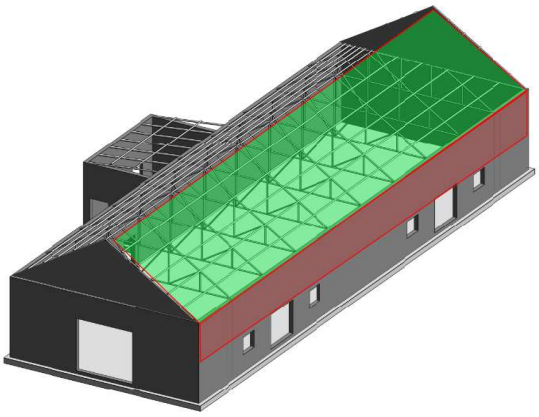
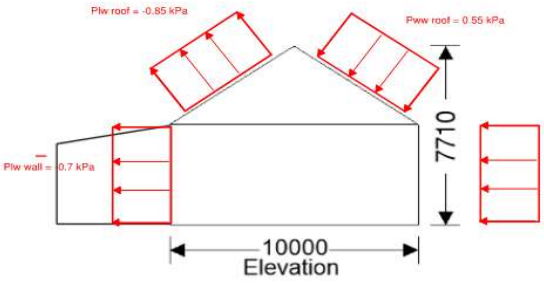
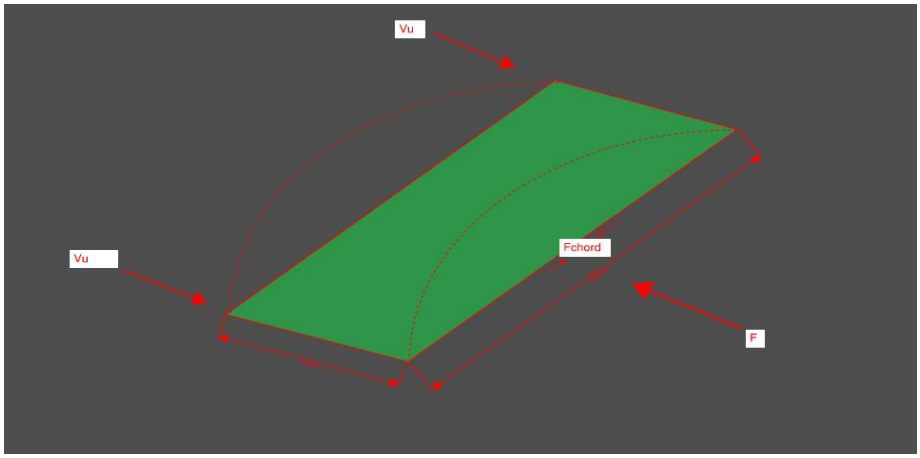
Roof Diaphragm Forces







Length of Diaphragm	L =	30	m
Depth of Diaphragm	d =	10	m
Force at roof Diaphragm Level	F =	249.15	kN
Max Shear at end gable wall	**Vu = F/2 =**	**124.575**	**KN**
Max Moment in Diaphragm	Mu = F*L/4 = (249.15 * 30)/4 =	1868.6	kNm
Chord Force along diaphragm	Fchord = Mu/d = 1868/10	186.9	kN
Number of Trusses	N_{truss} =	9	trusses @ 3
Lateral Reaction per truss (in long direction)	Rx = $_{chord}/N_{truss}$ =	20.76	kN/truss
Shear per bolt (2 bolts per truss)	R_{xbolt} = Rx/2	**10.38**	**kN/bolt**
		2.33	**kips/bolt**

[See calc 2]

3m