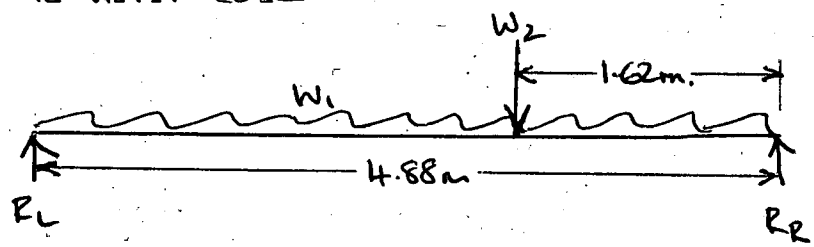
STRUCTURAL CALCULATIONS FOR BEAMS SUPPORTING STRUCTURE WHERE REAR WALL REMOVED AT 68 NEWSTEAD AVENUE. BURBAGE. LEICS FOR MR. S. VANES

275mm. cavity external wall to be supported across span of 4.88m. + associated structure

2ND Universal I section beams to be used bolted together

Inner beam is worst case



Assuming wallplate to main roof is supported by inner leaf of cavity wall

Then Roof load = 2.75 KN/m.run

Floor joists to 1st flr. run parallel to beams

wt. of inner skin = 1.66 /m² x 0.8 red. factor for windows

= 1.32 KN/m² or 3.23KN/m. run

∴ Total distributed load W_1 = 5.98 KN/m. run

Estimated self wt. + casing = 0.5 KN/m. run

Transferred S.L. from Roof = 1.2 KN/m. run

∴ Total U.D.L. = 7.68KN x 4.88 = 37.5 KN.

Point load W_2 = floor load D.L. + S.L. = 0.38 + 1.3 = 1.68KN/m²

Total floor load = 1.68 x 1.15 x 2.71 = 5.24 KN.

Adding transferred wt. of 1st flr. stud ptn.

= 0.45 x 2.3 x 1.4 = 1.45 KN.

∴ total point load W_2 = 6.69 KN