

Belmont Castle

Preliminary foundation design loadings

Loadings	Character DL	LL
Flat roof	4.940	0.750
Upper grd floor	5.650	2.000
Lower grd floor	5.650	2.000
Basement	5.650	2.000
External walls	8.043	
Internal walls	5.140	
External GB (1050x600)	15.120	
Internal GB (750x600)	10.800	

No. floors for load reduction	% reduction LL all floors
1	0
2	10
3	20
4	30
5-10	40

Check piled foundations

External wall load	221.1	kN/m
Proposed pile ctrs	3	m
Pile load	663.3	kN
Pile diameter	450	mm
Approx length (See attached spreadsheet)	26.00	m

Check piled foundations

Internal wall load	234.4	kN/m
Proposed pile ctrs	2.5	m
Pile load	586.1	kN
Pile diameter	450	mm
Approx length (See attached spreadsheet)	24.00	m

External walls	Length	DL	LL	Ult DL	Ult LL
Flat roof	4.6	22.724	3.45	31.8136	5.52
Upper grd floor	4.6	25.99	9.2	36.386	14.72
Lower grd floor	4.6	25.99	9.2	36.386	14.72
Basement	4.6	25.99	9.2	36.386	14.72
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
External walls	10	80.43		112.602	0
Internal walls		0		0	0
0		0		0	0
External GB (1050x600)	1	15.12		21.168	0
Internal GB (750x600)		0		0	0
Sum		196.244	31.05	274.7416	49.68
% live load reduction	20	Total Char	227.294	Total Ult	324.4216
		Live load reduced	221.1		

Internal LB walls	Length	DL	LL	Ult DL	Ult LL
Flat roof	6.5	32.11	4.875	44.954	7.8
Upper grd floor	6.5	36.725	13	51.415	20.8
Lower grd floor	6.5	36.725	13	51.415	20.8
Basement	6.5	36.725	13	51.415	20.8
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
External walls		0		0	0
Internal walls	9	46.26		64.764	0
0		0		0	0
External GB (1050x600)		0		0	0
Internal GB (750x600)	1	10.8		15.12	0
Sum		199.345	43.875	279.083	70.2
% live load reduction	20	Total Char	243.22	Total Ult	349.283
		Live load reduced	234.4		