Company Name	**Pythons & Co**	**Project Title**	**Asimple block of flats**
Group/Team Name	**Flying Circus**	**Subtitle**	**Abattoir**
Designer	**Mr. Wiggin**	**Job Number**	**1.1.4.1.2**
Date	**20 /06 /2018**	**Client**	**Mr. Tid**

Design Conclusion	
Seated Angle	**Fail**
Seated Angle	
Connection Properties	
Connection	
Connection Title	Seated Angle
Connection Type	Shear Connection
Connection Category	
Connectivity	Column flange-Beam flange
Beam Connection	Bolted
Column Connection	Bolted
Loading (Factored Load)	
Shear Force (kN)	140.0
Components	
Column Section	SC 140
Material	Fe 410
Hole	Standard
Beam Section	MB 200
Material	Fe 410
Hole	Standard
Seated Angle Section	110 110 X 16
Material	Fe 410
Hole	Standard
Top Angle Section	90 90 x 8
Material	Fe 410
Hole	Standard
Bolts	
Type	Bearing Bolt
Grade	6.8
Diameter (mm)	12
Bolts - Required	8
Bolts - Provided	8
Rows	2
Columns	4

Gauge (mm)	16
Pitch (mm)	31.0
End Distance (mm)	35
Edge Distance (mm)	25
Assembly	
Column-Beam Clearance (mm)	10.0

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Design Preferences	
Bolt	
Hole Type	Standard Hole
Material Grade Fu (MPa) (overwrite)	800
Detailing	
Type of Edge	Sheared or hand flame cut
Minimum Edge Distance check multiplier	1.7 * bolt_hole_diameter
Are members exposed to corrosive influences?	Yes
Gap between Beam and Column (mm)	10.0
Design	
Design Method	Limit State Design

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Design Check			
Check	**Required**	**Provided**	**Remark**
Bolt Checks			
Bolt shear capacity (kN)	V_{dsb} = bolt_fu* (pi*0.78/4)*bolt_diameter^2/(√3)/$gamma_{mb}$ [cl. 10.3.3]	V_{dsb} = 600* (0.6126)*12^2/(√3)/1.25/1000 = 23.4	
Bolt bearing capacity (kN)	V_{dpb}: [Cl. 10.3.4]	V_{dpb} = 2.5*0.519*12*5.7*410/1.25/1000) = 61.3 kN	
Bolt capacity (kN)	min (bolt_shear_capacity, bolt_bearing_capacity)	min (23.4, 61.3) = 23.4	
No. of bolts	140.0/23.4 = 6.0	8	**Pass**
No. of columns		4	
No. of row(s)	≤ 2	2	
Bolt pitch (mm)	≥ 2.5* 12 = 30, ≤ min(32*12.0, 300) = 300.0 [cl. 10.2.2]	31.0	**Pass**
Bolt gauge (mm)	≥ 2.5*12 = 30, ≤ min(32*12.0, 300) = 300.0 [cl. 10.2.2]	16	**Fail**
End distance (mm)	≥1.7*13 = 23	35	**Pass**
Edge distance (mm)	≥1.7*13 = 23 [cl. 10.2.4.2] As the members are exposed to corrosive influences: [Cl 10.2.4.3] ≤ min(12*12.0*sqrt(250/250), 40 + 4*12.0) = 88.0	25	**Pass**
Seated Angle 110 110 X 16			
Length (mm)	= min(100.0, 140.0)	100	

Outstanding leg length (mm)	[Cl. 8.7.4] = (140.0*1000*1.1/(250*5.7)) + 10.0	110	**Fail**
Shear capacity of outstanding leg (kN)	$V_{dp} \geq V$ $V_{dp} \geq 140.0$kN [Cl. 8.4.1]	= (100*16.0)*250/ (√ 3 *1.1) = 254.0	**Pass**
Moment capacity of outstanding leg (kN-mm)	As $V \leq 0.6\ V_d$, [Cl 8.2.1.2] is applicable $M_d \geq$ Moment at root of angle $M_d \geq 4060.7$	M_d = min(beta$_b$Z$_e$f$_y$/gamma$_{m0}$, 1.5Z$_e$f$_y$/gamma$_{m0}$) = min(1.0* 100* (16.0^2/6)*250/1.1, 1.5*100* (16.0^2/6)*250/1.1) = 969.7	**Fail**
Top Angle			
Section	Recommended size (based on stability only): 55 55 X 6	User selected size: 90 90 x 8	
End distance (mm)	≥1.7*bolt_hole_diameter [cl. 10.2.4.2] ≥1.7*13 = 23	on leg connected to Beam: 40 on leg connected to Column: 40	**Pass**

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Additional Comments	This is a sample design report generated in Osdag!