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STRUCTURAL CALCULATIONS

FOR

MRS RABENA KHAN

@

29 BIRKLANDS ROAD, COWCLIFFE,
HUDDERSFIELD, HD2 2PF.

Design Summary: (See Sheet A1)

Notes:

- All dimensions and Beam Lengths to be confirmed and checked by builder on site prior to works commencing and materials being ordered
- All Beam Heights and Levels to be agreed with client on site.
- All steel to be minimum grade S275 (UNO)
- All Timber / Timber Packing to be minimum grade C16 (UNO)
- Minimum end bearing for steel to be 100mm (UNO)
- Minimum end bearing for timber to be 100mm
- Minimum end bearing for lintels to be 150mm
- All bolted connections to be Min. 4 No. M16 Grade 8.8 Bolts per 10mm end plates fully welded to flanges. Edge distance for bolts to be 30mm to bolting member (UNO)
- All welded connections for steel to be minimum 6mm fillet welds all round connecting member (UNO)
- All Beams to have minimum fire protection of 30 minutes or as required by building regulations
- All new masonry blockwork to be minimum 7.3 N/mm² strength
- All returns and loadbearing walls as shown on Architects drawings and mark ups
- All concrete to be minimum grade C30
- All ground conditions to approval of local authority / building inspector
- All temporary support works to builder/contractor's specification
- All party wall notices and approvals are client/contractor's responsibility.
- Hudds Design has not been appointed as CDM coordinator and is the responsibility of the builder.

ISSUED FOR BUILDING CONTROL APPROVAL:
HUDDS DESIGN

11th April 2024
Ref: HD-S24-0334

SHEET A1

Refer to sketch mark ups for references
Refer to Architects drawings for dimensions

DESIGN SUMMARY

'Rafters RR1'	Roof Rafters 75x150mm Deep Timber Rafters @400mm Ctrs Min Grade C24 Note: Double Up Rafters around Roof-lights
'Rafters RR2'	Roof Rafters 50x175mm Deep Timber Rafters @400mm Ctrs Min Grade C24 Note: Double Up Rafters around Roof-lights
'Flat Roof FRJ'	Flat Roof Joists 50x175mm Deep Timber Joists @400mm Ctrs Min Grade C24
'Dormer DC'	Dormer Cheeks 50x150mm Deep Loadbearing Timber Studs @600mm Ctrs Min Grade C24 Double up Timber at Window openings Double up rafters/floor joists below dormer cheeks
'Rafter DCR'	Dormer Cheek Rafter 3 No. 50x200mm Deep Timber Rafters Bolted together at 400mm ctrs using M12 Grade 8.8 bolts Min Grade C24
'Purlin P1'	152x152x23 UC 300x100x215mm Deep Concrete Padstones
'Purlin P2'	152x152x23 UC RB: 300x100x215mm Deep Concrete Padstone RA: To Be Supported Above / Bolted into Beam B2 Bolted connections to be Min. 4 No. M16 Grade 8.8 Bolts per 10mm end plates fully welded to flanges. Edge distance for bolts to be 30mm to bolting member (UNO)
'Beam B1'	2 No. 152x152x23 UC's 300x100x215mm Deep Concrete Padstones
'Floor LFJ'	Loft Floor Joists 75x150mm Deep Timber Joists @400mm Ctrs Min Grade C24
'Floor GFJ'	Ground Floor Joists 50x200mm Deep Timber Joists @400mm Ctrs Min Grade C24
'Trimmer T1'	Double Up Loft Floor Joists

SHEET A1 (CONTINUED)

‘Trimmer T2’	<p>152x152x23 UC 215x100x215mm Deep Concrete Padstones</p>
‘Existing Lintel EL’	<p>Provide 178x102x19 UB to inner leaf above Existing Cavity Wall Lintel with 215x100x215mm Deep Concrete Padstones <u>Min 150mm End Bearing</u></p>
‘Lintel L1’	IG L1/S Cavity Wall Lintel
‘Lintel L2’	IG L1/HD Cavity Wall Lintel
‘Lintel L3’	Naylor R9 100x215mm Deep Concrete Lintel per 100mm Wall
‘Lintel L4’	<p>Boot Lintel 203x203x46 UC with 10mm plate fully welded to bottom Min 6mm fillet welds 440x100x215mm Deep Concrete Padstones <u>Min 200mm End Bearing</u></p>
‘Moment Frame 1’	<p>Beam B2: 305x305x97 UC To be Bolted into Column C1 on both sides Min. 8 No. M20 Grade 8.8 Bolts per 10mm end plates fully welded to flanges. Edge distance for bolts to be 30mm to bolting member (UNO)</p> <p>Column C1: 203x203x46 UC Provide ties to masonry at 225mm ctrs Provide 400x400x12mm Thick Baseplate with 4 No. M20 Anchor bolts to New Pad Footing PF</p> <p>Pad Footing PF (OFFSET): 2.0mx2.0mx0.3m Deep Min Grade C30 concrete Bottom Reinforcement T16 Bars @200mm ctrs in both directions Minimum Cover to reinforcement 50mm</p>
‘Strip SF1’	<p>Strip Foundation 600x300mm Deep Concrete Strip Footing Min Grade Concrete C30</p> <p><u>Note: Provide Bridging Lintels as Naylor R9 100x215mm Deep Concrete Lintel per 100mm Wall as per requirement with min 500mm clearance between new footing and drain pipe</u></p>
‘Strip SF2’	<p>Strip Foundation 400x300mm Deep Concrete Strip Footing Min Grade Concrete C30</p> <p><u>Note: Provide Bridging Lintels as Naylor R9 100x215mm Deep Concrete Lintel per 100mm Wall as per requirement with min 500mm clearance between new footing and drain pipe</u></p>
‘Windpost WP’	<p>100x100x5 SHS with fixings top and bottom Fixed top and Bottom using 10mm cleats fully welded with 2 No. M12 grade 8.8 bolts. Fixings to wall plate, floor joists, steel beams as required. Ties at 225mm Ctrs</p>

SHEET A1 (CONTINUED)

‘GB’

Gallows Bracket (3 No @ Equal Ctrs)

80x80x8 RSA fully welded together to suit chimney width
with 10mm Plate over

3 No. M12 Rawl Bolts Shield Anchor Loose Bolts Per Bracket

All angles fully welded together

(Refer Sketch Page A12)

NOTE: TO BE PROVIDED ON SITE

- 10mm Plate over gallows bracket full width of chimney
- 3 No. M12 Rawl Bolts Shield Anchor Loose Bolts Per Bracket.
- BOLT SIZE TO BE M12 MINIMUM
- All angles fully welded together