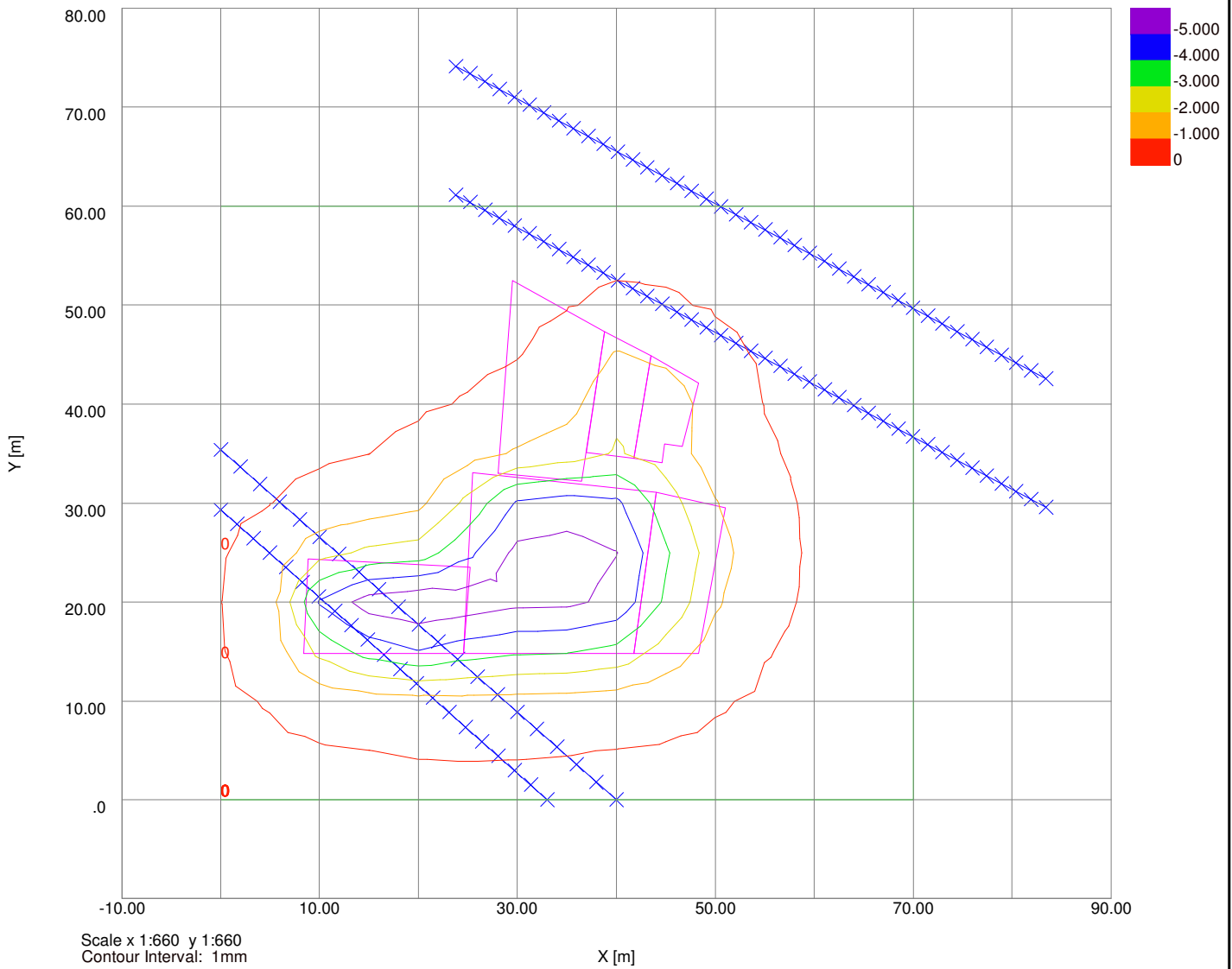


New Oxford Street
Stage 1 - Post demolition
Undrained conditions

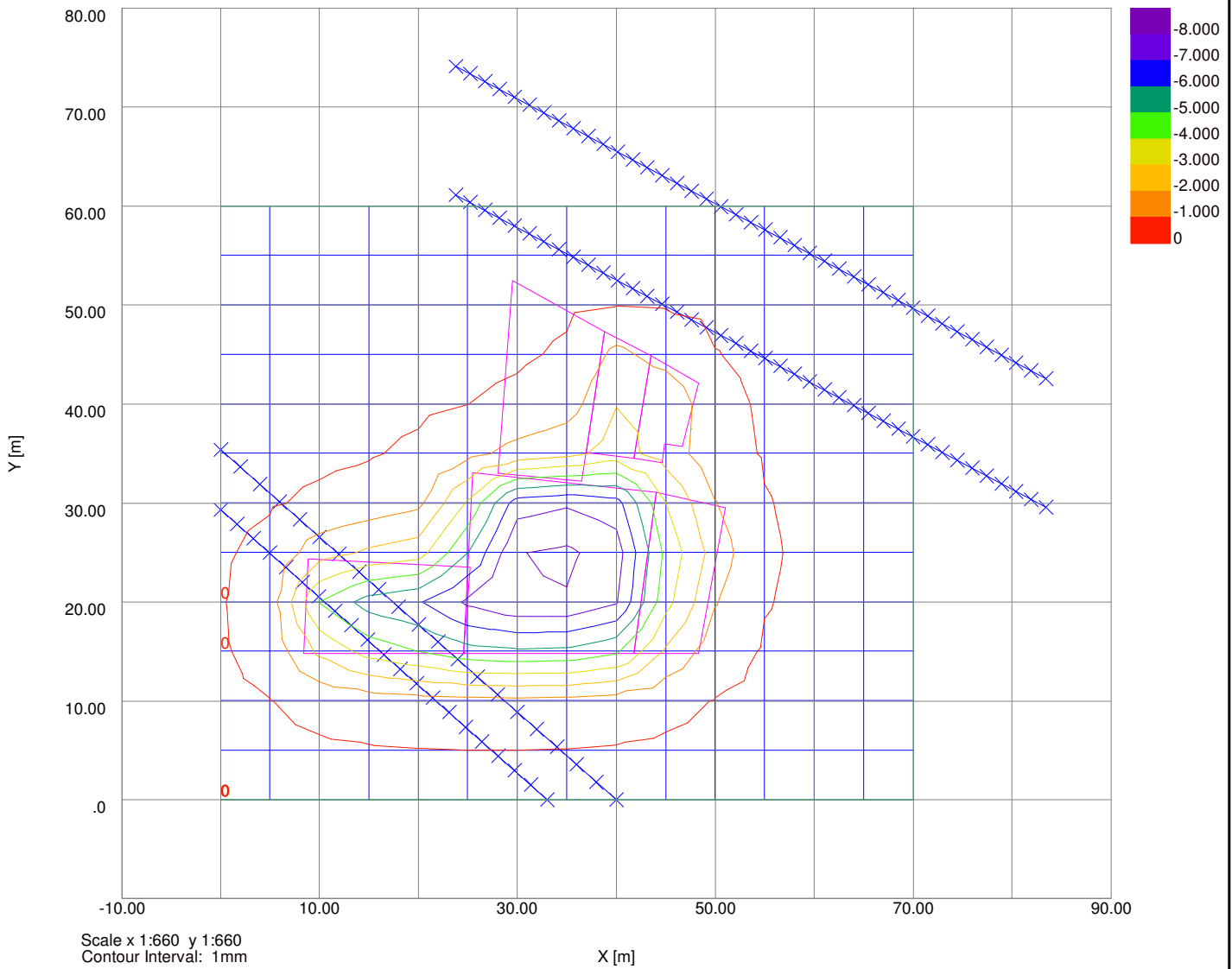
Settlement Contours : Grid 1 at 20.6000m



Scale x 1:660 y 1:660
Contour Interval: 1mm

New Oxford Street
Stage 2 - Post excavation
Undrained conditions

Settlement Contours : Grid 1 at 20.6000m



Scale x 1:660 y 1:660
Contour Interval: 1mm

New Oxford Street
Stage 2 - Post excavation
Undrained conditions

Dr. Ref.

Made by
MC

Date

Checked

Analysis Options

Analysis: Boussinesq
Global Poisson's ratio: 0.50
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: -5.00 [m OD]
Displacements at area centroids calculated.

Soil Profiles Undrained

Layer	Level at top	Number of intermediate displacement levels	Youngs Modulus	Poissons ratio	Non-linear curve
	[mOD]		Top [kN/m ²]	Btm [kN/m ²]	
1	22.800	15	90000.	90000.	0.20000 None
2	18.750	50	52500.	123750.	0.50000 None
3	0.0	20	123750.	123750.	0.50000 None

Soil Profiles Drained

Layer	Level at top	Number of intermediate displacement levels	Youngs Modulus	Poissons ratio	Non-linear curve
	[mOD]		Top [kN/m ²]	Btm [kN/m ²]	
1	22.800	15	90000.	90000.	0.20000 None
2	18.750	50	39375.	92819.	0.20000 None
3	0.0	20	92819.	92819.	0.20000 None

Soil Zones

Zone	Name	X coordinates min max	Y coordinates min max	Profile
		[m]	[m]	
1	Main Zone	0.0 70.000	0.0 60.000	Undrained

Load Data

Load ref.	Name	Shape	Orientation of Plane	Centre of load (Global) X Y	Z (level)	Load position Angle of local x from	Width x or Radius	Length y	Polygon Coordinates	Rectangle of tolerance	Number of rectangles	Normal Load value (local z)	Tangential Load value (local x)	(local y)
				[m]	[m]	[m]	[Degrees]	[m]	[m]	[m]		[kN/m ²]	[kN/m ²]	[kN/m ²]
1	A	Polygonal	Horizontal	N/A N/A	22.500	N/A	N/A	N/A	(28.1,33) (29.5,52.5)	10.000	9	0.0	N/A	N/A
2	B	Polygonal	Horizontal	N/A N/A	20.900	N/A	N/A	N/A	(38.8,47.3) (36.5,32.2)	10.000	8	-21.400	N/A	N/A
3	C	Polygonal	Horizontal	N/A N/A	20.900	N/A	N/A	N/A	(43.5,44.9) (41.8,34.5)	10.000	7	-21.400	N/A	N/A
4	D	Polygonal	Horizontal	N/A N/A	20.900	N/A	N/A	N/A	(48.3,42.1) (46.7,35.7)	10.000	11	-21.600	N/A	N/A
5	E	Polygonal	Horizontal	N/A N/A	20.600	N/A	N/A	N/A	(44.9,36) (44.6,34.1)	10.000	11	-66.300	N/A	N/A
6	F	Polygonal	Horizontal	N/A N/A	20.900	N/A	N/A	N/A	(41.8,14.8) (44,31.1)	10.000	3	-53.700	N/A	N/A

Polygonal Loads' Rectangles

No.	Centre of load X Y	Angle of local x from global X [Degrees]	Width x [m]	Depth y [m]
Load 1 : A				
(Edge 3 optimal)				
1	33.012 32.614	-94.106	0.065473	7.0428
2	34.407 32.449	-94.106	0.065473	4.2257
3	35.802 32.283	-94.106	0.065473	1.4086
4	29.949 52.015	-94.106	0.90413	0.96485
5	30.846 51.044	-94.106	0.90413	2.8945
6	31.744 50.073	-94.106	0.90413	4.8242
7	32.642 49.102	-94.106	0.90413	6.7539
8	33.539 48.131	-94.106	0.90413	8.6836
9	33.151 40.171	-94.106	15.030	9.0499
Load 2 : B				
(Edge 3 optimal)				
1	39.023 47.096	-98.393	0.33766	0.50000
2	39.468 46.689	-98.393	0.33766	1.5000
3	39.913 46.282	-98.393	0.33766	2.5000
4	40.359 45.875	-98.393	0.33766	3.5000
5	40.804 45.468	-98.393	0.33766	4.5000
6	40.217 40.059	-98.393	10.537	4.9181
7	38.806 34.915	-98.393	0.053519	3.6271
8	37.602 35.038	-98.393	0.053519	1.2090
Load 3 : C				
(Edge 1 optimal)				
1	43.356 35.270	81.027	1.9235	2.8227
2	45.074 39.291	81.027	6.5556	4.9163
3	45.514 42.744	81.027	0.40342	4.6700
4	45.066 43.223	81.027	0.40342	3.6322
5	44.619 43.702	81.027	0.40342	2.5945
6	44.171 44.181	81.027	0.40342	1.5567
7	43.724 44.660	81.027	0.40342	0.51889
Load 4 : D				
(Edge 2 optimal)				
1	42.020 15.615	0.0	0.44000	1.6300
2	42.460 17.245	0.0	0.44000	4.8900
3	42.900 18.875	0.0	0.44000	8.1500
4	43.340 20.505	0.0	0.44000	11.410
5	43.780 22.135	0.0	0.44000	14.670
6	46.150 22.704	0.0	4.3000	15.809
7	48.570 23.163	0.0	0.54000	13.785
8	49.110 24.571	0.0	0.54000	10.722
9	49.650 25.979	0.0	0.54000	7.6586
10	50.190 27.388	0.0	0.54000	4.5951
11	50.730 28.796	0.0	0.54000	1.5317
Load 5 : E				
(Edge 2 optimal)				
1	24.690 15.715	0.0	0.18000	1.8300
2	24.870 17.545	0.0	0.18000	5.4900
3	25.050 19.375	0.0	0.18000	9.1500
4	25.230 21.205	0.0	0.18000	12.810
5	25.410 23.035	0.0	0.18000	16.470
6	33.650 23.509	0.0	16.300	17.419
7	42.020 23.872	0.0	0.44000	14.884
8	42.460 25.478	0.0	0.44000	11.576
9	42.900 27.084	0.0	0.44000	8.2689
10	43.340 28.691	0.0	0.44000	4.9614
11	43.780 30.297	0.0	0.44000	1.6538
Load 6 : F				
(Edge 4 optimal)				
1	25.110 22.413	176.84	0.059725	2.1800
2	24.930 20.240	176.84	0.059725	6.5399
3	16.753 19.376	176.84	16.175	9.1664

Displacement Data

Ref.	Type	Name	Direction of Extrusion	Line/Line for extrusion	First point X Y Z (level)	Second point X Y Z (level)	No. of intrvl across extrusion/line	Extrusion Depth	No. of intrvl along extrusion	Calculate	Show Detailed results
					[m]	[m]	[m]	[m]		Yes	No
1	Grid	Grid 1	Global X		0.0 0.0 20.600	N/A 60.000 20.600	12	70.000	14	Yes	No
2	Line	RMT Nth	N/A		0.0 35.400 10.000	40.000 0.0 10.000	20	N/A	N/A	Yes	Yes



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New Oxford Street
 Stage 2 - Post excavation
 Undrained conditions

Job No.	Sheet No.	Rev.
Drg. Ref.		
Made by	Date	Checked
MC		

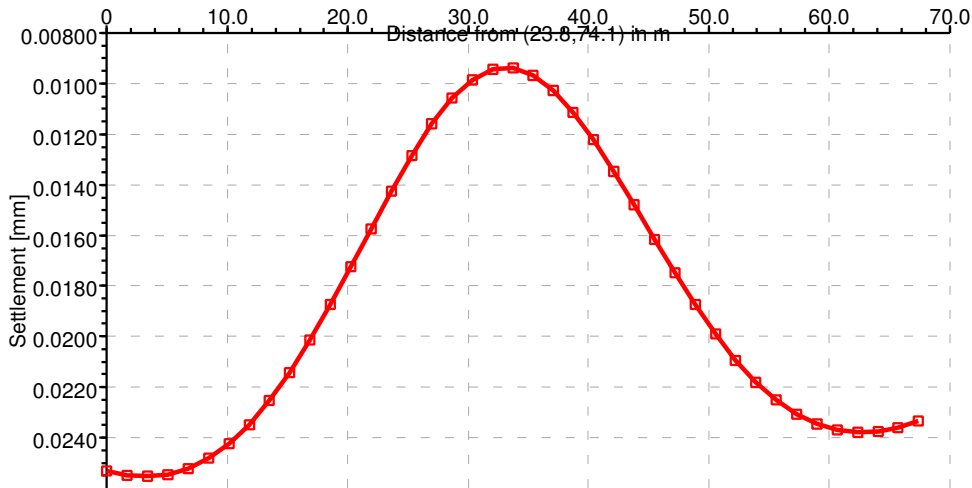
Name	Location		Z [Level] [mOD]	Z [mm]	Calc Level [mOD]	Stresses		Vert Strain [-]
	X [m]	Y [m]				Vert Stress [kN/m ²]	Sum Princ [kN/m ²]	
65.52000	52.05000		1.40000	0.017493	1.3003	-0.69351	-3.1851	4.6488E-6
67.01000	51.26250		1.40000	0.018759	1.3003	-0.64391	-3.0597	4.7471E-6
68.50000	50.47500		1.40000	0.019917	1.3003	-0.59494	-2.9305	4.8215E-6
69.99000	49.68750		1.40000	0.020940	1.3003	-0.54734	-2.7992	4.8700E-6
71.48000	48.90000		1.40000	0.021811	1.3003	-0.50167	-2.6674	4.8921E-6 !
72.97000	48.11250		1.40000	0.022521	1.3003	-0.45832	-2.5365	4.8885E-6 !
74.46000	47.32500		1.40000	0.023068	1.3003	-0.41754	-2.4076	4.8606E-6 !
75.95000	46.53750		1.40000	0.023455	1.3003	-0.37950	-2.2816	4.8106E-6 !
77.44000	45.75000		1.40000	0.023690	1.3003	-0.34423	-2.1592	4.7409E-6 !
78.93000	44.96250		1.40000	0.023784	1.3003	-0.31173	-2.0411	4.6540E-6 !
80.42000	44.17500		1.40000	0.023749	1.3003	-0.28192	-1.9276	4.5527E-6 !
81.91000	43.38750		1.40000	0.023599	1.3003	-0.25470	-1.8190	4.4393E-6 !
83.40000	42.60000		1.40000	0.023347	1.3003	-0.22992	-1.7154	4.3165E-6 !

! Point lies outside soil zones. Results calculated for this point assume a soil zone with properties of the first soil profile.

New Oxford Street
Stage 2 - Post excavation
Undrained conditions

Displacement for LUL Eastbound Crown

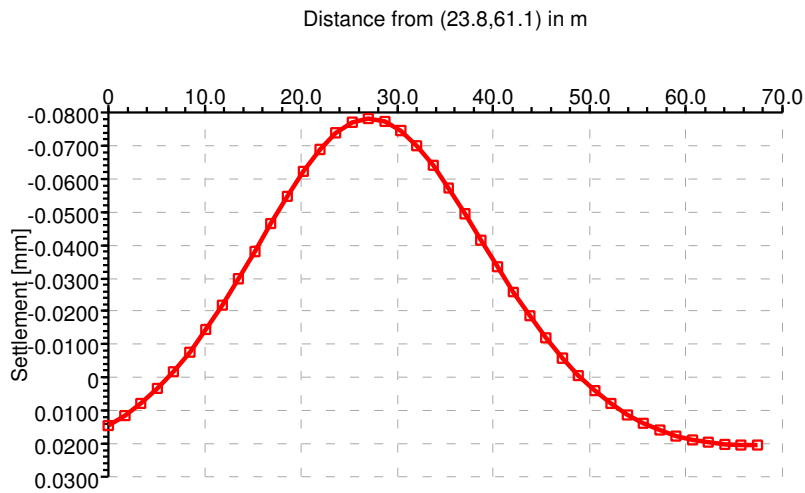
—■— Line Displacement



New Oxford Street
Stage 2 - Post excavation
Undrained conditions

Displacement for LUL Westbound Crown

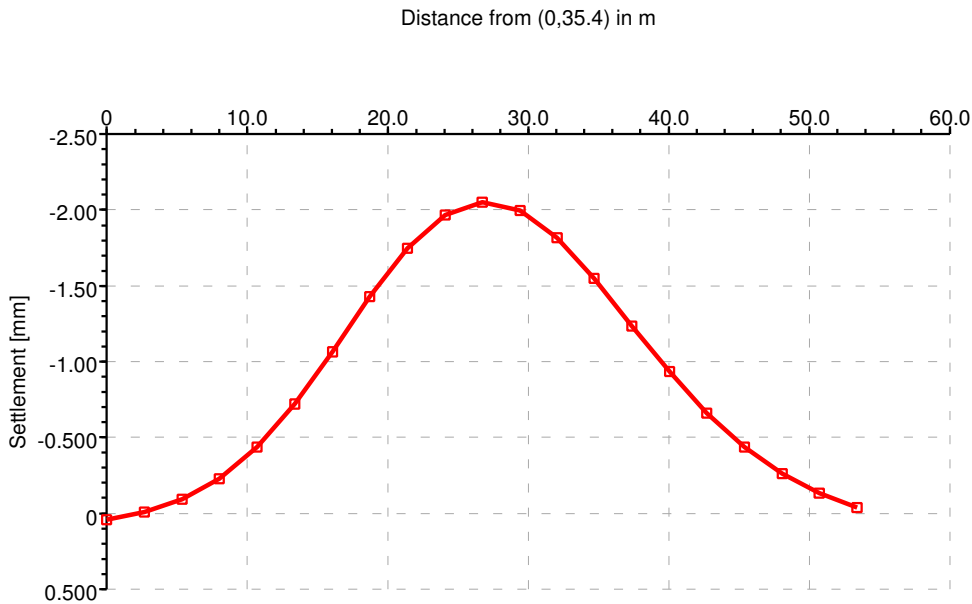
—■— Line Displacement



New Oxford Street
Stage 2 - Post excavation
Undrained conditions

Displacement for RMT Nth Wall

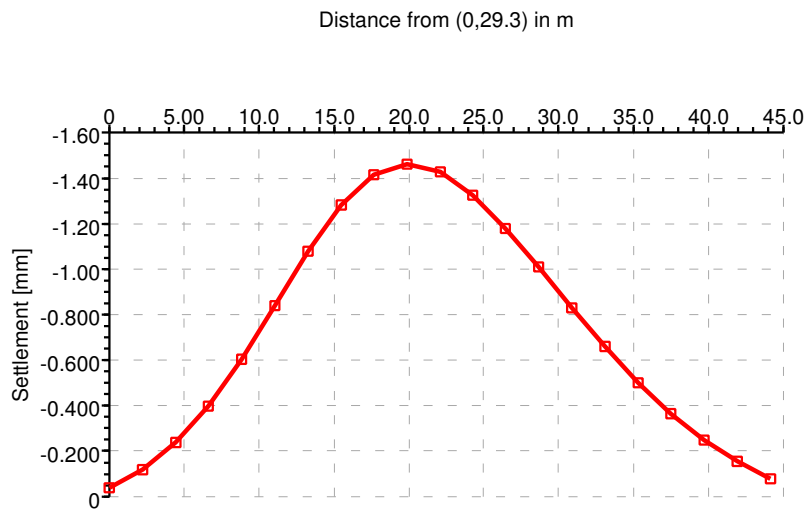
—■— Line Displacement



New Oxford Street
Stage 2 - Post excavation
Undrained conditions

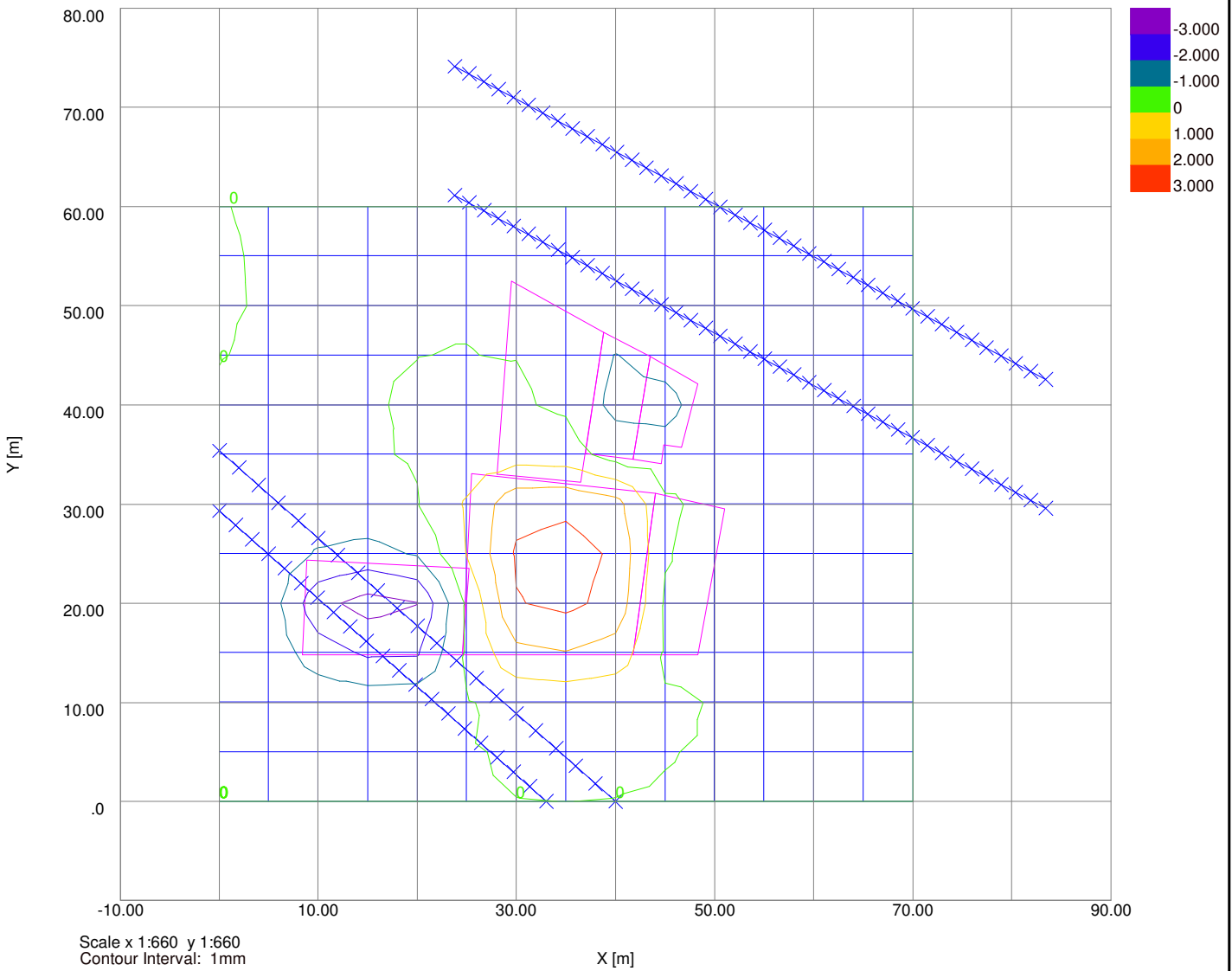
Displacement for RMT Sth Wall

—■— Line Displacement



New Oxford Street
Stage 3 - Following reloading
Undrained conditions

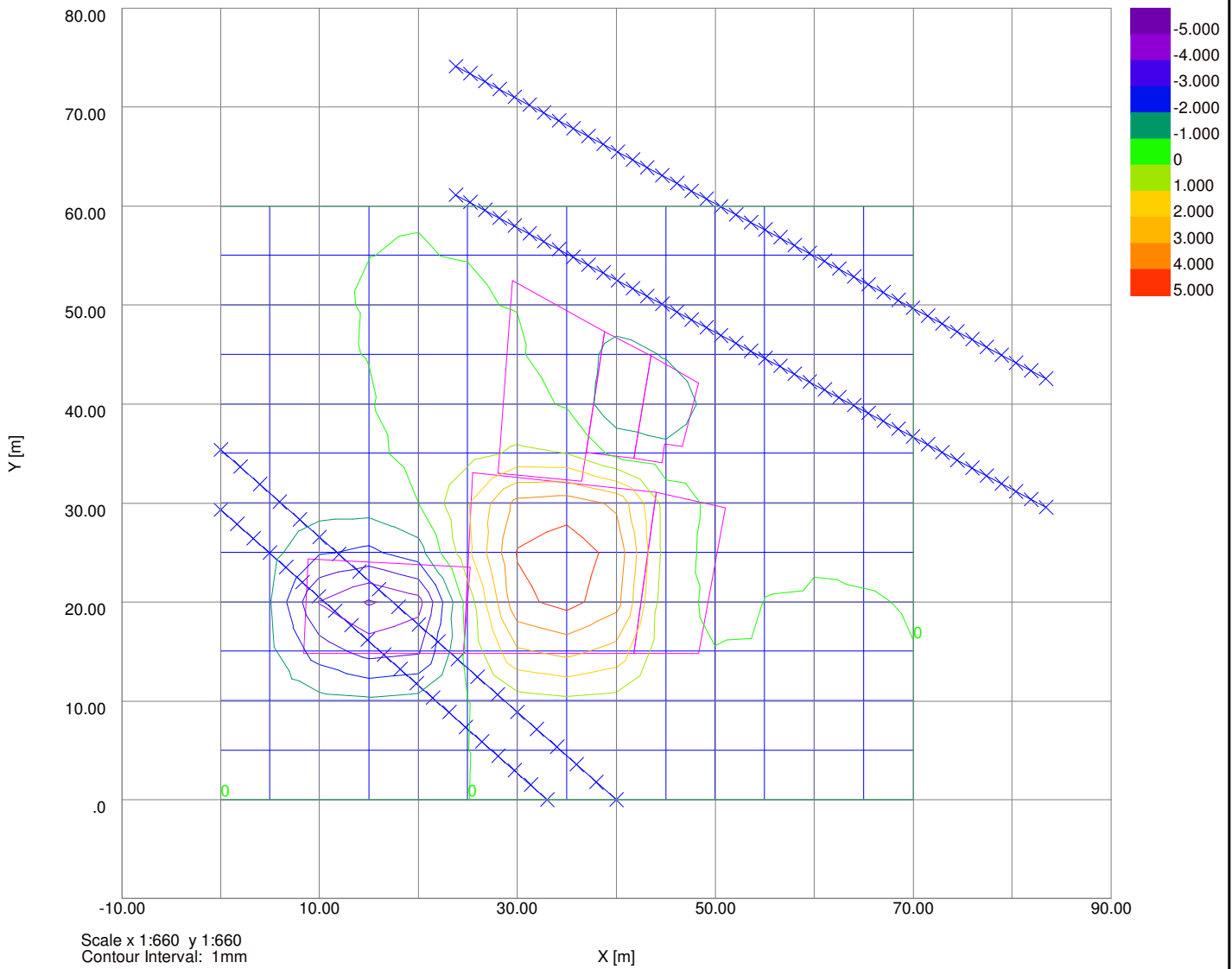
Settlement Contours : Grid 1 at 20.6000m



Scale x 1:660 y 1:660
Contour Interval: 1mm

New Oxford Street
Stage 4 - Following reloading long term
Drained conditions

Settlement Contours : Grid 1 at 20.6000m



Scale x 1:660 y 1:660
Contour Interval: 1mm

New Oxford Street
Stage 4 - Following reloading long term
Drained conditions

Dr. Ref.

Made by MC	Date	Checked
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Analysis Options

Analysis: Boussinesq
Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: -5.00 [m OD]
Displacements at area centroids calculated.

Soil Profiles Undrained

Layer	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus [kN/m ²]	Poissons ratio	Non-linear curve	
			Top [kN/m ²]	Btm [kN/m ²]		
1	22.800	15	90000.	90000.	0.20000	None
2	18.750	50	52500.	123750.	0.50000	None
3	0.0	20	123750.	123750.	0.50000	None

Soil Profiles Drained

Layer	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus [kN/m ²]	Poissons ratio	Non-linear curve	
			Top [kN/m ²]	Btm [kN/m ²]		
1	22.800	15	90000.	90000.	0.20000	None
2	18.750	50	39375.	92819.	0.20000	None
3	0.0	20	92819.	92819.	0.20000	None

Soil Zones

Zone	Name	X coordinates min [m]	X coordinates max [m]	Y coordinates min [m]	Y coordinates max [m]	Profile
1	Main Zone	0.0	70.000	0.0	60.000	Drained

Load Data

Load ref.	Name	Shape	Orientation of Plane	Centre of load (Global)		Z (level) [m]	Load position			Polygon Coordinates [m]	Rectangle of tolerance	Number of rectangles	Load value		
				X [m]	Y [m]		Angle of local x from	Width x or Radius [m]	Length y [m]				Normal (local z) [kN/m ²]	Tangential (local x) [kN/m ²]	Tangential (local y) [kN/m ²]
1	A	Polygonal	Horizontal	N/A	N/A	22.500	N/A	N/A	N/A	(28.1,33) (29.5,52.5)	10.000	9	0.30000	N/A	N/A
2	B	Polygonal	Horizontal	N/A	N/A	20.900	N/A	N/A	N/A	(38.8,47.3) (36.5,32.2)	10.000	8	-15.900	N/A	N/A
3	C	Polygonal	Horizontal	N/A	N/A	20.900	N/A	N/A	N/A	(43.5,44.9) (41.8,34.5)	10.000	7	-15.900	N/A	N/A
4	D	Polygonal	Horizontal	N/A	N/A	20.900	N/A	N/A	N/A	(48.3,42.1) (46.7,35.7)	10.000	11	-9.3000	N/A	N/A
5	E	Polygonal	Horizontal	N/A	N/A	20.600	N/A	N/A	N/A	(44.9,36) (44.6,34.1)	10.000	11	28.100	N/A	N/A
6	F	Polygonal	Horizontal	N/A	N/A	20.900	N/A	N/A	N/A	(41.8,14.8) (44,31.1)	10.000	3	-33.700	N/A	N/A

Polygonal Loads' Rectangles

No.	Centre of load X [m]	Centre of load Y [m]	Angle of local x from global X [Degrees]	Width x [m]	Depth y [m]
Load 1 : A					
(Edge 3 optimal)					
1	33.012	32.614	-94.106	0.065473	7.0428
2	34.407	32.449	-94.106	0.065473	4.2257
3	35.802	32.283	-94.106	0.065473	1.4086
4	29.949	52.015	-94.106	0.90413	0.96485
5	30.846	51.044	-94.106	0.90413	2.8945
6	31.744	50.073	-94.106	0.90413	4.8242
7	32.642	49.102	-94.106	0.90413	6.7539
8	33.539	48.131	-94.106	0.90413	8.6836
9	33.151	40.171	-94.106	15.030	9.0499
Load 2 : B					
(Edge 3 optimal)					
1	39.023	47.096	-98.393	0.33766	0.50000
2	39.468	46.689	-98.393	0.33766	1.5000
3	39.913	46.282	-98.393	0.33766	2.5000
4	40.359	45.875	-98.393	0.33766	3.5000
5	40.804	45.468	-98.393	0.33766	4.5000
6	40.217	40.059	-98.393	10.537	4.9181
7	38.806	34.915	-98.393	0.053519	3.6271
8	37.602	35.038	-98.393	0.053519	1.2090
Load 3 : C					
(Edge 1 optimal)					
1	43.356	35.270	81.027	1.9235	2.8227
2	45.074	39.291	81.027	6.5556	4.9163
3	45.514	42.744	81.027	0.40342	4.6700
4	45.066	43.223	81.027	0.40342	3.6322
5	44.619	43.702	81.027	0.40342	2.5945
6	44.171	44.181	81.027	0.40342	1.5567
7	43.724	44.660	81.027	0.40342	0.51889
Load 4 : D					
(Edge 2 optimal)					
1	42.020	15.615	0.0	0.44000	1.6300
2	42.460	17.245	0.0	0.44000	4.8900
3	42.900	18.875	0.0	0.44000	8.1500
4	43.340	20.505	0.0	0.44000	11.410
5	43.780	22.135	0.0	0.44000	14.670
6	46.150	22.704	0.0	4.3000	15.809
7	48.570	23.163	0.0	0.54000	13.785
8	49.110	24.571	0.0	0.54000	10.722
9	49.650	25.979	0.0	0.54000	7.6586
10	50.190	27.388	0.0	0.54000	4.5951
11	50.730	28.796	0.0	0.54000	1.5317
Load 5 : E					
(Edge 2 optimal)					
1	24.690	15.715	0.0	0.18000	1.8300
2	24.870	17.545	0.0	0.18000	5.4900
3	25.050	19.375	0.0	0.18000	9.1500
4	25.230	21.205	0.0	0.18000	12.810
5	25.410	23.035	0.0	0.18000	16.470
6	33.650	23.509	0.0	16.300	17.419
7	42.020	23.872	0.0	0.44000	14.884
8	42.460	25.478	0.0	0.44000	11.576
9	42.900	27.084	0.0	0.44000	8.2689
10	43.340	28.691	0.0	0.44000	4.9614
11	43.780	30.297	0.0	0.44000	1.6538
Load 6 : F					
(Edge 4 optimal)					
1	25.110	22.413	176.84	0.059725	2.1800
2	24.930	20.240	176.84	0.059725	6.5399
3	16.753	19.376	176.84	16.175	9.1664

Displacement Data

Ref.	Type	Name	Direction of Extrusion	Line/Line for extrusion			No. of intrvl across extrusion/line	Extrusion Depth	No. of intrvl along extrusion	Calculate	Show Detailed results	
				First point X [m]	First point Y [m]	First point Z (level) [m]						Second point X [m]
1	Grid	Grid 1	Global X	0.0	0.0	20.600	N/A	60.000	20.600	12	Yes	No
2	Line	RMT Nth	N/A	0.0	35.400	10.000	40.000	0.0	10.000	20	Yes	Yes



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New Oxford Street
 Stage 4 - Following reloading long term
 Drained conditions

Job No.	Sheet No.	Rev.
Dr. Ref.		
Made by	Date	Checked
MC		

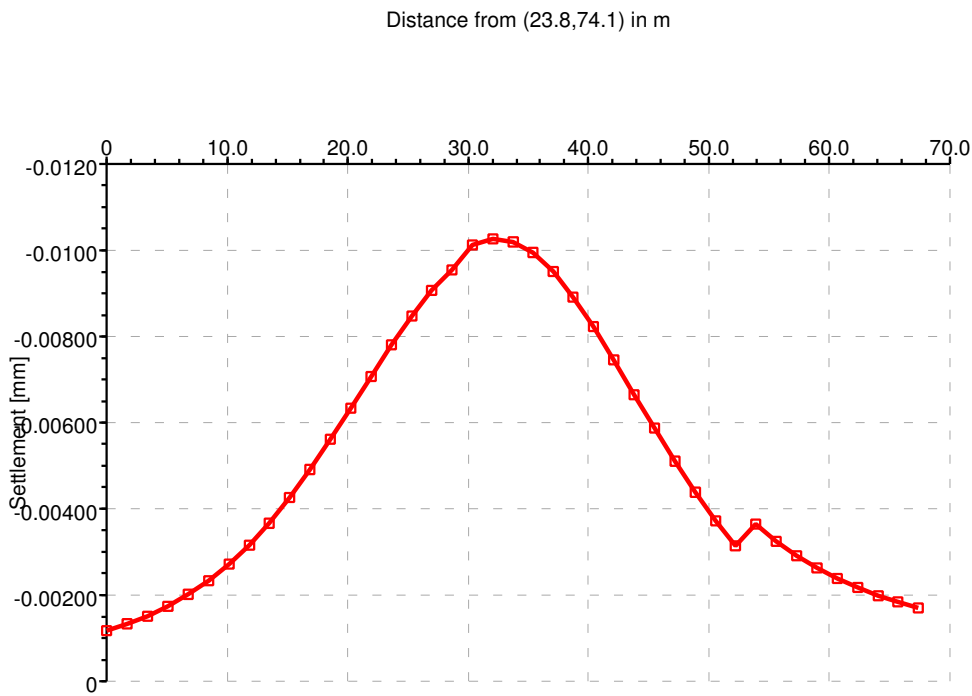
Name	Location		Z [Level] [mOD]	Z [mm]	Calc Level [mOD]	Stresses		Vert Strain [-]
	X [m]	Y [m]				Vert Stress [kN/m ²]	Sum Princ [kN/m ²]	
65.52000	52.05000		1.40000	-0.0050957	1.3003	-0.058926	0.047255	0.0
67.01000	51.26250		1.40000	-0.0043769	1.3003	-0.048216	0.054844	0.0
68.50000	50.47500		1.40000	-0.0037217	1.3003	-0.038619	0.061463	0.0
69.99000	49.68750		1.40000	-0.0031375	1.3003	-0.030214	0.067021	0.0
71.48000	48.90000		1.40000	-0.0036403	1.3003	-0.023002	0.071492	0.0 !
72.97000	48.11250		1.40000	-0.0032508	1.3003	-0.016927	0.074901	0.0 !
74.46000	47.32500		1.40000	-0.0029140	1.3003	-0.011894	0.077306	0.0 !
75.95000	46.53750		1.40000	-0.0026249	1.3003	-0.0077930	0.078794	0.0 !
77.44000	45.75000		1.40000	-0.0023780	1.3003	-0.0045036	0.079464	0.0 !
78.93000	44.96250		1.40000	-0.0021678	1.3003	-0.0019084	0.079419	0.0 !
80.42000	44.17500		1.40000	-0.0019887	1.3003	102.61E-6	0.078767	0.0 !
81.91000	43.38750		1.40000	-0.0018360	1.3003	0.0016291	0.077607	0.0 !
83.40000	42.60000		1.40000	-0.0017052	1.3003	0.0027589	0.076033	0.0 !

! Point lies outside soil zones. Results calculated for this point assume a soil zone with properties of the first soil profile.

New Oxford Street
Stage 4 - Following reloading long term
Drained conditions

Displacement for LUL Eastbound Crown

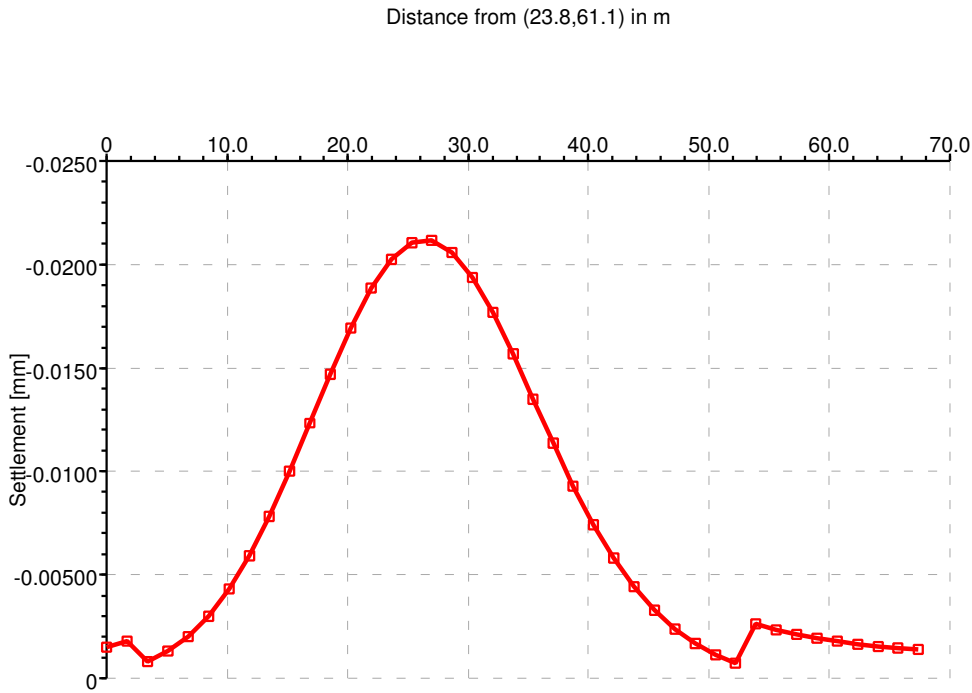
—■— Line Displacement



New Oxford Street
Stage 4 - Following reloading long term
Drained conditions

Displacement for LUL Westbound Crown

—■— Line Displacement

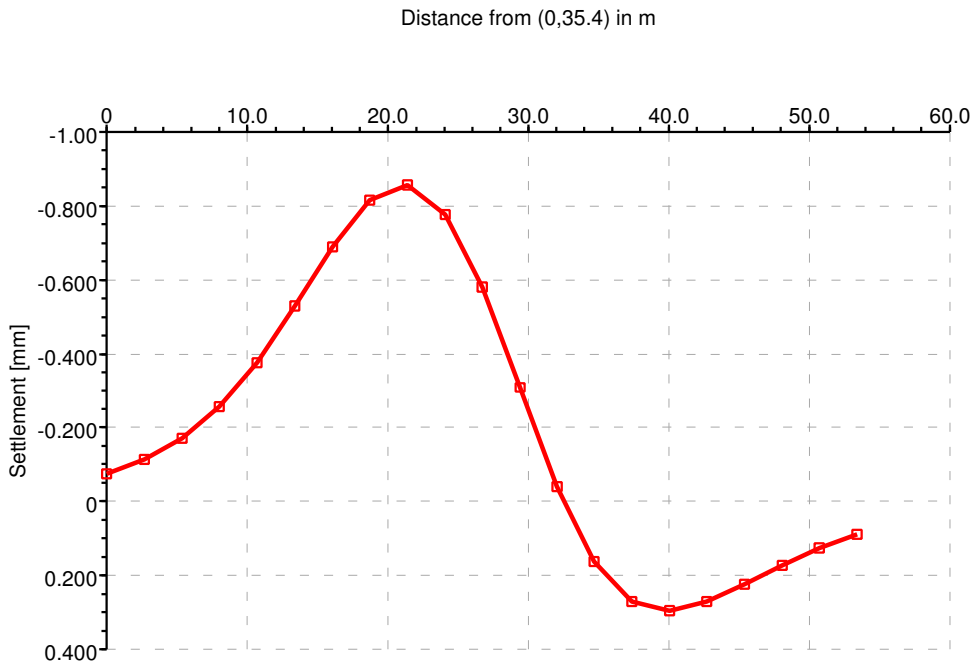


New Oxford Street
 Stage 4 - Following reloading long term
 Drained conditions

Job No.	Sheet No.	Rev.
Dr. Ref.		
Made by	Date	Checked
MC		

Displacement for RMT Nth Wall

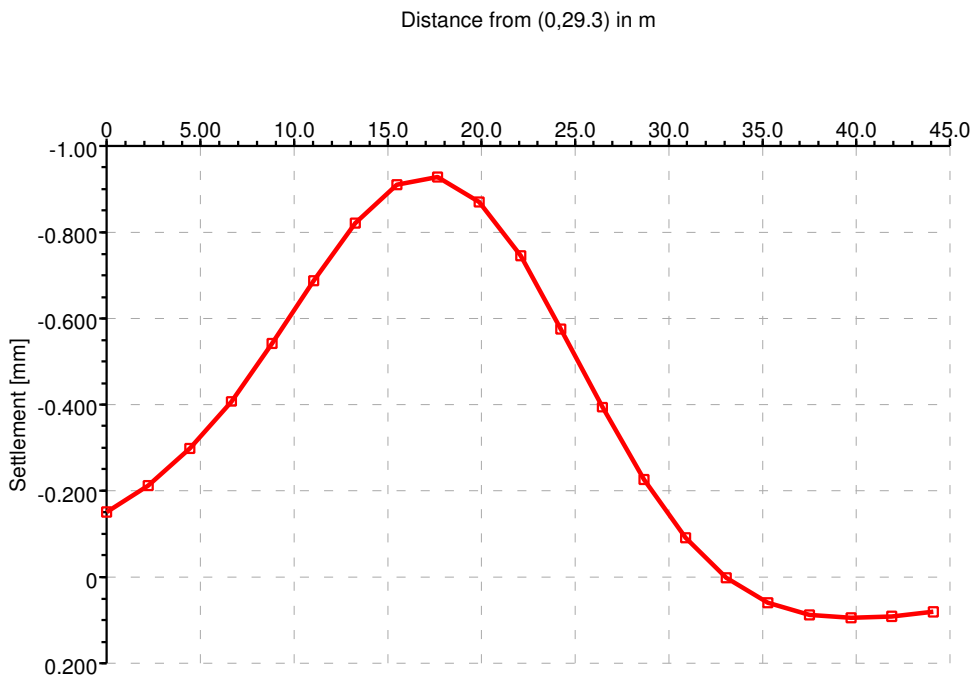
—■— Line Displacement



New Oxford Street
Stage 4 - Following reloading long term
Drained conditions

Displacement for RMT Sth Wall

—■— Line Displacement



Geotechnical & Environmental Associates (GEA) is an engineer-led and client-focused independent specialist providing a complete range of geotechnical and contaminated land investigation, analytical and consultancy services to the property and construction industries.

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