

project	5 Penryn St	date	07/15	page	15639/01
		engineer		checked	
	<u>New Valley Beam</u>				output
	<u>LOADING</u>				
	Roof DL 0.75 kN/m2 x 4.3m/2	1.6	x1.4	2.2	
	Roof LL (0.75 + 0.25)kN/m2 x 4.3m/2	2.2	x1.6	3.5	
	Beam s/w	0.2	x1.4	0.3	
	TOTAL	4.0kN/m2 SLS		6.0kN/m2 ULS	
	Try 2nd 125x65x15 PFC				
	BM max ULS = 6.0/2 x 3.9^2/8 = 5.7kNm ULS				
	From tables for Le=3.9m				
	Mb = 12.8kNm ULS > 5.7kNm therefore OK				
	check deflection				
	δ ≈ 5 x [4.0/2] x 3.9^4 x E3 ÷ (384 x 2.05 x 483) = 6.1mm				
	δ LL allowable = 3900/360 = 10.8mm therefore OK				
	use 125x65x15 PFC				
	<u>New Backing Lintel</u>				
	Try 125x65x15 PFC				
	Span 1.25m				
	<u>UDL</u>				
	Wall 5.0x75m 3.8kN/m SLS x1.4 5.3kN/m ULS				
	<u>Point Load</u>				
	Roof DL 0.75 x 4.3m/2 x 3.9m/2 3.1 x1.4 4.3				
	Roof LL 1.0 x 4.3m/2 x 3.9m/2 4.2 x1.6 6.7				
	Beam s/w 0.2 x1.4 0.3				
	7.5kN/m SLS 11.3kN/m ULS				
	BM max ≈ 5.3x1.25^2/8 + 11.3x1.25/4 = 4.0kNm ULS				
	From tables for Le=1.25m				
	Mb = 22.5kNm ULS > 4.0kNm therefore OK				