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CALCULATION SHEET

Project 1 NICHOLAS WINTON COURT

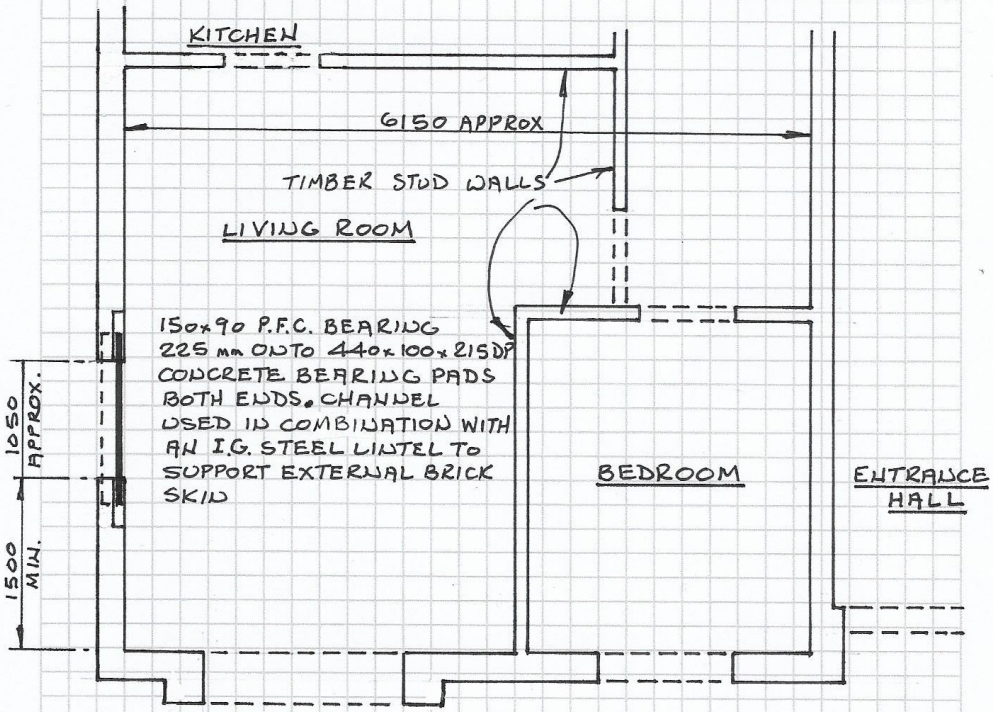
Location MAIDENHEAD SL6 8BB

Engineer M G DEAR

Job Number 544

Checked

Sheet No: SK/A Date: OCT. '17 Revision: Revision Date:



PART GROUND FLOOR PLAN OF FLAT 1 1:50

NOTES:

1) THE CONTRACTOR SHOULD NOTE THAT TEMPORARY SUPPORT REQUIRED TO FORM OPENING SUPPORTS A LOADING OF 3.0 TONNES.

2) STEELWORK TO BE GRADE S275 PRIMED BEFORE DELIVERY TO SITE.

3) STEELWORK TO BE FIRE PROTECTED USING 2N° SKINS OF 12.5 mm PLASTERBOARD WITH STAGGERED JOINTS.

4) CONTRACTOR TO PROVIDE LEVEL THRESHOLD WITH EASY RAMP AND ACO DRAIN CONNECTED TO SURFACE WATER DRAINAGE SYSTEM.

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STRUCTURAL INSPECTION OF FLAT 1 NICHOLAS WINTON COURT

FLAT 1 IS A GROUND FLOOR FLAT IN A SMALL TWO STOREY BLOCK OF FLATS (4 No° FLATS, 2 No° AT GROUND FLOOR, 2 No° AT FIRST FLOOR WITH A CENTRAL COMMON ENTRANCE CONTAINING THE STAIRCASE). THE EXTERNAL WALLS ARE OF CAVITY CONSTRUCTION, FIRST FLOOR OF CONCRETE ASSUMED TO BE OF PRECAST CONCRETE PLANKS AND A PITCHED TIMBER FRAMED ROOF TILE CLAD.

MY INSPECTION WAS PURELY VISUAL AND ACCESS WAS RESTRICTED TO FLAT 1 AND COMMON ENTRANCE AND FIRST FLOOR LANDING.

FROM MY INSPECTION OF FLAT 1 IT WAS EVIDENT THAT THE INTERNAL PARTITIONS ARE OF LIGHTWEIGHT CONSTRUCTION AND ARE NOT CONSIDERED LOADBEARING. I AM THEREFORE OF THE OPINION THAT THE CONCRETE FIRST FLOOR SLAB SPANS BETWEEN THE EXTERNAL FLANK WALLS AND INTERNAL WALLS SURROUNDING THE ENTRANCE HALL. WITH A SPAN OF 6.15 METRES I ASSUME PRECAST FLOOR PLANKS USED IN THE ORIGINAL CONSTRUCTION A 200mm DEEP HOLLOW CORE UNITS.

THE ROOF IS HIPPED TO ALL ELEVATIONS AND ASSUMED TO BE OF TRUSS RAFTER CONSTRUCTION DUE TO SPANS EXCEEDING 6.0 METRES.

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UNIT LOADING

			D.L	L.L
ROOF	TILING	=	0.84 KN/M²	
	FELT + BATTENS	=	0.10 "	
	TIMBER FRAME	=	0.15 "	
	CEILING	=	0.15 "	
	SERVICE + INSUL.	=	0.05 "	
	SUPER 0.6+0.25	=	0.85 KN/M²	0.85 KN/M²
			1.29 KN/M²	0.85 KN/M²
FACTORED 1.4 & 1.6		=	1.81 KN/M²	1.36 KN/M²
FIRST FLOOR	SCREED	=	1.55 KN/M²	
	200mm P.C. UNITS	=	3.00 "	
	SDS. CEILING	=	0.25 "	
	SERVICES + INSUL.	=	0.05 "	
DOMESTIC	SUPER	=	1.50 KN/M²	
			4.85 KN/M²	1.50 KN/M²
FACTORED 1.4 & 1.6		=	6.79 KN/M²	2.40 KN/M²

BRICKWORK 102.5 mm = 2.25 KN/M² FACT. 3.15 KN/M²

BLOCKWORK 100 mm PLASTERED 1F = 1.10 KN/M² FACT 1.54 KN/M²

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DESIGN LINTEL TO NEW DISABLED ACCESS DOOR

LOADING FACTORED

	ROOF	3.08 x 3.17	= 9.8 KN/M
(INNER SKIN ONLY)	WALL	2.5 x 1.54	= 3.9 "
	FIRST FLOOR	3.08 x 9.19	= 28.3 "
			42.0 KN/m.

SPAN 1.05M.

MOMENT = $42.0 \times 1.05^2/8$ = 5.8 KN.m.

USING A 150 x 90 P.F.C

l = 1050 x 1.2 (225) = 1485 mm

BY OBSERVATION l/r_{yy} SATISFACTORY

M_{cx} = 49.0 KN.m SATISFACTORY

M_b = 45.9 KN.m SATISFACTORY

DUE TO LOADING LINTEL TO BEAR 225 mm ONTO A 440 x 100 x 215 DP. CONCRETE BEARING PAD

FACTORED LOAD (0.525 + 0.44) x 42.0 = 40.5 KN

STRESS IN MASONRY $\frac{40.5 \times 10^3}{440 \times 100}$ = 0.92 N/mm²

ASSUMED TO BEAR ONTO A 7.0N/mm² BLOCKWORK

BY OBSERVATION SATISFACTORY

EXTERNAL BRICKWORK SKIN SUPPORTED OFF AN IG LINTEL IN COMBINATION WITH 150 x 90 P.F.C.