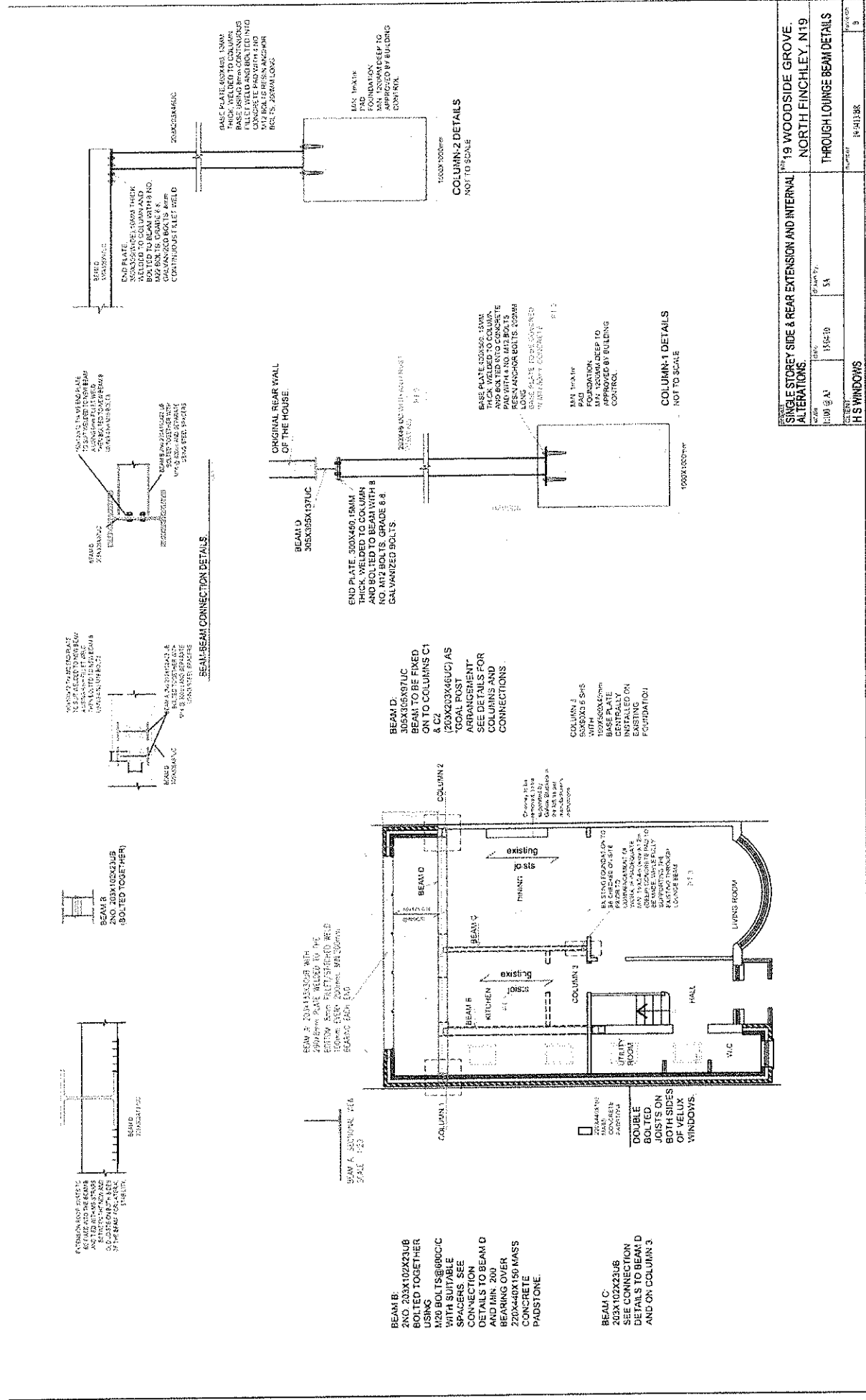
**SITE LOCATION PLAN
AREA 2 HA
SCALE 1:1250**

CENTRE COORDINATES: 526180, 193041

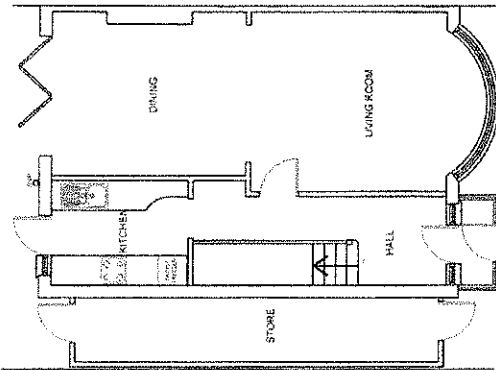


**SITE: 19 WOODSIDE GROVE,
NORTH FINCHLEY, N12 8QT.
PROPOSED: LOFT CONVERSION
WITH REAR DORMER UNDER
LAWFUL DEVELOPMENT**

754



8/13/5737

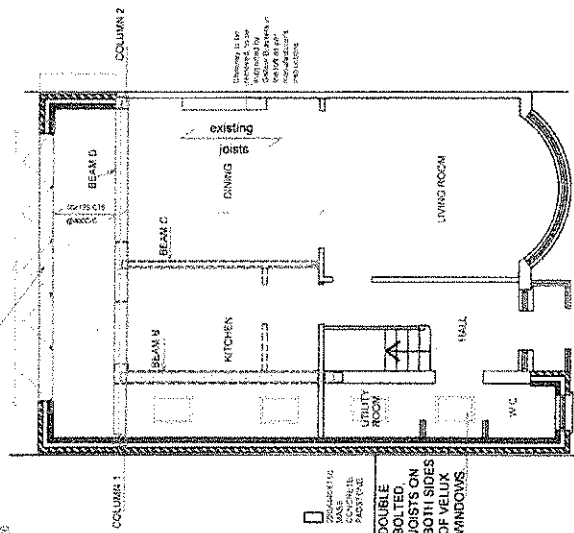


BEAM A SECTION VIEW
SCALE 1:20

BEAM A 203X102X23UB WITH
250MM STEEL PLATE WELDED TO THE
BOTTOM. BRIM PALE/PAINTED WELD
100mm CLEAR ROOM. VAN COMES
BEARING EACH END.

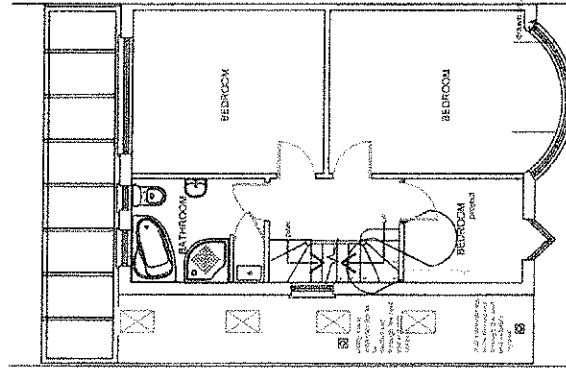
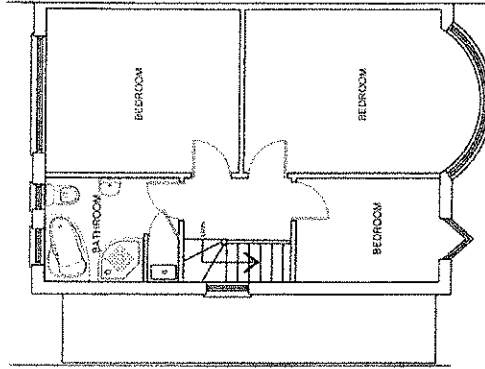
BEAM B:
2NO. 203X102X23UB
BOLTED TOGETHER
USING
M20 BOLTS@600C/C
WITH SUITABLE
SPACERS. SEE
CONNECTION
DETAILS TO BEAM D
AND MIN. 200
230X440X150 MASS
CONCRETE
PAVEMENT.

BEAM C:
203X102X23UB
BOLTED
JOISTS ON
BOTH SIDES
OF VELUX
WINDOWS.

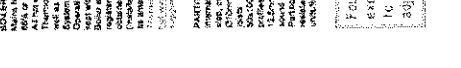


BEAM D:
305X105X87UC
BEAM TO BE FIXED
ON TO COLUMNS C1
& C2
(203X203X48UC) AS
"GOAL POST"
ARRANGEMENT
SEE DETAILS FOR
COLUMNS AND
CONNECTIONS.

Chimney is to be
removed to new
location. See
Colour Booklet in
specification for
details of new
chimney location.



PROJECT		19 WOODSIDE GROVE, NORTH FINCHLEY, N19	
SINGLE STOREY SIDE & REAR EXTENSION AND INTERNAL ALTERATIONS.		Drawn By	SA
THROUGH LOUNGE BEAM DETAILS		Scale	1:50 (B.A.)
H. SHINDOVS		Client	190413 TEL
		Drawn By	B

[illegible]

THROUGH LOUNGE DETAIL -

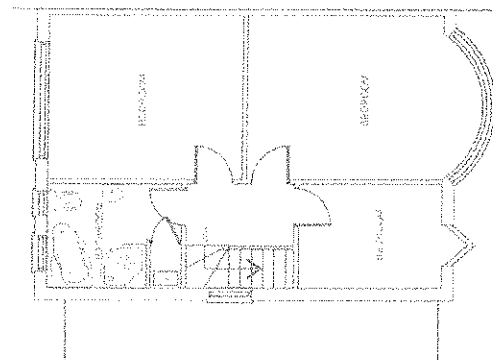
The drawing consists of two parts:

- Side Elevation (Left):** Shows a cross-section of the lounge assembly. Labels include:
 - Top horizontal member: 1x6-2x8 DOG
 - Vertical support post: 2x4 No. 1000 150W
 - Horizontal base plate: 1/2" x 6" x 10' 150W
 - Base material: 1000 150W base plate
 - Fasteners: bolts
- Plan View (Right):** Shows the top-down view of the assembly. Labels include:
 - Central vertical member: 4 1000 Grade C-1 sections 150w
 - Outer vertical members: 2x4 No. 1000 150W
 - Horizontal base plate: 1000 150W center plates cut in for seat 150W grouted after casting
 - Fasteners: bolts
 - Base material: 1000 150W base plate
 - Foundation: concrete footing

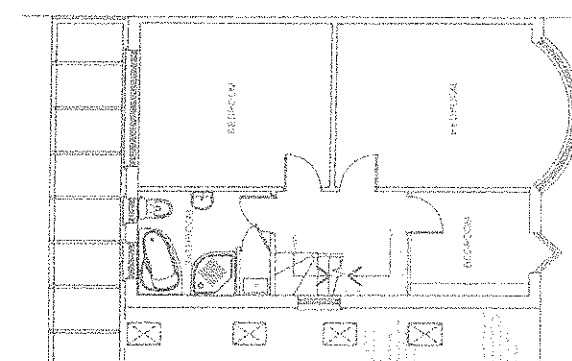
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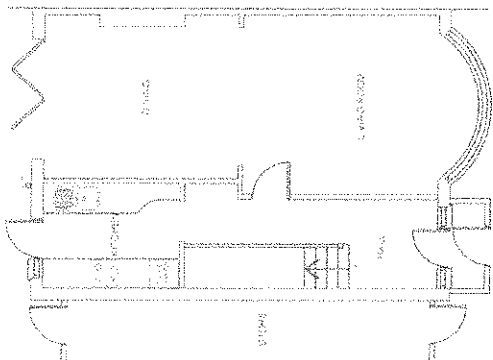
DATE: 05/11/2012
BY: [Signature]
CHECKED: [Signature]
SCALE: 1:100 @ A3



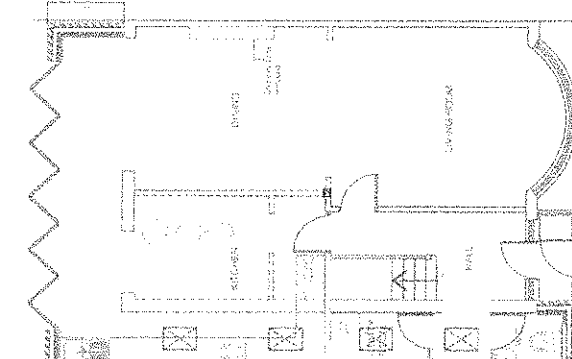
EXISTING FIRST FLOOR PLAN



PROPOSED FIRST FLOOR PLAN

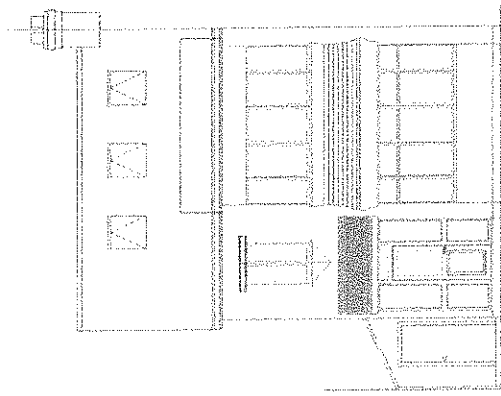
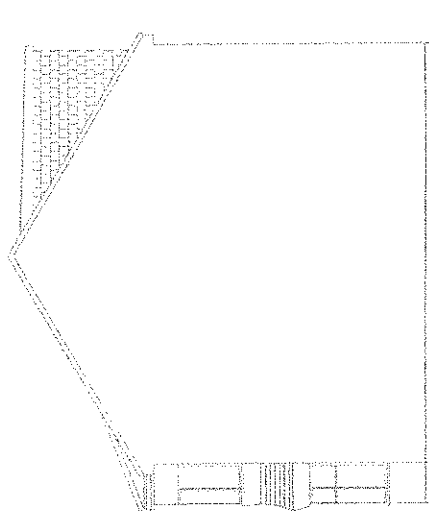
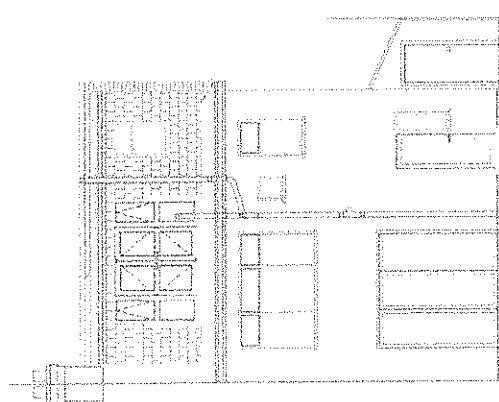
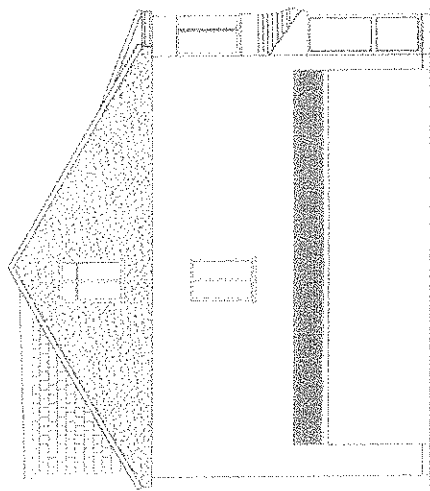


EXISTING GROUND FLOOR PLAN

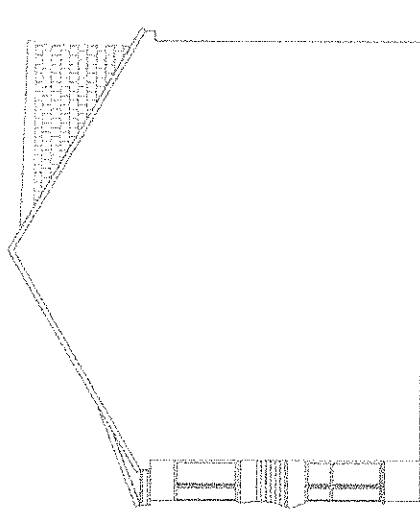
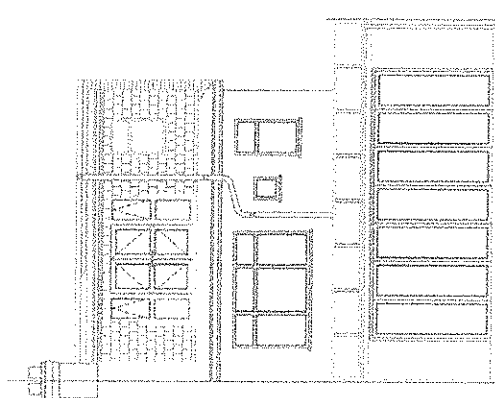
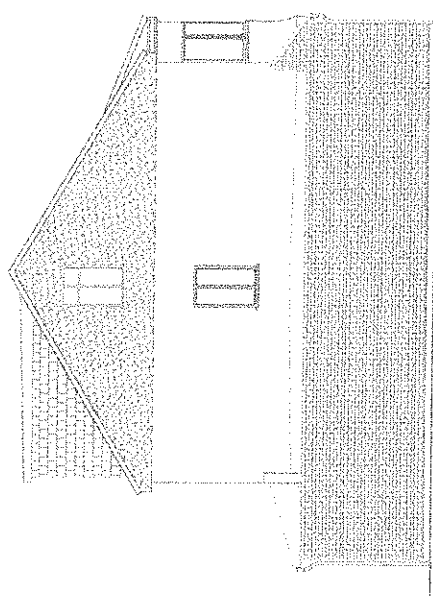
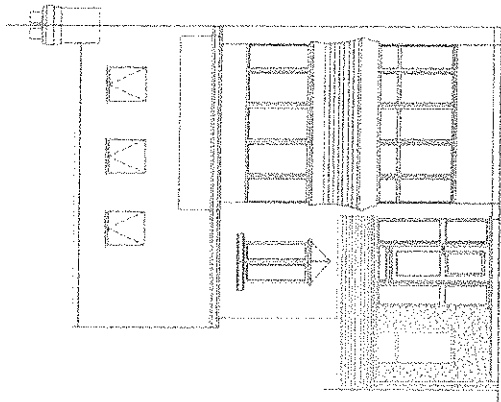


PROPOSED GROUND FLOOR PLAN

MCS DESIGN Architectural & Planning 33 Woodside, Victoria, 3141 Tel: 03 9591 1222 Fax: 03 9591 1223 Email: info@mcsdesign.com.au	Client MR. RICKY BABA
Site 19 WOODSIDE GROVE NORTH FINCHLEY, N19	Project SINGLE SIDE AND REAR EXTENSIONS
Title EXISTING & PROPOSED FLOOR PLANS	Author PLANNING APPLICATION
Drawing Number BABA/PLAN/01	Scale 1:100 @ A3
Date 05/11/2012	

[illegible]

 MCS DESIGN 53 Kew Road, Windsor, SA 5109 Tel: 0873 569117 Fax: 0873 569117 email: info@mcsgroup.com.au	ask: 0903191224 tel: 0873 569117 fax: 0873 569117 email: info@mcsgroup.com.au	MR. RICKY BABA 18 WOODSIDE GROVE, NORTH FINCHLEY, N19	SINGLE SIDE AND REAF EXTENSIONS	EXISTING ELEVATIONS	PLANNING APPLICATION	BABA/PLAN/01	1:100 @ A3	05/11/2012
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 MCS DESIGN INC. 29 Westland, Windsor, SA 5109	ask: 0785512524 tel: 01532 169111 fax: 01532 691117 email: clairem@mcsgroup.com	MR. RICKY BABA	01532 169111	18 WOODSIDE GROVE, NORTH FINCHLEY, N19	SINGLE SIDE AND REAF EXTENSIONS	PROPOSED ELEVATION	PLANNING APPLICATION	BABA/PLAN/02	1:100 @ A3	05/11/2012
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