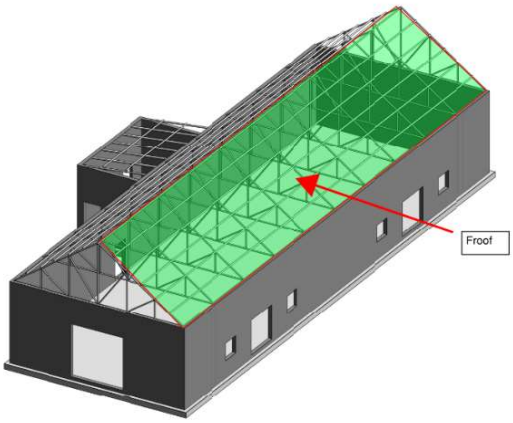
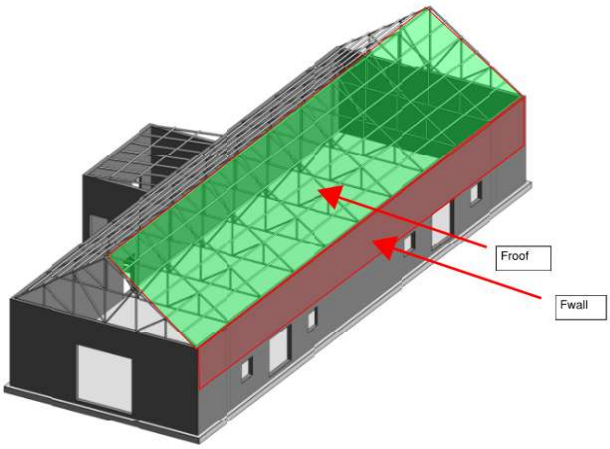
Truss Hand Calculation

Calc 1: Assuming Truss Supports Take Wind load from roof only



Net Wind Force on Roof (Windward + Leeward)	p_{net} =	1.4	kPa
Area of roof	A_{roof} = (3.2m high x 30m long) =	96	m2
Total Lateral Force acting on Roof	$F_{roof} = p_{net} * A_{roof}$ =	134.4	kN
Total Number of Trusses on Roof System	N_{truss} =	9	trusses @ 3m
Lateral Reaction per truss (assuming simply suported)	$Rx = F_{roof}/N_{truss}$ =	14.93	kN/truss
Shear per bolt (2 bolts per truss)	$R_{xbolt} = Rx/2$	**7.47**	**kN/bolt**
		1.67	**kips/bolt**

Calc 2: Assuming Roof system acts as a diaphragm and takes wind load from truss and top half of wall height



Net Wind Force on Tributary Wall (Windward + Leeward)	p_{net} =	1.7	kPa
Area of Wall	A_{wall} = (2.25 high x 30m long) =	67.5	m2
Total Lateral Force acting on Wall	$F_{wall} = p_{net} * A_{roof}$ =	114.75	kN
Total Lateral Force acting at roof level	F = Froof + Fwall =	249.15	
Total Number of Trusses on Roof System	N_{truss} =	9	trusses @ 3m
Lateral Reaction per truss (assuming simply suported)	$Rx = F_{roof}/N_{truss}$ =	27.68	kN/truss
Shear per bolt (2 bolts per truss)	R_{xbolt} = Rx/2	**13.84**	**kN/bolt**
		3.10	**kips/bolt**