	Project no	0001	Date	11/09/2019
SMART SCAFFOLDER	Name	Sample project	Prepared by	TR
	Item	Scaffold 001	Checked by	BB
	Notes		Revision	
	File	Sample brick guard scaffold.ssc	Page	1 of 4
Your company contact details are displayed here.				

Tied independent scaffolding leg loads

For tube and fitting scaffolding, in accordance with BS EN 12811-1:2003 and NASC TG20:13.

ℹ This calculation should be read in conjunction with the wind factor and tie duty calculation reports.
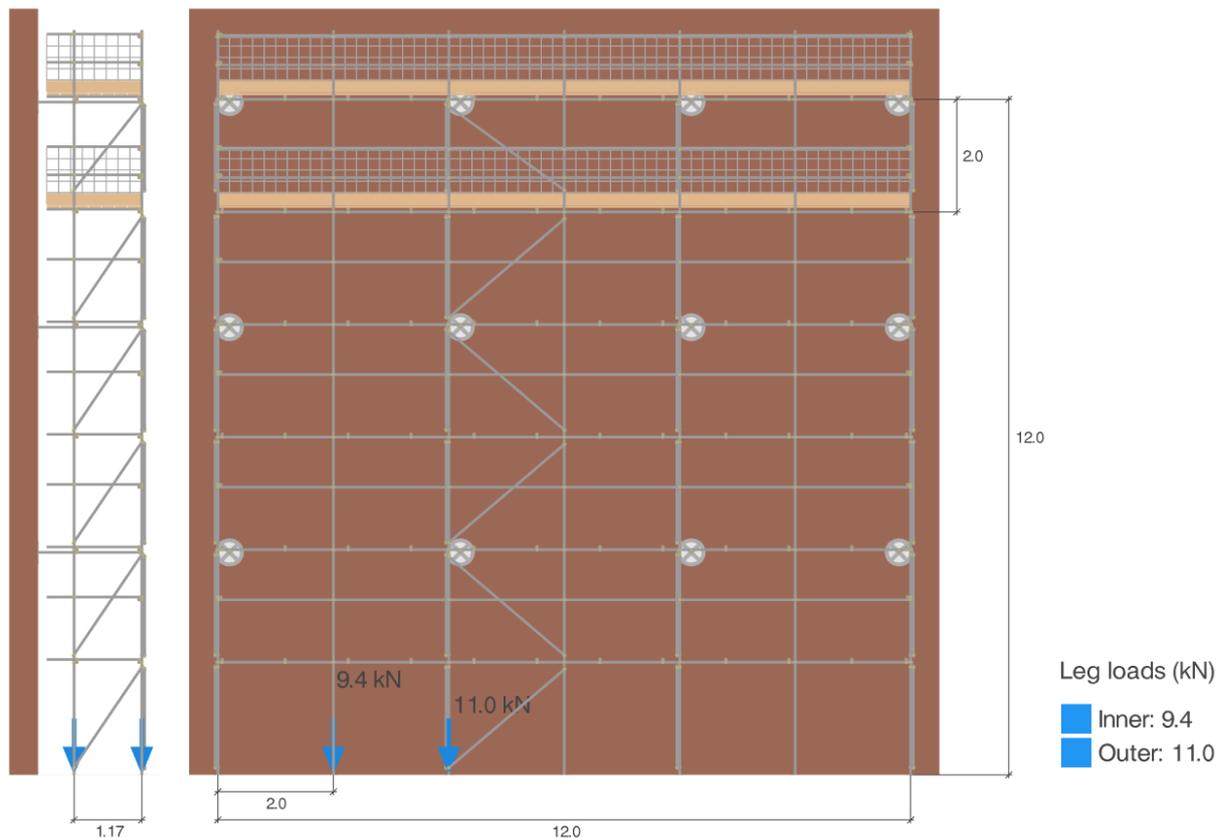
Site location

Description	Value
Site address	East Overcliff Drive, E Overcliff Dr, Bournemouth BH1, UK
TG20:13 wind factor, $S_{TG20:13}$	26.6
Peak velocity pressure at 13.00 m, $q_{p(z = 13.00m)}$	0.888 kN/m²

	Project no	0001	Date	11/09/2019
SMART SCAFFOLDER	Name	Sample project	Prepared by	TR
	Item	Scaffold 001	Checked by	BB
	Notes		Revision	
	File	Sample brick guard scaffold.ssc	Page	2 of 4

Your company contact details are displayed here.

Scaffold dimensions

Description	Value
Number of boarded lifts, n_b	2
Number of unboarded lifts, n_u	4
Maximum lift height, H_{lift}	2.00 m
Maximum bay length, L_{bay}	2.00 m
Number of main boards wide, n_m	5
Number of inside boards, n_i	2

Edge protection

Description	Value
Guard rails at boarded lifts, $n_{gr,b}$	2
Guard rails at unboarded lifts, $n_{gr,u}$	1
Inner guard rails at boarded lifts	None
Inner guard rails at unboarded lifts	None
Inner toe boards	None

Scaffold configuration

Description	Value
Cladding	Brick guards
Facade permeability [(1)]	Impermeable
Tie pattern	TG20:13 A
Structural transoms	None

Loading

Description	Value
Main platform working load, P_m	2.00 kN/m²
Inner platform working load, P_i	0.75 kN/m²
Number of loaded lifts, n_l	1
Number of 50% loaded lifts, $n_{l,50}$	1

[(1)] No significant openings.

Structural analysis

Vertical loads

Load description	Inner face	Outer face	Unit
Dead load on unboarded lift ledgers	0.144	0.089	kN/m
Dead load on boarded lift ledgers	0.439	0.297	kN/m
Dead load per end standard per unboarded lift	0.251	0.269	kN
Dead load per end standard per boarded lift	0.424	0.411	kN
Dead load per unbraced intermediate standard per unboarded lift	0.098	0.196	kN
Dead load per ledger-braced intermediate standard per unboarded lift	0.169	0.267	kN
Dead load per unbraced intermediate standard per boarded lift	0.098	0.304	kN
Dead load per ledger-braced intermediate standard per boarded lift	0.169	0.375	kN
Dead load of facade bracing	-	0.058	kN/m
Dead load per tie tube	0.072	0.034	kN
Imposed load on loaded lift ledgers	1.598	1.115	kN/m
Imposed load on 50% loaded lift ledgers	0.799	0.557	kN/m
Out-of-service imposed load on loaded lift ledgers	0.279	0.279	kN/m

	Project no	0001		Date	11/09/2019
SMART SCAFFOLDER	Name	Sample project		Prepared by	TR
	Item	Scaffold 001		Checked by	BB
	Notes			Revision	
	File	Sample brick guard scaffold.ssc		Page	3 of 4
Your company contact details are displayed here.					

Horizontal loads

Load description	In service		Out of service		Unit
	Inner	Outer	Inner	Outer	
Notional horizontal load per working bay	0.150	0.150	-	-	kN
Wind on working lift end standards	0.232	0.084	0.903	0.327	kN
Wind on unboarded lift end standards	0.073	0.026	0.304	0.110	kN
Wind on unbraced intermediate standards of boarded lifts	0.064	0.076	0.284	0.338	kN
Wind on ledger-braced intermediate standards of boarded lifts	0.080	0.092	0.354	0.407	kN
Wind on unbraced intermediate standards of unboarded lifts	0.070	0.040	0.294	0.168	kN
Wind on ledger-braced intermediate standards of unboarded lifts	0.086	0.056	0.359	0.233	kN
Wind on working lift leeward end standards	0.272	0.137	1.084	0.562	kN
Wind on unboarded lift leeward end standards	0.120	0.043	0.500	0.181	kN
Wind per tie tube	0.016	0.006	0.071	0.026	kN
Wind on facade bracing	-	0.008	-	0.036	kN/m

Inner face
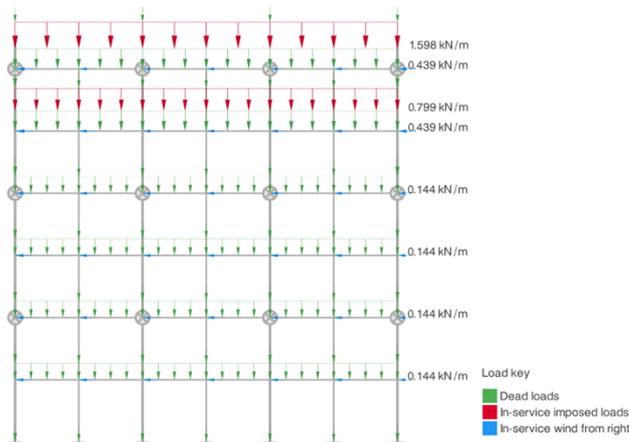
Outer face
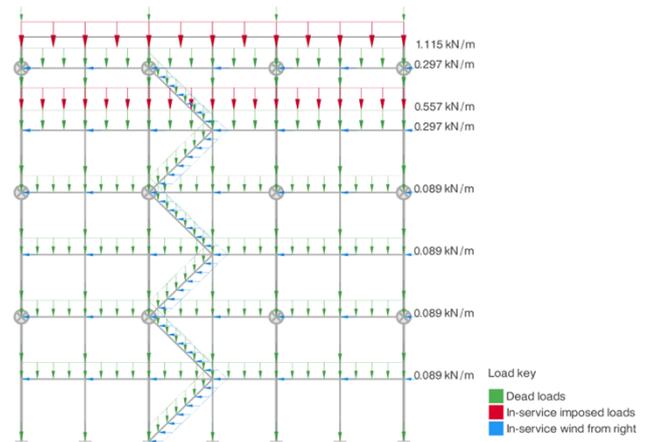
The analytical model is shown for the load combination which produces the maximum leg load: 5 - Dead + in-service imposed + wind (-ve).

For clarity, the point loads and horizontal loads are not labelled in the figures. Refer to the load tables above for values.

Analysis results

No.	Load combination	Maximum leg load (kN)	
		Inner	Outer
1	Dead + in-service imposed	9.3	7.6
2	Dead + in-service imposed + notional (+ve)	9.4	10.4
3	Dead + in-service imposed + notional (-ve)	9.4	10.9

	Project no	0001	Date	11/09/2019
SMART SCAFFOLDER	Name	Sample project	Prepared by	TR
	Item	Scaffold 001	Checked by	BB
	Notes		Revision	
	File	Sample brick guard scaffold.ssc	Page	4 of 4

Your company contact details are displayed here.

No.	Load combination	Maximum leg load (kN)	
		Inner	Outer
4	Dead + in-service imposed + wind (+ve)	9.3	10.6
5	Dead + in-service imposed + wind (-ve)	9.3	11.0
6	Dead + out-of-service imposed	4.6	4.8
7	Dead + out-of-service imposed + wind (+ve)	4.7	9.1
8	Dead + out-of-service imposed + wind (-ve)	4.7	10.6
	Maximum	**9.4**	**11.0**

Results summary

Description	Inner	Outer
Maximum unfactored leg load (kN)	9.4	11.0

TG20:13 check

Check	Result
TG20:13 compliance criteria check	✓ Pass
TG20:13 safe height check	✓ Pass

The scaffold height of 12.00 m is within the maximum safe height of a TG20:13 compliant tied independent scaffold of the given location and configuration.

ℹ This scaffold is TG20:13 compliant, with the following conditions in addition to the design criteria specified above:

No.	TG20:13 compliance note
1	The maximum leg load should be communicated to the Engineer responsible for the scaffold foundation design.
2	Tie tubes should be connected to the inner and outer standards or ledgers with right-angle couplers.