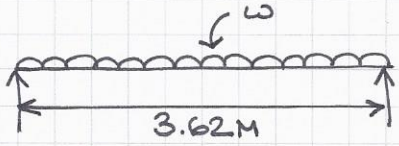
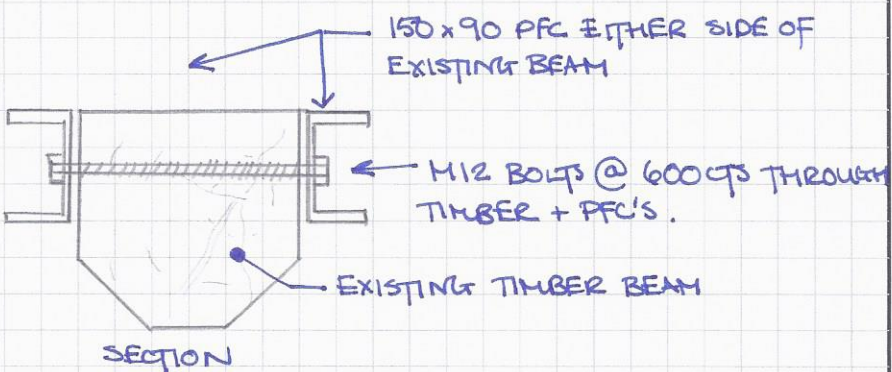


Project TY NEWYDD, LANFECHAIN BEAM UNDER KITCHEN FLOOR	Job No. GH0191	Eng. AE
	Date SEPT-22	Sheet No.
Reference	Calculation	
	<p>S.W. OAK BEAM = <math>750 \text{ kg/m}^3 = 7.4 \text{ kN/m}^3</math></p> <p><math>W_{DL} = 7.4 \times 0.29 \times 0.29 = 0.62 \text{ kN/m}</math></p> <p>NEW BEAMS UNDER KITCHEN FLOOR:</p>  <p style="text-align: right;">LOADED WIDTH = 1.9m</p> <p>DEAD LOAD:</p> <p>DL FLOORS = <math>0.6 \text{ kN/m}^2</math></p> <p>TOTAL DL = <math>(1.9 \times 0.6) + 0.62 = 1.76 \text{ kN/m}</math></p> <p>LIVE LOAD:</p> <p>DOMESTIC - RESIDENTIAL ONLY = <math>1.5 \times 1.9 = 2.85 \text{ kN/m}</math></p> <p><math>W_{ULS} = 1.35 \times 1.76 + 1.5 \times 2.85 = 6.7 \text{ kN/m}</math></p> <p><math>M_{MAX} = \frac{6.7 \times 3.62^2}{8} = 11 \text{ kNm}</math></p> <p><math>V_{MAX} = \frac{6.7 \times 3.62}{2} = 12.2 \text{ kN}</math></p> <p>FOR LOADSHARING BETWEEN 2 PFC'S:</p> <p><math>M_{MAX} = 5.5 \text{ kNm} \quad V_{MAX} = 6.1 \text{ kN}</math></p> <p><math>I_{xx \text{ REQ}} = \frac{5}{384} \times \frac{2.3 \times 3.62^4}{0.01 \times 205 \times 10^6} = 251 \text{ cm}^4</math></p> <p>∴ USE 2 NO. 150 x 90 PFC</p> <p><math>M_c = 30.2 \text{ kNm} \quad I_{xx} = 1160 \text{ cm}^4 \quad \therefore \text{OK.}</math></p>	

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Reference	Calculation
	 <p>150 x 90 PFC EITHER SIDE OF EXISTING BEAM</p> <p>M12 BOLTS @ 600CTS THROUGH TIMBER + PFC'S.</p> <p>EXISTING TIMBER BEAM</p> <p>SECTION</p> <ul style="list-style-type: none"> <li>• FLOOR JOISTS TO BEAR ONTO PFC'S.</li> <li>• PFC'S TO BE <u>GALVANISED</u> FINISH</li> <li>• <u>DO NOT</u> SPLICE PFC'S</li> <li>• EACH PFC END TO BEAR ON CONCRETE PADSTONE MIN 140 DP WITH 100MM BEARING</li> </ul>