Titles

Job No.: J18119
Job Title: 7 Denmark Street, London WC2H 8LZ
Sub-title: Drained total movement
Calculation Heading:
Initials: ML
Checker:
Date Saved:
Date Checked:
Notes:
File Name: Total (19.4).pdd
File Path: C:\Users\Matt Legg\Desktop\PDisp workings\7 Denmark St

History

Date	Time	By	Notes
12-Jun-2018	17:11	Matt Legg	
12-Jun-2018	17:38	Matt Legg	
13-Jun-2018	01:10	Matt Legg	
13-Jun-2018	15:25	Matt Legg	
02-Oct-2018	13:32	Matt Legg	

Analysis Options

General

Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: -30.00 [m OD]
Displacements at load centroids: Yes
GSA piled raft data : No

Elastic

Elastic : Yes
Analysis: Boussinesq
Stiffness for horizontal displacement calculations: Weighted average
Using legacy heave correction factor: No

Consolidation

Consolidation : No

Soil ProfilesShort-term

Layer ref.	Name	Level at top	Number of intermediate displacement levels	Youngs Modulus : Top	Youngs Modulus : Btm.	Poissons ratio	Non-linear curve
		[mOD]		[kN/m²]	[kN/m²]		
1	Layer 1	0.0	2	5000.0	10000.	0.50000	None
2	Layer 2	-2.5000	2	60000.	60000.	0.50000	None
3	Layer 3	-4.0000	2	48000.	48000.	0.50000	None
4	Layer 4	-6.0000	1	40000.	42500.	0.50000	None
5	Layer 5	-7.0000	1	42500.	45000.	0.50000	None
6	Layer 6	-8.0000	2	45000.	55000.	0.50000	None
7	Layer 7	-10.000	2	55000.	60000.	0.50000	None
8	Layer 8	-12.000	3	60000.	70000.	0.50000	None
9	Layer 9	-15.000	3	70000.	85000.	0.50000	None
10	Layer 10	-18.000	7	85000.	105000.	0.50000	None
11	Layer 11	-25.000	5	105000.	120000.	0.50000	None

Soil ProfilesTotal

Layer ref.	Name	Level at top	Number of intermediate displacement levels	Youngs Modulus : Top	Youngs Modulus : Btm.	Poissons ratio	Non-linear curve
		[mOD]		[kN/m²]	[kN/m²]		
1	Layer 1	0.0	2	3000.0	6000.0	0.20000	None
2	Layer 2	-2.5000	2	60000.	60000.	0.20000	None
3	Layer 3	-4.0000	2	48000.	48000.	0.20000	None
4	Layer 4	-6.0000	1	24000.	25500.	0.20000	None
5	Layer 5	-7.0000	1	25500.	27000.	0.20000	None
6	Layer 6	-8.0000	2	27000.	33000.	0.20000	None
7	Layer 7	-10.000	2	33000.	36000.	0.20000	None
8	Layer 8	-12.000	3	36000.	42000.	0.20000	None
9	Layer 9	-15.000	3	42000.	51000.	0.20000	None
10	Layer 10	-18.000	7	51000.	63000.	0.20000	None
11	Layer 11	-25.000	5	63000.	72000.	0.20000	None

Soil Zones

Zone	Name	X min [m]	X max [m]	Y min [m]	Y max [m]	Profile
1	Zone 1	15.000	55.000	0.0	50.000	Total

Polygonal Load Data

Load ref.	Name	Position : Level	Position : Polygon : Coords.	Position : Polygon : Rect. tolerance	No. of Rectangles	Value : Normal (local z)
		[m]	[m]	[%]		[kN/m²]
1	Basement Unloading	-3.50000	(34,22.6) (38.5,17.7) (43.1,21.1) (39.1,26.1) (34,22.6)	10.000	11	-50.000
2	6 Denmark St	-3.50000	(38.3,25.6) (39.1,26.1) (43.1,21.1) (42.1,20.6) (38.3,25.6)	10.000	6	62.200
3	7 Denmark St	-3.50000	(34,22.6) (38.3,25.6) (38.8,25) (34.6,22) (34,22.6)	10.000	4	26.900
4	8 Denmark St	-3.50000	(34.6,22) (35.3,22.5) (39.2,18.3) (38.5,17.7) (34.6,22)	10.000	2	0.0
5	122 Charing Cross Rd	-3.50000	(39.2,18.3) (42.1,20.6) (41.7,21.2) (38.8,18.9) (39.2,18.3)	10.000	3	0.0

Polygonal Loads' Rectangles

No.	Centre : x	Centre : y	Angle of local x from global X	Width x	Depth y
	[m]	[m]	[Degrees]	[m]	[m]
Load 1 : Basement Unloading					
(Edge 1 optimal)					
1	34.28448	22.74289	-47.437	0.17436	0.61237
2	34.85345	23.02868	-47.437	0.17436	1.8371
3	35.42242	23.31447	-47.437	0.17436	3.0619

No.	Centre : x	Centre : y	Angle of local x from global X	Width x	Depth y
4	35.99139	23.60026	-47.437	0.17436	4.2866
5	36.56036	23.88605	-47.437	0.17436	5.5113
6	38.72737	21.83329	-47.437	5.7810	5.9265
7	40.85889	19.78388	-47.437	0.12145	5.1563
8	41.35692	20.07635	-47.437	0.12145	4.0105
9	41.85494	20.36882	-47.437	0.12145	2.8646
10	42.35296	20.66129	-47.437	0.12145	1.7188
11	42.85099	20.95376	-47.437	0.12145	0.57293
Load 2 : 6 Denmark St					
(Edge 3 optimal)					
1	42.60591	20.95199	-52.765	0.051751	0.95686
2	42.74708	20.99428	-52.765	0.051751	0.68347
3	42.88825	21.03657	-52.765	0.051751	0.41008
4	43.02942	21.07886	-52.765	0.051751	0.13669
5	38.51301	25.70789	-52.765	0.085986	0.46974
6	40.63067	23.37331	-52.765	6.1941	1.0165
Load 3 : 7 Denmark St					
(Edge 2 optimal)					
1	36.44178	23.81151	35.538	5.1033	0.80715
2	38.66318	25.14155	35.538	0.058124	0.38943
3	34.08930	22.53498	35.538	0.069749	0.20886
4	34.26790	22.40493	35.538	0.069749	0.62658
Load 4 : 8 Denmark St					
(Edge 3 optimal)					
1	34.79178	22.10650	-47.793	0.099911	0.42721
2	36.91238	20.11123	-47.793	5.7053	0.88785
Load 5 : 122 Charing Cross Rd					
(Edge 1 optimal)					
1	39.11164	18.45923	38.418	0.059438	0.35933
2	40.45000	19.75000	38.418	3.6419	0.71866
3	41.78836	21.04077	38.418	0.059438	0.35933

Displacement Lines

Name	X1 [m]	Y1 [m]	Z1 [m]	X2 [m]	Y2 [m]	Z2 [m]	Intervals [No.]	Calculate	Detailed Results
No7 A	25.70000	33.20000	-2.50000	34.00000	22.60000	-2.50000	7	Yes	No
No7 B	34.00000	22.60000	-2.50000	39.10000	26.10000	-2.50000	6	Yes	No
No7 C	39.10000	26.10000	-2.50000	30.80000	37.20000	-2.50000	7	Yes	No
No7 D	30.80000	37.20000	-2.50000	25.70000	33.20000	-2.50000	6	Yes	No
No6 A	30.80000	37.20000	-2.50000	40.30000	25.00000	-2.50000	8	Yes	No
No6 B	40.30000	25.00000	-0.70000	43.10000	21.10000	-0.70000	6	Yes	No
No6 C	43.10000	21.10000	-0.70000	47.90000	24.70000	-0.70000	4	Yes	No
No6 D	47.90000	24.70000	-0.70000	45.20000	28.40000	-0.70000	8	Yes	No
No7 E	45.20000	28.40000	-2.50000	35.70000	41.10000	-2.50000	6	Yes	No
No8 F	35.70000	41.10000	-2.50000	30.80000	37.20000	-2.50000	6	Yes	No
No9 A	20.60000	29.40000	-2.50000	28.40000	19.40000	-2.50000	7	Yes	No
No9 B	28.40000	19.40000	-2.50000	33.10000	13.40000	-2.50000	7	Yes	No
122A	29.30000	10.20000	-3.50000	41.20000	19.20000	-3.50000	7	Yes	No
122B	41.20000	19.20000	-3.50000	48.20000	10.40000	-3.50000	9	Yes	No
No8 A	25.70000	33.20000	-1.00000	20.60000	29.40000	-1.00000	6	Yes	No

Displacement Grids

Name	Extrusion: Direction	X1 [m]	Y1 [m]	Z1 [m]	X2 [m]	Y2 [m]	Z2 [m]	Intervals Along Line [No.]	Extrusion: Distance [m]	Extrusion: Intervals Along [No.]	Calculate	Detailed Results
Grid 1	Global X	15.00000	0.00000	-3.50000	-	50.00000	-3.50000	25	40.00000	20	Yes	No

Warnings

(1)The load at (38.635, 21.897, -3.500)m lies wide of all soil zones. Displacements at its centre have been requested. The first soil profile will be used.