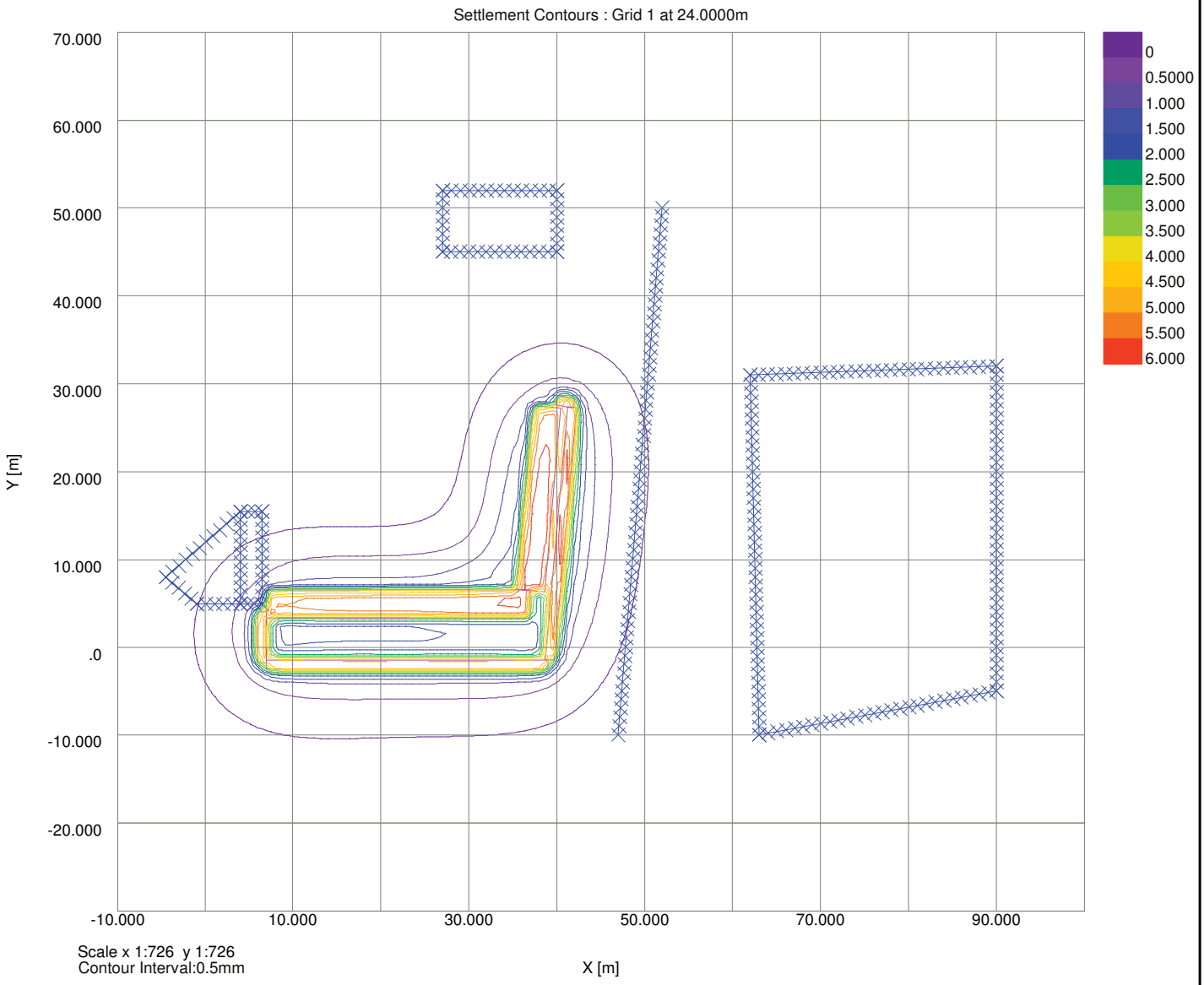
Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Vert Stress [kN/m²]	Sum Princ [kN/m²]	Vert Strain [-]
	35.00000	52.00000	20.50000	-0.0074000	20.325	0.0	0.0	0.0
	34.00000	52.00000	20.50000	-0.0082311	20.325	0.0	0.0	0.0
	33.00000	52.00000	20.50000	-0.0091355	20.325	0.0	0.0	0.0
	32.00000	52.00000	20.50000	-0.010096	20.325	0.0	0.0	0.0
	31.00000	52.00000	20.50000	-0.011096	20.325	0.0	0.0	0.0
	30.00000	52.00000	20.50000	-0.012117	20.325	0.0	0.0	0.0
	29.00000	52.00000	20.50000	-0.013145	20.325	0.0	0.0	0.0
	28.00000	52.00000	20.50000	-0.014164	20.325	0.0	0.0	0.0
	27.00000	52.00000	20.50000	-0.015161	20.325	0.0	0.0	0.0
167HH_4	27.00000	52.00000	20.50000	-0.015161	20.325	0.0	0.0	0.0
	27.00000	51.00000	20.50000	-0.013322	20.325	0.0	0.0	0.0
	27.00000	50.00000	20.50000	-0.011028	20.325	0.0	0.0	0.0
	27.00000	49.00000	20.50000	-0.0081965	20.325	0.0	0.0	0.0
	27.00000	48.00000	20.50000	-0.0047341	20.325	0.0	0.0	0.0
	27.00000	47.00000	20.50000	-530.30E-6	20.325	0.0	0.0	0.0
	27.00000	46.00000	20.50000	0.0045417	20.325	0.0	0.0	0.0
	27.00000	45.00000	20.50000	0.010628	20.325	0.0	0.0	0.0
210SH_1	4.00000	5.00000	20.50000	2.4559	20.325	0.0	0.0	0.0
	3.00000	5.00000	20.50000	1.8887	20.325	0.0	0.0	0.0
	2.00000	5.00000	20.50000	1.4637	20.325	0.0	0.0	0.0
	1.00000	5.00000	20.50000	1.1409	20.325	0.0	0.0	0.0
	0.00000	5.00000	20.50000	0.89505	20.325	0.0	0.0	0.0
	-1.00000	5.00000	20.50000	0.70635	20.325	0.0	0.0	0.0
210SH_2	-1.00000	5.00000	20.50000	0.70635	20.325	0.0	0.0	0.0
	-1.70000	5.60000	20.50000	0.57840	20.325	0.0	0.0	0.0
	-2.40000	6.20000	20.50000	0.47370	20.325	0.0	0.0	0.0
	-3.10000	6.80000	20.50000	0.38783	20.325	0.0	0.0	0.0
	-3.80000	7.40000	20.50000	0.31722	20.325	0.0	0.0	0.0
	-4.50000	8.00000	20.50000	0.25903	20.325	0.0	0.0	0.0
210SH_3	-4.50000	8.00000	20.50000	0.25903	20.325	0.0	0.0	0.0
	-3.72727	8.68182	20.50000	0.28691	20.325	0.0	0.0	0.0
	-2.95455	9.36364	20.50000	0.31416	20.325	0.0	0.0	0.0
	-2.18182	10.04545	20.50000	0.33976	20.325	0.0	0.0	0.0
	-1.40909	10.72727	20.50000	0.36260	20.325	0.0	0.0	0.0
	-0.63636	11.40909	20.50000	0.38158	20.325	0.0	0.0	0.0
	0.13636	12.09091	20.50000	0.39571	20.325	0.0	0.0	0.0
	0.90909	12.77273	20.50000	0.40424	20.325	0.0	0.0	0.0
	1.68182	13.45455	20.50000	0.40679	20.325	0.0	0.0	0.0
	2.45455	14.13636	20.50000	0.40339	20.325	0.0	0.0	0.0
	3.22727	14.81818	20.50000	0.39447	20.325	0.0	0.0	0.0
	4.00000	15.50000	20.50000	0.38080	20.325	0.0	0.0	0.0
210SH_4	4.00000	15.50000	20.50000	0.38080	20.325	0.0	0.0	0.0
	4.00000	14.54545	20.50000	0.46072	20.325	0.0	0.0	0.0
	4.00000	13.59091	20.50000	0.55642	20.325	0.0	0.0	0.0
	4.00000	12.63636	20.50000	0.67093	20.325	0.0	0.0	0.0
	4.00000	11.68182	20.50000	0.80761	20.325	0.0	0.0	0.0
	4.00000	10.72727	20.50000	0.96985	20.325	0.0	0.0	0.0
	4.00000	9.77273	20.50000	1.1603	20.325	0.0	0.0	0.0
	4.00000	8.81818	20.50000	1.3798	20.325	0.0	0.0	0.0
	4.00000	7.86364	20.50000	1.6255	20.325	0.0	0.0	0.0
	4.00000	6.90909	20.50000	1.8912	20.325	0.0	0.0	0.0
	4.00000	5.95455	20.50000	2.1696	20.325	0.0	0.0	0.0
	4.00000	5.00000	20.50000	2.4559	20.325	0.0	0.0	0.0
Tunnel	52.00000	50.00000	10.00000	447.17E-6	8.4049	0.028070	0.40411	-1.0184E-6
	51.91667	49.00000	10.00000	0.0043506	8.4049	0.032639	0.43775	-1.0453E-6
	51.83333	48.00000	10.00000	0.0090585	8.4049	0.038122	0.47530	-1.0654E-6
	51.75000	47.00000	10.00000	0.014718	8.4049	0.044734	0.51734	-1.0756E-6
	51.66667	46.00000	10.00000	0.021502	8.4049	0.052742	0.56452	-1.0719E-6
	51.58333	45.00000	10.00000	0.029614	8.4049	0.062484	0.61761	-1.0487E-6
	51.50000	44.00000	10.00000	0.039291	8.4049	0.074388	0.67750	0.0
	51.41667	43.00000	10.00000	0.050809	8.4049	0.088991	0.74523	0.0
	51.33333	42.00000	10.00000	0.064487	8.4049	0.10697	0.82198	0.0
	51.25000	41.00000	10.00000	0.080692	8.4049	0.12916	0.90910	0.0
	51.16667	40.00000	10.00000	0.099837	8.4049	0.15662	1.0081	0.0
	51.08333	39.00000	10.00000	0.12239	8.4049	0.19061	1.1207	0.0
	51.00000	38.00000	10.00000	0.14884	8.4049	0.23269	1.2486	0.0
	50.91667	37.00000	10.00000	0.17975	8.4049	0.28464	1.3938	1.3571E-6
	50.83333	36.00000	10.00000	0.21563	8.4049	0.34848	1.5580	2.3024E-6
	50.75000	35.00000	10.00000	0.25701	8.4049	0.42631	1.7429	3.5214E-6
	50.66667	34.00000	10.00000	0.30431	8.4049	0.52019	1.9497	5.0618E-6
	50.58333	33.00000	10.00000	0.35780	8.4049	0.63171	2.1787	6.9634E-6
	50.50000	32.00000	10.00000	0.41751	8.4049	0.76165	2.4293	9.2492E-6
	50.41667	31.00000	10.00000	0.48314	8.4049	0.90946	2.6996	11.913E-6
	50.33333	30.00000	10.00000	0.55400	8.4049	1.0728	2.9860	14.912E-6
	50.25000	29.00000	10.00000	0.62895	8.4049	1.2476	3.2834	18.157E-6
	50.16667	28.00000	10.00000	0.70647	8.4049	1.4279	3.5855	21.526E-6
	50.08333	27.00000	10.00000	0.78475	8.4049	1.6068	3.8853	24.869E-6
	50.00000	26.00000	10.00000	0.86190	8.4049	1.7776	4.1760	28.042E-6
	49.91667	25.00000	10.00000	0.93612	8.4049	1.9347	4.4516	30.923E-6
	49.83333	24.00000	10.00000	1.0059	8.4049	2.0741	4.7077	33.431E-6
	49.75000	23.00000	10.00000	1.0701	8.4049	2.1941	4.9414	35.533E-6
	49.66667	22.00000	10.00000	1.1279	8.4049	2.2947	5.1514	37.233E-6
	49.58333	21.00000	10.00000	1.1792	8.4049	2.3773	5.3379	38.568E-6
	49.50000	20.00000	10.00000	1.2238	8.4049	2.4440	5.5018	39.588E-6
	49.41667	19.00000	10.00000	1.2619	8.4049	2.4972	5.6449	40.349E-6
	49.33333	18.00000	10.00000	1.2939	8.4049	2.5392	5.7690	40.903E-6
	49.25000	17.00000	10.00000	1.3200	8.4049	2.5722	5.8760	41.297E-6
	49.16667	16.00000	10.00000	1.3406	8.4049	2.5980	5.9676	41.569E-6
	49.08333	15.00000	10.00000	1.3559	8.4049	2.6179	6.0453	41.748E-6
	49.00000	14.00000	10.00000	1.3662	8.4049	2.6329	6.1104	41.858E-6
	48.91667	13.00000	10.00000	1.3714	8.4049	2.6440	6.1637	41.914E-6
	48.83333	12.00000	10.00000	1.3717	8.4049	2.6515	6.2057	41.926E-6
	48.75000	11.00000	10.00000	1.3669	8.4049	2.6556	6.2366	41.900E-6
	48.66667	10.00000	10.00000	1.3568	8.4049	2.6563	6.2560	41.834E-6
	48.58333	9.00000	10.00000	1.3415	8.4049	2.6532	6.2634	41.722E-6
	48.50000	8.00000	10.00000	1.3208	8.4049	2.6456	6.2576	41.550E-6
	48.41667	7.00000	10.00000	1.2946	8.4049	2.6324	6.2371	41.295E-6
	48.33333	6.00000	10.00000	1.2629	8.4049	2.6120	6.1998	40.928E-6
	48.25000	5.00000	10.00000	1.2259	8.4049	2.5824	6.1433	40.406E-6
	48.16667	4.00000	10.00000	1.1838	8.4049	2.5413	6.0649	39.679E-6
	48.08333	3.00000	10.00000	1.1367	8.4049	2.4858	5.9617	38.687E-6
	48.00000	2.00000	10.00000	1.0849	8.4049	2.4133	5.8313	37.370E-6
	47.91667	1.00000	10.00000	1.0289	8.4049	2.3213	5.6715	35.675E-6
	47.83333	0.00000	10.00000	0.96901	8.4049	2.2086	5.4816	33.572E-6
	47.75000	-1.00000	10.00000	0.90589	8.4049	2.0752	5.2622	31.062E-6
	47.66667	-2.00000	10.00000	0.84033	8.4049	1.9233	5.0158	28.189E-6
	47.58333	-3.00000	10.00000	0.77332	8.4049	1.7570	4.7466	25.043E-6
	47.50000	-4.00000	10.00000	0.70596	8.4049	1.5821	4.4605	21.743E-6
	47.41667	-5.00000	10.00000	0.63941	8.4049	1.4049	4.1643	18.430E-6
	47.33333	-6.00000	10.00000	0.57480	8.4049	1.2319	3.8651	15.236E-6
	47.25000	-7.00000	10.00000	0.51309	8.4049	1.0682	3.5694	12.270E-6
	47.16667	-8.00000	10.00000	0.45503	8.4049	0.91774	3.2828	9.6080E-6
	47.08333	-9.00000	10.00000	0.40114	8.4049	0.78282	3.0098	7.2900E-6
	47.00000	-10.00000	10.00000	0.35170	8.4049	0.66422	2.7532	5.3238E-6
GrapeNear	38.00000	39.00000	24.00000	0.25062	23.615	0.0	0.0	0.0
GrapeFar	38.00000	44.50000	24.00000	0.061290	23.615	0.0	0.0	0.0
HighNear	41.00000	10.00000	24.00000	11.662	23.615	0.0	0.0	0.0
HighFar	61.00000	10.00000	24.00000	0.10910	23.615	0.0	0.0	0.0
ShaftsNear	20.00000	-2.50000	24.00000	11.533	23.615	0.0	0.0	0.0
ShaftsFar	20.00000	-8.00000	24.00000	1.7174	23.615	0.0	0.0	0.0


Settlement Contours : Grid 1 at 24.0000m
70.000
60.000
50.000
40.000
30.000
20.000
10.000
.0
-10.000
-20.000
Y [m]
-10.000
10.000
30.000
50.000
70.000
90.000
X [m]
0
0.5000
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000
Scale x 1:726 y 1:726
Contour Interval:0.5mm

Analysis Options

Analysis: Boussinesq
Global Poisson's ratio: 0.50
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: -10.10 [m OD]
Stiffness for horizontal displacement calculations: Weighted average
Using legacy heave correction factor: No
Displacements at load centroids: Yes

Soil ProfilesSoil Profile 1

Layer	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus Top [kN/m²]	Youngs Modulus Btm [kN/m²]	Poissons ratio	Non-linear curve
1	24.150	5	20000.	20000.	0.20000	None
2	20.150	5	28000.	140000.	0.50000	None
3	-6.5000	5	140000.	140000.	0.50000	None

Soil Zones

Zone	Name	X coordinates min [m]	X coordinates max [m]	Y coordinates min [m]	Y coordinates max [m]	Profile
1	SZ1	-20.00000	100.00000	-20.00000	60.00000	Soil Profile 1

Load Data

Load ref.	Name	Shape	Orientation of Plane	Load position: Centre of load (Global) X [m]	Y [m]	Z (level) [m]	Angle of local x from [Degrees]	Width x or Radius [m]	Length y [m]	Polygon Coordinates [m]	Rectangle tolerance [%]	Number of rectangles	Load value: Normal (local z) [kN/m²]	Tangential (local x) [kN/m²]	Tangential (local y) [kN/m²]
1	Pile Wall 1	Rectangular	Horizontal	6.50000	1.20000	16.38000	90.000	6.0000	1.0400	N/A	N/A	1	144.00	0.0	0.0
2	Pile Wall 2	Rectangular	Horizontal	23.00000	-2.00000	16.38000	0.0	32.000	1.0400	N/A	N/A	1	144.00	0.0	0.0
3	Pile Wall 3	Rectangular	Horizontal	40.50000	13.00000	16.38000	85.000	29.000	1.0400	N/A	N/A	1	144.00	0.0	0.0
4	Pile Wall 4	Rectangular	Horizontal	41.00000	28.00000	16.38000	-10.000	2.0000	1.0400	N/A	N/A	1	144.00	0.0	0.0
5	Building Wall 1	Rectangular	Horizontal	22.00000	5.00000	7.70000	0.0	30.000	3.2000	N/A	N/A	1	125.00	0.0	0.0
6	Building Wall 2	Rectangular	Horizontal	38.00000	17.00000	7.70000	85.000	21.000	3.2000	N/A	N/A	1	125.00	0.0	0.0

Displacement Data

Ref.	Type	Name	Direction of Extrusion	Line/Line for extrusion: First point X [m]	First point Y [m]	First point Z(level) [m]	Second point X [m]	Second point Y [m]	Second point Z(level) [m]	No. of intrvls across extrusion/line	Extrusion Depth [m]	No. of intrvls along extrusion	Calculate	Show Detailed results
1	Line	BKH_1	N/A	63.00000	-10.00000	22.50000	62.00000	31.00000	22.50000	41	N/A	N/A	Yes	Yes
2	Line	BKH_2	N/A	62.00000	31.00000	22.50000	90.00000	32.00000	22.50000	28	N/A	N/A	Yes	Yes
3	Line	BKH_3	N/A	90.00000	32.00000	22.50000	90.00000	-5.00000	22.50000	37	N/A	N/A	Yes	Yes
4	Line	BKH_4	N/A	90.00000	-5.00000	22.50000	63.00000	-10.00000	22.50000	27	N/A	N/A	Yes	Yes
5	Line	Archway_1	N/A	6.50000	5.00000	20.50000	6.50000	15.50000	20.50000	11	N/A	N/A	Yes	Yes
6	Line	Archway_2	N/A	6.50000	15.50000	20.50000	4.00000	15.50000	20.50000	3	N/A	N/A	Yes	Yes
7	Line	Archway_3	N/A	4.00000	5.00000	20.50000	6.50000	5.00000	20.50000	3	N/A	N/A	Yes	Yes
8	Line	167HH_1	N/A	27.00000	45.00000	20.50000	40.00000	45.00000	20.50000	13	N/A	N/A	Yes	Yes
9	Line	167HH_2	N/A	40.00000	45.00000	20.50000	40.00000	52.00000	20.50000	7	N/A	N/A	Yes	Yes
10	Line	167HH_3	N/A	40.00000	52.00000	20.50000	27.00000	52.00000	20.50000	13	N/A	N/A	Yes	Yes
11	Line	167HH_4	N/A	27.00000	52.00000	20.50000	27.00000	45.00000	20.50000	7	N/A	N/A	Yes	Yes
12	Line	210SH_1	N/A	4.00000	5.00000	20.50000	-1.00000	5.00000	20.50000	5	N/A	N/A	Yes	Yes
13	Line	210SH_2	N/A	-1.00000	5.00000	20.50000	-4.50000	8.00000	20.50000	5	N/A	N/A	Yes	Yes
14	Line	210SH_3	N/A	-4.50000	8.00000	20.50000	4.00000	15.50000	20.50000	11	N/A	N/A	Yes	Yes
15	Line	210SH_4	N/A	4.00000	15.50000	20.50000	4.00000	5.00000	20.50000	11	N/A	N/A	Yes	Yes
16	Line	Tunnel	N/A	52.00000	50.00000	10.00000	47.00000	-10.00000	10.00000	60	N/A	N/A	Yes	Yes
17	Point	GrapeNear	N/A	38.00000	39.00000	24.00000	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes
18	Point	GrapeFar	N/A	38.00000	44.50000	24.00000	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes
19	Point	HighNear	N/A	41.00000	10.00000	24.00000	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes
20	Point	HighFar	N/A	61.00000	10.00000	24.00000	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes
21	Point	ShaftsNear	N/A	20.00000	-2.50000	24.00000	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes
22	Point	ShaftsFar	N/A	20.00000	-8.00000	24.00000	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes
23	Grid	Grid 1	Global X	-10.00000	-20.00000	24.00000	N/A	60.00000	24.00000	100	80.00000	100	No	N/A

RESULTS FOR GRIDS

Analysis: Boussinesq
Global Poisson's ratio: 0.50
Horizontal rigid boundary level: -10.10 [m OD]

The maximum displacement difference between the Boussinesq method (4.5571mm) and the Mindlin method (1.2007mm) occurs at point X = 20.00000m, Y = -2.50000m, level = 24.000mOD, and is 3.3564mm.

Name	Location X [m]	Location Y [m]	Location Z[Level] [mOD]	Displacement Z [mm]	Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Sum Princ [kN/m²]	Vert Strain [-]
Pile Wall 1	6.50000	1.20000	16.38000	4.2833	14.324	44.173	64.966	649.47E-6
Pile Wall 2	23.00000	-2.00000	16.38000	4.3101	14.324	44.509	68.182	628.25E-6
Pile Wall 3	40.50000	13.00000	16.38000	5.6025	14.324	44.508	68.073	629.26E-6
Pile Wall 4	41.00000	28.00000	16.38000	4.2519	14.324	38.895	53.035	611.93E-6
Building Wall 1	22.00000	5.00000	7.70000	5.4430	5.7949	99.449	176.06	694.13E-6
Building Wall 2	38.00000	17.00000	7.70000	5.6736	5.7949	102.46	177.38	737.92E-6
BKH_1	63.00000	-10.00000	22.50000	-0.13111	22.108	0.0	0.0	0.0
	62.97561	-9.00000	22.50000	-0.13413	22.108	0.0	0.0	0.0
	62.95122	-8.00000	22.50000	-0.13709	22.108	0.0	0.0	0.0
	62.92683	-7.00000	22.50000	-0.13998	22.108	0.0	0.0	0.0
	62.90244	-6.00000	22.50000	-0.14281	22.108	0.0	0.0	0.0
	62.87805	-5.00000	22.50000	-0.14554	22.108	0.0	0.0	0.0
	62.85366	-4.00000	22.50000	-0.14819	22.108	0.0	0.0	0.0
	62.82927	-3.00000	22.50000	-0.15072	22.108	0.0	0.0	0.0
	62.80488	-2.00000	22.50000	-0.15315	22.108	0.0	0.0	0.0
	62.78049	-1.00000	22.50000	-0.15544	22.108	0.0	0.0	0.0
	62.75610	0.00000	22.50000	-0.15761	22.108	0.0	0.0	0.0
	62.73171	1.00000	22.50000	-0.15963	22.108	0.0	0.0	0.0
	62.70732	2.00000	22.50000	-0.16149	22.108	0.0	0.0	0.0
	62.68293	3.00000	22.50000	-0.16319	22.108	0.0	0.0	0.0
	62.65854	4.00000	22.50000	-0.16472	22.108	0.0	0.0	0.0
	62.63415	5.00000	22.50000	-0.16607	22.108	0.0	0.0	0.0
	62.60976	6.00000	22.50000	-0.16723	22.108	0.0	0.0	0.0
	62.58537	7.00000	22.50000	-0.16819	22.108	0.0	0.0	0.0
	62.56098	8.00000	22.50000	-0.16895	22.108	0.0	0.0	0.0
	62.53659	9.00000	22.50000	-0.16950	22.108	0.0	0.0	0.0
	62.51220	10.00000	22.50000	-0.16984	22.108	0.0	0.0	0.0
	62.48780	11.00000	22.50000	-0.16997	22.108	0.0	0.0	0.0
	62.46341	12.00000	22.50000	-0.16988	22.108	0.0	0.0	0.0
	62.43902	13.00000	22.50000	-0.16958	22.108	0.0	0.0	0.0
	62.41463	14.00000	22.50000	-0.16907	22.108	0.0	0.0	0.0
	62.39024	15.00000	22.50000	-0.16835	22.108	0.0	0.0	0.0
	62.36585	16.00000	22.50000	-0.16744	22.108	0.0	0.0	0.0
	62.34146	17.00000	22.50000	-0.16633	22.108	0.0	0.0	0.0
	62.31707	18.00000	22.50000	-0.16504	22.108	0.0	0.0	0.0
	62.29268	19.00000	22.50000	-0.16359	22.108	0.0	0.0	0.0
	62.26829	20.00000	22.50000	-0.16197	22.108	0.0	0.0	0.0
	62.24390	21.00000	22.50000	-0.16020	22.108	0.0	0.0	0.0
	62.21951	22.00000	22.50000	-0.15830	22.108	0.0	0.0	0.0
	62.19512	23.00000	22.50000	-0.15628	22.108	0.0	0.0	0.0
	62.17073	24.00000	22.50000	-0.15414	22.108	0.0	0.0	0.0
	62.14634	25.00000	22.50000	-0.15190	22.108	0.0	0.0	0.0
	62.12195	26.00000	22.50000	-0.14956	22.108	0.0	0.0	0.0
	62.09756	27.00000	22.50000	-0.14713	22.108	0.0	0.0	0.0
	62.07317	28.00000	22.50000	-0.14462	22.108	0.0	0.0	0.0
	62.04878	29.00000	22.50000	-0.14203	22.108	0.0	0.0	0.0
	62.02439	30.00000	22.50000	-0.13936	22.108	0.0	0.0	0.0
	62.00000	31.00000	22.50000	-0.13662	22.108	0.0	0.0	0.0
BKH_2	62.00000	31.00000	22.50000	-0.13662	22.108	0.0	0.0	0.0

Name	Location X [m]	Location Y [m]	Displacement Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
	63.00000	31.03571	22.50000	-0.13265	22.108	0.0	0.0	0.0
	64.00000	31.07143	22.50000	-0.12845	22.108	0.0	0.0	0.0
	65.00000	31.10714	22.50000	-0.12412	22.108	0.0	0.0	0.0
	66.00000	31.14286	22.50000	-0.11973	22.108	0.0	0.0	0.0
	67.00000	31.17857	22.50000	-0.11533	22.108	0.0	0.0	0.0
	68.00000	31.21429	22.50000	-0.11096	22.108	0.0	0.0	0.0
	69.00000	31.25000	22.50000	-0.10666	22.108	0.0	0.0	0.0
	70.00000	31.28571	22.50000	-0.10245	22.108	0.0	0.0	0.0
	71.00000	31.32143	22.50000	-0.098349	22.108	0.0	0.0	0.0
	72.00000	31.35714	22.50000	-0.094370	22.108	0.0	0.0	0.0
	73.00000	31.39286	22.50000	-0.090523	22.108	0.0	0.0	0.0
	74.00000	31.42857	22.50000	-0.086813	22.108	0.0	0.0	0.0
	75.00000	31.46429	22.50000	-0.083243	22.108	0.0	0.0	0.0
	76.00000	31.50000	22.50000	-0.079814	22.108	0.0	0.0	0.0
	77.00000	31.53571	22.50000	-0.076526	22.108	0.0	0.0	0.0
	78.00000	31.57143	22.50000	-0.073376	22.108	0.0	0.0	0.0
	79.00000	31.60714	22.50000	-0.070363	22.108	0.0	0.0	0.0
	80.00000	31.64286	22.50000	-0.067482	22.108	0.0	0.0	0.0
	81.00000	31.67857	22.50000	-0.064729	22.108	0.0	0.0	0.0
	82.00000	31.71429	22.50000	-0.062101	22.108	0.0	0.0	0.0
	83.00000	31.75000	22.50000	-0.059592	22.108	0.0	0.0	0.0
	84.00000	31.78571	22.50000	-0.057199	22.108	0.0	0.0	0.0
	85.00000	31.82143	22.50000	-0.054915	22.108	0.0	0.0	0.0
	86.00000	31.85714	22.50000	-0.052738	22.108	0.0	0.0	0.0
	87.00000	31.89286	22.50000	-0.050661	22.108	0.0	0.0	0.0
	88.00000	31.92857	22.50000	-0.048680	22.108	0.0	0.0	0.0
	89.00000	31.96429	22.50000	-0.046790	22.108	0.0	0.0	0.0
	90.00000	32.00000	22.50000	-0.044989	22.108	0.0	0.0	0.0
BKH_3	90.00000	32.00000	22.50000	-0.044989	22.108	0.0	0.0	0.0
	90.00000	31.00000	22.50000	-0.045592	22.108	0.0	0.0	0.0
	90.00000	30.00000	22.50000	-0.046177	22.108	0.0	0.0	0.0
	90.00000	29.00000	22.50000	-0.046742	22.108	0.0	0.0	0.0
	90.00000	28.00000	22.50000	-0.047287	22.108	0.0	0.0	0.0
	90.00000	27.00000	22.50000	-0.047808	22.108	0.0	0.0	0.0
	90.00000	26.00000	22.50000	-0.048306	22.108	0.0	0.0	0.0
	90.00000	25.00000	22.50000	-0.048778	22.108	0.0	0.0	0.0
	90.00000	24.00000	22.50000	-0.049223	22.108	0.0	0.0	0.0
	90.00000	23.00000	22.50000	-0.049640	22.108	0.0	0.0	0.0
	90.00000	22.00000	22.50000	-0.050028	22.108	0.0	0.0	0.0
	90.00000	21.00000	22.50000	-0.050386	22.108	0.0	0.0	0.0
	90.00000	20.00000	22.50000	-0.050713	22.108	0.0	0.0	0.0
	90.00000	19.00000	22.50000	-0.051007	22.108	0.0	0.0	0.0
	90.00000	18.00000	22.50000	-0.051269	22.108	0.0	0.0	0.0
	90.00000	17.00000	22.50000	-0.051496	22.108	0.0	0.0	0.0
	90.00000	16.00000	22.50000	-0.051690	22.108	0.0	0.0	0.0
	90.00000	15.00000	22.50000	-0.051848	22.108	0.0	0.0	0.0
	90.00000	14.00000	22.50000	-0.051972	22.108	0.0	0.0	0.0
	90.00000	13.00000	22.50000	-0.052059	22.108	0.0	0.0	0.0
	90.00000	12.00000	22.50000	-0.052111	22.108	0.0	0.0	0.0
	90.00000	11.00000	22.50000	-0.052127	22.108	0.0	0.0	0.0
	90.00000	10.00000	22.50000	-0.052108	22.108	0.0	0.0	0.0
	90.00000	9.00000	22.50000	-0.052053	22.108	0.0	0.0	0.0
	90.00000	8.00000	22.50000	-0.051962	22.108	0.0	0.0	0.0
	90.00000	7.00000	22.50000	-0.051837	22.108	0.0	0.0	0.0
	90.00000	6.00000	22.50000	-0.051677	22.108	0.0	0.0	0.0
	90.00000	5.00000	22.50000	-0.051484	22.108	0.0	0.0	0.0
	90.00000	4.00000	22.50000	-0.051257	22.108	0.0	0.0	0.0
	90.00000	3.00000	22.50000	-0.050999	22.108	0.0	0.0	0.0
	90.00000	2.00000	22.50000	-0.050709	22.108	0.0	0.0	0.0
	90.00000	1.00000	22.50000	-0.050388	22.108	0.0	0.0	0.0
	90.00000	0.00000	22.50000	-0.050038	22.108	0.0	0.0	0.0
	90.00000	-1.00000	22.50000	-0.049660	22.108	0.0	0.0	0.0
	90.00000	-2.00000	22.50000	-0.049255	22.108	0.0	0.0	0.0
	90.00000	-3.00000	22.50000	-0.048824	22.108	0.0	0.0	0.0
	90.00000	-4.00000	22.50000	-0.048368	22.108	0.0	0.0	0.0
	90.00000	-5.00000	22.50000	-0.047889	22.108	0.0	0.0	0.0
BKH_4	90.00000	-5.00000	22.50000	-0.047889	22.108	0.0	0.0	0.0
	89.00000	-5.18519	22.50000	-0.049731	22.108	0.0	0.0	0.0
	88.00000	-5.37037	22.50000	-0.051653	22.108	0.0	0.0	0.0
	87.00000	-5.55556	22.50000	-0.053659	22.108	0.0	0.0	0.0
	86.00000	-5.74074	22.50000	-0.055751	22.108	0.0	0.0	0.0
	85.00000	-5.92593	22.50000	-0.057933	22.108	0.0	0.0	0.0
	84.00000	-6.11111	22.50000	-0.060209	22.108	0.0	0.0	0.0
	83.00000	-6.29630	22.50000	-0.062581	22.108	0.0	0.0	0.0
	82.00000	-6.48148	22.50000	-0.065051	22.108	0.0	0.0	0.0
	81.00000	-6.66667	22.50000	-0.067623	22.108	0.0	0.0	0.0
	80.00000	-6.85185	22.50000	-0.070300	22.108	0.0	0.0	0.0
	79.00000	-7.03704	22.50000	-0.073083	22.108	0.0	0.0	0.0
	78.00000	-7.22222	22.50000	-0.075975	22.108	0.0	0.0	0.0
	77.00000	-7.40741	22.50000	-0.078976	22.108	0.0	0.0	0.0
	76.00000	-7.59259	22.50000	-0.082089	22.108	0.0	0.0	0.0
	75.00000	-7.77778	22.50000	-0.085312	22.108	0.0	0.0	0.0
	74.00000	-7.96296	22.50000	-0.088645	22.108	0.0	0.0	0.0
	73.00000	-8.14815	22.50000	-0.092088	22.108	0.0	0.0	0.0
	72.00000	-8.33333	22.50000	-0.095636	22.108	0.0	0.0	0.0
	71.00000	-8.51852	22.50000	-0.099287	22.108	0.0	0.0	0.0
	70.00000	-8.70370	22.50000	-0.10304	22.108	0.0	0.0	0.0
	69.00000	-8.88889	22.50000	-0.10687	22.108	0.0	0.0	0.0
	68.00000	-9.07407	22.50000	-0.11079	22.108	0.0	0.0	0.0
	67.00000	-9.25926	22.50000	-0.11478	22.108	0.0	0.0	0.0
	66.00000	-9.44444	22.50000	-0.11882	22.108	0.0	0.0	0.0
	65.00000	-9.62963	22.50000	-0.12290	22.108	0.0	0.0	0.0
	64.00000	-9.81481	22.50000	-0.12701	22.108	0.0	0.0	0.0
	63.00000	-10.00000	22.50000	-0.13111	22.108	0.0	0.0	0.0
Archway_1	6.50000	5.00000	20.50000	1.8651	20.325	0.0	0.0	0.0
	6.50000	5.95455	20.50000	1.2726	20.325	0.0	0.0	0.0
	6.50000	6.90909	20.50000	0.76448	20.325	0.0	0.0	0.0
	6.50000	7.86364	20.50000	0.52393	20.325	0.0	0.0	0.0
	6.50000	8.81818	20.50000	0.40989	20.325	0.0	0.0	0.0
	6.50000	9.77273	20.50000	0.28569	20.325	0.0	0.0	0.0
	6.50000	10.72727	20.50000	0.17003	20.325	0.0	0.0	0.0
	6.50000	11.68182	20.50000	0.073837	20.325	0.0	0.0	0.0
	6.50000	12.63636	20.50000	-0.0020479	20.325	0.0	0.0	0.0
	6.50000	13.59091	20.50000	-0.060419	20.325	0.0	0.0	0.0
	6.50000	14.54545	20.50000	-0.10466	20.325	0.0	0.0	0.0
	6.50000	15.50000	20.50000	-0.13776	20.325	0.0	0.0	0.0
Archway_2	6.50000	15.50000	20.50000	-0.13776	20.325	0.0	0.0	0.0
	5.66667	15.50000	20.50000	-0.14206	20.325	0.0	0.0	0.0
	4.83333	15.50000	20.50000	-0.14628	20.325	0.0	0.0	0.0
	4.00000	15.50000	20.50000	-0.15019	20.325	0.0	0.0	0.0
Archway_3	4.00000	5.00000	20.50000	0.53864	20.325	0.0	0.0	0.0
	4.83333	5.00000	20.50000	0.72032	20.325	0.0	0.0	0.0
	5.66667	5.00000	20.50000	1.0328	20.325	0.0	0.0	0.0
	6.50000	5.00000	20.50000	1.8651	20.325	0.0	0.0	0.0
167HH_1	27.00000	45.00000	20.50000	-0.14052	20.325	0.0	0.0	0.0
	28.00000	45.00000	20.50000	-0.14120	20.325	0.0	0.0	0.0
	29.00000	45.00000	20.50000	-0.14166	20.325	0.0	0.0	0.0
	30.00000	45.00000	20.50000	-0.14190	20.325	0.0	0.0	0.0
	31.00000	45.00000	20.50000	-0.14192	20.325	0.0	0.0	0.0
	32.00000	45.00000	20.50000	-0.14174	20.325	0.0	0.0	0.0
	33.00000	45.00000	20.50000	-0.14135	20.325	0.0	0.0	0.0
	34.00000	45.00000	20.50000	-0.14079	20.325	0.0	0.0	0.0
	35.00000	45.00000	20.50000	-0.14007	20.325	0.0	0.0	0.0
	36.00000	45.00000	20.50000	-0.13922	20.325	0.0	0.0	0.0
	37.00000	45.00000	20.50000	-0.13826	20.325	0.0	0.0	0.0
	38.00000	45.00000	20.50000	-0.13723	20.325	0.0	0.0	0.0
	39.00000	45.00000	20.50000	-0.13614	20.325	0.0	0.0	0.0
	40.00000	45.00000	20.50000	-0.13500	20.325	0.0	0.0	0.0
167HH_2	40.00000	45.00000	20.50000	-0.13500	20.325	0.0	0.0	0.0
	40.00000	46.00000	20.50000	-0.13131	20.325	0.0	0.0	0.0
	40.00000	47.00000	20.50000	-0.12717	20.325	0.0	0.0	0.0
	40.00000	48.00000	20.50000	-0.12275	20.325	0.0	0.0	0.0
	40.00000	49.00000	20.50000	-0.11818	20.325	0.0	0.0	0.0
	40.00000	50.00000	20.50000	-0.11355	20.325	0.0	0.0	0.0
	40.00000	51.00000	20.50000	-0.10894	20.325	0.0	0.0	0.0
	40.00000	52.00000	20.50000	-0.10439	20.325	0.0	0.0	0.0
167HH_3	40.00000	52.00000	20.50000	-0.10439	20.325	0.0	0.0	0.0
	39.00000	52.00000	20.50000	-0.10499	20.325	0.0	0.0	0.0
	38.00000	52.00000	20.50000	-0.10548	20.325	0.0	0.0	0.0
	37.00000	52.00000	20.50000	-0.10586	20.325	0.0	0.0	0.0
	36.00000	52.00000	20.50000	-0.10613	20.325	0.0	0.0	0.0

Name	Location X [m]	Location Y [m]	Displacement Z[Level] [mOD]	Displacement Z [mm]	Stresses Calc Level [mOD]	Stresses Vert Stress [kN/m²]	Stresses Sum Princ [kN/m²]	Stresses Vert Strain [-]
	35.00000	52.00000	20.50000	-0.10629	20.325	0.0	0.0	0.0
	34.00000	52.00000	20.50000	-0.10634	20.325	0.0	0.0	0.0
	33.00000	52.00000	20.50000	-0.10627	20.325	0.0	0.0	0.0
	32.00000	52.00000	20.50000	-0.10609	20.325	0.0	0.0	0.0
	31.00000	52.00000	20.50000	-0.10580	20.325	0.0	0.0	0.0
	30.00000	52.00000	20.50000	-0.10539	20.325	0.0	0.0	0.0
	29.00000	52.00000	20.50000	-0.10487	20.325	0.0	0.0	0.0
	28.00000	52.00000	20.50000	-0.10424	20.325	0.0	0.0	0.0
	27.00000	52.00000	20.50000	-0.10351	20.325	0.0	0.0	0.0
167HH_4	27.00000	52.00000	20.50000	-0.10351	20.325	0.0	0.0	0.0
	27.00000	51.00000	20.50000	-0.10828	20.325	0.0	0.0	0.0
	27.00000	50.00000	20.50000	-0.11324	20.325	0.0	0.0	0.0
	27.00000	49.00000	20.50000	-0.11839	20.325	0.0	0.0	0.0
	27.00000	48.00000	20.50000	-0.12371	20.325	0.0	0.0	0.0
	27.00000	47.00000	20.50000	-0.12919	20.325	0.0	0.0	0.0
	27.00000	46.00000	20.50000	-0.13480	20.325	0.0	0.0	0.0
	27.00000	45.00000	20.50000	-0.14052	20.325	0.0	0.0	0.0
210SH_1	4.00000	5.00000	20.50000	0.53864	20.325	0.0	0.0	0.0
	3.00000	5.00000	20.50000	0.36967	20.325	0.0	0.0	0.0
	2.00000	5.00000	20.50000	0.23140	20.325	0.0	0.0	0.0
	1.00000	5.00000	20.50000	0.12456	20.325	0.0	0.0	0.0
	0.00000	5.00000	20.50000	0.045480	20.325	0.0	0.0	0.0
	-1.00000	5.00000	20.50000	-0.011801	20.325	0.0	0.0	0.0
210SH_2	-1.00000	5.00000	20.50000	-0.011801	20.325	0.0	0.0	0.0
	-1.70000	5.60000	20.50000	-0.049335	20.325	0.0	0.0	0.0
	-2.40000	6.20000	20.50000	-0.077848	20.325	0.0	0.0	0.0
	-3.10000	6.80000	20.50000	-0.099147	20.325	0.0	0.0	0.0
	-3.80000	7.40000	20.50000	-0.11471	20.325	0.0	0.0	0.0
	-4.50000	8.00000	20.50000	-0.12572	20.325	0.0	0.0	0.0
210SH_3	-4.50000	8.00000	20.50000	-0.12572	20.325	0.0	0.0	0.0
	-3.72727	8.68182	20.50000	-0.12340	20.325	0.0	0.0	0.0
	-2.95455	9.36364	20.50000	-0.12108	20.325	0.0	0.0	0.0
	-2.18182	10.04545	20.50000	-0.11910	20.325	0.0	0.0	0.0
	-1.40909	10.72727	20.50000	-0.11781	20.325	0.0	0.0	0.0
	-0.63636	11.40909	20.50000	-0.11761	20.325	0.0	0.0	0.0
	0.13636	12.09091	20.50000	-0.11882	20.325	0.0	0.0	0.0
	0.90909	12.77273	20.50000	-0.12172	20.325	0.0	0.0	0.0
	1.68182	13.45455	20.50000	-0.12642	20.325	0.0	0.0	0.0
	2.45455	14.13636	20.50000	-0.13289	20.325	0.0	0.0	0.0
	3.22727	14.81818	20.50000	-0.14092	20.325	0.0	0.0	0.0
	4.00000	15.50000	20.50000	-0.15019	20.325	0.0	0.0	0.0
210SH_4	4.00000	15.50000	20.50000	-0.15019	20.325	0.0	0.0	0.0
	4.00000	14.54545	20.50000	-0.12875	20.325	0.0	0.0	0.0
	4.00000	13.59091	20.50000	-0.10056	20.325	0.0	0.0	0.0
	4.00000	12.63636	20.50000	-0.064243	20.325	0.0	0.0	0.0
	4.00000	11.68182	20.50000	-0.018329	20.325	0.0	0.0	0.0
	4.00000	10.72727	20.50000	0.038474	20.325	0.0	0.0	0.0
	4.00000	9.77273	20.50000	0.10675	20.325	0.0	0.0	0.0
	4.00000	8.81818	20.50000	0.18556	20.325	0.0	0.0	0.0
	4.00000	7.86364	20.50000	0.27193	20.325	0.0	0.0	0.0
	4.00000	6.90909	20.50000	0.36139	20.325	0.0	0.0	0.0
	4.00000	5.95455	20.50000	0.45030	20.325	0.0	0.0	0.0
	4.00000	5.00000	20.50000	0.53864	20.325	0.0	0.0	0.0
Tunnel	52.00000	50.00000	10.00000	-0.086534	8.3973	0.028142	0.50554	-2.7275E-6
	51.91667	49.00000	10.00000	-0.089629	8.3973	0.032721	0.54761	-2.9111E-6
	51.83333	48.00000	10.00000	-0.092672	8.3973	0.038217	0.59459	-3.1085E-6
	51.75000	47.00000	10.00000	-0.095615	8.3973	0.044843	0.64716	-3.3203E-6
	51.66667	46.00000	10.00000	-0.098394	8.3973	0.052869	0.70617	-3.5465E-6
	51.58333	45.00000	10.00000	-0.10093	8.3973	0.062633	0.77257	-3.7869E-6
	51.50000	44.00000	10.00000	-0.10313	8.3973	0.074562	0.84747	-4.0403E-6
	51.41667	43.00000	10.00000	-0.10488	8.3973	0.089194	0.93217	-4.3045E-6
	51.33333	42.00000	10.00000	-0.10604	8.3973	0.10721	1.0281	-4.5762E-6
	51.25000	41.00000	10.00000	-0.10643	8.3973	0.12944	1.1371	-4.8497E-6
	51.16667	40.00000	10.00000	-0.10588	8.3973	0.15695	1.2609	-5.1171E-6
	51.08333	39.00000	10.00000	-0.10414	8.3973	0.19100	1.4016	-5.3669E-6
	51.00000	38.00000	10.00000	-0.10097	8.3973	0.23315	1.5616	-5.5840E-6
	50.91667	37.00000	10.00000	-0.096081	8.3973	0.28518	1.7431	-5.7485E-6
	50.83333	36.00000	10.00000	-0.089189	8.3973	0.34910	1.9484	-5.8362E-6
	50.75000	35.00000	10.00000	-0.080003	8.3973	0.42704	2.1795	-5.8188E-6
	50.66667	34.00000	10.00000	-0.068266	8.3973	0.52102	2.4379	-5.6664E-6
	50.58333	33.00000	10.00000	-0.053791	8.3973	0.63265	2.7241	-5.3512E-6
	50.50000	32.00000	10.00000	-0.036506	8.3973	0.76271	3.0374	-4.8529E-6
	50.41667	31.00000	10.00000	-0.016504	8.3973	0.91064	3.3752	-4.1662E-6
	50.33333	30.00000	10.00000	0.0059141	8.3973	1.0741	3.7330	-3.3071E-6
	50.25000	29.00000	10.00000	0.030229	8.3973	1.2490	4.1046	-2.3160E-6
	50.16667	28.00000	10.00000	0.055719	8.3973	1.4294	4.4820	-1.2558E-6
	50.08333	27.00000	10.00000	0.081529	8.3973	1.6084	4.8566	0.0
	50.00000	26.00000	10.00000	0.10677	8.3973	1.7794	5.2199	0.0
	49.91667	25.00000	10.00000	0.13062	8.3973	1.9365	5.5643	1.5888E-6
	49.83333	24.00000	10.00000	0.15242	8.3973	2.0761	5.8843	2.2273E-6
	49.75000	23.00000	10.00000	0.17176	8.3973	2.1962	6.1764	2.6694E-6
	49.66667	22.00000	10.00000	0.18840	8.3973	2.2969	6.4388	2.9259E-6
	49.58333	21.00000	10.00000	0.20233	8.3973	2.3795	6.6719	3.0226E-6
	49.50000	20.00000	10.00000	0.21369	8.3973	2.4463	6.8768	2.9924E-6
	49.41667	19.00000	10.00000	0.22269	8.3973	2.4996	7.0557	2.8690E-6
	49.33333	18.00000	10.00000	0.22959	8.3973	2.5417	7.2108	2.6829E-6
	49.25000	17.00000	10.00000	0.23465	8.3973	2.5748	7.3446	2.4594E-6
	49.16667	16.00000	10.00000	0.23812	8.3973	2.6006	7.4591	2.2188E-6
	49.08333	15.00000	10.00000	0.24020	8.3973	2.6205	7.5564	1.9761E-6
	49.00000	14.00000	10.00000	0.24103	8.3973	2.6356	7.6377	1.7426E-6
	48.91667	13.00000	10.00000	0.24071	8.3973	2.6467	7.7044	1.5260E-6
	48.83333	12.00000	10.00000	0.23927	8.3973	2.6542	7.7569	1.3315E-6
	48.75000	11.00000	10.00000	0.23672	8.3973	2.6583	7.7955	1.1621E-6
	48.66667	10.00000	10.00000	0.23300	8.3973	2.6590	7.8199	1.0182E-6
	48.58333	9.00000	10.00000	0.22804	8.3973	2.6559	7.8291	0.0
	48.50000	8.00000	10.00000	0.22176	8.3973	2.6483	7.8219	0.0
	48.41667	7.00000	10.00000	0.21409	8.3973	2.6351	7.7962	0.0
	48.33333	6.00000	10.00000	0.20493	8.3973	2.6147	7.7496	0.0
	48.25000	5.00000	10.00000	0.19424	8.3973	2.5851	7.6790	0.0
	48.16667	4.00000	10.00000	0.18194	8.3973	2.5439	7.5810	0.0
	48.08333	3.00000	10.00000	0.16800	8.3973	2.4884	7.4521	0.0
	48.00000	2.00000	10.00000	0.15237	8.3973	2.4158	7.2891	0.0
	47.91667	1.00000	10.00000	0.13506	8.3973	2.3238	7.0895	0.0
	47.83333	0.00000	10.00000	0.11613	8.3973	2.2109	6.8523	-1.4217E-6
	47.75000	-1.00000	10.00000	0.095752	8.3973	2.0774	6.5781	-2.2396E-6
	47.66667	-2.00000	10.00000	0.074214	8.3973	1.9255	6.2702	-3.1981E-6
	47.58333	-3.00000	10.00000	0.051949	8.3973	1.7591	5.9339	-4.2520E-6
	47.50000	-4.00000	10.00000	0.029485	8.3973	1.5841	5.5764	-5.3381E-6
	47.41667	-5.00000	10.00000	0.0074034	8.3973	1.4068	5.2063	-6.3858E-6
	47.33333	-6.00000	10.00000	-0.013732	8.3973	1.2336	4.8324	-7.3297E-6
	47.25000	-7.00000	10.00000	-0.033435	8.3973	1.0698	4.4629	-8.1197E-6
	47.16667	-8.00000	10.00000	-0.051335	8.3973	0.91920	4.1048	-8.7261E-6
	47.08333	-9.00000	10.00000	-0.067195	8.3973	0.78413	3.7636	-9.1402E-6
	47.00000	-10.00000	10.00000	-0.080909	8.3973	0.66539	3.4429	-9.3704E-6
GrapeNear	38.00000	39.00000	24.00000	-0.13320	23.615	0.0	0.0	0.0
GrapeFar	38.00000	44.50000	24.00000	-0.13898	23.615	0.0	0.0	0.0
HighNear	41.00000	10.00000	24.00000	4.2156	23.615	0.0	0.0	0.0
HighFar	61.00000	10.00000	24.00000	-0.17693	23.615	0.0	0.0	0.0
ShaftsNear	20.00000	-2.50000	24.00000	4.5571	23.615	0.0	0.0	0.0
ShaftsFar	20.00000	-8.00000	24.00000	0.19369	23.615	0.0	0.0	0.0

APPENDIX E
XDISP OUTPUTS

Problem Type

Problem Type : Tunnelling and Embedded Wall Excavations

Displacement Data

Type	Name	Direction of extrusion	Point/Line/Line for extrusion						No. of intervals across extrusion/line	Extrusion depth	No. of intervals along extrusion		Calculate	Surface type for tunnels
			First point			Second point								
			X [m]	Y [m]	Z(level) [m]	X [m]	Y [m]	Z(level) [m]		[m]				
Grid	Grid 1	Global X	-10.00000	-10.00000	24.00000	-	60.00000	20.00000	70	80.00000		60	No	Surface
Line	BKH_1	-	63.00000	-10.00000	22.50000	62.00000	31.00000	22.50000	41	-	-		Yes	Surface
Line	BKH_2	-	62.00000	31.00000	22.50000	90.00000	32.00000	22.50000	28	-	-		Yes	Surface
Line	BKH_3	-	90.00000	32.00000	22.50000	90.00000	-5.00000	22.50000	37	-	-		Yes	Surface
Line	BKH_4	-	90.00000	-5.00000	22.50000	63.00000	-10.00000	22.50000	27	-	-		Yes	Surface
Line	Archway_1	-	6.50000	5.00000	20.50000	6.50000	15.50000	20.50000	11	-	-		Yes	Surface
Line	Archway_2	-	6.50000	15.50000	20.50000	4.00000	15.50000	20.50000	3	-	-		Yes	Surface
Line	Archway_3	-	4.00000	5.00000	20.50000	6.50000	5.00000	20.50000	3	-	-		Yes	Surface
Line	167HH_1	-	27.00000	45.00000	20.50000	40.00000	45.00000	20.50000	13	-	-		Yes	Surface
Line	167HH_2	-	40.00000	45.00000	20.50000	40.00000	52.00000	20.50000	7	-	-		Yes	Surface
Line	167HH_3	-	40.00000	52.00000	20.50000	27.00000	52.00000	20.50000	13	-	-		Yes	Surface
Line	167HH_4	-	27.00000	52.00000	20.50000	27.00000	45.00000	20.50000	7	-	-		Yes	Surface
Line	210SH_1	-	4.00000	5.00000	20.50000	-1.00000	5.00000	20.50000	5	-	-		Yes	Surface
Line	210SH_2	-	-1.00000	5.00000	20.50000	-4.50000	8.00000	20.50000	5	-	-		Yes	Surface
Line	210SH_3	-	-4.50000	8.00000	20.50000	4.00000	15.50000	20.50000	11	-	-		Yes	Surface
Line	210SH_4	-	4.00000	15.50000	20.50000	4.00000	5.00000	20.50000	11	-	-		Yes	Surface
Point	GrapeNear	-	38.00000	39.00000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	GrapeFar	-	38.00000	44.50000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	HighNear	-	41.00000	10.00000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	HighFar	-	61.00000	10.00000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	ShaftsNear	-	20.00000	-2.50000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	ShaftsFar	-	20.00000	-8.00000	24.00000	-	-	-	-	-	-		Yes	Surface

Vertical Ground Movement Curves (Excavations)

Curve Name: **No vertical ground movement**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.000][1.000,0.000,0.000][0.000,1.000,0.000][1.000,1.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = 0.0x + 0.0
Coeff. of Determination: -2147483648.E+2147483647

Curve Name: **Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][2.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = -2.5E-2x + 5.0E-2
Coeff. of Determination: 1.0

Curve Name: **Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.039][0.100,0.000,0.049][0.200,0.000,0.056][0.300,0.000,0.062]
[0.400,0.000,0.067][0.500,0.000,0.070][0.600,0.000,0.072][0.700,0.000,0.073]
[0.800,0.000,0.073][0.900,0.000,0.072][1.000,0.000,0.070][1.100,0.000,0.068]
[1.200,0.000,0.065][1.300,0.000,0.061][1.400,0.000,0.058][1.500,0.000,0.054]
[1.600,0.000,0.050][1.700,0.000,0.046][1.800,0.000,0.042][1.900,0.000,0.038]
[2.000,0.000,0.034][2.100,0.000,0.030][2.200,0.000,0.027][2.300,0.000,0.023]
[2.400,0.000,0.020][2.500,0.000,0.017][2.600,0.000,0.014][2.700,0.000,0.012]
[2.800,0.000,0.010][2.900,0.000,0.008][3.000,0.000,0.007][3.100,0.000,0.005]
[3.200,0.000,0.004][3.300,0.000,0.004][3.400,0.000,0.003][3.500,0.000,0.002]
[3.600,0.000,0.002][3.700,0.000,0.002][3.800,0.000,0.001][3.900,0.000,0.001]
[4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-2.6455E-3x^4 + 2.8495E-2x^3 - 1.0051E-1x^2 + 1.0569E-1x + 3.8990E-2$
Coeff. of Determination: 9.9991E-1

Horizontal Ground Movement Curves (Excavations)

Curve Name: **No horizontal ground movement**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.000][1.000,0.000,0.000][0.000,1.000,0.000][1.000,1.000,0.000]
Curve Fitting Method: Polynomial
x Order: 0
y Order: 0
Polynomial: z = 0.0
Coeff. of Determination: -2147483648.E+2147483647

Curve Name: **Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.081][0.050,0.000,0.076][0.100,0.000,0.072][0.150,0.000,0.067]
[0.200,0.000,0.063][0.250,0.000,0.059][0.300,0.000,0.056][0.350,0.000,0.052]
[0.400,0.000,0.049][0.450,0.000,0.045][0.500,0.000,0.043][0.550,0.000,0.040]
[0.600,0.000,0.037][0.650,0.000,0.034][0.700,0.000,0.032][0.750,0.000,0.029]
[0.800,0.000,0.027][0.850,0.000,0.024][0.900,0.000,0.022][0.950,0.000,0.020]
[1.000,0.000,0.018][1.050,0.000,0.016][1.100,0.000,0.014][1.150,0.000,0.012]
[1.200,0.000,0.011][1.250,0.000,0.009][1.300,0.000,0.007][1.350,0.000,0.005]
[1.400,0.000,0.004][1.450,0.000,0.002][1.500,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 3
y Order: 0
Polynomial: z = $-1.0610E-2x^3 + 4.4203E-2x^2 - 9.6358E-2x + 8.0901E-2$
Coeff. of Determination: 1.0000

Curve Name: **Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.150][4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = -3.75E-2x + 1.50E-1

Type	Name	Direction of extrusion	Point/Line/Line for extrusion	No. of intervals across extrusion/line	Extrusion depth	No. of intervals along extrusion	Calculate Surface type for tunnels

Coeff. of Determination: 1.00

Polygonal Excavations

Excavation Name: **New Excavation**
Surface level [m]: 24.000
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 20.300

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	6.5000	4.4000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	6.5000	-1.8000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	39.000	-1.6000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	40.000	5.0000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
5	35.900	5.3000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	6.5000	4.4000	6.5000	-1.8000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
2	6.5000	-1.8000	39.000	-1.6000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
3	39.000	-1.6000	40.000	5.0000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
4	40.000	5.0000	35.900	5.3000	No vertical ground movement	No horizontal ground movement
5	35.900	5.3000	6.5000	4.4000	No vertical ground movement	No horizontal ground movement

Excavation Name: **New Excavation 2**
Surface level [m]: 23.500
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 20.300

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	38.800	27.700	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	35.900	5.3000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	40.000	5.0000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	41.900	27.000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	38.800	27.700	35.900	5.3000	No vertical ground movement	No horizontal ground movement
2	35.900	5.3000	40.000	5.0000	No vertical ground movement	No horizontal ground movement
3	40.000	5.0000	41.900	27.000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
4	41.900	27.000	38.800	27.700	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))

Excavation Name: **Wall Installation**
Surface level [m]: 24.000
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 14.000

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	6.5000	4.4000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	6.5000	-1.8000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	39.000	-1.6000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	40.000	5.0000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
5	35.900	5.3000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	6.5000	4.4000	6.5000	-1.8000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
2	6.5000	-1.8000	39.000	-1.6000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
3	39.000	-1.6000	40.000	5.0000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
4	40.000	5.0000	35.900	5.3000	No vertical ground movement	No horizontal ground movement
5	35.900	5.3000	6.5000	4.4000	No vertical ground movement	No horizontal ground movement

Excavation Name: **Wall Installation 2**
Surface level [m]: 24.000
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 14.000

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	38.800	27.700	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	35.900	5.3000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	40.000	5.0000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	41.900	27.000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	38.800	27.700	35.900	5.3000	No vertical ground movement	No horizontal ground movement
2	35.900	5.3000	40.000	5.0000	No vertical ground movement	No horizontal ground movement
3	40.000	5.0000	41.900	27.000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
4	41.900	27.000	38.800	27.700	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))

Damage Category Strains

Name	0 (Negligible) to 1 (Very Slight)	1 (Very Slight) to 2 (Slight)	2 (Slight) to 3 (Moderate)	3 (Moderate) to 4 (Severe)
Burland Strain Limits	0.0	500.00E-6	750.00E-6	0.0015000

Specific Structures - Geometry

Name	0 (Negligible) to 1 (Very Slight)	1 (Very Slight) to 2 (Slight)	2 (Slight) to 3 (Moderate)	3 (Moderate) to 4 (Severe)

Structure Name	Sub-Structure Name	Displacement Line	Start Distance Along Line	End Distance Along Line	Vertical Offsets from Line for Vertical Movement Calculations	Vertical Displacement Limit Sensitivity	Damage Category Strains	Poisson's Ratio	E/G
			[m]	[m]	[m]	[mm]			
BKH_1	BKH_1	BKH_1	0.00000	41.01200	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
BKH_2	BKH_2	BKH_2	0.00000	28.01700	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
BKH_3	BKH_3	BKH_3	0.00000	37.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
BKH_4	BKH_4	BKH_4	0.00000	27.45900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Archway_1	Archway_1	Archway_1	0.00000	10.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Archway_2	Archway_2	Archway_2	0.00000	2.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Archway_3	Archway_3	Archway_3	0.00000	2.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_1	167HH_1	167HH_1	0.00000	13.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_2	167HH_2	167HH_2	0.00000	7.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_3	167HH_3	167HH_3	0.00000	13.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_4	167HH_4	167HH_4	0.00000	7.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_1	210SH_1	210SH_1	0.00000	5.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_2	210SH_2	210SH_2	0.00000	4.60900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_3	210SH_3	210SH_3	0.00000	11.33500	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_4	210SH_4	210SH_4	0.00000	10.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height	Default Properties	Hogging			Sagging		
				2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension	2nd Moment of Area (per unit width)	Distance of Bending Strain from N.A.	Distance of N.A. from Edge of Beam in Tension
		[m]		[m³]	[m]	[m]	[m³]	[m]	[m]
BKH_1	BKH_1	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
BKH_2	BKH_2	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
BKH_3	BKH_3	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
BKH_4	BKH_4	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
Archway_1	Archway_1	18.000	Yes	1944.0	18.000	18.000	486.00	9.0000	9.0000
Archway_2	Archway_2	18.000	Yes	1944.0	18.000	18.000	486.00	9.0000	9.0000
Archway_3	Archway_3	18.000	Yes	1944.0	18.000	18.000	486.00	9.0000	9.0000
167HH_1	167HH_1	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
167HH_2	167HH_2	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
167HH_3	167HH_3	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
167HH_4	167HH_4	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
210SH_1	210SH_1	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000
210SH_2	210SH_2	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000
210SH_3	210SH_3	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000
210SH_4	210SH_4	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000

Building Segment Combinations

Structure Name	Sub-Structure Name	Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Combined Segment
		[m]		[m]	[m]		

No structures have segments combined.

Utility Strain Calculation Options

Neglect beneficial contribution of axial strains : No

Warnings

1 Multiple excavations have been specified. The displacements resulting from these excavations are calculated by summing the displacements resulting from each individual excavation. No account has been taken of the interactions between excavations (e.g. overlapping zones of influence or 'shielding' of one excavation by another).

2 Embedded Wall Excavation PE1 : New Excavation intersects PE2 : New Excavation 2, and PE4 : Wall Installation 2.

3 Embedded Wall Excavation PE2 : New Excavation 2 intersects PE1 : New Excavation, and PE3 : Wall Installation .

4 Embedded Wall Excavation PE3 : Wall Installation intersects PE2 : New Excavation 2, and PE4 : Wall Installation 2.

5 Embedded Wall Excavation PE4 : Wall Installation 2 intersects PE1 : New Excavation, and PE3 : Wall Installation .

6 If an embedded wall excavation is assigned a 'surface' ground movement curve and if the 'allow movement calculation to level' option is checked for the excavation then displacements induced by it are calculated for points at the surface, and points below the surface to the level specified. Others are ignored. An example of such a combination, for which displacements will not be calculated is Excavation XP2/Side 3/Point 1/Vertical. This is an example only. There are 23 others.

7 If an embedded wall excavation is assigned a 'sub-surface' ground movement curve then displacements induced by it can only be calculated for those points that are level with or below the embedded wall excavation's 'surface level'. Others are ignored. An example of such a combination, for which displacements will not be calculated is Excavation XP2/Side 1/Point 1/Vertical. This is an example only. There are 23 others.

Errors

None

Displacement and Strain Results

Type/No. Name	Dist.	Coordinates x	y	z	Displacements x	y	z	Horizontal displacement along Line	Horizontal displacement perpendicular to Line	Angle of Line to x Axis
	[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]
BKH_1	Line 1	63.00000	-10.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	1.0003	62.97561	-9.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	2.0006	62.95122	-8.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	3.0009	62.92683	-7.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	4.0012	62.90244	-6.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	5.0015	62.87805	-5.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	6.0018	62.85366	-4.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	7.0021	62.82927	-3.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	8.0024	62.80488	-2.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	9.0027	62.78049	-1.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	10.003	62.75610	0.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	11.003	62.73171	1.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	12.004	62.70732	2.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	13.004	62.68293	3.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	14.004	62.65854	4.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	15.004	62.63415	5.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	16.005	62.60976	6.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	17.005	62.58537	7.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	18.005	62.56098	8.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	19.006	62.53659	9.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	20.006	62.51220	10.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	21.006	62.48780	11.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	22.007	62.46341	12.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	23.007	62.43902	13.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	24.007	62.41463	14.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397

Type/No.		Coordinates			Displacements					Angle of Line
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	to x Axis
	25.007	62.39024	15.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	26.008	62.36585	16.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	27.008	62.34146	17.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	28.008	62.31707	18.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	29.009	62.29268	19.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	30.009	62.26829	20.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	31.009	62.24390	21.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	32.010	62.21951	22.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	33.010	62.19512	23.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	34.010	62.17073	24.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	35.010	62.14634	25.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	36.011	62.12195	26.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	37.011	62.09756	27.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	38.011	62.07317	28.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	39.012	62.04878	29.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	40.012	62.02439	30.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
	41.012	62.00000	31.00000	22.50000	0.0	0.0	0.0	0.0	0.0	91.397
BKH_2	Line 2	62.00000	31.00000	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	1.0006	63.00000	31.03571	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	2.0013	64.00000	31.07143	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	3.0019	65.00000	31.10714	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	4.0026	66.00000	31.14286	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	5.0032	67.00000	31.17857	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	6.0038	68.00000	31.21429	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	7.0045	69.00000	31.25000	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	8.0051	70.00000	31.28571	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	9.0057	71.00000	31.32143	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	10.006	72.00000	31.35714	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	11.007	73.00000	31.39286	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	12.008	74.00000	31.42857	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	13.008	75.00000	31.46429	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	14.009	76.00000	31.50000	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	15.010	77.00000	31.53571	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	16.010	78.00000	31.57143	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	17.011	79.00000	31.60714	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	18.011	80.00000	31.64286	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	19.012	81.00000	31.67857	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	20.013	82.00000	31.71429	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	21.013	83.00000	31.75000	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	22.014	84.00000	31.78571	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	23.015	85.00000	31.82143	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	24.015	86.00000	31.85714	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	25.016	87.00000	31.89286	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	26.017	88.00000	31.92857	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	27.017	89.00000	31.96429	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
	28.018	90.00000	32.00000	22.50000	0.0	0.0	0.0	0.0	0.0	2.0454
BKH_3	Line 3	90.00000	32.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	1.0000	90.00000	31.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	2.0000	90.00000	30.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	3.0000	90.00000	29.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	4.0000	90.00000	28.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	5.0000	90.00000	27.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	6.0000	90.00000	26.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	7.0000	90.00000	25.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	8.0000	90.00000	24.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	9.0000	90.00000	23.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	10.000	90.00000	22.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	11.000	90.00000	21.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	12.000	90.00000	20.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	13.000	90.00000	19.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	14.000	90.00000	18.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	15.000	90.00000	17.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	16.000	90.00000	16.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	17.000	90.00000	15.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	18.000	90.00000	14.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	19.000	90.00000	13.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	20.000	90.00000	12.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	21.000	90.00000	11.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	22.000	90.00000	10.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	23.000	90.00000	9.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	24.000	90.00000	8.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	25.000	90.00000	7.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	26.000	90.00000	6.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	27.000	90.00000	5.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	28.000	90.00000	4.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	29.000	90.00000	3.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	30.000	90.00000	2.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	31.000	90.00000	1.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	32.000	90.00000	0.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	33.000	90.00000	-1.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	34.000	90.00000	-2.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	35.000	90.00000	-3.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	36.000	90.00000	-4.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
	37.000	90.00000	-5.00000	22.50000	0.0	0.0	0.0	0.0	0.0	270.00
BKH_4	Line 4	90.00000	-5.00000	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	1.0170	89.00000	-5.18519	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	2.0340	88.00000	-5.37037	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	3.0510	87.00000	-5.55556	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	4.0680	86.00000	-5.74074	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	5.0850	85.00000	-5.92593	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	6.1020	84.00000	-6.11111	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	7.1190	83.00000	-6.29630	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	8.1360	82.00000	-6.48148	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	9.1530	81.00000	-6.66667	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	10.170	80.00000	-6.85185	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	11.187	79.00000	-7.03704	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	12.204	78.00000	-7.22222	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	13.221	77.00000	-7.40741	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	14.238	76.00000	-7.59259	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	15.255	75.00000	-7.77778	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	16.272	74.00000	-7.96296	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	17.289	73.00000	-8.14815	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	18.306	72.00000	-8.33333	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	19.323	71.00000	-8.51852	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	20.340	70.00000	-8.70370	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	21.357	69.00000	-8.88889	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	22.374	68.00000	-9.07407	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	23.391	67.00000	-9.25926	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	24.408	66.00000	-9.44444	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	25.425	65.00000	-9.62963	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	26.442	64.00000	-9.81481	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
	27.459	63.00000	-10.00000	22.50000	0.0	0.0	0.0	0.0	0.0	190.49
Archway_1	Line 5	6.50000	5.00000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	0.95455	6.50000	5.95455	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	1.9091	6.50000	6.90909	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	2.8636	6.50000	7.86364	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	3.8182	6.50000	8.81818	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	4.7727	6.50000	9.77273	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	5.7273	6.50000	10.72727	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	6.6818	6.50000	11.68182	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	7.6364	6.50000	12.63636	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	8.5909	6.50000	13.59091	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	9.5455	6.50000	14.54545	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	10.500	6.50000	15.50000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
Archway_2	Line 6	6.50000	15.50000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	0.83333	5.66667	15.50000	20.50000	0.040403	0.0	0.036045	-0.040403	0.0	180.00
	1.6667	4.83333	15.50000	20.50000	0.10520	0.0	0.094901	-0.10520	0.0	180.00
	2.5000	4.00000	15.50000	20.50000	0.16236	0.0	0.14937	-0.16236	0.0	180.00
Archway_3	Line 7	4.00000	5.00000	20.50000	5.7337	0.0	3.8612	5.7337	0.0	0.0
	0.83333	4.83333	5.00000	20.50000	5.5557	0.0	3.4743	5.5557	0.0	0.0
	1.6667	5.66667	5.00000	20.50000	4.1221	0.0	2.3461	4.1221	0.0	0.0
	2.5000	6.50000	5.00000	20.50000	0.0	0.0	0.0	0.0	0.0	0.0
167HH_1	Line 8	27.00000	45.00000	20.50000	0.0	0.0	0.0	0.0	0.0	0.0
	1.0000	28.00000	45.00000	20.50000	0.0	0.0	0.0	0.0	0.0	0.0
	2.0000	29.00000	45.00000	20.50000	0.0	0.0	0.0081980	0.0	0.0	0.0
	3.0000	30.00000	45.00000	20.50000	0.0	0.0	0.044483	0.0	0.0	0.0
	4.0000	31.00000	45.00000	20.50000	0.0	0.0	0.082765	0.0	0.0	0.0
	5.0000	32.00000	45.00000	20.50000	0.0	0.0	0.12243	0.0	0.0	0.0
	6.0000	33.00000	45.00000	20.50000	0.0	0.0	0.16272	0.0	0.0	0.0
	7.0000	34.00000	45.00000	20.50000	0.0	0.0	0.20273	0.0	0.0	0.0
	8.0000	35.00000	45.00000	20.50000	0.0	0.0	0.24139	0.0	0.0	0.0

Type/No. Name	Dist.	Coordinates x	y	z	Displacements x	y	z	Horizontal displacement	Horizontal displacement	Angle of Line to x Axis
	9.0000	36.00000	45.00000	20.50000	0.0	0.0	0.27754	0.0	0.0	0.0
	10.000	37.00000	45.00000	20.50000	0.0	0.0	0.30988	0.0	0.0	0.0
	11.000	38.00000	45.00000	20.50000	0.0	0.0	0.33707	0.0	0.0	0.0
	12.000	39.00000	45.00000	20.50000	0.0	0.0	0.35776	0.0	0.0	0.0
	13.000	40.00000	45.00000	20.50000	0.0	0.0	0.37061	0.0	0.0	0.0
167HH_2	Line 9	40.00000	45.00000	20.50000	0.0	0.0	0.37061	0.0	0.0	90.000
	1.0000	40.00000	46.00000	20.50000	0.0	0.0	0.23077	0.0	0.0	90.000
	2.0000	40.00000	47.00000	20.50000	0.0	0.0	0.091827	0.0	0.0	90.000
	3.0000	40.00000	48.00000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	4.0000	40.00000	49.00000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	5.0000	40.00000	50.00000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	6.0000	40.00000	51.00000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
	7.0000	40.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	90.000
167HH_3	Line 10	40.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	1.0000	39.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	2.0000	38.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	3.0000	37.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	4.0000	36.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	5.0000	35.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	6.0000	34.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	7.0000	33.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	8.0000	32.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	9.0000	31.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	10.000	30.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	11.000	29.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	12.000	28.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
	13.000	27.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	180.00
167HH_4	Line 11	27.00000	52.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	1.0000	27.00000	51.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	2.0000	27.00000	50.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	3.0000	27.00000	49.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	4.0000	27.00000	48.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	5.0000	27.00000	47.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	6.0000	27.00000	46.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
	7.0000	27.00000	45.00000	20.50000	0.0	0.0	0.0	0.0	0.0	270.00
210SH_1	Line 12	4.00000	5.00000	20.50000	5.7337	0.0	3.8612	-5.7337	0.0	180.00
	1.0000	3.00000	5.00000	20.50000	5.4829	0.0	3.9279	-5.4829	0.0	180.00
	2.0000	2.00000	5.00000	20.50000	5.0574	0.0	3.7640	-5.0574	0.0	180.00
	3.0000	1.00000	5.00000	20.50000	4.5701	0.0	3.4721	-4.5701	0.0	180.00
	4.0000	0.00000	5.00000	20.50000	4.0635	0.0	3.1155	-4.0635	0.0	180.00
	5.0000	-1.00000	5.00000	20.50000	3.5554	0.0	2.7386	-3.5554	0.0	180.00
210SH_2	Line 13	-1.00000	5.00000	20.50000	3.5554	0.0	2.7386	-2.6995	-2.3138	139.40
	0.92195	-1.70000	5.60000	20.50000	2.9718	0.0	2.3023	-2.2564	-1.9340	139.40
	1.8439	-2.40000	6.20000	20.50000	2.4592	0.0	1.9316	-1.8672	-1.6004	139.40
	2.7659	-3.10000	6.80000	20.50000	2.0037	0.0	1.6211	-1.5213	-1.3040	139.40
	3.6878	-3.80000	7.40000	20.50000	1.5937	0.0	1.3646	-1.2100	-1.0371	139.40
	4.6098	-4.50000	8.00000	20.50000	1.2198	0.0	1.1540	-0.92615	-0.79384	139.40
210SH_3	Line 14	-4.50000	8.00000	20.50000	1.2198	0.0	1.1540	0.91466	-0.80706	41.424
	1.0305	-3.72727	8.68182	20.50000	1.2801	0.0	1.1363	0.95986	-0.84694	41.424
	2.0611	-2.95455	9.36364	20.50000	1.2744	0.0	1.0864	0.95559	-0.84317	41.424
	3.0916	-2.18182	10.04545	20.50000	1.2052	0.0	1.0020	0.90368	-0.79736	41.424
	4.1221	-1.40909	10.72727	20.50000	1.0792	0.0	0.88428	0.80922	-0.71402	41.424
	5.1526	-0.63636	11.40909	20.50000	0.91294	0.0	0.74276	0.68455	-0.60402	41.424
	6.1832	0.13636	12.09091	20.50000	0.79310	0.0	0.64455	0.59469	-0.52473	41.424
	7.2137	0.90909	12.77273	20.50000	0.65786	0.0	0.53716	0.49329	-0.43526	41.424
	8.2442	1.68182	13.45455	20.50000	0.51828	0.0	0.42805	0.38862	-0.34290	41.424
	9.2747	2.45455	14.13636	20.50000	0.38431	0.0	0.32400	0.28817	-0.25427	41.424
	10.305	3.22727	14.81818	20.50000	0.26387	0.0	0.23010	0.19786	-0.17458	41.424
	11.336	4.00000	15.50000	20.50000	0.16236	0.0	0.14937	0.12174	-0.10742	41.424
210SH_4	Line 15	4.00000	15.50000	20.50000	0.16236	0.0	0.14937	0.0	0.16236	270.00
	0.95455	4.00000	14.54545	20.50000	0.22829	0.0	0.19108	0.0	0.22829	270.00
	1.9091	4.00000	13.59091	20.50000	0.30981	0.0	0.24669	0.0	0.30981	270.00
	2.8636	4.00000	12.63636	20.50000	0.41226	0.0	0.32075	0.0	0.41226	270.00
	3.8182	4.00000	11.68182	20.50000	0.54333	0.0	0.41891	0.0	0.54333	270.00
	4.7727	4.00000	10.72727	20.50000	0.71450	0.0	0.54859	0.0	0.71450	270.00
	5.7273	4.00000	9.77273	20.50000	0.94333	0.0	0.72000	0.0	0.94333	270.00
	6.6818	4.00000	8.81818	20.50000	1.2575	0.0	0.94810	0.0	1.2575	270.00
	7.6364	4.00000	7.86364	20.50000	1.7014	0.0	1.2558	0.0	1.7014	270.00
	8.5909	4.00000	6.90909	20.50000	2.3441	0.0	1.6785	0.0	2.3441	270.00
	9.5455	4.00000	5.95455	20.50000	3.7396	0.0	2.5869	0.0	3.7396	270.00
	10.500	4.00000	5.00000	20.50000	5.7337	0.0	3.8612	0.0	5.7337	270.00
GrapeNear	Point 1	38.00000	39.00000	24.00000	-0.20085	-0.88950	1.1006	-	-	-
GrapeFar	Point 2	38.00000	44.50000	24.00000	0.0	0.0	0.39934	-	-	-
HighNear	Point 3	41.00000	10.00000	24.00000	-12.379	1.0871	6.8204	-	-	-
HighFar	Point 4	61.00000	10.00000	24.00000	0.0	0.0	0.0	-	-	-
ShaftsNear	Point 5	20.00000	-2.50000	24.00000	-0.077651	12.618	6.9177	-	-	-
ShaftsFar	Point 6	20.00000	-8.00000	24.00000	-0.041302	6.7116	5.1380	-	-	-

Specific Building Damage Results - Horizontal Displacements

Structure: BKH_1 | Sub-structure: BKH_1

Dist.	Coordinates x	y	z	Displacements x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	63.00000	-10.00000	22.50000	0.0	0.0	0.0	0.0
1.0003	62.97561	-9.00000	22.50000	0.0	0.0	0.0	0.0
2.0006	62.95122	-8.00000	22.50000	0.0	0.0	0.0	0.0
3.0009	62.92683	-7.00000	22.50000	0.0	0.0	0.0	0.0
4.0012	62.90244	-6.00000	22.50000	0.0	0.0	0.0	0.0
5.0015	62.87805	-5.00000	22.50000	0.0	0.0	0.0	0.0
6.0018	62.85366	-4.00000	22.50000	0.0	0.0	0.0	0.0
7.0021	62.82927	-3.00000	22.50000	0.0	0.0	0.0	0.0
8.0024	62.80488	-2.00000	22.50000	0.0	0.0	0.0	0.0
9.0027	62.78049	-1.00000	22.50000	0.0	0.0	0.0	0.0
10.003	62.75610	0.00000	22.50000	0.0	0.0	0.0	0.0
11.003	62.73171	1.00000	22.50000	0.0	0.0	0.0	0.0
12.004	62.70732	2.00000	22.50000	0.0	0.0	0.0	0.0
13.004	62.68293	3.00000	22.50000	0.0	0.0	0.0	0.0
14.004	62.65854	4.00000	22.50000	0.0	0.0	0.0	0.0
15.004	62.63415	5.00000	22.50000	0.0	0.0	0.0	0.0
16.005	62.60976	6.00000	22.50000	0.0	0.0	0.0	0.0
17.005	62.58537	7.00000	22.50000	0.0	0.0	0.0	0.0
18.005	62.56098	8.00000	22.50000	0.0	0.0	0.0	0.0
19.006	62.53659	9.00000	22.50000	0.0	0.0	0.0	0.0
20.006	62.51220	10.00000	22.50000	0.0	0.0	0.0	0.0
21.006	62.48780	11.00000	22.50000	0.0	0.0	0.0	0.0
22.007	62.46341	12.00000	22.50000	0.0	0.0	0.0	0.0
23.007	62.43902	13.00000	22.50000	0.0	0.0	0.0	0.0
24.007	62.41463	14.00000	22.50000	0.0	0.0	0.0	0.0
25.007	62.39024	15.00000	22.50000	0.0	0.0	0.0	0.0
26.008	62.36585	16.00000	22.50000	0.0	0.0	0.0	0.0
27.008	62.34146	17.00000	22.50000	0.0	0.0	0.0	0.0
28.008	62.31707	18.00000	22.50000	0.0	0.0	0.0	0.0
29.009	62.29268	19.00000	22.50000	0.0	0.0	0.0	0.0
30.009	62.26829	20.00000	22.50000	0.0	0.0	0.0	0.0
31.009	62.24390	21.00000	22.50000	0.0	0.0	0.0	0.0
32.010	62.21951	22.00000	22.50000	0.0	0.0	0.0	0.0
33.010	62.19512	23.00000	22.50000	0.0	0.0	0.0	0.0
34.010	62.17073	24.00000	22.50000	0.0	0.0	0.0	0.0
35.010	62.14634	25.00000	22.50000	0.0	0.0	0.0	0.0
36.011	62.12195	26.00000	22.50000	0.0	0.0	0.0	0.0
37.011	62.09756	27.00000	22.50000	0.0	0.0	0.0	0.0
38.011	62.07317	28.00000	22.50000	0.0	0.0	0.0	0.0
39.012	62.04878	29.00000	22.50000	0.0	0.0	0.0	0.0
40.012	62.02439	30.00000	22.50000	0.0	0.0	0.0	0.0
41.012	62.00000	31.00000	22.50000	0.0	0.0	0.0	0.0

Structure: BKH_2 | Sub-structure: BKH_2

Dist.	Coordinates x	y	z	Displacements x	y	Horizontal displacement	Horizontal displacement

						Displacements	
						Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	62.00000	31.00000	22.50000	0.0	0.0	0.0	0.0
1.0006	63.00000	31.03571	22.50000	0.0	0.0	0.0	0.0
2.0013	64.00000	31.07143	22.50000	0.0	0.0	0.0	0.0
3.0019	65.00000	31.10714	22.50000	0.0	0.0	0.0	0.0
4.0026	66.00000	31.14286	22.50000	0.0	0.0	0.0	0.0
5.0032	67.00000	31.17857	22.50000	0.0	0.0	0.0	0.0
6.0038	68.00000	31.21429	22.50000	0.0	0.0	0.0	0.0
7.0045	69.00000	31.25000	22.50000	0.0	0.0	0.0	0.0
8.0051	70.00000	31.28571	22.50000	0.0	0.0	0.0	0.0
9.0057	71.00000	31.32143	22.50000	0.0	0.0	0.0	0.0
10.006	72.00000	31.35714	22.50000	0.0	0.0	0.0	0.0
11.007	73.00000	31.39286	22.50000	0.0	0.0	0.0	0.0
12.008	74.00000	31.42857	22.50000	0.0	0.0	0.0	0.0
13.008	75.00000	31.46429	22.50000	0.0	0.0	0.0	0.0
14.009	76.00000	31.50000	22.50000	0.0	0.0	0.0	0.0
15.010	77.00000	31.53571	22.50000	0.0	0.0	0.0	0.0
16.010	78.00000	31.57143	22.50000	0.0	0.0	0.0	0.0
17.011	79.00000	31.60714	22.50000	0.0	0.0	0.0	0.0
18.011	80.00000	31.64286	22.50000	0.0	0.0	0.0	0.0
19.012	81.00000	31.67857	22.50000	0.0	0.0	0.0	0.0
20.013	82.00000	31.71429	22.50000	0.0	0.0	0.0	0.0
21.013	83.00000	31.75000	22.50000	0.0	0.0	0.0	0.0
22.014	84.00000	31.78571	22.50000	0.0	0.0	0.0	0.0
23.015	85.00000	31.82143	22.50000	0.0	0.0	0.0	0.0
24.015	86.00000	31.85714	22.50000	0.0	0.0	0.0	0.0
25.016	87.00000	31.89286	22.50000	0.0	0.0	0.0	0.0
26.017	88.00000	31.92857	22.50000	0.0	0.0	0.0	0.0
27.017	89.00000	31.96429	22.50000	0.0	0.0	0.0	0.0
28.018	90.00000	32.00000	22.50000	0.0	0.0	0.0	0.0

Structure: BKH_3 | Sub-structure: BKH_3

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	90.00000	32.00000	22.50000	0.0	0.0	0.0	0.0
1.0000	90.00000	31.00000	22.50000	0.0	0.0	0.0	0.0
2.0000	90.00000	30.00000	22.50000	0.0	0.0	0.0	0.0
3.0000	90.00000	29.00000	22.50000	0.0	0.0	0.0	0.0
4.0000	90.00000	28.00000	22.50000	0.0	0.0	0.0	0.0
5.0000	90.00000	27.00000	22.50000	0.0	0.0	0.0	0.0
6.0000	90.00000	26.00000	22.50000	0.0	0.0	0.0	0.0
7.0000	90.00000	25.00000	22.50000	0.0	0.0	0.0	0.0
8.0000	90.00000	24.00000	22.50000	0.0	0.0	0.0	0.0
9.0000	90.00000	23.00000	22.50000	0.0	0.0	0.0	0.0
10.000	90.00000	22.00000	22.50000	0.0	0.0	0.0	0.0
11.000	90.00000	21.00000	22.50000	0.0	0.0	0.0	0.0
12.000	90.00000	20.00000	22.50000	0.0	0.0	0.0	0.0
13.000	90.00000	19.00000	22.50000	0.0	0.0	0.0	0.0
14.000	90.00000	18.00000	22.50000	0.0	0.0	0.0	0.0
15.000	90.00000	17.00000	22.50000	0.0	0.0	0.0	0.0
16.000	90.00000	16.00000	22.50000	0.0	0.0	0.0	0.0
17.000	90.00000	15.00000	22.50000	0.0	0.0	0.0	0.0
18.000	90.00000	14.00000	22.50000	0.0	0.0	0.0	0.0
19.000	90.00000	13.00000	22.50000	0.0	0.0	0.0	0.0
20.000	90.00000	12.00000	22.50000	0.0	0.0	0.0	0.0
21.000	90.00000	11.00000	22.50000	0.0	0.0	0.0	0.0
22.000	90.00000	10.00000	22.50000	0.0	0.0	0.0	0.0
23.000	90.00000	9.00000	22.50000	0.0	0.0	0.0	0.0
24.000	90.00000	8.00000	22.50000	0.0	0.0	0.0	0.0
25.000	90.00000	7.00000	22.50000	0.0	0.0	0.0	0.0
26.000	90.00000	6.00000	22.50000	0.0	0.0	0.0	0.0
27.000	90.00000	5.00000	22.50000	0.0	0.0	0.0	0.0
28.000	90.00000	4.00000	22.50000	0.0	0.0	0.0	0.0
29.000	90.00000	3.00000	22.50000	0.0	0.0	0.0	0.0
30.000	90.00000	2.00000	22.50000	0.0	0.0	0.0	0.0
31.000	90.00000	1.00000	22.50000	0.0	0.0	0.0	0.0
32.000	90.00000	0.00000	22.50000	0.0	0.0	0.0	0.0
33.000	90.00000	-1.00000	22.50000	0.0	0.0	0.0	0.0
34.000	90.00000	-2.00000	22.50000	0.0	0.0	0.0	0.0
35.000	90.00000	-3.00000	22.50000	0.0	0.0	0.0	0.0
36.000	90.00000	-4.00000	22.50000	0.0	0.0	0.0	0.0
37.000	90.00000	-5.00000	22.50000	0.0	0.0	0.0	0.0

Structure: BKH_4 | Sub-structure: BKH_4

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	90.00000	-5.00000	22.50000	0.0	0.0	0.0	0.0
1.0170	89.00000	-5.18519	22.50000	0.0	0.0	0.0	0.0
2.0340	88.00000	-5.37037	22.50000	0.0	0.0	0.0	0.0
3.0510	87.00000	-5.55556	22.50000	0.0	0.0	0.0	0.0
4.0680	86.00000	-5.74074	22.50000	0.0	0.0	0.0	0.0
5.0850	85.00000	-5.92593	22.50000	0.0	0.0	0.0	0.0
6.1020	84.00000	-6.11111	22.50000	0.0	0.0	0.0	0.0
7.1190	83.00000	-6.29630	22.50000	0.0	0.0	0.0	0.0
8.1360	82.00000	-6.48148	22.50000	0.0	0.0	0.0	0.0
9.1530	81.00000	-6.66667	22.50000	0.0	0.0	0.0	0.0
10.170	80.00000	-6.85185	22.50000	0.0	0.0	0.0	0.0
11.187	79.00000	-7.03704	22.50000	0.0	0.0	0.0	0.0
12.204	78.00000	-7.22222	22.50000	0.0	0.0	0.0	0.0
13.221	77.00000	-7.40741	22.50000	0.0	0.0	0.0	0.0
14.238	76.00000	-7.59259	22.50000	0.0	0.0	0.0	0.0
15.255	75.00000	-7.77778	22.50000	0.0	0.0	0.0	0.0
16.272	74.00000	-7.96296	22.50000	0.0	0.0	0.0	0.0
17.289	73.00000	-8.14815	22.50000	0.0	0.0	0.0	0.0
18.306	72.00000	-8.33333	22.50000	0.0	0.0	0.0	0.0
19.323	71.00000	-8.51852	22.50000	0.0	0.0	0.0	0.0
20.340	70.00000	-8.70370	22.50000	0.0	0.0	0.0	0.0
21.357	69.00000	-8.88889	22.50000	0.0	0.0	0.0	0.0
22.374	68.00000	-9.07407	22.50000	0.0	0.0	0.0	0.0
23.391	67.00000	-9.25926	22.50000	0.0	0.0	0.0	0.0
24.408	66.00000	-9.44444	22.50000	0.0	0.0	0.0	0.0
25.425	65.00000	-9.62963	22.50000	0.0	0.0	0.0	0.0
26.442	64.00000	-9.81481	22.50000	0.0	0.0	0.0	0.0
27.459	63.00000	-10.00000	22.50000	0.0	0.0	0.0	0.0

Structure: Archway_1 | Sub-structure: Archway_1

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	6.50000	5.00000	20.50000	0.0	0.0	0.0	0.0
0.95455	6.50000	5.95455	20.50000	0.0	0.0	0.0	0.0
1.9091	6.50000	6.90909	20.50000	0.0	0.0	0.0	0.0
2.8636	6.50000	7.86364	20.50000	0.0	0.0	0.0	0.0
3.8182	6.50000	8.81818	20.50000	0.0	0.0	0.0	0.0
4.7727	6.50000	9.77273	20.50000	0.0	0.0	0.0	0.0
5.7273	6.50000	10.72727	20.50000	0.0	0.0	0.0	0.0
6.6818	6.50000	11.68182	20.50000	0.0	0.0	0.0	0.0
7.6364	6.50000	12.63636	20.50000	0.0	0.0	0.0	0.0
8.5909	6.50000	13.59091	20.50000	0.0	0.0	0.0	0.0
9.5455	6.50000	14.54545	20.50000	0.0	0.0	0.0	0.0
10.500	6.50000	15.50000	20.50000	0.0	0.0	0.0	0.0

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line

Structure: Archway_2 | Sub-structure: Archway_2

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	6.50000	15.50000	20.50000	0.0	0.0	0.0	0.0
0.83333	5.66667	15.50000	20.50000	0.040403	0.0	-0.040403	0.0
1.6667	4.83333	15.50000	20.50000	0.10520	0.0	-0.10520	0.0
2.5000	4.00000	15.50000	20.50000	0.16236	0.0	-0.16236	0.0

Structure: Archway_3 | Sub-structure: Archway_3

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	4.00000	5.00000	20.50000	5.7337	0.0	5.7337	0.0
0.83333	4.83333	5.00000	20.50000	5.5557	0.0	5.5557	0.0
1.6667	5.66667	5.00000	20.50000	4.1221	0.0	4.1221	0.0
2.5000	6.50000	5.00000	20.50000	0.0	0.0	0.0	0.0

Structure: 167HH_1 | Sub-structure: 167HH_1

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	27.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
1.0000	28.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
2.0000	29.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
3.0000	30.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
4.0000	31.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
5.0000	32.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
6.0000	33.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
7.0000	34.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
8.0000	35.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
9.0000	36.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
10.000	37.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
11.000	38.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
12.000	39.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
13.000	40.00000	45.00000	20.50000	0.0	0.0	0.0	0.0

Structure: 167HH_2 | Sub-structure: 167HH_2

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	40.00000	45.00000	20.50000	0.0	0.0	0.0	0.0
1.0000	40.00000	46.00000	20.50000	0.0	0.0	0.0	0.0
2.0000	40.00000	47.00000	20.50000	0.0	0.0	0.0	0.0
3.0000	40.00000	48.00000	20.50000	0.0	0.0	0.0	0.0
4.0000	40.00000	49.00000	20.50000	0.0	0.0	0.0	0.0
5.0000	40.00000	50.00000	20.50000	0.0	0.0	0.0	0.0
6.0000	40.00000	51.00000	20.50000	0.0	0.0	0.0	0.0
7.0000	40.00000	52.00000	20.50000	0.0	0.0	0.0	0.0

Structure: 167HH_3 | Sub-structure: 167HH_3

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	40.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
1.0000	39.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
2.0000	38.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
3.0000	37.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
4.0000	36.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
5.0000	35.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
6.0000	34.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
7.0000	33.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
8.0000	32.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
9.0000	31.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
10.000	30.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
11.000	29.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
12.000	28.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
13.000	27.00000	52.00000	20.50000	0.0	0.0	0.0	0.0

Structure: 167HH_4 | Sub-structure: 167HH_4

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	27.00000	52.00000	20.50000	0.0	0.0	0.0	0.0
1.0000	27.00000	51.00000	20.50000	0.0	0.0	0.0	0.0
2.0000	27.00000	50.00000	20.50000	0.0	0.0	0.0	0.0
3.0000	27.00000	49.00000	20.50000	0.0	0.0	0.0	0.0
4.0000	27.00000	48.00000	20.50000	0.0	0.0	0.0	0.0
5.0000	27.00000	47.00000	20.50000	0.0	0.0	0.0	0.0
6.0000	27.00000	46.00000	20.50000	0.0	0.0	0.0	0.0
7.0000	27.00000	45.00000	20.50000	0.0	0.0	0.0	0.0

Structure: 210SH_1 | Sub-structure: 210SH_1

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	4.00000	5.00000	20.50000	5.7337	0.0	-5.7337	0.0
1.0000	3.00000	5.00000	20.50000	5.4829	0.0	-5.4829	0.0
2.0000	2.00000	5.00000	20.50000	5.0574	0.0	-5.0574	0.0
3.0000	1.00000	5.00000	20.50000	4.5701	0.0	-4.5701	0.0
4.0000	0.00000	5.00000	20.50000	4.0635	0.0	-4.0635	0.0
5.0000	-1.00000	5.00000	20.50000	3.5554	0.0	-3.5554	0.0

Structure: 210SH_2 | Sub-structure: 210SH_2

Dist.	Coordinates x	y	z	x	y	Displacements Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]

Dist.	Coordinates x	y	z	Displacements x	y	Horizontal displacement along the	Horizontal displacement perpendicular
0.0	-1.00000	5.00000	20.50000	3.5554	0.0	-2.6995	-2.3138
0.92195	-1.70000	5.60000	20.50000	2.9718	0.0	-2.2564	-1.9340
1.8439	-2.40000	6.20000	20.50000	2.4592	0.0	-1.8672	-1.6004
2.7659	-3.10000	6.80000	20.50000	2.0037	0.0	-1.5213	-1.3040
3.6878	-3.80000	7.40000	20.50000	1.5937	0.0	-1.2100	-1.0371
4.6098	-4.50000	8.00000	20.50000	1.2198	0.0	-0.92615	-0.79384

Structure: 210SH_3 | Sub-structure: 210SH_3

Dist.	Coordinates x	y	z	Displacements x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	-4.50000	8.00000	20.50000	1.2198	0.0	0.91466	-0.80706
1.0305	-3.72727	8.68182	20.50000	1.2801	0.0	0.95986	-0.84694
2.0611	-2.95455	9.36364	20.50000	1.2744	0.0	0.95559	-0.84317
3.0916	-2.18182	10.04545	20.50000	1.2052	0.0	0.90368	-0.79736
4.1221	-1.40909	10.72727	20.50000	1.0792	0.0	0.80922	-0.71402
5.1526	-0.63636	11.40909	20.50000	0.91294	0.0	0.68455	-0.60402
6.1832	0.13636	12.09091	20.50000	0.79310	0.0	0.59469	-0.52473
7.2137	0.90909	12.77273	20.50000	0.65786	0.0	0.49329	-0.43526
8.2442	1.68182	13.45455	20.50000	0.51828	0.0	0.38862	-0.34290
9.2747	2.45455	14.13636	20.50000	0.38431	0.0	0.28817	-0.25427
10.305	3.22727	14.81818	20.50000	0.26387	0.0	0.19786	-0.17458
11.336	4.00000	15.50000	20.50000	0.16236	0.0	0.12174	-0.10742

Structure: 210SH_4 | Sub-structure: 210SH_4

Dist.	Coordinates x	y	z	Displacements x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	4.00000	15.50000	20.50000	0.16236	0.0	0.0	0.16236
0.95455	4.00000	14.54545	20.50000	0.22829	0.0	0.0	0.22829
1.9091	4.00000	13.59091	20.50000	0.30981	0.0	0.0	0.30981
2.8636	4.00000	12.63636	20.50000	0.41226	0.0	0.0	0.41226
3.8182	4.00000	11.68182	20.50000	0.54333	0.0	0.0	0.54333
4.7727	4.00000	10.72727	20.50000	0.71450	0.0	0.0	0.71450
5.7273	4.00000	9.77273	20.50000	0.94333	0.0	0.0	0.94333
6.6818	4.00000	8.81818	20.50000	1.2575	0.0	0.0	1.2575
7.6364	4.00000	7.86364	20.50000	1.7014	0.0	0.0	1.7014
8.5909	4.00000	6.90909	20.50000	2.3441	0.0	0.0	2.3441
9.5455	4.00000	5.95455	20.50000	3.7396	0.0	0.0	3.7396
10.500	4.00000	5.00000	20.50000	5.7337	0.0	0.0	5.7337

Specific Building Damage Results - Vertical Displacements

Structure: BKH_1 | Sub-structure: BKH_1

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	63.00000	-10.00000	22.50000	0.0
1.0003	62.97561	-9.00000	22.50000	0.0
2.0006	62.95122	-8.00000	22.50000	0.0
3.0009	62.92683	-7.00000	22.50000	0.0
4.0012	62.90244	-6.00000	22.50000	0.0
5.0015	62.87805	-5.00000	22.50000	0.0
6.0018	62.85366	-4.00000	22.50000	0.0
7.0021	62.82927	-3.00000	22.50000	0.0
8.0024	62.80488	-2.00000	22.50000	0.0
9.0027	62.78049	-1.00000	22.50000	0.0
10.003	62.75610	0.00000	22.50000	0.0
11.003	62.73171	1.00000	22.50000	0.0
12.004	62.70732	2.00000	22.50000	0.0
13.004	62.68293	3.00000	22.50000	0.0
14.004	62.65854	4.00000	22.50000	0.0
15.004	62.63415	5.00000	22.50000	0.0
16.005	62.60976	6.00000	22.50000	0.0
17.005	62.58537	7.00000	22.50000	0.0
18.005	62.56098	8.00000	22.50000	0.0
19.006	62.53659	9.00000	22.50000	0.0
20.006	62.51220	10.00000	22.50000	0.0
21.006	62.48780	11.00000	22.50000	0.0
22.007	62.46341	12.00000	22.50000	0.0
23.007	62.43902	13.00000	22.50000	0.0
24.007	62.41463	14.00000	22.50000	0.0
25.007	62.39024	15.00000	22.50000	0.0
26.008	62.36585	16.00000	22.50000	0.0
27.008	62.34146	17.00000	22.50000	0.0
28.008	62.31707	18.00000	22.50000	0.0
29.009	62.29268	19.00000	22.50000	0.0
30.009	62.26829	20.00000	22.50000	0.0
31.009	62.24390	21.00000	22.50000	0.0
32.010	62.21951	22.00000	22.50000	0.0
33.010	62.19512	23.00000	22.50000	0.0
34.010	62.17073	24.00000	22.50000	0.0
35.010	62.14634	25.00000	22.50000	0.0
36.011	62.12195	26.00000	22.50000	0.0
37.011	62.09756	27.00000	22.50000	0.0
38.011	62.07317	28.00000	22.50000	0.0
39.012	62.04878	29.00000	22.50000	0.0
40.012	62.02439	30.00000	22.50000	0.0
41.012	62.00000	31.00000	22.50000	0.0

Structure: BKH_2 | Sub-structure: BKH_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	62.00000	31.00000	22.50000	0.0
1.0006	63.00000	31.03571	22.50000	0.0
2.0013	64.00000	31.07143	22.50000	0.0
3.0019	65.00000	31.10714	22.50000	0.0
4.0026	66.00000	31.14286	22.50000	0.0
5.0032	67.00000	31.17857	22.50000	0.0
6.0038	68.00000	31.21429	22.50000	0.0
7.0045	69.00000	31.25000	22.50000	0.0
8.0051	70.00000	31.28571	22.50000	0.0
9.0057	71.00000	31.32143	22.50000	0.0
10.006	72.00000	31.35714	22.50000	0.0
11.007	73.00000	31.39286	22.50000	0.0
12.008	74.00000	31.42857	22.50000	0.0
13.008	75.00000	31.46429	22.50000	0.0
14.009	76.00000	31.50000	22.50000	0.0
15.010	77.00000	31.53571	22.50000	0.0
16.010	78.00000	31.57143	22.50000	0.0
17.011	79.00000	31.60714	22.50000	0.0
18.011	80.00000	31.64286	22.50000	0.0
19.012	81.00000	31.67857	22.50000	0.0
20.013	82.00000	31.71429	22.50000	0.0
21.013	83.00000	31.75000	22.50000	0.0
22.014	84.00000	31.78571	22.50000	0.0
23.015	85.00000	31.82143	22.50000	0.0
24.015	86.00000	31.85714	22.50000	0.0
25.016	87.00000	31.89286	22.50000	0.0

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
26.017	88.00000	31.92857	22.50000	0.0
27.017	89.00000	31.96429	22.50000	0.0
28.018	90.00000	32.00000	22.50000	0.0

Structure: BKH_3 | Sub-structure: BKH_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	90.00000	32.00000	22.50000	0.0
1.0000	90.00000	31.00000	22.50000	0.0
2.0000	90.00000	30.00000	22.50000	0.0
3.0000	90.00000	29.00000	22.50000	0.0
4.0000	90.00000	28.00000	22.50000	0.0
5.0000	90.00000	27.00000	22.50000	0.0
6.0000	90.00000	26.00000	22.50000	0.0
7.0000	90.00000	25.00000	22.50000	0.0
8.0000	90.00000	24.00000	22.50000	0.0
9.0000	90.00000	23.00000	22.50000	0.0
10.000	90.00000	22.00000	22.50000	0.0
11.000	90.00000	21.00000	22.50000	0.0
12.000	90.00000	20.00000	22.50000	0.0
13.000	90.00000	19.00000	22.50000	0.0
14.000	90.00000	18.00000	22.50000	0.0
15.000	90.00000	17.00000	22.50000	0.0
16.000	90.00000	16.00000	22.50000	0.0
17.000	90.00000	15.00000	22.50000	0.0
18.000	90.00000	14.00000	22.50000	0.0
19.000	90.00000	13.00000	22.50000	0.0
20.000	90.00000	12.00000	22.50000	0.0
21.000	90.00000	11.00000	22.50000	0.0
22.000	90.00000	10.00000	22.50000	0.0
23.000	90.00000	9.00000	22.50000	0.0
24.000	90.00000	8.00000	22.50000	0.0
25.000	90.00000	7.00000	22.50000	0.0
26.000	90.00000	6.00000	22.50000	0.0
27.000	90.00000	5.00000	22.50000	0.0
28.000	90.00000	4.00000	22.50000	0.0
29.000	90.00000	3.00000	22.50000	0.0
30.000	90.00000	2.00000	22.50000	0.0
31.000	90.00000	1.00000	22.50000	0.0
32.000	90.00000	0.00000	22.50000	0.0
33.000	90.00000	-1.00000	22.50000	0.0
34.000	90.00000	-2.00000	22.50000	0.0
35.000	90.00000	-3.00000	22.50000	0.0
36.000	90.00000	-4.00000	22.50000	0.0
37.000	90.00000	-5.00000	22.50000	0.0

Structure: BKH_4 | Sub-structure: BKH_4

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	90.00000	-5.00000	22.50000	0.0
1.0170	89.00000	-5.18519	22.50000	0.0
2.0340	88.00000	-5.37037	22.50000	0.0
3.0510	87.00000	-5.55556	22.50000	0.0
4.0680	86.00000	-5.74074	22.50000	0.0
5.0850	85.00000	-5.92593	22.50000	0.0
6.1020	84.00000	-6.11111	22.50000	0.0
7.1190	83.00000	-6.29630	22.50000	0.0
8.1360	82.00000	-6.48148	22.50000	0.0
9.1530	81.00000	-6.66667	22.50000	0.0
10.170	80.00000	-6.85185	22.50000	0.0
11.187	79.00000	-7.03704	22.50000	0.0
12.204	78.00000	-7.22222	22.50000	0.0
13.221	77.00000	-7.40741	22.50000	0.0
14.238	76.00000	-7.59259	22.50000	0.0
15.255	75.00000	-7.77778	22.50000	0.0
16.272	74.00000	-7.96296	22.50000	0.0
17.289	73.00000	-8.14815	22.50000	0.0
18.306	72.00000	-8.33333	22.50000	0.0
19.323	71.00000	-8.51852	22.50000	0.0
20.340	70.00000	-8.70370	22.50000	0.0
21.357	69.00000	-8.88889	22.50000	0.0
22.374	68.00000	-9.07407	22.50000	0.0
23.391	67.00000	-9.25926	22.50000	0.0
24.408	66.00000	-9.44444	22.50000	0.0
25.425	65.00000	-9.62963	22.50000	0.0
26.442	64.00000	-9.81481	22.50000	0.0
27.459	63.00000	-10.00000	22.50000	0.0

Structure: Archway_1 | Sub-structure: Archway_1

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	6.50000	5.00000	20.50000	0.0
0.95455	6.50000	5.95455	20.50000	0.0
1.9091	6.50000	6.90909	20.50000	0.0
2.8636	6.50000	7.86364	20.50000	0.0
3.8182	6.50000	8.81818	20.50000	0.0
4.7727	6.50000	9.77273	20.50000	0.0
5.7273	6.50000	10.72727	20.50000	0.0
6.6818	6.50000	11.68182	20.50000	0.0
7.6364	6.50000	12.63636	20.50000	0.0
8.5909	6.50000	13.59091	20.50000	0.0
9.5455	6.50000	14.54545	20.50000	0.0
10.500	6.50000	15.50000	20.50000	0.0

Structure: Archway_2 | Sub-structure: Archway_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	6.50000	15.50000	20.50000	0.0
0.83333	5.66667	15.50000	20.50000	0.036045
1.6667	4.83333	15.50000	20.50000	0.094901
2.5000	4.00000	15.50000	20.50000	0.14937

Structure: Archway_3 | Sub-structure: Archway_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	4.00000	5.00000	20.50000	3.8612
0.83333	4.83333	5.00000	20.50000	3.4743
1.6667	5.66667	5.00000	20.50000	2.3461
2.5000	6.50000	5.00000	20.50000	0.0

Structure: 167HH_1 | Sub-structure: 167HH_1

Dist.	Coordinates x	y	z	Displacements z

[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	27.00000	45.00000	20.50000	0.0
1.0000	28.00000	45.00000	20.50000	0.0
2.0000	29.00000	45.00000	20.50000	0.0081980
3.0000	30.00000	45.00000	20.50000	0.044483
4.0000	31.00000	45.00000	20.50000	0.082765
5.0000	32.00000	45.00000	20.50000	0.12243
6.0000	33.00000	45.00000	20.50000	0.16272
7.0000	34.00000	45.00000	20.50000	0.20273
8.0000	35.00000	45.00000	20.50000	0.24139
9.0000	36.00000	45.00000	20.50000	0.27754
10.000	37.00000	45.00000	20.50000	0.30988
11.000	38.00000	45.00000	20.50000	0.33707
12.000	39.00000	45.00000	20.50000	0.35776
13.000	40.00000	45.00000	20.50000	0.37061

Structure: 167HH_2 | Sub-structure: 167HH_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	40.00000	45.00000	20.50000	0.37061
1.0000	40.00000	46.00000	20.50000	0.23077
2.0000	40.00000	47.00000	20.50000	0.091827
3.0000	40.00000	48.00000	20.50000	0.0
4.0000	40.00000	49.00000	20.50000	0.0
5.0000	40.00000	50.00000	20.50000	0.0
6.0000	40.00000	51.00000	20.50000	0.0
7.0000	40.00000	52.00000	20.50000	0.0

Structure: 167HH_3 | Sub-structure: 167HH_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	40.00000	52.00000	20.50000	0.0
1.0000	39.00000	52.00000	20.50000	0.0
2.0000	38.00000	52.00000	20.50000	0.0
3.0000	37.00000	52.00000	20.50000	0.0
4.0000	36.00000	52.00000	20.50000	0.0
5.0000	35.00000	52.00000	20.50000	0.0
6.0000	34.00000	52.00000	20.50000	0.0
7.0000	33.00000	52.00000	20.50000	0.0
8.0000	32.00000	52.00000	20.50000	0.0
9.0000	31.00000	52.00000	20.50000	0.0
10.000	30.00000	52.00000	20.50000	0.0
11.000	29.00000	52.00000	20.50000	0.0
12.000	28.00000	52.00000	20.50000	0.0
13.000	27.00000	52.00000	20.50000	0.0

Structure: 167HH_4 | Sub-structure: 167HH_4

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	27.00000	52.00000	20.50000	0.0
1.0000	27.00000	51.00000	20.50000	0.0
2.0000	27.00000	50.00000	20.50000	0.0
3.0000	27.00000	49.00000	20.50000	0.0
4.0000	27.00000	48.00000	20.50000	0.0
5.0000	27.00000	47.00000	20.50000	0.0
6.0000	27.00000	46.00000	20.50000	0.0
7.0000	27.00000	45.00000	20.50000	0.0

Structure: 210SH_1 | Sub-structure: 210SH_1

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	4.00000	5.00000	20.50000	3.8612
1.0000	3.00000	5.00000	20.50000	3.9279
2.0000	2.00000	5.00000	20.50000	3.7640
3.0000	1.00000	5.00000	20.50000	3.4721
4.0000	0.00000	5.00000	20.50000	3.1155
5.0000	-1.00000	5.00000	20.50000	2.7386

Structure: 210SH_2 | Sub-structure: 210SH_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	-1.00000	5.00000	20.50000	2.7386
0.92195	-1.70000	5.60000	20.50000	2.3023
1.8439	-2.40000	6.20000	20.50000	1.9316
2.7659	-3.10000	6.80000	20.50000	1.6211
3.6878	-3.80000	7.40000	20.50000	1.3646
4.6098	-4.50000	8.00000	20.50000	1.1540

Structure: 210SH_3 | Sub-structure: 210SH_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	-4.50000	8.00000	20.50000	1.1540
1.0305	-3.72727	8.68182	20.50000	1.1363
2.0611	-2.95455	9.36364	20.50000	1.0864
3.0916	-2.18182	10.04545	20.50000	1.0020
4.1221	-1.40909	10.72727	20.50000	0.88428
5.1526	-0.63636	11.40909	20.50000	0.74276
6.1832	0.13636	12.09091	20.50000	0.64455
7.2137	0.90909	12.77273	20.50000	0.53716
8.2442	1.68182	13.45455	20.50000	0.42805
9.2747	2.45455	14.13636	20.50000	0.32400
10.305	3.22727	14.81818	20.50000	0.23010
11.336	4.00000	15.50000	20.50000	0.14937

Structure: 210SH_4 | Sub-structure: 210SH_4

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]

Vertical Offset 1

0.0	4.00000	15.50000	20.50000	0.14937
0.95455	4.00000	14.54545	20.50000	0.19108
1.9091	4.00000	13.59091	20.50000	0.24669
2.8636	4.00000	12.63636	20.50000	0.32075
3.8182	4.00000	11.68182	20.50000	0.41891

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
4.7727	4.00000	10.72727	20.50000	0.54859
5.7273	4.00000	9.77273	20.50000	0.72000
6.6818	4.00000	8.81818	20.50000	0.94810
7.6364	4.00000	7.86364	20.50000	1.2558
8.5909	4.00000	6.90909	20.50000	1.6785
9.5455	4.00000	5.95455	20.50000	2.5869
10.500	4.00000	5.00000	20.50000	3.8612

Specific Building Damage Results - All Segments

Structure: BKH_1 | Sub-structure: BKH_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: BKH_2 | Sub-structure: BKH_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: BKH_3 | Sub-structure: BKH_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: BKH_4 | Sub-structure: BKH_4

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Archway_1 | Sub-structure: Archway_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Archway_2 | Sub-structure: Archway_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	2.5000	0.0	None	0.0	0.0	0.0	68.588E-6	-65.364E-6	62044.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Archway_3 | Sub-structure: Archway_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	1.6667	Sagging	0.022087	-0.096696	0.023384	0.0049712	0.0028293	625.66	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_1 | Sub-structure: 167HH_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	5.0000	0.64572	None	0.0	0.0	0.0	0.0	-40.291E-6	1.7049E+6	0 (Negligible)
	2	5.6457	7.3543	Sagging	405.36E-6	0.0	378.55E-6	0.0	-40.291E-6	122410.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_2 | Sub-structure: 167HH_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	0.46141	Hogging	0.0	0.0	0.0	0.0	139.84E-6	93770.	0 (Negligible)
	2	0.46141	0.53859	None	0.0	0.0	0.0	0.0	139.84E-6	80333.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_3 | Sub-structure: 167HH_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m] [m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_4 | Sub-structure: 167HH_4

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m] [m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.									

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_1 | Sub-structure: 210SH_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m] [m]		[%]	[%]	[%]			[m]	
0.0	1	0.0 5.0000	Sagging	0.0070050	0.043567	0.046354	-507.84E-6	376.74E-6	3906.1	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_2 | Sub-structure: 210SH_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m] [m]		[%]	[%]	[%]			[m]	
0.0	1	0.0 4.6090	Hogging	0.0037510	0.038470	0.039167	-480.38E-6	472.97E-6	12725.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_3 | Sub-structure: 210SH_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.5465	Sagging	0.0017834	-0.0034485	0.0013354	120.99E-6	137.35E-6	31570.	0 (Negligible)
	2	4.5465	2.4142	Hogging	716.41E-6	-0.0099285	0.0020286	120.99E-6	137.35E-6	79311.	0 (Negligible)
	3	6.9607	0.55134	Sagging	40.796E-6	-0.010011	0.0020024	101.58E-6	105.88E-6	567280.	0 (Negligible)
	4	7.5120	3.8230	Hogging	453.44E-6	-0.0089247	0.0018040	101.58E-6	105.88E-6	76194.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_4 | Sub-structure: 210SH_4

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m] [m]		[%]	[%]	[%]			[m]	
0.0	1	0.0 10.500	Hogging	0.015173	0.0	0.014881	0.0	-0.0013350	2301.3	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Specific Building Damage Results - Critical Values for All Segments within Each Sub-Structure

Structure: BKH_1 | Sub-structure: BKH_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: BKH_2 | Sub-structure: BKH_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: BKH_3 | Sub-structure: BKH_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: BKH_4 | Sub-structure: BKH_4

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: Archway_1 | Sub-structure: Archway_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: Archway_2 | Sub-structure: Archway_2

Vertical Offset from	Deflection Ratio	Average Horizontal	Max Slope	Max Settlement	Max Tensile	Max Gradient of	Max Gradient of Vertical	Min Radius of	Min Radius of	Damage Category

Line for Vertical Movement Calculations	Strain		Strain	Horizontal Displacement Curve	Displacement Curve	Curvature (Hogging)	Curvature (Sagging)	
[m]	[%]	[%]	[mm]	[%]		[m]	[m]	
0.0	0.0	0.0 -65.364E-6	0.14937	0.0	68.588E-6	-65.364E-6	-	- 0 (Negligible)

Structure: Archway_3 | Sub-structure: Archway_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.022087	-0.096696	0.0028293	3.8612	0.023384	0.0049712	0.0028293	-	625.66	0 (Negligible)

Structure: 167HH_1 | Sub-structure: 167HH_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	405.36E-6	0.0	-40.291E-6	0.37061	378.55E-6	0.0	-40.291E-6	-	122410.	0 (Negligible)

Structure: 167HH_2 | Sub-structure: 167HH_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0	0.0	139.84E-6	0.37061	0.0	0.0	139.84E-6	93770.	-	0 (Negligible)

Structure: 167HH_3 | Sub-structure: 167HH_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: 167HH_4 | Sub-structure: 167HH_4

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: 210SH_1 | Sub-structure: 210SH_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0070050	0.043567	376.74E-6	3.9262	0.046354	-507.84E-6	376.74E-6	-	3906.1	0 (Negligible)

Structure: 210SH_2 | Sub-structure: 210SH_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0037510	0.038470	472.97E-6	2.7386	0.039167	-480.38E-6	472.97E-6	12725.	-	0 (Negligible)

Structure: 210SH_3 | Sub-structure: 210SH_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0017834	-0.010011	137.35E-6	1.1540	0.0020286	120.99E-6	137.35E-6	76194.	31570.	0 (Negligible)

Structure: 210SH_4 | Sub-structure: 210SH_4

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.015173	0.0	-0.0013350	3.8612	0.014881	0.0	-0.0013350	2301.3	-	0 (Negligible)

Specific Building Damage Results - Critical Segments within Each Structure

Structure Name	Parameter	Critical Sub-Structure	Critical Start Segment	End	Curvature Max Slope	Max Settlement	Max Tensile Strain	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
			[m]	[m]		[mm]	[%]	[m]	[m]	
BKH_1	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
BKH_2	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
BKH_3	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									
	All settlements are less than the Settlement Trough Limit Sensitivity.									

Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Max Slope	Max Settlement	Max Tensile Strain	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
BKH_4	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
Archway_1	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
Archway_2	Max Slope	Archway_2	1	2.5000	2.5000	Sagging	**65.364E-6**	0.14937	0.0	-	62044.	0 (Negligible)
	Max Settlement	Archway_2	1	2.5000	2.5000	Sagging	65.364E-6	**0.14937**	0.0	-	62044.	0 (Negligible)
	Max Tensile Strain	Archway_2	1	2.5000	2.5000	Sagging	65.364E-6	0.14937	**0.0**	-	62044.	0 (Negligible)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
Archway_3	Max Slope	Archway_3	1	0.0	1.6667	Sagging	**0.0028293**	3.8612	0.023384	-	625.66	0 (Negligible)
	Max Settlement	Archway_3	1	0.0	1.6667	Sagging	0.0028293	**3.8612**	0.023384	-	625.66	0 (Negligible)
	Max Tensile Strain	Archway_3	1	0.0	1.6667	Sagging	0.0028293	3.8612	**0.023384**	-	625.66	0 (Negligible)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)	Archway_3	1	0.0	1.6667	Sagging	0.0028293	3.8612	0.023384	-	**625.66**	0 (Negligible)
167HH_1	Max Slope	167HH_1	1	5.0000	5.6457	Sagging	**40.291E-6**	0.14845	0.0	-	1.7049E+6	0 (Negligible)
	Max Settlement	167HH_1	2	5.6457	13.000	Sagging	40.291E-6	**0.37061**	378.55E-6	-	122410.	0 (Negligible)
	Max Tensile Strain	167HH_1	2	5.6457	13.000	Sagging	40.291E-6	0.37061	**378.55E-6**	-	122410.	0 (Negligible)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)	167HH_1	2	5.6457	13.000	Sagging	40.291E-6	0.37061	378.55E-6	-	**122410.**	0 (Negligible)
167HH_2	Max Slope	167HH_2	1	0.0	0.46141	Hogging	**139.84E-6**	0.37061	0.0	93770.	-	0 (Negligible)
	Max Settlement	167HH_2	1	0.0	0.46141	Hogging	139.84E-6	**0.37061**	0.0	93770.	-	0 (Negligible)
	Max Tensile Strain	167HH_2	1	0.0	0.46141	Hogging	139.84E-6	0.37061	**0.0**	93770.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	167HH_2	1	0.0	0.46141	Hogging	139.84E-6	0.37061	0.0	**93770.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
167HH_3	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
167HH_4	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
210SH_1	Max Slope	210SH_1	1	0.0	5.0000	Sagging	**376.74E-6**	3.9262	0.046354	-	3906.1	0 (Negligible)
	Max Settlement	210SH_1	1	0.0	5.0000	Sagging	376.74E-6	**3.9262**	0.046354	-	3906.1	0 (Negligible)
	Max Tensile Strain	210SH_1	1	0.0	5.0000	Sagging	376.74E-6	3.9262	**0.046354**	-	3906.1	0 (Negligible)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)	210SH_1	1	0.0	5.0000	Sagging	376.74E-6	3.9262	0.046354	-	**3906.1**	0 (Negligible)
210SH_2	Max Slope	210SH_2	1	0.0	4.6090	Hogging	**472.97E-6**	2.7386	0.039167	12725.	-	0 (Negligible)
	Max Settlement	210SH_2	1	0.0	4.6090	Hogging	472.97E-6	**2.7386**	0.039167	12725.	-	0 (Negligible)
	Max Tensile Strain	210SH_2	1	0.0	4.6090	Hogging	472.97E-6	2.7386	**0.039167**	12725.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	210SH_2	1	0.0	4.6090	Hogging	472.97E-6	2.7386	0.039167	**12725.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
210SH_3	Max Slope	210SH_3	1	0.0	4.5465	Sagging	**137.35E-6**	1.1540	0.0013354	-	31570.	0 (Negligible)
	Max Settlement	210SH_3	1	0.0	4.5465	Sagging	137.35E-6	**1.1540**	0.0013354	-	31570.	0 (Negligible)
	Max Tensile Strain	210SH_3	2	4.5465	6.9607	Hogging	137.35E-6	0.82600	**0.0020286**	79311.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	210SH_3	4	7.5120	11.335	Hogging	105.88E-6	0.50557	0.0018040	**76194.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)	210SH_3	1	0.0	4.5465	Sagging	137.35E-6	1.1540	0.0013354	-	**31570.**	0 (Negligible)
210SH_4	Max Slope	210SH_4	1	0.0	10.500	Hogging	**0.0013350**	3.8612	0.014881	2301.3	-	0 (Negligible)
	Max Settlement	210SH_4	1	0.0	10.500	Hogging	0.0013350	**3.8612**	0.014881	2301.3	-	0 (Negligible)
	Max Tensile Strain	210SH_4	1	0.0	10.500	Hogging	0.0013350	3.8612	**0.014881**	2301.3	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	210SH_4	1	0.0	10.500	Hogging	0.0013350	3.8612	0.014881	**2301.3**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-

Problem Type

Problem Type : Tunnelling and Embedded Wall Excavations

Displacement Data

Type	Name	Direction of extrusion	Point/Line/Line for extrusion						No. of intervals across extrusion/line	Extrusion depth	No. of intervals along extrusion		Calculate	Surface type for tunnels
			First point			Second point								
			X [m]	Y [m]	Z(level) [m]	X [m]	Y [m]	Z(level) [m]		[m]				
Grid	Grid 1	Global X	-10.00000	-10.00000	24.00000	-	60.00000	20.00000	70	80.00000		60	No	Surface
Line	BKH_1	-	63.00000	-10.00000	22.50000	62.00000	31.00000	22.50000	41	-	-		Yes	Surface
Line	BKH_2	-	62.00000	31.00000	22.50000	90.00000	32.00000	22.50000	28	-	-		Yes	Surface
Line	BKH_3	-	90.00000	32.00000	22.50000	90.00000	-5.00000	22.50000	37	-	-		Yes	Surface
Line	BKH_4	-	90.00000	-5.00000	22.50000	63.00000	-10.00000	22.50000	27	-	-		Yes	Surface
Line	Archway_1	-	6.50000	5.00000	20.50000	6.50000	15.50000	20.50000	11	-	-		Yes	Surface
Line	Archway_2	-	6.50000	15.50000	20.50000	4.00000	15.50000	20.50000	3	-	-		Yes	Surface
Line	Archway_3	-	4.00000	5.00000	20.50000	6.50000	5.00000	20.50000	3	-	-		Yes	Surface
Line	167HH_1	-	27.00000	45.00000	20.50000	40.00000	45.00000	20.50000	13	-	-		Yes	Surface
Line	167HH_2	-	40.00000	45.00000	20.50000	40.00000	52.00000	20.50000	7	-	-		Yes	Surface
Line	167HH_3	-	40.00000	52.00000	20.50000	27.00000	52.00000	20.50000	13	-	-		Yes	Surface
Line	167HH_4	-	27.00000	52.00000	20.50000	27.00000	45.00000	20.50000	7	-	-		Yes	Surface
Line	210SH_1	-	4.00000	5.00000	20.50000	-1.00000	5.00000	20.50000	5	-	-		Yes	Surface
Line	210SH_2	-	-1.00000	5.00000	20.50000	-4.50000	8.00000	20.50000	5	-	-		Yes	Surface
Line	210SH_3	-	-4.50000	8.00000	20.50000	4.00000	15.50000	20.50000	11	-	-		Yes	Surface
Line	210SH_4	-	4.00000	15.50000	20.50000	4.00000	5.00000	20.50000	11	-	-		Yes	Surface
Point	GrapeNear	-	38.00000	39.00000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	GrapeFar	-	38.00000	44.50000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	HighNear	-	41.00000	10.00000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	HighFar	-	61.00000	10.00000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	ShaftsNear	-	20.00000	-2.50000	24.00000	-	-	-	-	-	-		Yes	Surface
Point	ShaftsFar	-	20.00000	-8.00000	24.00000	-	-	-	-	-	-		Yes	Surface

Imported Displacements

The following data points and displacements were found in the import file Prop Dev.csv.

Ref.	Coordinates			Displacements			
	x [m]	y [m]	z [m]	x [mm]	y [mm]	z [mm]	
1	63.00000	-10.00000	22.50000	0.00000	0.00000	-0.19720	1,2,6
2	62.97561	-9.00000	22.50000	0.00000	0.00000	-0.20167	1,2,6
3	62.95122	-8.00000	22.50000	0.00000	0.00000	-0.20598	1,2,6
4	62.92683	-7.00000	22.50000	0.00000	0.00000	-0.21009	1,2,6
5	62.90244	-6.00000	22.50000	0.00000	0.00000	-0.21397	1,2,6
6	62.87805	-5.00000	22.50000	0.00000	0.00000	-0.21761	1,2,6
7	62.85366	-4.00000	22.50000	0.00000	0.00000	-0.22096	1,2,6
8	62.82927	-3.00000	22.50000	0.00000	0.00000	-0.22401	1,2,6
9	62.80488	-2.00000	22.50000	0.00000	0.00000	-0.22672	1,2,6
10	62.78049	-1.00000	22.50000	0.00000	0.00000	-0.22907	1,2,6
11	62.75610	0.00000	22.50000	0.00000	0.00000	-0.23105	1,2,6
12	62.73171	1.00000	22.50000	0.00000	0.00000	-0.23263	1,2,6
13	62.70732	2.00000	22.50000	0.00000	0.00000	-0.23380	1,2,6
14	62.68293	3.00000	22.50000	0.00000	0.00000	-0.23455	1,2,6
15	62.65854	4.00000	22.50000	0.00000	0.00000	-0.23488	1,2,6
16	62.63415	5.00000	22.50000	0.00000	0.00000	-0.23478	1,2,6
17	62.60976	6.00000	22.50000	0.00000	0.00000	-0.23425	1,2,6
18	62.58537	7.00000	22.50000	0.00000	0.00000	-0.23332	1,2,6
19	62.56098	8.00000	22.50000	0.00000	0.00000	-0.23197	1,2,6
20	62.53659	9.00000	22.50000	0.00000	0.00000	-0.23025	1,2,6
21	62.51220	10.00000	22.50000	0.00000	0.00000	-0.22816	1,2,6
22	62.48780	11.00000	22.50000	0.00000	0.00000	-0.22573	1,2,6
23	62.46341	12.00000	22.50000	0.00000	0.00000	-0.22299	1,2,6
24	62.43902	13.00000	22.50000	0.00000	0.00000	-0.21996	1,2,6
25	62.41463	14.00000	22.50000	0.00000	0.00000	-0.21669	1,2,6
26	62.39024	15.00000	22.50000	0.00000	0.00000	-0.21320	1,2,6
27	62.36585	16.00000	22.50000	0.00000	0.00000	-0.20953	1,2,6
28	62.34146	17.00000	22.50000	0.00000	0.00000	-0.20572	1,2,6
29	62.31707	18.00000	22.50000	0.00000	0.00000	-0.20180	1,2,6
30	62.29268	19.00000	22.50000	0.00000	0.00000	-0.19780	1,2,6
31	62.26829	20.00000	22.50000	0.00000	0.00000	-0.19376	1,2,6
32	62.24390	21.00000	22.50000	0.00000	0.00000	-0.18971	1,2,6
33	62.21951	22.00000	22.50000	0.00000	0.00000	-0.18567	1,2,6
34	62.19512	23.00000	22.50000	0.00000	0.00000	-0.18168	1,2,6
35	62.17073	24.00000	22.50000	0.00000	0.00000	-0.17774	1,2,6
36	62.14634	25.00000	22.50000	0.00000	0.00000	-0.17388	1,2,6
37	62.12195	26.00000	22.50000	0.00000	0.00000	-0.17010	1,2,6
38	62.09756	27.00000	22.50000	0.00000	0.00000	-0.16640	1,2,6
39	62.07317	28.00000	22.50000	0.00000	0.00000	-0.16280	1,2,6
40	62.04878	29.00000	22.50000	0.00000	0.00000	-0.15927	1,2,6
41	62.02439	30.00000	22.50000	0.00000	0.00000	-0.15582	1,2,6
42	62.00000	31.00000	22.50000	0.00000	0.00000	-0.15244	1,2,6
43	63.00000	31.03571	22.50000	0.00000	0.00000	-0.14973	1,2,6
44	64.00000	31.07143	22.50000	0.00000	0.00000	-0.14643	1,2,6
45	65.00000	31.10714	22.50000	0.00000	0.00000	-0.14269	1,2,6
46	66.00000	31.14286	22.50000	0.00000	0.00000	-0.13865	1,2,6
47	67.00000	31.17857	22.50000	0.00000	0.00000	-0.13441	1,2,6
48	68.00000	31.21429	22.50000	0.00000	0.00000	-0.13004	1,2,6
49	69.00000	31.25000	22.50000	0.00000	0.00000	-0.12562	1,2,6
50	70.00000	31.28571	22.50000	0.00000	0.00000	-0.12119	1,2,6
51	71.00000	31.32143	22.50000	0.00000	0.00000	-0.11679	1,2,6
52	72.00000	31.35714	22.50000	0.00000	0.00000	-0.11246	1,2,6
53	73.00000	31.39286	22.50000	0.00000	0.00000	-0.10822	1,2,6
54	74.00000	31.42857	22.50000	0.00000	0.00000	-0.10408	1,2,6
55	75.00000	31.46429	22.50000	0.00000	0.00000	-0.10006	1,2,6
56	76.00000	31.50000	22.50000	0.00000	0.00000	-0.09616	1,2,6
57	77.00000	31.53571	22.50000	0.00000	0.00000	-0.09240	1,2,6
58	78.00000	31.57143	22.50000	0.00000	0.00000	-0.08877	1,2,6
59	79.00000	31.60714	22.50000	0.00000	0.00000	-0.08528	1,2,6
60	80.00000	31.64286	22.50000	0.00000	0.00000	-0.08192	1,2,6
61	81.00000	31.67857	22.50000	0.00000	0.00000	-0.07870	1,2,6
62	82.00000	31.71429	22.50000	0.00000	0.00000	-0.07561	1,2,6
63	83.00000	31.75000	22.50000	0.00000	0.00000	-0.07265	1,2,6
64	84.00000	31.78571	22.50000	0.00000	0.00000	-0.06982	1,2,6
65	85.00000	31.82143	22.50000	0.00000	0.00000	-0.06711	1,2,6
66	86.00000	31.85714	22.50000	0.00000	0.00000	-0.06452	1,2,6
67	87.00000	31.89286	22.50000	0.00000	0.00000	-0.06204	1,2,6
68	88.00000	31.92857	22.50000	0.00000	0.00000	-0.05967	1,2,6
69	89.00000	31.96429	22.50000	0.00000	0.00000	-0.05740	1,2,6
70	90.00000	32.00000	22.50000	0.00000	0.00000	-0.05524	1,2,6
71	90.00000	31.00000	22.50000	0.00000	0.00000	-0.05605	1,2,6
72	90.00000	30.00000	22.50000	0.00000	0.00000	-0.05684	1,2,6
73	90.00000	29.00000	22.50000	0.00000	0.00000	-0.05762	1,2,6
74	90.00000	28.00000	22.50000	0.00000	0.00000	-0.05837	1,2,6
75	90.00000	27.00000	22.50000	0.00000	0.00000	-0.05911	1,2,6
76	90.00000	26.00000	22.50000	0.00000	0.00000	-0.05981	1,2,6
77	90.00000	25.00000	22.50000	0.00000	0.00000	-0.06049	1,2,6
78	90.00000	24.00000	22.50000	0.00000	0.00000	-0.06115	1,2,6
79	90.00000	23.00000	22.50000	0.00000	0.00000	-0.06177	1,2,6
80	90.00000	22.00000	22.50000	0.00000	0.00000	-0.06236	1,2,6
81	90.00000	21.00000	22.50000	0.00000	0.00000	-0.06292	1,2,6
82	90.00000	20.00000	22.50000	0.00000	0.00000	-0.06345	1,2,6
83	90.00000	19.00000	22.50000	0.00000	0.00000	-0.06393	1,2,6
84	90.00000	18.00000	22.50000	0.00000	0.00000	-0.06439	1,2,6
85	90.00000	17.00000	22.50000	0.00000	0.00000	-0.06480	1,2,6

Ref.	Coordinates x [m]	y [m]	z [m]	Displacements x [mm]	y [mm]	z [mm]	
86	90.00000	16.00000	22.50000	0.00000	0.00000	-0.06517	1,2,6
87	90.00000	15.00000	22.50000	0.00000	0.00000	-0.06550	1,2,6
88	90.00000	14.00000	22.50000	0.00000	0.00000	-0.06579	1,2,6
89	90.00000	13.00000	22.50000	0.00000	0.00000	-0.06603	1,2,6
90	90.00000	12.00000	22.50000	0.00000	0.00000	-0.06623	1,2,6
91	90.00000	11.00000	22.50000	0.00000	0.00000	-0.06638	1,2,6
92	90.00000	10.00000	22.50000	0.00000	0.00000	-0.06649	1,2,6
93	90.00000	9.00000	22.50000	0.00000	0.00000	-0.06656	1,2,6
94	90.00000	8.00000	22.50000	0.00000	0.00000	-0.06658	1,2,6
95	90.00000	7.00000	22.50000	0.00000	0.00000	-0.06655	1,2,6
96	90.00000	6.00000	22.50000	0.00000	0.00000	-0.06648	1,2,6
97	90.00000	5.00000	22.50000	0.00000	0.00000	-0.06636	1,2,6
98	90.00000	4.00000	22.50000	0.00000	0.00000	-0.06620	1,2,6
99	90.00000	3.00000	22.50000	0.00000	0.00000	-0.06599	1,2,6
100	90.00000	2.00000	22.50000	0.00000	0.00000	-0.06574	1,2,6
101	90.00000	1.00000	22.50000	0.00000	0.00000	-0.06544	1,2,6
102	90.00000	0.00000	22.50000	0.00000	0.00000	-0.06511	1,2,6
103	90.00000	-1.00000	22.50000	0.00000	0.00000	-0.06473	1,2,6
104	90.00000	-2.00000	22.50000	0.00000	0.00000	-0.06431	1,2,6
105	90.00000	-3.00000	22.50000	0.00000	0.00000	-0.06386	1,2,6
106	90.00000	-4.00000	22.50000	0.00000	0.00000	-0.06337	1,2,6
107	90.00000	-5.00000	22.50000	0.00000	0.00000	-0.06284	1,2,6
108	89.00000	-5.18519	22.50000	0.00000	0.00000	-0.06539	1,2,6
109	88.00000	-5.37037	22.50000	0.00000	0.00000	-0.06806	1,2,6
110	87.00000	-5.55556	22.50000	0.00000	0.00000	-0.07086	1,2,6
111	86.00000	-5.74074	22.50000	0.00000	0.00000	-0.07381	1,2,6
112	85.00000	-5.92593	22.50000	0.00000	0.00000	-0.07689	1,2,6
113	84.00000	-6.11111	22.50000	0.00000	0.00000	-0.08013	1,2,6
114	83.00000	-6.29630	22.50000	0.00000	0.00000	-0.08352	1,2,6
115	82.00000	-6.48148	22.50000	0.00000	0.00000	-0.08708	1,2,6
116	81.00000	-6.66667	22.50000	0.00000	0.00000	-0.09082	1,2,6
117	80.00000	-6.85185	22.50000	0.00000	0.00000	-0.09474	1,2,6
118	79.00000	-7.03704	22.50000	0.00000	0.00000	-0.09885	1,2,6
119	78.00000	-7.22222	22.50000	0.00000	0.00000	-0.10316	1,2,6
120	77.00000	-7.40741	22.50000	0.00000	0.00000	-0.10768	1,2,6
121	76.00000	-7.59259	22.50000	0.00000	0.00000	-0.11241	1,2,6
122	75.00000	-7.77778	22.50000	0.00000	0.00000	-0.11737	1,2,6
123	74.00000	-7.96296	22.50000	0.00000	0.00000	-0.12257	1,2,6
124	73.00000	-8.14815	22.50000	0.00000	0.00000	-0.12800	1,2,6
125	72.00000	-8.33333	22.50000	0.00000	0.00000	-0.13369	1,2,6
126	71.00000	-8.51852	22.50000	0.00000	0.00000	-0.13964	1,2,6
127	70.00000	-8.70370	22.50000	0.00000	0.00000	-0.14585	1,2,6
128	69.00000	-8.88889	22.50000	0.00000	0.00000	-0.15234	1,2,6
129	68.00000	-9.07407	22.50000	0.00000	0.00000	-0.15911	1,2,6
130	67.00000	-9.25926	22.50000	0.00000	0.00000	-0.16615	1,2,6
131	66.00000	-9.44444	22.50000	0.00000	0.00000	-0.17348	1,2,6
132	65.00000	-9.62963	22.50000	0.00000	0.00000	-0.18110	1,2,6
133	64.00000	-9.81481	22.50000	0.00000	0.00000	-0.18901	1,2,6
134	6.50000	5.00000	20.50000	0.00000	0.00000	1.78786	1,2,6
135	6.50000	5.95455	20.50000	0.00000	0.00000	1.43517	1,2,6
136	6.50000	6.90909	20.50000	0.00000	0.00000	0.68305	1,2,6
137	6.50000	7.86364	20.50000	0.00000	0.00000	0.26252	1,2,6
138	6.50000	8.81818	20.50000	0.00000	0.00000	0.11441	1,2,6
139	6.50000	9.77273	20.50000	0.00000	0.00000	-0.01711	1,2,6
140	6.50000	10.72727	20.50000	0.00000	0.00000	-0.13180	1,2,6
141	6.50000	11.68182	20.50000	0.00000	0.00000	-0.22234	1,2,6
142	6.50000	12.63636	20.50000	0.00000	0.00000	-0.28939	1,2,6
143	6.50000	13.59091	20.50000	0.00000	0.00000	-0.33680	1,2,6
144	6.50000	14.54545	20.50000	0.00000	0.00000	-0.36879	1,2,6
145	6.50000	15.50000	20.50000	0.00000	0.00000	-0.38894	1,2,6
146	5.66667	15.50000	20.50000	0.00000	0.00000	-0.38378	1,2,6
147	4.83333	15.50000	20.50000	0.00000	0.00000	-0.37866	1,2,6
148	4.00000	15.50000	20.50000	0.00000	0.00000	-0.37335	1,2,6
149	4.00000	5.00000	20.50000	0.00000	0.00000	0.10526	1,2,6
150	4.83333	5.00000	20.50000	0.00000	0.00000	0.26192	1,2,6
151	5.66667	5.00000	20.50000	0.00000	0.00000	0.59332	1,2,6
152	27.00000	45.00000	20.50000	0.00000	0.00000	-0.16773	1,2,6
153	28.00000	45.00000	20.50000	0.00000	0.00000	-0.16666	1,2,6
154	29.00000	45.00000	20.50000	0.00000	0.00000	-0.16527	1,2,6
155	30.00000	45.00000	20.50000	0.00000	0.00000	-0.16360	1,2,6
156	31.00000	45.00000	20.50000	0.00000	0.00000	-0.16165	1,2,6
157	32.00000	45.00000	20.50000	0.00000	0.00000	-0.15948	1,2,6
158	33.00000	45.00000	20.50000	0.00000	0.00000	-0.15713	1,2,6
159	34.00000	45.00000	20.50000	0.00000	0.00000	-0.15466	1,2,6
160	35.00000	45.00000	20.50000	0.00000	0.00000	-0.15212	1,2,6
161	36.00000	45.00000	20.50000	0.00000	0.00000	-0.14957	1,2,6
162	37.00000	45.00000	20.50000	0.00000	0.00000	-0.14709	1,2,6
163	38.00000	45.00000	20.50000	0.00000	0.00000	-0.14471	1,2,6
164	39.00000	45.00000	20.50000	0.00000	0.00000	-0.14250	1,2,6
165	40.00000	45.00000	20.50000	0.00000	0.00000	-0.14048	1,2,6
166	40.00000	46.00000	20.50000	0.00000	0.00000	-0.13957	1,2,6
167	40.00000	47.00000	20.50000	0.00000	0.00000	-0.13753	1,2,6
168	40.00000	48.00000	20.50000	0.00000	0.00000	-0.13466	1,2,6
169	40.00000	49.00000	20.50000	0.00000	0.00000	-0.13122	1,2,6
170	40.00000	50.00000	20.50000	0.00000	0.00000	-0.12738	1,2,6
171	40.00000	51.00000	20.50000	0.00000	0.00000	-0.12329	1,2,6
172	40.00000	52.00000	20.50000	0.00000	0.00000	-0.11905	1,2,6
173	39.00000	52.00000	20.50000	0.00000	0.00000	-0.12010	1,2,6
174	38.00000	52.00000	20.50000	0.00000	0.00000	-0.12108	1,2,6
175	37.00000	52.00000	20.50000	0.00000	0.00000	-0.12200	1,2,6
176	36.00000	52.00000	20.50000	0.00000	0.00000	-0.12284	1,2,6
177	35.00000	52.00000	20.50000	0.00000	0.00000	-0.12359	1,2,6
178	34.00000	52.00000	20.50000	0.00000	0.00000	-0.12426	1,2,6
179	33.00000	52.00000	20.50000	0.00000	0.00000	-0.12482	1,2,6
180	32.00000	52.00000	20.50000	0.00000	0.00000	-0.12528	1,2,6
181	31.00000	52.00000	20.50000	0.00000	0.00000	-0.12563	1,2,6
182	30.00000	52.00000	20.50000	0.00000	0.00000	-0.12586	1,2,6
183	29.00000	52.00000	20.50000	0.00000	0.00000	-0.12597	1,2,6
184	28.00000	52.00000	20.50000	0.00000	0.00000	-0.12595	1,2,6
185	27.00000	52.00000	20.50000	0.00000	0.00000	-0.12580	1,2,6
186	27.00000	51.00000	20.50000	0.00000	0.00000	-0.13135	1,2,6
187	27.00000	50.00000	20.50000	0.00000	0.00000	-0.13708	1,2,6
188	27.00000	49.00000	20.50000	0.00000	0.00000	-0.14299	1,2,6
189	27.00000	48.00000	20.50000	0.00000	0.00000	-0.14904	1,2,6
190	27.00000	47.00000	20.50000	0.00000	0.00000	-0.15521	1,2,6
191	27.00000	46.00000	20.50000	0.00000	0.00000	-0.16145	1,2,6
192	3.00000	5.00000	20.50000	0.00000	0.00000	-0.02493	1,2,6
193	2.00000	5.00000	20.50000	0.00000	0.00000	-0.12761	1,2,6
194	1.00000	5.00000	20.50000	0.00000	0.00000	-0.20255	1,2,6
195	0.00000	5.00000	20.50000	0.00000	0.00000	-0.25281	1,2,6
196	-1.00000	5.00000	20.50000	0.00000	0.00000	-0.28401	1,2,6
197	-1.70000	5.60000	20.50000	0.00000	0.00000	-0.29983	1,2,6
198	-2.40000	6.20000	20.50000	0.00000	0.00000	-0.30900	1,2,6
199	-3.10000	6.80000	20.50000	0.00000	0.00000	-0.31291	1,2,6
200	-3.80000	7.40000	20.50000	0.00000	0.00000	-0.31273	1,2,6
201	-4.50000	8.00000	20.50000	0.00000	0.00000	-0.30942	1,2,6
202	-3.72727	8.68182	20.50000	0.00000	0.00000	-0.31413	1,2,6
203	-2.95455	9.36364	20.50000	0.00000	0.00000	-0.31826	1,2,6
204	-2.18182	10.04545	20.50000	0.00000	0.00000	-0.32199	1,2,6
205	-1.40909	10.72727	20.50000	0.00000	0.00000	-0.32564	1,2,6
206	-0.63636	11.40909	20.50000	0.00000	0.00000	-0.32956	1,2,6
207	0.13636	12.09091	20.50000	0.00000	0.00000	-0.33413	1,2,6
208	0.90909	12.77273	20.50000	0.00000	0.00000	-0.33969	1,2,6
209	1.68182	13.45455	20.50000	0.00000	0.00000	-0.34646	1,2,6
210	2.45455	14.13636	20.50000	0.00000	0.00000	-0.35446	1,2,6
211	3.22727	14.81818	20.50000	0.00000	0.00000	-0.36354	1,2,6
212	4.00000	14.54545	20.50000	0.00000	0.00000	-0.36347	1,2,6
213	4.00000	13.59091	20.50000	0.00000	0.00000	-0.34680	1,2,6

Ref.	Coordinates x [m]	y [m]	z [m]	Displacements x [mm]	y [mm]	z [mm]	
214	4.00000	12.63636	20.50000	0.00000	0.00000	-0.32186	1,2,6
215	4.00000	11.68182	20.50000	0.00000	0.00000	-0.28715	1,2,6
216	4.00000	10.72727	20.50000	0.00000	0.00000	-0.24154	1,2,6
217	4.00000	9.77273	20.50000	0.00000	0.00000	-0.18507	1,2,6
218	4.00000	8.81818	20.50000	0.00000	0.00000	-0.12018	1,2,6
219	4.00000	7.86364	20.50000	0.00000	0.00000	-0.05273	1,2,6
220	4.00000	6.90909	20.50000	0.00000	0.00000	0.00873	1,2,6
221	4.00000	5.95455	20.50000	0.00000	0.00000	0.05868	1,2,6
222	52.00000	50.00000	10.00000	0.00000	0.00000	-0.08085	
223	51.91667	49.00000	10.00000	0.00000	0.00000	-0.08237	
224	51.83333	48.00000	10.00000	0.00000	0.00000	-0.08355	
225	51.75000	47.00000	10.00000	0.00000	0.00000	-0.08431	
226	51.66667	46.00000	10.00000	0.00000	0.00000	-0.08450	
227	51.58333	45.00000	10.00000	0.00000	0.00000	-0.08400	
228	51.50000	44.00000	10.00000	0.00000	0.00000	-0.08262	
229	51.41667	43.00000	10.00000	0.00000	0.00000	-0.08015	
230	51.33333	42.00000	10.00000	0.00000	0.00000	-0.07635	
231	51.25000	41.00000	10.00000	0.00000	0.00000	-0.07093	
232	51.16667	40.00000	10.00000	0.00000	0.00000	-0.06354	
233	51.08333	39.00000	10.00000	0.00000	0.00000	-0.05382	
234	51.00000	38.00000	10.00000	0.00000	0.00000	-0.04134	
235	50.91667	37.00000	10.00000	0.00000	0.00000	-0.02563	
236	50.83333	36.00000	10.00000	0.00000	0.00000	-0.00624	
237	50.75000	35.00000	10.00000	0.00000	0.00000	0.01729	
238	50.66667	34.00000	10.00000	0.00000	0.00000	0.04535	
239	50.58333	33.00000	10.00000	0.00000	0.00000	0.07818	
240	50.50000	32.00000	10.00000	0.00000	0.00000	0.11584	
241	50.41667	31.00000	10.00000	0.00000	0.00000	0.15808	
242	50.33333	30.00000	10.00000	0.00000	0.00000	0.20431	
243	50.25000	29.00000	10.00000	0.00000	0.00000	0.25353	
244	50.16667	28.00000	10.00000	0.00000	0.00000	0.30442	
245	50.08333	27.00000	10.00000	0.00000	0.00000	0.35540	
246	50.00000	26.00000	10.00000	0.00000	0.00000	0.40483	
247	49.91667	25.00000	10.00000	0.00000	0.00000	0.45117	
248	49.83333	24.00000	10.00000	0.00000	0.00000	0.49315	
249	49.75000	23.00000	10.00000	0.00000	0.00000	0.52989	
250	49.66667	22.00000	10.00000	0.00000	0.00000	0.56087	
251	49.58333	21.00000	10.00000	0.00000	0.00000	0.58594	
252	49.50000	20.00000	10.00000	0.00000	0.00000	0.60519	
253	49.41667	19.00000	10.00000	0.00000	0.00000	0.61890	
254	49.33333	18.00000	10.00000	0.00000	0.00000	0.62744	
255	49.25000	17.00000	10.00000	0.00000	0.00000	0.63119	
256	49.16667	16.00000	10.00000	0.00000	0.00000	0.63050	
257	49.08333	15.00000	10.00000	0.00000	0.00000	0.62570	
258	49.00000	14.00000	10.00000	0.00000	0.00000	0.61703	
259	48.91667	13.00000	10.00000	0.00000	0.00000	0.60466	
260	48.83333	12.00000	10.00000	0.00000	0.00000	0.58873	
261	48.75000	11.00000	10.00000	0.00000	0.00000	0.56932	
262	48.66667	10.00000	10.00000	0.00000	0.00000	0.54653	
263	48.58333	9.00000	10.00000	0.00000	0.00000	0.52047	
264	48.50000	8.00000	10.00000	0.00000	0.00000	0.49130	
265	48.41667	7.00000	10.00000	0.00000	0.00000	0.45927	
266	48.33333	6.00000	10.00000	0.00000	0.00000	0.42470	
267	48.25000	5.00000	10.00000	0.00000	0.00000	0.38797	
268	48.16667	4.00000	10.00000	0.00000	0.00000	0.34951	
269	48.08333	3.00000	10.00000	0.00000	0.00000	0.30972	
270	48.00000	2.00000	10.00000	0.00000	0.00000	0.26897	
271	47.91667	1.00000	10.00000	0.00000	0.00000	0.22760	
272	47.83333	0.00000	10.00000	0.00000	0.00000	0.18594	
273	47.75000	-1.00000	10.00000	0.00000	0.00000	0.14435	
274	47.66667	-2.00000	10.00000	0.00000	0.00000	0.10326	
275	47.58333	-3.00000	10.00000	0.00000	0.00000	0.06322	
276	47.50000	-4.00000	10.00000	0.00000	0.00000	0.02481	
277	47.41667	-5.00000	10.00000	0.00000	0.00000	-0.01131	
278	47.33333	-6.00000	10.00000	0.00000	0.00000	-0.04458	
279	47.25000	-7.00000	10.00000	0.00000	0.00000	-0.07452	
280	47.16667	-8.00000	10.00000	0.00000	0.00000	-0.10082	
281	47.08333	-9.00000	10.00000	0.00000	0.00000	-0.12337	
282	47.00000	-10.00000	10.00000	0.00000	0.00000	-0.14219	
283	38.00000	39.00000	24.00000	0.00000	0.00000	-0.09748	1
284	38.00000	44.50000	24.00000	0.00000	0.00000	-0.14489	1
285	41.00000	10.00000	24.00000	0.00000	0.00000	5.95229	1
286	61.00000	10.00000	24.00000	0.00000	0.00000	-0.23961	1
287	20.00000	-2.50000	24.00000	0.00000	0.00000	4.19757	1
288	20.00000	-8.00000	24.00000	0.00000	0.00000	-0.71771	1

1 - Data point coincident with displacement data. Its displacement has been added to those calculated by Xdisp.
2 - Data point coincident with horizontal movement calculation point for a specific building. Its displacement has been added before performing building damage calculations.
6 - Data point coincident with vertical movement calculation point for a specific building. Its displacement has been added before performing building damage calculations.

Vertical Ground Movement Curves (Excavations)

Curve Name: **No vertical ground movement**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.000][1.000,0.000,0.000][0.000,1.000,0.000][1.000,1.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = 0.0x + 0.0
Coeff. of Determination: -2147483648.E+2147483647

Curve Name: **Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.050][2.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = -2.5E-2x + 5.0E-2
Coeff. of Determination: 1.0

Curve Name: **Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Settlement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.039][0.100,0.000,0.049][0.200,0.000,0.056][0.300,0.000,0.062]
[0.400,0.000,0.067][0.500,0.000,0.070][0.600,0.000,0.072][0.700,0.000,0.073]
[0.800,0.000,0.073][0.900,0.000,0.072][1.000,0.000,0.070][1.100,0.000,0.068]
[1.200,0.000,0.065][1.300,0.000,0.061][1.400,0.000,0.058][1.500,0.000,0.054]
[1.600,0.000,0.050][1.700,0.000,0.046][1.800,0.000,0.042][1.900,0.000,0.038]
[2.000,0.000,0.034][2.100,0.000,0.030][2.200,0.000,0.027][2.300,0.000,0.023]
[2.400,0.000,0.020][2.500,0.000,0.017][2.600,0.000,0.014][2.700,0.000,0.012]
[2.800,0.000,0.010][2.900,0.000,0.008][3.000,0.000,0.007][3.100,0.000,0.005]
[3.200,0.000,0.004][3.300,0.000,0.004][3.400,0.000,0.003][3.500,0.000,0.002]
[3.600,0.000,0.002][3.700,0.000,0.002][3.800,0.000,0.001][3.900,0.000,0.001]
[4.000,0.000,0.000]
Curve Fitting Method: Polynomial
x Order: 4
y Order: 0
Polynomial: z = $-2.6455E-3x^4 + 2.8495E-2x^3 - 1.0051E-1x^2 + 1.0569E-1x + 3.8990E-2$
Coeff. of Determination: 9.9991E-1

Horizontal Ground Movement Curves (Excavations)

Curve Name: **No horizontal ground movement**
Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]

Ref.	Coordinates x [m]	y [m]	z [m]	Displacements x [mm]	y [mm]	z [mm]

[0.000,0.000,0.000][1.000,0.000,0.000][0.000,1.000,0.000][1.000,1.000,0.000]

Curve Fitting Method: Polynomial
x Order: 0
y Order: 0
Polynomial: z = 0.0
Coeff. of Determination: -2147483648.E+2147483647

Curve Name: Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))

Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.081][0.050,0.000,0.076][0.100,0.000,0.072][0.150,0.000,0.067]
[0.200,0.000,0.063][0.250,0.000,0.059][0.300,0.000,0.056][0.350,0.000,0.052]
[0.400,0.000,0.049][0.450,0.000,0.045][0.500,0.000,0.043][0.550,0.000,0.040]
[0.600,0.000,0.037][0.650,0.000,0.034][0.700,0.000,0.032][0.750,0.000,0.029]
[0.800,0.000,0.027][0.850,0.000,0.024][0.900,0.000,0.022][0.950,0.000,0.020]
[1.000,0.000,0.018][1.050,0.000,0.016][1.100,0.000,0.014][1.150,0.000,0.012]
[1.200,0.000,0.011][1.250,0.000,0.009][1.300,0.000,0.007][1.350,0.000,0.005]
[1.400,0.000,0.004][1.450,0.000,0.002][1.500,0.000,0.000]

Curve Fitting Method: Polynomial
x Order: 3
y Order: 0
Polynomial: z = $-1.0610E-2x^3 + 4.4203E-2x^2 - 9.6358E-2x + 8.0901E-2$
Coeff. of Determination: 1.0000

Curve Name: Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))

Coordinates: [Distance from wall / wall depth or max. excavation depth (x), Depth / wall depth or max. excavation depth (y), Horizontal movement / wall depth or max. excavation depth (z)(%)]
[0.000,0.000,0.150][4.000,0.000,0.000]

Curve Fitting Method: Polynomial
x Order: 1
y Order: 0
Polynomial: z = -3.75E-2x + 1.50E-1
Coeff. of Determination: 1.00

Polygonal Excavations

Excavation Name: New Excavation
Surface level [m]: 24.000
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 20.300

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	6.5000	4.4000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	6.5000	-1.8000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	39.000	-1.6000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	40.000	5.0000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
5	35.900	5.3000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	6.5000	4.4000	6.5000	-1.8000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
2	6.5000	-1.8000	39.000	-1.6000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
3	39.000	-1.6000	40.000	5.0000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
4	40.000	5.0000	35.900	5.3000	No vertical ground movement	No horizontal ground movement
5	35.900	5.3000	6.5000	4.4000	No vertical ground movement	No horizontal ground movement

Excavation Name: New Excavation 2
Surface level [m]: 23.500
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 20.300

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	38.800	27.700	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	35.900	5.3000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	40.000	5.0000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	41.900	27.000	20.300	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	38.800	27.700	35.900	5.3000	No vertical ground movement	No horizontal ground movement
2	35.900	5.3000	40.000	5.0000	No vertical ground movement	No horizontal ground movement
3	40.000	5.0000	41.900	27.000	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))
4	41.900	27.000	38.800	27.700	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(b)	Excavation in front of high stiffness wall in stiff clay (CIRIA 580 Fig. 2.11(a))

Excavation Name: Wall Installation
Surface level [m]: 24.000
Contribution: Positive
Enabled: Yes
Surface movement curves which are selected are applied between surface and [m]: 14.000

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	6.5000	4.4000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	6.5000	-1.8000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	39.000	-1.6000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	40.000	5.0000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
5	35.900	5.3000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	6.5000	4.4000	6.5000	-1.8000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
2	6.5000	-1.8000	39.000	-1.6000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
3	39.000	-1.6000	40.000	5.0000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
4	40.000	5.0000	35.900	5.3000	No vertical ground movement	No horizontal ground movement
5	35.900	5.3000	6.5000	4.4000	No vertical ground movement	No horizontal ground movement

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal

Excavation Name: Wall Installation 2

Surface level [m]:	24.000
Contribution:	Positive
Enabled:	Yes
Surface movement curves which are selected are applied between surface and [m]:	14.000

Corner	x [m]	y [m]	Base Level [m]	Stiffened	Previous Side d [m]	Previous Side p1 [%]	Previous Side p2* [%]	Next Side d [m]	Next Side p1 [%]	Next Side p2* [%]
1	38.800	27.700	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
2	35.900	5.3000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
3	40.000	5.0000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000
4	41.900	27.000	14.000	Yes	0.0	67.000	25.000	0.0	67.000	25.000

Side	Corner 1 x [m]	Corner 1 y [m]	Corner 2 x [m]	Corner 2 y [m]	Ground Movement Curve Vertical	Ground Movement Curve Horizontal
1	38.800	27.700	35.900	5.3000	No vertical ground movement	No horizontal ground movement
2	35.900	5.3000	40.000	5.0000	No vertical ground movement	No horizontal ground movement
3	40.000	5.0000	41.900	27.000	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))
4	41.900	27.000	38.800	27.700	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(b))	Installation of secant bored pile wall in stiff clay (CIRIA 580 Fig. 2.8(a))

Damage Category Strains

Name	0 (Negligible) to 1 (Very Slight)	1 (Very Slight) to 2 (Slight)	2 (Slight) to 3 (Moderate)	3 (Moderate) to 4 (Severe)
Burland Strain Limits	0.0	500.00E-6	750.00E-6	0.0015000

Specific Structures - Geometry

Structure Name	Sub-Structure Name	Displacement Line	Start Distance Along Line [m]	End Distance Along Line [m]	Vertical Offsets from Line for Vertical Movement Calculations [m]	Vertical Displacement Limit Sensitivity [mm]	Damage Category Strains	Poisson's Ratio	E/G
BKH_1	BKH_1	BKH_1	0.00000	41.01200	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
BKH_2	BKH_2	BKH_2	0.00000	28.01700	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
BKH_3	BKH_3	BKH_3	0.00000	37.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
BKH_4	BKH_4	BKH_4	0.00000	27.45900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Archway_1	Archway_1	Archway_1	0.00000	10.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Archway_2	Archway_2	Archway_2	0.00000	2.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
Archway_3	Archway_3	Archway_3	0.00000	2.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_1	167HH_1	167HH_1	0.00000	13.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_2	167HH_2	167HH_2	0.00000	7.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_3	167HH_3	167HH_3	0.00000	13.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
167HH_4	167HH_4	167HH_4	0.00000	7.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_1	210SH_1	210SH_1	0.00000	5.00000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_2	210SH_2	210SH_2	0.00000	4.60900	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_3	210SH_3	210SH_3	0.00000	11.33500	0.0	0.10000	Burland Strain Limits	0.20000	2.6000
210SH_4	210SH_4	210SH_4	0.00000	10.50000	0.0	0.10000	Burland Strain Limits	0.20000	2.6000

Specific Structures - Bending Parameters

Structure Name	Sub-Structure Name	Height [m]	Default Properties	Hogging 2nd Moment of Area (per unit width) [m³]	Hogging Distance of Bending Strain from N.A. [m]	Hogging Distance of N.A. from Edge of Beam in Tension [m]	Sagging 2nd Moment of Area (per unit width) [m³]	Sagging Distance of Bending Strain from N.A. [m]	Sagging Distance of N.A. from Edge of Beam in Tension [m]
BKH_1	BKH_1	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
BKH_2	BKH_2	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
BKH_3	BKH_3	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
BKH_4	BKH_4	35.000	Yes	14292.	35.000	35.000	3572.9	17.500	17.500
Archway_1	Archway_1	18.000	Yes	1944.0	18.000	18.000	486.00	9.0000	9.0000
Archway_2	Archway_2	18.000	Yes	1944.0	18.000	18.000	486.00	9.0000	9.0000
Archway_3	Archway_3	18.000	Yes	1944.0	18.000	18.000	486.00	9.0000	9.0000
167HH_1	167HH_1	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
167HH_2	167HH_2	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
167HH_3	167HH_3	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
167HH_4	167HH_4	14.000	Yes	914.67	14.000	14.000	228.67	7.0000	7.0000
210SH_1	210SH_1	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000
210SH_2	210SH_2	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000
210SH_3	210SH_3	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000
210SH_4	210SH_4	19.000	Yes	2286.3	19.000	19.000	571.58	9.5000	9.5000

Building Segment Combinations

Structure Name	Sub-Structure Name	Vertical Offset from Line for Vertical Movement Calculations [m]	Segment Start [m]	Length [m]	Curvature	Combined Segment

No structures have segments combined.

Utility Strain Calculation Options

Neglect beneficial contribution of axial strains : No

Warnings

1 Multiple excavations have been specified. The displacements resulting from these excavations are calculated by summing the displacements resulting from each individual excavation. No account has been taken of the interactions between excavations (e.g. overlapping zones of influence or 'shielding' of one excavation by another).

2 Embedded Wall Excavation PE1 : New Excavation intersects PE2 : New Excavation 2, and PE4 : Wall Installation 2.

3 Embedded Wall Excavation PE2 : New Excavation 2 intersects PE1 : New Excavation, and PE3 : Wall Installation .

4 Embedded Wall Excavation PE3 : Wall Installation intersects PE2 : New Excavation 2, and PE4 : Wall Installation 2.

5 Embedded Wall Excavation PE4 : Wall Installation 2 intersects PE1 : New Excavation, and PE3 : Wall Installation .

6 If an embedded wall excavation is assigned a 'surface' ground movement curve and if the 'allow movement calculation to level' option is checked for the excavation then displacements induced by it are calculated for points at the surface, and points below the surface to the level specified. Others are ignored. An example of such a combination, for which displacements will not be calculated is Excavation XP2/Side 3/Point 1/Vertical. This is an example only. There are 23 others.

7 If an embedded wall excavation is assigned a 'sub-surface' ground movement curve then displacements induced by it can only be calculated for those points that are level with or below the embedded wall excavation's 'surface level'. Others are ignored. An example of such a combination, for which displacements will not be calculated is Excavation XP2/Side 1/Point 1/Vertical. This is an example only. There are 23 others.

Structure Name	Sub-Structure Name	Vertical Offset from Line for Vertical	Segment Start	Length	Curvature	Combined Segment

Errors

None

Displacement and Strain Results

Type/No. Name	Dist.	Coordinates x	y	z	Displacements x	y	z	Horizontal displacement along Line	Horizontal displacement perpendicular to Line	Angle of Line to x Axis	
	[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]	
BKH_1	Line 1	63.00000	-10.00000	22.50000	0.0	0.0	-0.19720	0.0	0.0	91.397	*
	1.0003	62.97561	-9.00000	22.50000	0.0	0.0	-0.20167	0.0	0.0	91.397	*
	2.0006	62.95122	-8.00000	22.50000	0.0	0.0	-0.20598	0.0	0.0	91.397	*
	3.0009	62.92683	-7.00000	22.50000	0.0	0.0	-0.21009	0.0	0.0	91.397	*
	4.0012	62.90244	-6.00000	22.50000	0.0	0.0	-0.21397	0.0	0.0	91.397	*
	5.0015	62.87805	-5.00000	22.50000	0.0	0.0	-0.21761	0.0	0.0	91.397	*
	6.0018	62.85366	-4.00000	22.50000	0.0	0.0	-0.22096	0.0	0.0	91.397	*
	7.0021	62.82927	-3.00000	22.50000	0.0	0.0	-0.22401	0.0	0.0	91.397	*
	8.0024	62.80488	-2.00000	22.50000	0.0	0.0	-0.22672	0.0	0.0	91.397	*
	9.0027	62.78049	-1.00000	22.50000	0.0	0.0	-0.22907	0.0	0.0	91.397	*
	10.003	62.75610	0.00000	22.50000	0.0	0.0	-0.23105	0.0	0.0	91.397	*
	11.003	62.73171	1.00000	22.50000	0.0	0.0	-0.23263	0.0	0.0	91.397	*
	12.004	62.70732	2.00000	22.50000	0.0	0.0	-0.23380	0.0	0.0	91.397	*
	13.004	62.68293	3.00000	22.50000	0.0	0.0	-0.23455	0.0	0.0	91.397	*
	14.004	62.65854	4.00000	22.50000	0.0	0.0	-0.23488	0.0	0.0	91.397	*
	15.004	62.63415	5.00000	22.50000	0.0	0.0	-0.23478	0.0	0.0	91.397	*
	16.005	62.60976	6.00000	22.50000	0.0	0.0	-0.23425	0.0	0.0	91.397	*
	17.005	62.58537	7.00000	22.50000	0.0	0.0	-0.23332	0.0	0.0	91.397	*
	18.005	62.56098	8.00000	22.50000	0.0	0.0	-0.23197	0.0	0.0	91.397	*
	19.006	62.53659	9.00000	22.50000	0.0	0.0	-0.23025	0.0	0.0	91.397	*
	20.006	62.51220	10.00000	22.50000	0.0	0.0	-0.22816	0.0	0.0	91.397	*
	21.006	62.48780	11.00000	22.50000	0.0	0.0	-0.22573	0.0	0.0	91.397	*
	22.007	62.46341	12.00000	22.50000	0.0	0.0	-0.22299	0.0	0.0	91.397	*
	23.007	62.43902	13.00000	22.50000	0.0	0.0	-0.21996	0.0	0.0	91.397	*
	24.007	62.41463	14.00000	22.50000	0.0	0.0	-0.21669	0.0	0.0	91.397	*
	25.007	62.39024	15.00000	22.50000	0.0	0.0	-0.21320	0.0	0.0	91.397	*
	26.008	62.36585	16.00000	22.50000	0.0	0.0	-0.20953	0.0	0.0	91.397	*
	27.008	62.34146	17.00000	22.50000	0.0	0.0	-0.20572	0.0	0.0	91.397	*
	28.008	62.31707	18.00000	22.50000	0.0	0.0	-0.20180	0.0	0.0	91.397	*
	29.009	62.29268	19.00000	22.50000	0.0	0.0	-0.19780	0.0	0.0	91.397	*
	30.009	62.26829	20.00000	22.50000	0.0	0.0	-0.19376	0.0	0.0	91.397	*
	31.009	62.24390	21.00000	22.50000	0.0	0.0	-0.18971	0.0	0.0	91.397	*
	32.010	62.21951	22.00000	22.50000	0.0	0.0	-0.18567	0.0	0.0	91.397	*
	33.010	62.19512	23.00000	22.50000	0.0	0.0	-0.18168	0.0	0.0	91.397	*
	34.010	62.17073	24.00000	22.50000	0.0	0.0	-0.17774	0.0	0.0	91.397	*
	35.010	62.14634	25.00000	22.50000	0.0	0.0	-0.17388	0.0	0.0	91.397	*
	36.011	62.12195	26.00000	22.50000	0.0	0.0	-0.17010	0.0	0.0	91.397	*
	37.011	62.09756	27.00000	22.50000	0.0	0.0	-0.16640	0.0	0.0	91.397	*
	38.011	62.07317	28.00000	22.50000	0.0	0.0	-0.16280	0.0	0.0	91.397	*
	39.012	62.04878	29.00000	22.50000	0.0	0.0	-0.15927	0.0	0.0	91.397	*
	40.012	62.02439	30.00000	22.50000	0.0	0.0	-0.15582	0.0	0.0	91.397	*
	41.012	62.00000	31.00000	22.50000	0.0	0.0	-0.15244	0.0	0.0	91.397	*
BKH_2	Line 2	62.00000	31.00000	22.50000	0.0	0.0	-0.15244	0.0	0.0	2.0454	*
	1.0006	63.00000	31.03571	22.50000	0.0	0.0	-0.14973	0.0	0.0	2.0454	*
	2.0013	64.00000	31.07143	22.50000	0.0	0.0	-0.14643	0.0	0.0	2.0454	*
	3.0019	65.00000	31.10714	22.50000	0.0	0.0	-0.14269	0.0	0.0	2.0454	*
	4.0026	66.00000	31.14286	22.50000	0.0	0.0	-0.13865	0.0	0.0	2.0454	*
	5.0032	67.00000	31.17857	22.50000	0.0	0.0	-0.13441	0.0	0.0	2.0454	*
	6.0038	68.00000	31.21429	22.50000	0.0	0.0	-0.13004	0.0	0.0	2.0454	*
	7.0045	69.00000	31.25000	22.50000	0.0	0.0	-0.12562	0.0	0.0	2.0454	*
	8.0051	70.00000	31.28571	22.50000	0.0	0.0	-0.12119	0.0	0.0	2.0454	*
	9.0057	71.00000	31.32143	22.50000	0.0	0.0	-0.11679	0.0	0.0	2.0454	*
	10.006	72.00000	31.35714	22.50000	0.0	0.0	-0.11246	0.0	0.0	2.0454	*
	11.007	73.00000	31.39286	22.50000	0.0	0.0	-0.10822	0.0	0.0	2.0454	*
	12.008	74.00000	31.42857	22.50000	0.0	0.0	-0.10408	0.0	0.0	2.0454	*
	13.008	75.00000	31.46429	22.50000	0.0	0.0	-0.10006	0.0	0.0	2.0454	*
	14.009	76.00000	31.50000	22.50000	0.0	0.0	-0.096160	0.0	0.0	2.0454	*
	15.010	77.00000	31.53571	22.50000	0.0	0.0	-0.092396	0.0	0.0	2.0454	*
	16.010	78.00000	31.57143	22.50000	0.0	0.0	-0.088767	0.0	0.0	2.0454	*
	17.011	79.00000	31.60714	22.50000	0.0	0.0	-0.085275	0.0	0.0	2.0454	*
	18.011	80.00000	31.64286	22.50000	0.0	0.0	-0.081919	0.0	0.0	2.0454	*
	19.012	81.00000	31.67857	22.50000	0.0	0.0	-0.078698	0.0	0.0	2.0454	*
	20.013	82.00000	31.71429	22.50000	0.0	0.0	-0.075610	0.0	0.0	2.0454	*
	21.013	83.00000	31.75000	22.50000	0.0	0.0	-0.072652	0.0	0.0	2.0454	*
	22.014	84.00000	31.78571	22.50000	0.0	0.0	-0.069819	0.0	0.0	2.0454	*
	23.015	85.00000	31.82143	22.50000	0.0	0.0	-0.067109	0.0	0.0	2.0454	*
	24.015	86.00000	31.85714	22.50000	0.0	0.0	-0.064516	0.0	0.0	2.0454	*
	25.016	87.00000	31.89286	22.50000	0.0	0.0	-0.062037	0.0	0.0	2.0454	*
	26.017	88.00000	31.92857	22.50000	0.0	0.0	-0.059668	0.0	0.0	2.0454	*
	27.017	89.00000	31.96429	22.50000	0.0	0.0	-0.057403	0.0	0.0	2.0454	*
	28.018	90.00000	32.00000	22.50000	0.0	0.0	-0.055239	0.0	0.0	2.0454	*
BKH_3	Line 3	90.00000	32.00000	22.50000	0.0	0.0	-0.055239	0.0	0.0	270.00	*
	1.0000	90.00000	31.00000	22.50000	0.0	0.0	-0.056050	0.0	0.0	270.00	*
	2.0000	90.00000	30.00000	22.50000	0.0	0.0	-0.056844	0.0	0.0	270.00	*
	3.0000	90.00000	29.00000	22.50000	0.0	0.0	-0.057619	0.0	0.0	270.00	*
	4.0000	90.00000	28.00000	22.50000	0.0	0.0	-0.058373	0.0	0.0	270.00	*
	5.0000	90.00000	27.00000	22.50000	0.0	0.0	-0.059105	0.0	0.0	270.00	*
	6.0000	90.00000	26.00000	22.50000	0.0	0.0	-0.059813	0.0	0.0	270.00	*
	7.0000	90.00000	25.00000	22.50000	0.0	0.0	-0.060494	0.0	0.0	270.00	*
	8.0000	90.00000	24.00000	22.50000	0.0	0.0	-0.061147	0.0	0.0	270.00	*
	9.0000	90.00000	23.00000	22.50000	0.0	0.0	-0.061771	0.0	0.0	270.00	*
	10.000	90.00000	22.00000	22.50000	0.0	0.0	-0.062363	0.0	0.0	270.00	*
	11.000	90.00000	21.00000	22.50000	0.0	0.0	-0.062922	0.0	0.0	270.00	*
	12.000	90.00000	20.00000	22.50000	0.0	0.0	-0.063447	0.0	0.0	270.00	*
	13.000	90.00000	19.00000	22.50000	0.0	0.0	-0.063935	0.0	0.0	270.00	*
	14.000	90.00000	18.00000	22.50000	0.0	0.0	-0.064385	0.0	0.0	270.00	*
	15.000	90.00000	17.00000	22.50000	0.0	0.0	-0.064797	0.0	0.0	270.00	*
	16.000	90.00000	16.00000	22.50000	0.0	0.0	-0.065168	0.0	0.0	270.00	*
	17.000	90.00000	15.00000	22.50000	0.0	0.0	-0.065498	0.0	0.0	270.00	*
	18.000	90.00000	14.00000	22.50000	0.0	0.0	-0.065785	0.0	0.0	270.00	*
	19.000	90.00000	13.00000	22.50000	0.0	0.0	-0.066029	0.0	0.0	270.00	*
	20.000	90.00000	12.00000	22.50000	0.0	0.0	-0.066229	0.0	0.0	270.00	*
	21.000	90.00000	11.00000	22.50000	0.0	0.0	-0.066384	0.0	0.0	270.00	*
	22.000	90.00000	10.00000	22.50000	0.0	0.0	-0.066494	0.0	0.0	270.00	*
	23.000	90.00000	9.00000	22.50000	0.0	0.0	-0.066559	0.0	0.0	270.00	*
	24.000	90.00000	8.00000	22.50000	0.0	0.0	-0.066577	0.0	0.0	270.00	*
	25.000	90.00000	7.00000	22.50000	0.0	0.0	-0.066550	0.0	0.0	270.00	*
	26.000	90.00000	6.00000	22.50000	0.0	0.0	-0.066477	0.0	0.0	270.00	*
	27.000	90.00000	5.00000	22.50000	0.0	0.0	-0.066359	0.0	0.0	270.00	*
	28.000	90.00000	4.00000	22.50000	0.0	0.0	-0.066196	0.0	0.0	270.00	*
	29.000	90.00000	3.00000	22.50000	0.0	0.0	-0.065988	0.0	0.0	270.00	*
	30.000	90.00000	2.00000	22.50000	0.0	0.0	-0.065737	0.0	0.0	270.00	*
	31.000	90.00000	1.00000	22.50000	0.0	0.0	-0.065443	0.0	0.0	270.00	*
	32.000	90.00000	0.00000	22.50000	0.0	0.0	-0.065106	0.0	0.0	270.00	*
	33.000	90.00000	-1.00000	22.50000	0.0	0.0	-0.064729	0.0	0.0	270.00	*
	34.000	90.00000	-2.00000	22.50000	0.0	0.0	-0.064312	0.0	0.0	270.00	*
	35.000	90.00000	-3.00000	22.50000	0.0	0.0	-0.063857	0.0	0.0	270.00	*
	36.000	90.00000	-4.00000	22.50000	0.0	0.0	-0.063365	0.0	0.0	270.00	*
	37.000	90.00000	-5.00000	22.50000	0.0	0.0	-0.062838	0.0	0.0	270.00	*
BKH_4	Line 4	90.00000	-5.00000	22.50000	0.0	0.0	-0.062838	0.0	0.0	190.49	*
	1.0170	89.00000	-5.18519	22.50000	0.0	0.0	-0.065387	0.0	0.0	190.49	*
	2.0340	88.00000	-5.37037	22.50000	0.0	0.0	-0.068061	0.0	0.0	190.49	*
	3.0510	87.00000	-5.55556	22.50000	0.0	0.0	-0.070865	0.0	0.0	190.49	*
	4.0680	86.00000	-5.74074	22.50000	0.0	0.0	-0.073806	0.0	0.0	190.49	*
	5.0850	85.00000	-5.92593	22.50000	0.0	0.0	-0.076891	0.0	0.0	190.49	*
	6.1020	84.00000	-6.11111	22.50000	0.0	0.0	-0.080127	0.0	0.0	190.49	*
	7.1190	83.00000	-6.29630	22.50000	0.0	0.0	-0.083522	0.0	0.0	190.49	*
	8.1360	82.00000	-6.48148	22.50000	0.0	0.0	-0.087083	0.0	0.0	190.49	*
	9.1530	81.00000	-6.66667	22.50000	0.0	0.0	-0.090819	0.0	0.0	190.49	*
	10.170	80.00000	-6.85185	22.50000	0.0	0.0	-0.094738	0.0	0.0	190.49	*
	11.187	79.00000	-7.03704	22.50000	0.0	0.0	-0.098848	0.0	0.0	190.49	*
	12.204	78.00000	-7.22222	22.50000	0.0	0.0	-0.10316	0.0	0.0	190.49	*
	13.221	77.00000	-7.40741	22.50000	0.0	0.0	-0.10768	0.0	0.0	190.49	*
	14.238	76.00000	-7.59259	22.50000	0.0	0.0	-0.11241	0.0	0.0	190.49	*
	15.255	75.00000	-7.77778	22.50000	0.0	0.0	-0.11737	0.0	0.0	190.49	*

Type/No.		Coordinates			Displacements					Angle of Line to x Axis
Name	Dist.	x	y	z	x	y	z	Horizontal displacement	Horizontal displacement	
	16.272	74.00000	-7.96296	22.50000	0.0	0.0	-0.12557	0.0	0.0	190.49 *
	17.289	73.00000	-8.14815	22.50000	0.0	0.0	-0.12800	0.0	0.0	190.49 *
	18.306	72.00000	-8.33333	22.50000	0.0	0.0	-0.13369	0.0	0.0	190.49 *
	19.323	71.00000	-8.51852	22.50000	0.0	0.0	-0.13964	0.0	0.0	190.49 *
	20.340	70.00000	-8.70370	22.50000	0.0	0.0	-0.14585	0.0	0.0	190.49 *
	21.357	69.00000	-8.88889	22.50000	0.0	0.0	-0.15234	0.0	0.0	190.49 *
	22.374	68.00000	-9.07407	22.50000	0.0	0.0	-0.15911	0.0	0.0	190.49 *
	23.391	67.00000	-9.25926	22.50000	0.0	0.0	-0.16615	0.0	0.0	190.49 *
	24.408	66.00000	-9.44444	22.50000	0.0	0.0	-0.17348	0.0	0.0	190.49 *
	25.425	65.00000	-9.62963	22.50000	0.0	0.0	-0.18110	0.0	0.0	190.49 *
	26.442	64.00000	-9.81481	22.50000	0.0	0.0	-0.18901	0.0	0.0	190.49 *
	27.459	63.00000	-10.00000	22.50000	0.0	0.0	-0.19720	0.0	0.0	190.49 *
Archway_1	Line 5	6.50000	5.00000	20.50000	0.0	0.0	1.7879	0.0	0.0	90.000 *
	0.95455	6.50000	5.95455	20.50000	0.0	0.0	1.4352	0.0	0.0	90.000 *
	1.9091	6.50000	6.90909	20.50000	0.0	0.0	0.68305	0.0	0.0	90.000 *
	2.8636	6.50000	7.86364	20.50000	0.0	0.0	0.26252	0.0	0.0	90.000 *
	3.8182	6.50000	8.81818	20.50000	0.0	0.0	0.11441	0.0	0.0	90.000 *
	4.7727	6.50000	9.77273	20.50000	0.0	0.0	-0.017108	0.0	0.0	90.000 *
	5.7273	6.50000	10.72727	20.50000	0.0	0.0	-0.13180	0.0	0.0	90.000 *
	6.6818	6.50000	11.68182	20.50000	0.0	0.0	-0.22234	0.0	0.0	90.000 *
	7.6364	6.50000	12.63636	20.50000	0.0	0.0	-0.28939	0.0	0.0	90.000 *
	8.5909	6.50000	13.59091	20.50000	0.0	0.0	-0.33680	0.0	0.0	90.000 *
	9.5455	6.50000	14.54545	20.50000	0.0	0.0	-0.36879	0.0	0.0	90.000 *
	10.500	6.50000	15.50000	20.50000	0.0	0.0	-0.38894	0.0	0.0	90.000 *
Archway_2	Line 6	15.50000	20.50000	0.0	0.0	-0.38894	0.0	0.0	180.00 *	
	0.83333	5.66667	15.50000	20.50000	0.040403	0.0	-0.34774	-0.040403	0.0	180.00 *
	1.6667	4.83333	15.50000	20.50000	0.10520	0.0	-0.28376	-0.10520	0.0	180.00 *
	2.5000	4.00000	15.50000	20.50000	0.16236	0.0	-0.22398	-0.16236	0.0	180.00 *
Archway_3	Line 7	4.00000	5.00000	20.50000	5.7337	0.0	3.9665	5.7337	0.0	0.0 *
	0.83333	4.83333	5.00000	20.50000	5.5557	0.0	3.7362	5.5557	0.0	0.0 *
	1.6667	5.66667	5.00000	20.50000	4.1221	0.0	2.9394	4.1221	0.0	0.0 *
	2.5000	6.50000	5.00000	20.50000	0.0	0.0	1.7879	0.0	0.0	0.0 *
167HH_1	Line 8	27.00000	45.00000	20.50000	0.0	0.0	-0.16773	0.0	0.0	0.0 *
	1.0000	28.00000	45.00000	20.50000	0.0	0.0	-0.16666	0.0	0.0	0.0 *
	2.0000	29.00000	45.00000	20.50000	0.0	0.0	-0.15708	0.0	0.0	0.0 *
	3.0000	30.00000	45.00000	20.50000	0.0	0.0	-0.11911	0.0	0.0	0.0 *
	4.0000	31.00000	45.00000	20.50000	0.0	0.0	-0.078888	0.0	0.0	0.0 *
	5.0000	32.00000	45.00000	20.50000	0.0	0.0	-0.037051	0.0	0.0	0.0 *
	6.0000	33.00000	45.00000	20.50000	0.0	0.0	0.0055886	0.0	0.0	0.0 *
	7.0000	34.00000	45.00000	20.50000	0.0	0.0	0.048068	0.0	0.0	0.0 *
	8.0000	35.00000	45.00000	20.50000	0.0	0.0	0.089275	0.0	0.0	0.0 *
	9.0000	36.00000	45.00000	20.50000	0.0	0.0	0.12796	0.0	0.0	0.0 *
	10.000	37.00000	45.00000	20.50000	0.0	0.0	0.16279	0.0	0.0	0.0 *
	11.000	38.00000	45.00000	20.50000	0.0	0.0	0.19236	0.0	0.0	0.0 *
	12.000	39.00000	45.00000	20.50000	0.0	0.0	0.21526	0.0	0.0	0.0 *
	13.000	40.00000	45.00000	20.50000	0.0	0.0	0.23013	0.0	0.0	0.0 *
167HH_2	Line 9	40.00000	45.00000	20.50000	0.0	0.0	0.23013	0.0	0.0	90.000 *
	1.0000	40.00000	46.00000	20.50000	0.0	0.0	0.091200	0.0	0.0	90.000 *
	2.0000	40.00000	47.00000	20.50000	0.0	0.0	-0.045699	0.0	0.0	90.000 *
	3.0000	40.00000	48.00000	20.50000	0.0	0.0	-0.13466	0.0	0.0	90.000 *
	4.0000	40.00000	49.00000	20.50000	0.0	0.0	-0.13122	0.0	0.0	90.000 *
	5.0000	40.00000	50.00000	20.50000	0.0	0.0	-0.12738	0.0	0.0	90.000 *
	6.0000	40.00000	51.00000	20.50000	0.0	0.0	-0.12329	0.0	0.0	90.000 *
	7.0000	40.00000	52.00000	20.50000	0.0	0.0	-0.11905	0.0	0.0	90.000 *
167HH_3	Line 10	40.00000	52.00000	20.50000	0.0	0.0	-0.11905	0.0	0.0	180.00 *
	1.0000	39.00000	52.00000	20.50000	0.0	0.0	-0.12010	0.0	0.0	180.00 *
	2.0000	38.00000	52.00000	20.50000	0.0	0.0	-0.12108	0.0	0.0	180.00 *
	3.0000	37.00000	52.00000	20.50000	0.0	0.0	-0.12200	0.0	0.0	180.00 *
	4.0000	36.00000	52.00000	20.50000	0.0	0.0	-0.12284	0.0	0.0	180.00 *
	5.0000	35.00000	52.00000	20.50000	0.0	0.0	-0.12359	0.0	0.0	180.00 *
	6.0000	34.00000	52.00000	20.50000	0.0	0.0	-0.12426	0.0	0.0	180.00 *
	7.0000	33.00000	52.00000	20.50000	0.0	0.0	-0.12482	0.0	0.0	180.00 *
	8.0000	32.00000	52.00000	20.50000	0.0	0.0	-0.12528	0.0	0.0	180.00 *
	9.0000	31.00000	52.00000	20.50000	0.0	0.0	-0.12563	0.0	0.0	180.00 *
	10.000	30.00000	52.00000	20.50000	0.0	0.0	-0.12586	0.0	0.0	180.00 *
	11.000	29.00000	52.00000	20.50000	0.0	0.0	-0.12597	0.0	0.0	180.00 *
	12.000	28.00000	52.00000	20.50000	0.0	0.0	-0.12595	0.0	0.0	180.00 *
	13.000	27.00000	52.00000	20.50000	0.0	0.0	-0.12580	0.0	0.0	180.00 *
167HH_4	Line 11	27.00000	52.00000	20.50000	0.0	0.0	-0.12580	0.0	0.0	270.00 *
	1.0000	27.00000	51.00000	20.50000	0.0	0.0	-0.13135	0.0	0.0	270.00 *
	2.0000	27.00000	50.00000	20.50000	0.0	0.0	-0.13708	0.0	0.0	270.00 *
	3.0000	27.00000	49.00000	20.50000	0.0	0.0	-0.14299	0.0	0.0	270.00 *
	4.0000	27.00000	48.00000	20.50000	0.0	0.0	-0.14904	0.0	0.0	270.00 *
	5.0000	27.00000	47.00000	20.50000	0.0	0.0	-0.15521	0.0	0.0	270.00 *
	6.0000	27.00000	46.00000	20.50000	0.0	0.0	-0.16145	0.0	0.0	270.00 *
	7.0000	27.00000	45.00000	20.50000	0.0	0.0	-0.16773	0.0	0.0	270.00 *
210SH_1	Line 12	4.00000	5.00000	20.50000	5.7337	0.0	3.9665	-5.7337	0.0	180.00 *
	1.0000	3.00000	5.00000	20.50000	5.4829	0.0	3.9029	-5.4829	0.0	180.00 *
	2.0000	2.00000	5.00000	20.50000	5.0574	0.0	3.6364	-5.0574	0.0	180.00 *
	3.0000	1.00000	5.00000	20.50000	4.5701	0.0	3.2695	-4.5701	0.0	180.00 *
	4.0000	0.00000	5.00000	20.50000	4.0635	0.0	2.8627	-4.0635	0.0	180.00 *
	5.0000	-1.00000	5.00000	20.50000	3.5554	0.0	2.4546	-3.5554	0.0	180.00 *
210SH_2	Line 13	-1.00000	5.00000	20.50000	3.5554	0.0	2.4546	-2.6995	-2.3138	139.40 *
	0.92195	-1.70000	5.60000	20.50000	2.9718	0.0	2.0025	-2.2564	-1.9340	139.40 *
	1.8439	-2.40000	6.20000	20.50000	2.4592	0.0	1.6226	-1.8672	-1.6004	139.40 *
	2.7659	-3.10000	6.80000	20.50000	2.0037	0.0	1.3082	-1.5213	-1.3040	139.40 *
	3.6878	-3.80000	7.40000	20.50000	1.5937	0.0	1.0518	-1.2100	-1.0371	139.40 *
	4.6098	-4.50000	8.00000	20.50000	1.2198	0.0	0.84460	-0.92615	-0.79384	139.40 *
210SH_3	Line 14	-4.50000	8.00000	20.50000	1.2198	0.0	0.84460	0.91466	-0.80706	41.424 *
	1.0305	-3.72727	8.68182	20.50000	1.2801	0.0	0.82220	0.95986	-0.84694	41.424 *
	2.0611	-2.95455	9.36364	20.50000	1.2744	0.0	0.76819	0.95559	-0.84317	41.424 *
	3.0916	-2.18182	10.04545	20.50000	1.2052	0.0	0.68002	0.90368	-0.79736	41.424 *
	4.1221	-1.40909	10.72727	20.50000	1.0792	0.0	0.55864	0.80922	-0.71402	41.424 *
	5.1526	-0.63636	11.40909	20.50000	0.91294	0.0	0.41320	0.68455	-0.60402	41.424 *
	6.1832	0.13636	12.09091	20.50000	0.79310	0.0	0.31042	0.59469	-0.52473	41.424 *
	7.2137	0.90909	12.77273	20.50000	0.65786	0.0	0.19747	0.49329	-0.43526	41.424 *
	8.2442	1.68182	13.45455	20.50000	0.51828	0.0	0.081596	0.38862	-0.34290	41.424 *
	9.2747	2.45455	14.13636	20.50000	0.38431	0.0	-0.030461	0.28817	-0.25427	41.424 *
	10.305	3.22727	14.81818	20.50000	0.26387	0.0	-0.13344	0.19786	-0.17458	41.424 *
	11.336	4.00000	15.50000	20.50000	0.16236	0.0	-0.22398	0.12174	-0.10742	41.424 *
210SH_4	Line 15	4.00000	15.50000	20.50000	0.16236	0.0	-0.22398	0.0	0.16236	270.00 *
	0.95455	4.00000	14.54545	20.50000	0.22829	0.0	-0.17239	0.0	0.22829	270.00 *
	1.9091	4.00000	13.59091	20.50000	0.30981	0.0	-0.10011	0.0	0.30981	270.00 *
	2.8636	4.00000	12.63636	20.50000	0.41226	0.0	-0.0011155	0.0	0.41226	270.00 *
	3.8182	4.00000	11.68182	20.50000	0.54333	0.0	0.13176	0.0	0.54333	270.00 *
	4.7727	4.00000	10.72727	20.50000	0.71450	0.0	0.30705	0.0	0.71450	270.00 *
	5.7273	4.00000	9.77273	20.50000	0.94333	0.0	0.53493	0.0	0.94333	270.00 *
	6.6818	4.00000	8.81818	20.50000	1.2575	0.0	0.82791	0.0	1.2575	270.00 *
	7.6364	4.00000	7.86364	20.50000	1.7014	0.0	1.2030	0.0	1.7014	270.00 *
	8.5909	4.00000	6.90909	20.50000	2.3441	0.0	1.6873	0.0	2.3441	270.00 *
	9.5455	4.00000	5.95455	20.50000	3.7396	0.0	2.6455	0.0	3.7396	270.00 *
	10.500	4.00000	5.00000	20.50000	5.7337	0.0	3.9665	0.0	5.7337	270.00 *
GrapeNear	Point 1	38.00000	39.00000	24.00000	-0.20085	-0.88950	1.0031	-	-	- *
GrapeFar	Point 2	38.00000	44.50000	24.00000	0.0	0.0	0.25445	-	-	- *
HighNear	Point 3	41.00000	10.00000	24.00000	-12.379	1.0871	12.773	-	-	- *
HighFar	Point 4	61.00000	10.00000	24.00000	0.0	0.0	-0.23961	-	-	- *
ShaftsNear	Point 5	20.00000	-2.50000	24.00000	-0.077651	12.618	11.115	-	-	- *
ShaftsFar	Point 6	20.00000	-8.00000	24.00000	-0.041302	6.7116	4.4203	-	-	- *

* Result includes imported displacement(s).

Specific Building Damage Results - Horizontal Displacements

Structure: BKH_1 | Sub-structure: BKH_1

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	63.00000	-10.00000	22.50000	0.0	0.0	0.0	0.0 d
1.0003	62.97561	-9.00000	22.50000	0.0	0.0	0.0	0.0 d
2.0006	62.95122	-8.00000	22.50000	0.0	0.0	0.0	0.0 d
3.0009	62.92683	-7.00000	22.50000	0.0	0.0	0.0	0.0 d
4.0012	62.90244	-6.00000	22.50000	0.0	0.0	0.0	0.0 d
5.0015	62.87805	-5.00000	22.50000	0.0	0.0	0.0	0.0 d
6.0018	62.85366	-4.00000	22.50000	0.0	0.0	0.0	0.0 d
7.0021	62.82927	-3.00000	22.50000	0.0	0.0	0.0	0.0 d

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the	Horizontal displacement perpendicular
8.0024	62.80488	-2.00000	22.50000	0.0	0.0	0.0	0.0 d
9.0027	62.78049	-1.00000	22.50000	0.0	0.0	0.0	0.0 d
10.003	62.75610	0.00000	22.50000	0.0	0.0	0.0	0.0 d
11.003	62.73171	1.00000	22.50000	0.0	0.0	0.0	0.0 d
12.004	62.70732	2.00000	22.50000	0.0	0.0	0.0	0.0 d
13.004	62.68293	3.00000	22.50000	0.0	0.0	0.0	0.0 d
14.004	62.65854	4.00000	22.50000	0.0	0.0	0.0	0.0 d
15.004	62.63415	5.00000	22.50000	0.0	0.0	0.0	0.0 d
16.005	62.60976	6.00000	22.50000	0.0	0.0	0.0	0.0 d
17.005	62.58537	7.00000	22.50000	0.0	0.0	0.0	0.0 d
18.005	62.56098	8.00000	22.50000	0.0	0.0	0.0	0.0 d
19.006	62.53659	9.00000	22.50000	0.0	0.0	0.0	0.0 d
20.006	62.51220	10.00000	22.50000	0.0	0.0	0.0	0.0 d
21.006	62.48780	11.00000	22.50000	0.0	0.0	0.0	0.0 d
22.007	62.46341	12.00000	22.50000	0.0	0.0	0.0	0.0 d
23.007	62.43902	13.00000	22.50000	0.0	0.0	0.0	0.0 d
24.007	62.41463	14.00000	22.50000	0.0	0.0	0.0	0.0 d
25.007	62.39024	15.00000	22.50000	0.0	0.0	0.0	0.0 d
26.008	62.36585	16.00000	22.50000	0.0	0.0	0.0	0.0 d
27.008	62.34146	17.00000	22.50000	0.0	0.0	0.0	0.0 d
28.008	62.31707	18.00000	22.50000	0.0	0.0	0.0	0.0 d
29.009	62.29268	19.00000	22.50000	0.0	0.0	0.0	0.0 d
30.009	62.26829	20.00000	22.50000	0.0	0.0	0.0	0.0 d
31.009	62.24390	21.00000	22.50000	0.0	0.0	0.0	0.0 d
32.010	62.21951	22.00000	22.50000	0.0	0.0	0.0	0.0 d
33.010	62.19512	23.00000	22.50000	0.0	0.0	0.0	0.0 d
34.010	62.17073	24.00000	22.50000	0.0	0.0	0.0	0.0 d
35.010	62.14634	25.00000	22.50000	0.0	0.0	0.0	0.0 d
36.011	62.12195	26.00000	22.50000	0.0	0.0	0.0	0.0 d
37.011	62.09756	27.00000	22.50000	0.0	0.0	0.0	0.0 d
38.011	62.07317	28.00000	22.50000	0.0	0.0	0.0	0.0 d
39.012	62.04878	29.00000	22.50000	0.0	0.0	0.0	0.0 d
40.012	62.02439	30.00000	22.50000	0.0	0.0	0.0	0.0 d
41.012	62.00000	31.00000	22.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: BKH_2 | Sub-structure: BKH_2

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	62.00000	31.00000	22.50000	0.0	0.0	0.0	0.0 d
1.0006	63.00000	31.03571	22.50000	0.0	0.0	0.0	0.0 d
2.0013	64.00000	31.07143	22.50000	0.0	0.0	0.0	0.0 d
3.0019	65.00000	31.10714	22.50000	0.0	0.0	0.0	0.0 d
4.0026	66.00000	31.14286	22.50000	0.0	0.0	0.0	0.0 d
5.0032	67.00000	31.17857	22.50000	0.0	0.0	0.0	0.0 d
6.0038	68.00000	31.21429	22.50000	0.0	0.0	0.0	0.0 d
7.0045	69.00000	31.25000	22.50000	0.0	0.0	0.0	0.0 d
8.0051	70.00000	31.28571	22.50000	0.0	0.0	0.0	0.0 d
9.0057	71.00000	31.32143	22.50000	0.0	0.0	0.0	0.0 d
10.006	72.00000	31.35714	22.50000	0.0	0.0	0.0	0.0 d
11.007	73.00000	31.39286	22.50000	0.0	0.0	0.0	0.0 d
12.008	74.00000	31.42857	22.50000	0.0	0.0	0.0	0.0 d
13.008	75.00000	31.46429	22.50000	0.0	0.0	0.0	0.0 d
14.009	76.00000	31.50000	22.50000	0.0	0.0	0.0	0.0 d
15.010	77.00000	31.53571	22.50000	0.0	0.0	0.0	0.0 d
16.010	78.00000	31.57143	22.50000	0.0	0.0	0.0	0.0 d
17.011	79.00000	31.60714	22.50000	0.0	0.0	0.0	0.0 d
18.011	80.00000	31.64286	22.50000	0.0	0.0	0.0	0.0 d
19.012	81.00000	31.67857	22.50000	0.0	0.0	0.0	0.0 d
20.013	82.00000	31.71429	22.50000	0.0	0.0	0.0	0.0 d
21.013	83.00000	31.75000	22.50000	0.0	0.0	0.0	0.0 d
22.014	84.00000	31.78571	22.50000	0.0	0.0	0.0	0.0 d
23.015	85.00000	31.82143	22.50000	0.0	0.0	0.0	0.0 d
24.015	86.00000	31.85714	22.50000	0.0	0.0	0.0	0.0 d
25.016	87.00000	31.89286	22.50000	0.0	0.0	0.0	0.0 d
26.017	88.00000	31.92857	22.50000	0.0	0.0	0.0	0.0 d
27.017	89.00000	31.96429	22.50000	0.0	0.0	0.0	0.0 d
28.018	90.00000	32.00000	22.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: BKH_3 | Sub-structure: BKH_3

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	90.00000	32.00000	22.50000	0.0	0.0	0.0	0.0 d
1.0000	90.00000	31.00000	22.50000	0.0	0.0	0.0	0.0 d
2.0000	90.00000	30.00000	22.50000	0.0	0.0	0.0	0.0 d
3.0000	90.00000	29.00000	22.50000	0.0	0.0	0.0	0.0 d
4.0000	90.00000	28.00000	22.50000	0.0	0.0	0.0	0.0 d
5.0000	90.00000	27.00000	22.50000	0.0	0.0	0.0	0.0 d
6.0000	90.00000	26.00000	22.50000	0.0	0.0	0.0	0.0 d
7.0000	90.00000	25.00000	22.50000	0.0	0.0	0.0	0.0 d
8.0000	90.00000	24.00000	22.50000	0.0	0.0	0.0	0.0 d
9.0000	90.00000	23.00000	22.50000	0.0	0.0	0.0	0.0 d
10.000	90.00000	22.00000	22.50000	0.0	0.0	0.0	0.0 d
11.000	90.00000	21.00000	22.50000	0.0	0.0	0.0	0.0 d
12.000	90.00000	20.00000	22.50000	0.0	0.0	0.0	0.0 d
13.000	90.00000	19.00000	22.50000	0.0	0.0	0.0	0.0 d
14.000	90.00000	18.00000	22.50000	0.0	0.0	0.0	0.0 d
15.000	90.00000	17.00000	22.50000	0.0	0.0	0.0	0.0 d
16.000	90.00000	16.00000	22.50000	0.0	0.0	0.0	0.0 d
17.000	90.00000	15.00000	22.50000	0.0	0.0	0.0	0.0 d
18.000	90.00000	14.00000	22.50000	0.0	0.0	0.0	0.0 d
19.000	90.00000	13.00000	22.50000	0.0	0.0	0.0	0.0 d
20.000	90.00000	12.00000	22.50000	0.0	0.0	0.0	0.0 d
21.000	90.00000	11.00000	22.50000	0.0	0.0	0.0	0.0 d
22.000	90.00000	10.00000	22.50000	0.0	0.0	0.0	0.0 d
23.000	90.00000	9.00000	22.50000	0.0	0.0	0.0	0.0 d
24.000	90.00000	8.00000	22.50000	0.0	0.0	0.0	0.0 d
25.000	90.00000	7.00000	22.50000	0.0	0.0	0.0	0.0 d
26.000	90.00000	6.00000	22.50000	0.0	0.0	0.0	0.0 d
27.000	90.00000	5.00000	22.50000	0.0	0.0	0.0	0.0 d
28.000	90.00000	4.00000	22.50000	0.0	0.0	0.0	0.0 d
29.000	90.00000	3.00000	22.50000	0.0	0.0	0.0	0.0 d
30.000	90.00000	2.00000	22.50000	0.0	0.0	0.0	0.0 d
31.000	90.00000	1.00000	22.50000	0.0	0.0	0.0	0.0 d
32.000	90.00000	0.00000	22.50000	0.0	0.0	0.0	0.0 d
33.000	90.00000	-1.00000	22.50000	0.0	0.0	0.0	0.0 d
34.000	90.00000	-2.00000	22.50000	0.0	0.0	0.0	0.0 d
35.000	90.00000	-3.00000	22.50000	0.0	0.0	0.0	0.0 d
36.000	90.00000	-4.00000	22.50000	0.0	0.0	0.0	0.0 d
37.000	90.00000	-5.00000	22.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: BKH_4 | Sub-structure: BKH_4

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	90.00000	-5.00000	22.50000	0.0	0.0	0.0	0.0 d
1.0170	89.00000	-5.18519	22.50000	0.0	0.0	0.0	0.0 d
2.0340	88.00000	-5.37037	22.50000	0.0	0.0	0.0	0.0 d
3.0510	87.00000	-5.55556	22.50000	0.0	0.0	0.0	0.0 d
4.0680	86.00000	-5.74074	22.50000	0.0	0.0	0.0	0.0 d
5.0850	85.00000	-5.92593	22.50000	0.0	0.0	0.0	0.0 d

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
6.1020	84.00000	-6.11111	22.50000	0.0	0.0	0.0	0.0 d
7.1190	83.00000	-6.29630	22.50000	0.0	0.0	0.0	0.0 d
8.1360	82.00000	-6.48148	22.50000	0.0	0.0	0.0	0.0 d
9.1530	81.00000	-6.66667	22.50000	0.0	0.0	0.0	0.0 d
10.170	80.00000	-6.85185	22.50000	0.0	0.0	0.0	0.0 d
11.187	79.00000	-7.03704	22.50000	0.0	0.0	0.0	0.0 d
12.204	78.00000	-7.22222	22.50000	0.0	0.0	0.0	0.0 d
13.221	77.00000	-7.40741	22.50000	0.0	0.0	0.0	0.0 d
14.238	76.00000	-7.59259	22.50000	0.0	0.0	0.0	0.0 d
15.255	75.00000	-7.77778	22.50000	0.0	0.0	0.0	0.0 d
16.272	74.00000	-7.96296	22.50000	0.0	0.0	0.0	0.0 d
17.289	73.00000	-8.14815	22.50000	0.0	0.0	0.0	0.0 d
18.306	72.00000	-8.33333	22.50000	0.0	0.0	0.0	0.0 d
19.323	71.00000	-8.51852	22.50000	0.0	0.0	0.0	0.0 d
20.340	70.00000	-8.70370	22.50000	0.0	0.0	0.0	0.0 d
21.357	69.00000	-8.88889	22.50000	0.0	0.0	0.0	0.0 d
22.374	68.00000	-9.07407	22.50000	0.0	0.0	0.0	0.0 d
23.391	67.00000	-9.25926	22.50000	0.0	0.0	0.0	0.0 d
24.408	66.00000	-9.44444	22.50000	0.0	0.0	0.0	0.0 d
25.425	65.00000	-9.62963	22.50000	0.0	0.0	0.0	0.0 d
26.442	64.00000	-9.81481	22.50000	0.0	0.0	0.0	0.0 d
27.459	63.00000	-10.00000	22.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: Archway_1 | Sub-structure: Archway_1

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	6.50000	5.00000	20.50000	0.0	0.0	0.0	0.0 d
0.95455	6.50000	5.95455	20.50000	0.0	0.0	0.0	0.0 d
1.9091	6.50000	6.90909	20.50000	0.0	0.0	0.0	0.0 d
2.8636	6.50000	7.86364	20.50000	0.0	0.0	0.0	0.0 d
3.8182	6.50000	8.81818	20.50000	0.0	0.0	0.0	0.0 d
4.7727	6.50000	9.77273	20.50000	0.0	0.0	0.0	0.0 d
5.7273	6.50000	10.72727	20.50000	0.0	0.0	0.0	0.0 d
6.6818	6.50000	11.68182	20.50000	0.0	0.0	0.0	0.0 d
7.6364	6.50000	12.63636	20.50000	0.0	0.0	0.0	0.0 d
8.5909	6.50000	13.59091	20.50000	0.0	0.0	0.0	0.0 d
9.5455	6.50000	14.54545	20.50000	0.0	0.0	0.0	0.0 d
10.500	6.50000	15.50000	20.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: Archway_2 | Sub-structure: Archway_2

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	6.50000	15.50000	20.50000	0.0	0.0	0.0	0.0 d
0.83333	5.66667	15.50000	20.50000	0.040403	0.0	-0.040403	0.0 d
1.6667	4.83333	15.50000	20.50000	0.10520	0.0	-0.10520	0.0 d
2.5000	4.00000	15.50000	20.50000	0.16236	0.0	-0.16236	0.0 d

d - Displacements include imported displacements.

Structure: Archway_3 | Sub-structure: Archway_3

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	4.00000	5.00000	20.50000	5.7337	0.0	5.7337	0.0 d
0.83333	4.83333	5.00000	20.50000	5.5557	0.0	5.5557	0.0 d
1.6667	5.66667	5.00000	20.50000	4.1221	0.0	4.1221	0.0 d
2.5000	6.50000	5.00000	20.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: 167HH_1 | Sub-structure: 167HH_1

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	27.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
1.0000	28.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
2.0000	29.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
3.0000	30.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
4.0000	31.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
5.0000	32.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
6.0000	33.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
7.0000	34.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
8.0000	35.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
9.0000	36.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
10.000	37.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
11.000	38.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
12.000	39.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
13.000	40.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: 167HH_2 | Sub-structure: 167HH_2

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	40.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d
1.0000	40.00000	46.00000	20.50000	0.0	0.0	0.0	0.0 d
2.0000	40.00000	47.00000	20.50000	0.0	0.0	0.0	0.0 d
3.0000	40.00000	48.00000	20.50000	0.0	0.0	0.0	0.0 d
4.0000	40.00000	49.00000	20.50000	0.0	0.0	0.0	0.0 d
5.0000	40.00000	50.00000	20.50000	0.0	0.0	0.0	0.0 d
6.0000	40.00000	51.00000	20.50000	0.0	0.0	0.0	0.0 d
7.0000	40.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: 167HH_3 | Sub-structure: 167HH_3

Dist.	Coordinates					Displacements	
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
[m]	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	40.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
1.0000	39.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
2.0000	38.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
3.0000	37.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
4.0000	36.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
5.0000	35.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
6.0000	34.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
7.0000	33.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
8.0000	32.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
9.0000	31.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
10.000	30.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
11.000	29.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
12.000	28.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
13.000	27.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: 167HH_4 | Sub-structure: 167HH_4

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	27.00000	52.00000	20.50000	0.0	0.0	0.0	0.0 d
1.0000	27.00000	51.00000	20.50000	0.0	0.0	0.0	0.0 d
2.0000	27.00000	50.00000	20.50000	0.0	0.0	0.0	0.0 d
3.0000	27.00000	49.00000	20.50000	0.0	0.0	0.0	0.0 d
4.0000	27.00000	48.00000	20.50000	0.0	0.0	0.0	0.0 d
5.0000	27.00000	47.00000	20.50000	0.0	0.0	0.0	0.0 d
6.0000	27.00000	46.00000	20.50000	0.0	0.0	0.0	0.0 d
7.0000	27.00000	45.00000	20.50000	0.0	0.0	0.0	0.0 d

d - Displacements include imported displacements.

Structure: 210SH_1 | Sub-structure: 210SH_1

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	4.00000	5.00000	20.50000	5.7337	0.0	-5.7337	0.0 d
1.0000	3.00000	5.00000	20.50000	5.4829	0.0	-5.4829	0.0 d
2.0000	2.00000	5.00000	20.50000	5.0574	0.0	-5.0574	0.0 d
3.0000	1.00000	5.00000	20.50000	4.5701	0.0	-4.5701	0.0 d
4.0000	0.00000	5.00000	20.50000	4.0635	0.0	-4.0635	0.0 d
5.0000	-1.00000	5.00000	20.50000	3.5554	0.0	-3.5554	0.0 d

d - Displacements include imported displacements.

Structure: 210SH_2 | Sub-structure: 210SH_2

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	-1.00000	5.00000	20.50000	3.5554	0.0	-2.6995	-2.3138 d
0.92195	-1.70000	5.60000	20.50000	2.9718	0.0	-2.2564	-1.9340 d
1.8439	-2.40000	6.20000	20.50000	2.4592	0.0	-1.8672	-1.6004 d
2.7659	-3.10000	6.80000	20.50000	2.0037	0.0	-1.5213	-1.3040 d
3.6878	-3.80000	7.40000	20.50000	1.5937	0.0	-1.2100	-1.0371 d
4.6098	-4.50000	8.00000	20.50000	1.2198	0.0	-0.92615	-0.79384 d

d - Displacements include imported displacements.

Structure: 210SH_3 | Sub-structure: 210SH_3

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	-4.50000	8.00000	20.50000	1.2198	0.0	0.91466	-0.80706 d
1.0305	-3.72727	8.68182	20.50000	1.2801	0.0	0.95986	-0.84694 d
2.0611	-2.95455	9.36364	20.50000	1.2744	0.0	0.95559	-0.84317 d
3.0916	-2.18182	10.04545	20.50000	1.2052	0.0	0.90368	-0.79736 d
4.1221	-1.40909	10.72727	20.50000	1.0792	0.0	0.80922	-0.71402 d
5.1526	-0.63636	11.40909	20.50000	0.91294	0.0	0.68455	-0.60402 d
6.1832	0.13636	12.09091	20.50000	0.79310	0.0	0.59469	-0.52473 d
7.2137	0.90909	12.77273	20.50000	0.65786	0.0	0.49329	-0.43526 d
8.2442	1.68182	13.45455	20.50000	0.51828	0.0	0.38862	-0.34290 d
9.2747	2.45455	14.13636	20.50000	0.38431	0.0	0.28817	-0.25427 d
10.305	3.22727	14.81818	20.50000	0.26387	0.0	0.19786	-0.17458 d
11.336	4.00000	15.50000	20.50000	0.16236	0.0	0.12174	-0.10742 d

d - Displacements include imported displacements.

Structure: 210SH_4 | Sub-structure: 210SH_4

Dist.	Coordinates			Displacements			
	x	y	z	x	y	Horizontal displacement along the Line	Horizontal displacement perpendicular to Line
	[m]	[m]	[m]	[mm]	[mm]	[mm]	[mm]
0.0	4.00000	15.50000	20.50000	0.16236	0.0	0.0	0.16236 d
0.95455	4.00000	14.54545	20.50000	0.22829	0.0	0.0	0.22829 d
1.9091	4.00000	13.59091	20.50000	0.30981	0.0	0.0	0.30981 d
2.8636	4.00000	12.63636	20.50000	0.41226	0.0	0.0	0.41226 d
3.8182	4.00000	11.68182	20.50000	0.54333	0.0	0.0	0.54333 d
4.7727	4.00000	10.72727	20.50000	0.71450	0.0	0.0	0.71450 d
5.7273	4.00000	9.77273	20.50000	0.94333	0.0	0.0	0.94333 d
6.6818	4.00000	8.81818	20.50000	1.2575	0.0	0.0	1.2575 d
7.6364	4.00000	7.86364	20.50000	1.7014	0.0	0.0	1.7014 d
8.5909	4.00000	6.90909	20.50000	2.3441	0.0	0.0	2.3441 d
9.5455	4.00000	5.95455	20.50000	3.7396	0.0	0.0	3.7396 d
10.500	4.00000	5.00000	20.50000	5.7337	0.0	0.0	5.7337 d

d - Displacements include imported displacements.

Specific Building Damage Results - Vertical Displacements

Structure: BKH_1 | Sub-structure: BKH_1

Dist.	Coordinates			Displacements
	x	y	z	z
	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	63.00000	-10.00000	22.50000	-0.19720 d
1.0003	62.97561	-9.00000	22.50000	-0.20167 d
2.0006	62.95122	-8.00000	22.50000	-0.20598 d
3.0009	62.92683	-7.00000	22.50000	-0.21009 d
4.0012	62.90244	-6.00000	22.50000	-0.21397 d
5.0015	62.87805	-5.00000	22.50000	-0.21761 d
6.0018	62.85366	-4.00000	22.50000	-0.22096 d
7.0021	62.82927	-3.00000	22.50000	-0.22401 d
8.0024	62.80488	-2.00000	22.50000	-0.22672 d
9.0027	62.78049	-1.00000	22.50000	-0.22907 d
10.003	62.75610	0.00000	22.50000	-0.23105 d
11.003	62.73171	1.00000	22.50000	-0.23263 d
12.004	62.70732	2.00000	22.50000	-0.23380 d
13.004	62.68293	3.00000	22.50000	-0.23455 d
14.004	62.65854	4.00000	22.50000	-0.23488 d
15.004	62.63415	5.00000	22.50000	-0.23478 d
16.005	62.60976	6.00000	22.50000	-0.23425 d
17.005	62.58537	7.00000	22.50000	-0.23332 d
18.005	62.56098	8.00000	22.50000	-0.23197 d
19.006	62.53659	9.00000	22.50000	-0.23025 d
20.006	62.51220	10.00000	22.50000	-0.22816 d
21.006	62.48780	11.00000	22.50000	-0.22573 d

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	
22.007	62.46341	12.00000	22.50000	-0.22299 d
23.007	62.43902	13.00000	22.50000	-0.21996 d
24.007	62.41463	14.00000	22.50000	-0.21669 d
25.007	62.39024	15.00000	22.50000	-0.21320 d
26.008	62.36585	16.00000	22.50000	-0.20953 d
27.008	62.34146	17.00000	22.50000	-0.20572 d
28.008	62.31707	18.00000	22.50000	-0.20180 d
29.009	62.29268	19.00000	22.50000	-0.19780 d
30.009	62.26829	20.00000	22.50000	-0.19376 d
31.009	62.24390	21.00000	22.50000	-0.18971 d
32.010	62.21951	22.00000	22.50000	-0.18567 d
33.010	62.19512	23.00000	22.50000	-0.18168 d
34.010	62.17073	24.00000	22.50000	-0.17774 d
35.010	62.14634	25.00000	22.50000	-0.17388 d
36.011	62.12195	26.00000	22.50000	-0.17010 d
37.011	62.09756	27.00000	22.50000	-0.16640 d
38.011	62.07317	28.00000	22.50000	-0.16280 d
39.012	62.04878	29.00000	22.50000	-0.15927 d
40.012	62.02439	30.00000	22.50000	-0.15582 d
41.012	62.00000	31.00000	22.50000	-0.15244 d

d - Displacements include imported displacements.

Structure: BKH_2 | Sub-structure: BKH_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	
Vertical Offset 1				
0.0	62.00000	31.00000	22.50000	-0.15244 d
1.0006	63.00000	31.03571	22.50000	-0.14973 d
2.0013	64.00000	31.07143	22.50000	-0.14643 d
3.0019	65.00000	31.10714	22.50000	-0.14269 d
4.0026	66.00000	31.14286	22.50000	-0.13865 d
5.0032	67.00000	31.17857	22.50000	-0.13441 d
6.0038	68.00000	31.21429	22.50000	-0.13004 d
7.0045	69.00000	31.25000	22.50000	-0.12562 d
8.0051	70.00000	31.28571	22.50000	-0.12119 d
9.0057	71.00000	31.32143	22.50000	-0.11679 d
10.006	72.00000	31.35714	22.50000	-0.11246 d
11.007	73.00000	31.39286	22.50000	-0.10822 d
12.008	74.00000	31.42857	22.50000	-0.10408 d
13.008	75.00000	31.46429	22.50000	-0.10006 d
14.009	76.00000	31.50000	22.50000	-0.096160 d
15.010	77.00000	31.53571	22.50000	-0.092396 d
16.010	78.00000	31.57143	22.50000	-0.088767 d
17.011	79.00000	31.60714	22.50000	-0.085275 d
18.011	80.00000	31.64286	22.50000	-0.081919 d
19.012	81.00000	31.67857	22.50000	-0.078698 d
20.013	82.00000	31.71429	22.50000	-0.075610 d
21.013	83.00000	31.75000	22.50000	-0.072652 d
22.014	84.00000	31.78571	22.50000	-0.069819 d
23.015	85.00000	31.82143	22.50000	-0.067109 d
24.015	86.00000	31.85714	22.50000	-0.064516 d
25.016	87.00000	31.89286	22.50000	-0.062037 d
26.017	88.00000	31.92857	22.50000	-0.059668 d
27.017	89.00000	31.96429	22.50000	-0.057403 d
28.018	90.00000	32.00000	22.50000	-0.055239 d

d - Displacements include imported displacements.

Structure: BKH_3 | Sub-structure: BKH_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	
Vertical Offset 1				
0.0	90.00000	32.00000	22.50000	-0.055239 d
1.0000	90.00000	31.00000	22.50000	-0.056050 d
2.0000	90.00000	30.00000	22.50000	-0.056844 d
3.0000	90.00000	29.00000	22.50000	-0.057619 d
4.0000	90.00000	28.00000	22.50000	-0.058373 d
5.0000	90.00000	27.00000	22.50000	-0.059105 d
6.0000	90.00000	26.00000	22.50000	-0.059813 d
7.0000	90.00000	25.00000	22.50000	-0.060494 d
8.0000	90.00000	24.00000	22.50000	-0.061147 d
9.0000	90.00000	23.00000	22.50000	-0.061771 d
10.000	90.00000	22.00000	22.50000	-0.062363 d
11.000	90.00000	21.00000	22.50000	-0.062922 d
12.000	90.00000	20.00000	22.50000	-0.063447 d
13.000	90.00000	19.00000	22.50000	-0.063935 d
14.000	90.00000	18.00000	22.50000	-0.064385 d
15.000	90.00000	17.00000	22.50000	-0.064797 d
16.000	90.00000	16.00000	22.50000	-0.065168 d
17.000	90.00000	15.00000	22.50000	-0.065498 d
18.000	90.00000	14.00000	22.50000	-0.065785 d
19.000	90.00000	13.00000	22.50000	-0.066029 d
20.000	90.00000	12.00000	22.50000	-0.066229 d
21.000	90.00000	11.00000	22.50000	-0.066384 d
22.000	90.00000	10.00000	22.50000	-0.066494 d
23.000	90.00000	9.00000	22.50000	-0.066559 d
24.000	90.00000	8.00000	22.50000	-0.066577 d
25.000	90.00000	7.00000	22.50000	-0.066550 d
26.000	90.00000	6.00000	22.50000	-0.066477 d
27.000	90.00000	5.00000	22.50000	-0.066359 d
28.000	90.00000	4.00000	22.50000	-0.066196 d
29.000	90.00000	3.00000	22.50000	-0.065988 d
30.000	90.00000	2.00000	22.50000	-0.065737 d
31.000	90.00000	1.00000	22.50000	-0.065443 d
32.000	90.00000	0.00000	22.50000	-0.065106 d
33.000	90.00000	-1.00000	22.50000	-0.064729 d
34.000	90.00000	-2.00000	22.50000	-0.064312 d
35.000	90.00000	-3.00000	22.50000	-0.063857 d
36.000	90.00000	-4.00000	22.50000	-0.063365 d
37.000	90.00000	-5.00000	22.50000	-0.062838 d

d - Displacements include imported displacements.

Structure: BKH_4 | Sub-structure: BKH_4

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	
Vertical Offset 1				
0.0	90.00000	-5.00000	22.50000	-0.062838 d
1.0170	89.00000	-5.18519	22.50000	-0.065387 d
2.0340	88.00000	-5.37037	22.50000	-0.068061 d
3.0510	87.00000	-5.55556	22.50000	-0.070865 d
4.0680	86.00000	-5.74074	22.50000	-0.073806 d
5.0850	85.00000	-5.92593	22.50000	-0.076891 d
6.1020	84.00000	-6.11111	22.50000	-0.080127 d
7.1190	83.00000	-6.29630	22.50000	-0.083522 d
8.1360	82.00000	-6.48148	22.50000	-0.087083 d
9.1530	81.00000	-6.66667	22.50000	-0.090819 d
10.170	80.00000	-6.85185	22.50000	-0.094738 d
11.187	79.00000	-7.03704	22.50000	-0.098848 d
12.204	78.00000	-7.22222	22.50000	-0.10316 d
13.221	77.00000	-7.40741	22.50000	-0.10768 d
14.238	76.00000	-7.59259	22.50000	-0.11241 d
15.255	75.00000	-7.77778	22.50000	-0.11737 d
16.272	74.00000	-7.96296	22.50000	-0.12257 d
17.289	73.00000	-8.14815	22.50000	-0.12800 d
18.306	72.00000	-8.33333	22.50000	-0.13369 d
19.323	71.00000	-8.51852	22.50000	-0.13964 d
20.340	70.00000	-8.70370	22.50000	-0.14585 d
21.357	69.00000	-8.88889	22.50000	-0.15234 d
22.374	68.00000	-9.07407	22.50000	-0.15911 d

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
23.391	67.00000	-9.25926	22.50000	-0.16615 d
24.408	66.00000	-9.44444	22.50000	-0.17348 d
25.425	65.00000	-9.62963	22.50000	-0.18110 d
26.442	64.00000	-9.81481	22.50000	-0.18901 d
27.459	63.00000	-10.00000	22.50000	-0.19720 d

d - Displacements include imported displacements.

Structure: Archway_1 | Sub-structure: Archway_1

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	6.50000	5.00000	20.50000	1.7879 d
0.95455	6.50000	5.95455	20.50000	1.4352 d
1.9091	6.50000	6.90909	20.50000	0.68305 d
2.8636	6.50000	7.86364	20.50000	0.26252 d
3.8182	6.50000	8.81818	20.50000	0.11441 d
4.7727	6.50000	9.77273	20.50000	-0.017108 d
5.7273	6.50000	10.72727	20.50000	-0.13180 d
6.6818	6.50000	11.68182	20.50000	-0.22234 d
7.6364	6.50000	12.63636	20.50000	-0.28939 d
8.5909	6.50000	13.59091	20.50000	-0.33680 d
9.5455	6.50000	14.54545	20.50000	-0.36879 d
10.500	6.50000	15.50000	20.50000	-0.38894 d

d - Displacements include imported displacements.

Structure: Archway_2 | Sub-structure: Archway_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	6.50000	15.50000	20.50000	-0.38894 d
0.83333	5.66667	15.50000	20.50000	-0.34774 d
1.6667	4.83333	15.50000	20.50000	-0.28376 d
2.5000	4.00000	15.50000	20.50000	-0.22398 d

d - Displacements include imported displacements.

Structure: Archway_3 | Sub-structure: Archway_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	4.00000	5.00000	20.50000	3.9665 d
0.83333	4.83333	5.00000	20.50000	3.7362 d
1.6667	5.66667	5.00000	20.50000	2.9394 d
2.5000	6.50000	5.00000	20.50000	1.7879 d

d - Displacements include imported displacements.

Structure: 167HH_1 | Sub-structure: 167HH_1

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	27.00000	45.00000	20.50000	-0.16773 d
1.0000	28.00000	45.00000	20.50000	-0.16666 d
2.0000	29.00000	45.00000	20.50000	-0.15708 d
3.0000	30.00000	45.00000	20.50000	-0.11911 d
4.0000	31.00000	45.00000	20.50000	-0.078888 d
5.0000	32.00000	45.00000	20.50000	-0.037051 d
6.0000	33.00000	45.00000	20.50000	0.0055886 d
7.0000	34.00000	45.00000	20.50000	0.048068 d
8.0000	35.00000	45.00000	20.50000	0.089275 d
9.0000	36.00000	45.00000	20.50000	0.12796 d
10.000	37.00000	45.00000	20.50000	0.16279 d
11.000	38.00000	45.00000	20.50000	0.19236 d
12.000	39.00000	45.00000	20.50000	0.21526 d
13.000	40.00000	45.00000	20.50000	0.23013 d

d - Displacements include imported displacements.

Structure: 167HH_2 | Sub-structure: 167HH_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	40.00000	45.00000	20.50000	0.23013 d
1.0000	40.00000	46.00000	20.50000	0.091200 d
2.0000	40.00000	47.00000	20.50000	-0.045699 d
3.0000	40.00000	48.00000	20.50000	-0.13466 d
4.0000	40.00000	49.00000	20.50000	-0.13122 d
5.0000	40.00000	50.00000	20.50000	-0.12738 d
6.0000	40.00000	51.00000	20.50000	-0.12329 d
7.0000	40.00000	52.00000	20.50000	-0.11905 d

d - Displacements include imported displacements.

Structure: 167HH_3 | Sub-structure: 167HH_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	40.00000	52.00000	20.50000	-0.11905 d
1.0000	39.00000	52.00000	20.50000	-0.12010 d
2.0000	38.00000	52.00000	20.50000	-0.12108 d
3.0000	37.00000	52.00000	20.50000	-0.12200 d
4.0000	36.00000	52.00000	20.50000	-0.12284 d
5.0000	35.00000	52.00000	20.50000	-0.12359 d
6.0000	34.00000	52.00000	20.50000	-0.12426 d
7.0000	33.00000	52.00000	20.50000	-0.12482 d
8.0000	32.00000	52.00000	20.50000	-0.12528 d
9.0000	31.00000	52.00000	20.50000	-0.12563 d
10.000	30.00000	52.00000	20.50000	-0.12586 d
11.000	29.00000	52.00000	20.50000	-0.12597 d
12.000	28.00000	52.00000	20.50000	-0.12595 d
13.000	27.00000	52.00000	20.50000	-0.12580 d

d - Displacements include imported displacements.

Structure: 167HH_4 | Sub-structure: 167HH_4

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]
Vertical Offset 1				
0.0	27.00000	52.00000	20.50000	-0.12580 d
1.0000	27.00000	51.00000	20.50000	-0.13135 d
2.0000	27.00000	50.00000	20.50000	-0.13708 d
3.0000	27.00000	49.00000	20.50000	-0.14299 d
4.0000	27.00000	48.00000	20.50000	-0.14904 d
5.0000	27.00000	47.00000	20.50000	-0.15521 d
6.0000	27.00000	46.00000	20.50000	-0.16145 d
7.0000	27.00000	45.00000	20.50000	-0.16773 d

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	

d - Displacements include imported displacements.

Structure: 210SH_1 | Sub-structure: 210SH_1

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	

Vertical Offset 1

0.0	4.00000	5.00000	20.50000	3.9665 d
1.0000	3.00000	5.00000	20.50000	3.9029 d
2.0000	2.00000	5.00000	20.50000	3.6364 d
3.0000	1.00000	5.00000	20.50000	3.2695 d
4.0000	0.00000	5.00000	20.50000	2.8627 d
5.0000	-1.00000	5.00000	20.50000	2.4546 d

d - Displacements include imported displacements.

Structure: 210SH_2 | Sub-structure: 210SH_2

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	

Vertical Offset 1

0.0	-1.00000	5.00000	20.50000	2.4546 d
0.92195	-1.70000	5.60000	20.50000	2.0025 d
1.8439	-2.40000	6.20000	20.50000	1.6226 d
2.7659	-3.10000	6.80000	20.50000	1.3082 d
3.6878	-3.80000	7.40000	20.50000	1.0518 d
4.6098	-4.50000	8.00000	20.50000	0.84460 d

d - Displacements include imported displacements.

Structure: 210SH_3 | Sub-structure: 210SH_3

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	

Vertical Offset 1

0.0	-4.50000	8.00000	20.50000	0.84460 d
1.0305	-3.72727	8.68182	20.50000	0.82220 d
2.0611	-2.95455	9.36364	20.50000	0.76819 d
3.0916	-2.18182	10.04545	20.50000	0.68002 d
4.1221	-1.40909	10.72727	20.50000	0.55864 d
5.1526	-0.63636	11.40909	20.50000	0.41320 d
6.1832	0.13636	12.09091	20.50000	0.31042 d
7.2137	0.90909	12.77273	20.50000	0.19747 d
8.2442	1.68182	13.45455	20.50000	0.081596 d
9.2747	2.45455	14.13636	20.50000	-0.030461 d
10.305	3.22727	14.81818	20.50000	-0.13344 d
11.336	4.00000	15.50000	20.50000	-0.22398 d

d - Displacements include imported displacements.

Structure: 210SH_4 | Sub-structure: 210SH_4

Dist.	Coordinates x	y	z	Displacements z
[m]	[m]	[m]	[m]	[mm]	

Vertical Offset 1

0.0	4.00000	15.50000	20.50000	-0.22398 d
0.95455	4.00000	14.54545	20.50000	-0.17239 d
1.9091	4.00000	13.59091	20.50000	-0.10011 d
2.8636	4.00000	12.63636	20.50000	-0.0011155 d
3.8182	4.00000	11.68182	20.50000	0.13176 d
4.7727	4.00000	10.72727	20.50000	0.30705 d
5.7273	4.00000	9.77273	20.50000	0.53493 d
6.6818	4.00000	8.81818	20.50000	0.82791 d
7.6364	4.00000	7.86364	20.50000	1.2030 d
8.5909	4.00000	6.90909	20.50000	1.6873 d
9.5455	4.00000	5.95455	20.50000	2.6455 d
10.500	4.00000	5.00000	20.50000	3.9665 d

d - Displacements include imported displacements.

Specific Building Damage Results - All Segments

Structure: BKH_1 | Sub-structure: BKH_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	30.468	Hogging	131.85E-6	0.0	125.71E-6	0.0	4.4705E-6	2.3525E+6	0 (Negligible)
	2	30.468	10.544	Sagging	10.064E-6	0.0	9.8348E-6	0.0	-4.0501E-6	11.589E+6	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: BKH_2 | Sub-structure: BKH_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	7.2335	Hogging	24.918E-6	0.0	24.855E-6	0.0	-4.4262E-6	1.5847E+6	0 (Negligible)
	2	7.2335	5.7747	Sagging	6.1420E-6	0.0	6.1154E-6	0.0	-4.4262E-6	7.9804E+6	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: BKH_3 | Sub-structure: BKH_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	All settlements are less than the Settlement Trough Limit Sensitivity.										

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: BKH_4 | Sub-structure: BKH_4

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	12.204	15.255	Sagging	48.843E-6	0.0	46.599E-6	0.0	8.0527E-6	3.6111E+6	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Archway_1 | Sub-structure: Archway_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	1.5443	Sagging	0.0098458	0.0	0.0098273	0.0	787.94E-6	1565.1	0 (Negligible)
	2	1.5443	8.9557	Hogging	0.0057045	0.0	0.0056154	0.0	787.94E-6	4173.6	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Archway_2 | Sub-structure: Archway_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	1.8239	Hogging	655.20E-6	-0.0063593	0.0013276	77.768E-6	-76.782E-6	23514.	0 (Negligible)
	2	1.8239	0.67612	None	0.0	-0.0068583	0.0013717	68.588E-6	-71.741E-6	63432.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Archway_3 | Sub-structure: Archway_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	2.5000	Sagging	0.019904	-0.22935	0.047288	0.0049712	0.0013887	1119.1	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_1 | Sub-structure: 167HH_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	5.7947	Hogging	793.08E-6	0.0	784.46E-6	0.0	-42.640E-6	59350.	0 (Negligible)
	2	5.7947	7.2053	Sagging	412.96E-6	0.0	386.70E-6	0.0	-42.640E-6	119440.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_2 | Sub-structure: 167HH_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	0.41161	Sagging	0.0	0.0	0.0	0.0	138.93E-6	105840.	0 (Negligible)
	2	0.41161	6.5884	Hogging	0.0029226	0.0	0.0028817	0.0	138.93E-6	17230.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_3 | Sub-structure: 167HH_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	13.000	Hogging	16.431E-6	0.0	15.557E-6	0.0	1.0448E-6	7.7454E+6	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 167HH_4 | Sub-structure: 167HH_4

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	7.0000	Sagging	11.143E-6	0.0	10.478E-6	0.0	6.2787E-6	5.2906E+6	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_1 | Sub-structure: 210SH_1

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.5685	Sagging	0.0055626	0.042883	0.044911	-507.84E-6	407.94E-6	4375.5	0 (Negligible)
	2	4.5685	0.43145	None	0.0	0.050809	0.050809	-507.84E-6	407.94E-6	120130.	1 (Very Slight)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_2 | Sub-structure: 210SH_2

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.6090	Hogging	0.0040720	0.038470	0.039227	-480.38E-6	490.12E-6	11520.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_3 | Sub-structure: 210SH_3

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	4.5662	Sagging	0.0017701	-0.0034857	0.0013291	120.99E-6	141.15E-6	31932.	0 (Negligible)
	2	4.5662	2.2497	Hogging	722.95E-6	-0.0099153	0.0020267	120.99E-6	141.15E-6	83359.	0

Vertical Offset from Line for Vertical Movement	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
											(Negligible)
	3	6.8159	0.88128	Sagging	69.589E-6	-0.010014	0.0020032	101.58E-6	112.45E-6	350380.	0 (Negligible)
	4	7.6972	3.6378	Hogging	396.03E-6	-0.0088620	0.0017870	101.58E-6	112.45E-6	79922.	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: 210SH_4 | Sub-structure: 210SH_4

Vertical Offset from Line for Vertical Movement Calculations	Segment	Start	Length	Curvature	Deflection Ratio	Average Horizontal Strain	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature	Damage Category
[m]		[m]	[m]		[%]	[%]	[%]			[m]	
0.0	1	0.0	10.500	Hogging	0.015434	0.0	0.015138	0.0	-0.0013838	2333.2	0 (Negligible)

Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Specific Building Damage Results - Critical Values for All Segments within Each Sub-Structure

Structure: BKH_1 | Sub-structure: BKH_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	131.85E-6	0.0	4.4705E-6	0.23486	125.71E-6	0.0	4.4705E-6	2.3525E+6	11.589E+6	0 (Negligible)

Structure: BKH_2 | Sub-structure: BKH_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	24.918E-6	0.0	-4.4262E-6	0.15244	24.855E-6	0.0	-4.4262E-6	1.5847E+6	7.9804E+6	0 (Negligible)

Structure: BKH_3 | Sub-structure: BKH_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	

Structure: BKH_4 | Sub-structure: BKH_4

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	48.843E-6	0.0	8.0527E-6	0.19720	46.599E-6	0.0	8.0527E-6	-	3.6111E+6	0 (Negligible)

Structure: Archway_1 | Sub-structure: Archway_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0098458	0.0	787.94E-6	1.7879	0.0098273	0.0	787.94E-6	4173.6	1565.1	0 (Negligible)

Structure: Archway_2 | Sub-structure: Archway_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	655.20E-6	-0.0068583	-76.782E-6	0.38894	0.0013717	77.768E-6	-76.782E-6	23514.	-	0 (Negligible)

Structure: Archway_3 | Sub-structure: Archway_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.019904	-0.22935	0.0013887	3.9665	0.047288	0.0049712	0.0013887	-	1119.1	0 (Negligible)

Structure: 167HH_1 | Sub-structure: 167HH_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	793.08E-6	0.0	-42.640E-6	0.23013	784.46E-6	0.0	-42.640E-6	59350.	119440.	0 (Negligible)

Structure: 167HH_2 | Sub-structure: 167HH_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0029226	0.0	138.93E-6	0.23013	0.0028817	0.0	138.93E-6	17230.	105840.	0 (Negligible)

Structure: 167HH_3 | Sub-structure: 167HH_3

Vertical Offset from	Deflection Ratio	Average Horizontal	Max Slope	Max Settlement	Max Tensile	Max Gradient of	Max Gradient of Vertical	Min Radius of	Min Radius of	Damage Category

Line for Vertical Movement Calculations	Strain			Strain	Horizontal Displacement Curve	Displacement Curve	Curvature (Hogging)	Curvature (Sagging)	
[m]	[%]	[%]	[mm]	[%]			[m]	[m]	
0.0	16.431E-6	0.0 1.0448E-6	0.12597	15.557E-6	0.0	1.0448E-6	7.7454E+6	- 0	(Negligible)

Structure: 167HH_4 | Sub-structure: 167HH_4

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	11.143E-6	0.0	6.2787E-6	0.16773	10.478E-6	0.0	6.2787E-6	- 5.2906E+6	0	(Negligible)

Structure: 210SH_1 | Sub-structure: 210SH_1

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0055626	0.050809	407.94E-6	3.9665	0.050809	-507.84E-6	407.94E-6	-	4375.5	1 (Very Slight)

Structure: 210SH_2 | Sub-structure: 210SH_2

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0040720	0.038470	490.12E-6	2.4546	0.039227	-480.38E-6	490.12E-6	11520.	-	0 (Negligible)

Structure: 210SH_3 | Sub-structure: 210SH_3

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.0017701	-0.010014	141.15E-6	0.84460	0.0020267	120.99E-6	141.15E-6	79922.	31932.	0 (Negligible)

Structure: 210SH_4 | Sub-structure: 210SH_4

Vertical Offset from Line for Vertical Movement Calculations	Deflection Ratio	Average Horizontal Strain	Max Slope	Max Settlement	Max Tensile Strain	Max Gradient of Horizontal Displacement Curve	Max Gradient of Vertical Displacement Curve	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
[m]	[%]	[%]		[mm]	[%]			[m]	[m]	
0.0	0.015434	0.0	-0.0013838	3.9665	0.015138	0.0	-0.0013838	2333.2	-	0 (Negligible)

Specific Building Damage Results - Critical Segments within Each Structure

Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Max Slope	Max Settlement	Max Tensile Strain	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
				[m]	[m]			[mm]	[%]	[m]	[m]	
BKH_1	Max Slope	BKH_1	1	0.0	30.468	Hogging	**4.4705E-6**	0.23486	125.71E-6	2.3525E+6	- 0	(Negligible)
	Max Settlement	BKH_1	1	0.0	30.468	Hogging	4.4705E-6	**0.23486**	125.71E-6	2.3525E+6	- 0	(Negligible)
	Max Tensile Strain	BKH_1	1	0.0	30.468	Hogging	4.4705E-6	0.23486	**125.71E-6**	2.3525E+6	- 0	(Negligible)
	Min Radius of Curvature (Hogging)	BKH_1	1	0.0	30.468	Hogging	4.4705E-6	0.23486	125.71E-6	**2.3525E+6**	- 0	(Negligible)
	Min Radius of Curvature (Sagging)	BKH_1	2	30.468	41.012	Sagging	4.0501E-6	0.19190	9.8348E-6	- **11.589E+6**	0	(Negligible)
BKH_2	Max Slope	BKH_2	1	0.0	7.2335	Hogging	**4.4262E-6**	0.15244	24.855E-6	1.5847E+6	- 0	(Negligible)
	Max Settlement	BKH_2	1	0.0	7.2335	Hogging	4.4262E-6	**0.15244**	24.855E-6	1.5847E+6	- 0	(Negligible)
	Max Tensile Strain	BKH_2	1	0.0	7.2335	Hogging	4.4262E-6	0.15244	**24.855E-6**	1.5847E+6	- 0	(Negligible)
	Min Radius of Curvature (Hogging)	BKH_2	1	0.0	7.2335	Hogging	4.4262E-6	0.15244	24.855E-6	**1.5847E+6**	- 0	(Negligible)
	Min Radius of Curvature (Sagging)	BKH_2	2	7.2335	13.008	Sagging	4.4262E-6	0.12461	6.1154E-6	- **7.9804E+6**	0	(Negligible)
BKH_3	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
	All settlements are less than the Settlement Trough Limit Sensitivity.											
BKH_4	Max Slope	BKH_4	1	12.204	27.459	Sagging	**8.0527E-6**	0.19720	46.599E-6	- 3.6111E+6	0	(Negligible)
	Max Settlement	BKH_4	1	12.204	27.459	Sagging	8.0527E-6	**0.19720**	46.599E-6	- 3.6111E+6	0	(Negligible)
	Max Tensile Strain	BKH_4	1	12.204	27.459	Sagging	8.0527E-6	0.19720	**46.599E-6**	- 3.6111E+6	0	(Negligible)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)	BKH_4	1	12.204	27.459	Sagging	8.0527E-6	0.19720	46.599E-6	- **3.6111E+6**	0	(Negligible)
Archway_1	Max Slope	Archway_1	1	0.0	1.5443	Sagging	**787.94E-6**	1.7879	0.0098273	- 1565.1	0	(Negligible)
	Max Settlement	Archway_1	1	0.0	1.5443	Sagging	787.94E-6	**1.7879**	0.0098273	- 1565.1	0	(Negligible)
	Max Tensile Strain	Archway_1	1	0.0	1.5443	Sagging	787.94E-6	1.7879	**0.0098273**	- 1565.1	0	(Negligible)
	Min Radius of Curvature (Hogging)	Archway_1	2	1.5443	10.500	Hogging	787.94E-6	0.97051	0.0056154	**4173.6**	- 0	(Negligible)
	Min Radius of Curvature (Sagging)	Archway_1	1	0.0	1.5443	Sagging	787.94E-6	1.7879	0.0098273	- **1565.1**	0	(Negligible)
Archway_2	Max Slope	Archway_2	1	0.0	1.8239	Hogging	**76.782E-6**	0.38894	0.0013276	23514.	- 0	(Negligible)
	Max Settlement	Archway_2	1	0.0	1.8239	Hogging	76.782E-6	**0.38894**	0.0013276	23514.	- 0	(Negligible)
	Max Tensile Strain	Archway_2	2	1.8239	2.5000	Sagging	71.741E-6	0.27248	**0.0013717**	- 63432.	0	(Negligible)
	Min Radius of Curvature (Hogging)	Archway_2	1	0.0	1.8239	Hogging	76.782E-6	0.38894	0.0013276	**23514.**	- 0	(Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
Archway_3	Max Slope	Archway_3	1	0.0	2.5000	Sagging	**0.0013887**	3.9665	0.047288	- 1119.1	0	(Negligible)
	Max Settlement	Archway_3	1	0.0	2.5000	Sagging	0.0013887	**3.9665**	0.047288	- 1119.1	0	(Negligible)
	Max Tensile Strain	Archway_3	1	0.0	2.5000	Sagging	0.0013887	3.9665	**0.047288**	- 1119.1	0	(Negligible)
	Min Radius of Curvature		-	-	-	-	-	-	-	-	-	-

Structure Name	Parameter	Critical Sub-Structure	Critical Segment	Start	End	Curvature	Max Slope	Max Settlement	Max Tensile Strain	Min Radius of Curvature (Hogging)	Min Radius of Curvature (Sagging)	Damage Category
	(Hogging)											
	Min Radius of Curvature (Sagging)	Archway_3	1	0.0	2.5000	Sagging	0.0013887	3.9665	0.047288	-	**1119.1**	0 (Negligible)
167HH_1	Max Slope	167HH_1	1	0.0	5.7947	Hogging	**42.640E-6**	0.16773	784.46E-6	59350.	-	0 (Negligible)
	Max Settlement	167HH_1	2	5.7947	13.000	Sagging	42.640E-6	**0.23013**	386.70E-6	-	119440.	0 (Negligible)
	Max Tensile Strain	167HH_1	1	0.0	5.7947	Hogging	42.640E-6	0.16773	**784.46E-6**	59350.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	167HH_1	1	0.0	5.7947	Hogging	42.640E-6	0.16773	784.46E-6	**59350.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)	167HH_1	2	5.7947	13.000	Sagging	42.640E-6	0.23013	386.70E-6	-	**119440.**	0 (Negligible)
167HH_2	Max Slope	167HH_2	1	0.0	0.41161	Sagging	**138.93E-6**	0.23013	0.0	-	105840.	0 (Negligible)
	Max Settlement	167HH_2	1	0.0	0.41161	Sagging	138.93E-6	**0.23013**	0.0	-	105840.	0 (Negligible)
	Max Tensile Strain	167HH_2	2	0.41161	7.0000	Hogging	138.93E-6	0.17294	**0.0028817**	17230.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	167HH_2	2	0.41161	7.0000	Hogging	138.93E-6	0.17294	0.0028817	**17230.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)	167HH_2	1	0.0	0.41161	Sagging	138.93E-6	0.23013	0.0	-	**105840.**	0 (Negligible)
167HH_3	Max Slope	167HH_3	1	0.0	13.000	Hogging	**1.0448E-6**	0.12597	15.557E-6	7.7454E+6	-	0 (Negligible)
	Max Settlement	167HH_3	1	0.0	13.000	Hogging	1.0448E-6	**0.12597**	15.557E-6	7.7454E+6	-	0 (Negligible)
	Max Tensile Strain	167HH_3	1	0.0	13.000	Hogging	1.0448E-6	0.12597	**15.557E-6**	7.7454E+6	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	167HH_3	1	0.0	13.000	Hogging	1.0448E-6	0.12597	15.557E-6	**7.7454E+6**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
167HH_4	Max Slope	167HH_4	1	0.0	7.0000	Sagging	**6.2787E-6**	0.16773	10.478E-6	-	5.2906E+6	0 (Negligible)
	Max Settlement	167HH_4	1	0.0	7.0000	Sagging	6.2787E-6	**0.16773**	10.478E-6	-	5.2906E+6	0 (Negligible)
	Max Tensile Strain	167HH_4	1	0.0	7.0000	Sagging	6.2787E-6	0.16773	**10.478E-6**	-	5.2906E+6	0 (Negligible)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)	167HH_4	1	0.0	7.0000	Sagging	6.2787E-6	0.16773	10.478E-6	-	**5.2906E+6**	0 (Negligible)
210SH_1	Max Slope	210SH_1	1	0.0	4.5685	Sagging	**407.94E-6**	3.9665	0.044911	-	4375.5	0 (Negligible)
	Max Settlement	210SH_1	1	0.0	4.5685	Sagging	407.94E-6	**3.9665**	0.044911	-	4375.5	0 (Negligible)
	Max Tensile Strain	210SH_1	2	4.5685	5.0000	Sagging	407.94E-6	2.6307	**0.050809**	-	120130.	1 (Very Slight)
	Min Radius of Curvature (Hogging)		-	-	-	-	-	-	-	-	-	-
	Min Radius of Curvature (Sagging)	210SH_1	1	0.0	4.5685	Sagging	407.94E-6	3.9665	0.044911	-	**4375.5**	0 (Negligible)
210SH_2	Max Slope	210SH_2	1	0.0	4.6090	Hogging	**490.12E-6**	2.4546	0.039227	11520.	-	0 (Negligible)
	Max Settlement	210SH_2	1	0.0	4.6090	Hogging	490.12E-6	**2.4546**	0.039227	11520.	-	0 (Negligible)
	Max Tensile Strain	210SH_2	1	0.0	4.6090	Hogging	490.12E-6	2.4546	**0.039227**	11520.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	210SH_2	1	0.0	4.6090	Hogging	490.12E-6	2.4546	0.039227	**11520.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-
210SH_3	Max Slope	210SH_3	1	0.0	4.5662	Sagging	**141.15E-6**	0.84460	0.0013291	-	31932.	0 (Negligible)
	Max Settlement	210SH_3	1	0.0	4.5662	Sagging	141.15E-6	**0.84460**	0.0013291	-	31932.	0 (Negligible)
	Max Tensile Strain	210SH_3	2	4.5662	6.8159	Hogging	141.15E-6	0.49597	**0.0020267**	83359.	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	210SH_3	4	7.6972	11.335	Hogging	112.45E-6	0.22391	0.0017870	**79922.**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)	210SH_3	1	0.0	4.5662	Sagging	141.15E-6	0.84460	0.0013291	-	**31932.**	0 (Negligible)
210SH_4	Max Slope	210SH_4	1	0.0	10.500	Hogging	**0.0013838**	3.9665	0.015138	2333.2	-	0 (Negligible)
	Max Settlement	210SH_4	1	0.0	10.500	Hogging	0.0013838	**3.9665**	0.015138	2333.2	-	0 (Negligible)
	Max Tensile Strain	210SH_4	1	0.0	10.500	Hogging	0.0013838	3.9665	**0.015138**	2333.2	-	0 (Negligible)
	Min Radius of Curvature (Hogging)	210SH_4	1	0.0	10.500	Hogging	0.0013838	3.9665	0.015138	**2333.2**	-	0 (Negligible)
	Min Radius of Curvature (Sagging)		-	-	-	-	-	-	-	-	-	-

APPENDIX F
THAMES WATER INFORMATION

CommercialDW
Drainage & Water Enquiry

Thames Water Property Searches

RSK Environment Limited
18
Frogmore Road Frogmore Road In
Hemel Hempstead
HP3 9RT

Search address supplied	Shaftesbury Theatre, 210, Shaftesbury Avenue, London, WC2H 8DP
Your reference	371647
Our reference	CDWS/CDWS Standard/2017_3670875
Received date	17 October 2017
Search date	20 October 2017

Keeping you up-to-date

Identifying the status associated with drainage and water is a vital part of commercial property conveyancing. To get the most comprehensive view surrounding drainage and water, it is important to obtain an official search.

A CommercialDW Drainage & Water Enquiry will:

- Confirm to the buyer that a property is connected to the mains supply and mains drainage
- Bring to light any potential risk of internal sewer flooding
- Provide information about trade effluent consent licenses and invert and cover levels
- Find out if wayleaves and easements affect the property/site, and
- Offer £2 million, £5 million, or £10 million of indemnity against any potential risks.

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

COMMERCIALDW
DRAINAGE AND WATER ENQUIRY

CommercialDW
Drainage & Water Enquiry

Thames Water Property Searches

Question		Summary Answer
Maps, Wayleaves, Easements, Manhole Cover and Invert levels		
1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map Provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map Provided
1.3	Is there a wayleave/easement agreement giving Thames Water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?	No
1.4	On the copy extract from the public sewer map, please show manhole cover, depth and invert levels where the information is available.	See Details
Drainage		
2.1	Does foul water from the property drain to a public sewer?	Connected
2.2	Does surface water from the property drain to a public sewer?	Connected
2.3	Is a surface water drainage charge payable?	See Details
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	No
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	Yes
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the 50metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?	Not At Risk
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	7.651 Kilometres
Water		
3.1	Is the property connected to mains water supply?	Connected
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	No
3.3	Is any water main or service pipe serving or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	Hard
3.6	Please include details of the location of any water meter serving the property.	See Details

Question		Summary Answer
Charging		
4.1.1	Who are the sewerage undertakers for the area?	Thames Water
4.1.2	Who are the water undertakers for the area?	Thames Water
4.2	Who bills the property for sewerage services?	See Details
4.3	Who bills the property for water services?	See Details
4.4	Is there a meter installed at this property?	Yes
4.5	Are there any trade effluent consents relating to this site/property for disposal of chemically enhanced waste?	No

CommercialDW
Drainage & Water Enquiry

Thames Water Property Searches

Search address supplied: Shaftesbury Theatre, 210, Shaftesbury Avenue, London, WC2H 8DP

Any new owner or occupier will need to contact Thames Water on 0800 316 9800 or log onto our website www.thameswater.co.uk and complete our online form to change the water and drainage services bills to their name.

The following records were searched in compiling this report: - the map of public sewers, the map of waterworks, water and sewer billing records, adoption of public sewer records, building over public sewer records, the register of properties subject to internal foul flooding, the register of properties subject to poor water pressure and the drinking water register. Thames Water Utilities Ltd (TWUL) holds all of these.

TWUL, trading as Property Searches, are responsible in respect of the following:-

(i) any negligent or incorrect entry in the records searched

(ii) any negligent or incorrect interpretation of the records searched

(iii) any negligent or incorrect recording of that interpretation in the search report

(iv) and compensation payments

Please refer to the attached Terms & Conditions. Customers and clients are asked to note these terms, which govern the basis on which this Commercial Drainage and Water search is supplied.

COPSO
EXECUTIVE MEMBER

Thames Water Property Searches is an Executive member of CoPSO (Council of Property Search Organisations).

Maps, Wayleaves, Easements, Manhole Cover and Invert levels

1.1 Where relevant, please include a copy of an extract from the public sewer map.

A copy of an extract of the public sewer map is included, showing the public sewers, disposal mains and lateral drains in the vicinity of the property.

1.2 Where relevant, please include a copy of an extract from the map of waterworks.

A copy of an extract of the map of waterworks is included, showing water mains, resource mains or discharge pipes in the vicinity of the property.

1.3 Wayleaves & Easements

Is there a wayleave/easement agreement giving Thames Water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?

No.

1.4 Manhole

On the copy extract from the public sewer map, please show manhole cover, depth and invert levels where the information is available.

Details of any manhole cover and invert levels applicable to this site are enclosed.

Drainage

2.1 Does foul water from the property drain to a public sewer?

Records indicate that foul water from the property drains to a public sewer.

2.2 Does surface water from the property drain to a public sewer?

Records indicate that surface water from the property drains to a public sewer.

2.3 Is a surface water drainage charge payable?

Records indicate that a surface water charge is applicable at this property.

2.4 Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundary of the property?

The public sewer map indicates that there are no public sewers, disposal mains or lateral drains within the boundaries of the property. However, from the 1st October 2011 there may be lateral drains and/or public sewers which are not recorded on the public sewer map but which may prevent or restrict development of the property.

2.4.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

The public sewer map included indicates that there is no public pumping station within the boundaries of the property.

2.5 Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

The public sewer map included indicates that there is a public sewer within 30.48 metres (100 feet) of a building within the property.

2.5.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?

The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property.

2.6 Are any sewers or lateral drains serving, or which are proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that Foul sewers serving the development, of which the property forms part are not the subject of an existing adoption agreement or an application for such an agreement.

The Surface Water sewer(s) and/or Surface Water lateral drain(s) are not the subject of an adoption agreement.

2.7 Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?

There are no records in relation to any approval or consultation about plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

2.8 Is the building which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?

The property is not recorded as being at risk of internal flooding due to overloaded public sewers.

From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership It is therefore possible that a property may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

2.9 Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

The nearest sewage treatment works is OLYMPIC PARK BLACKWATER PLANT which is 7.651 kilometres to the east of the property.

Water

3.1 Is the property connected to mains water supply?

Records indicate that the property is connected to mains water supply.

3.2 Are there any water mains, resource mains or discharge pipes within the boundary of the property?

The map of waterworks does not indicate any water mains, resource mains or discharge pipes within the boundaries of the property.

3.3 Is any water main or service pipe serving, or which is proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

3.4 Is the property at risk of receiving low water pressure or flow?

Records confirm that the property is not recorded on a register kept by the water undertaker as being at risk of receiving low water pressure or flow.

3.5 What is the classification of the water supply for the property?

The water supplied to the property has an average water hardness of 101.2mg/l calcium which is defined as Hard by Thames Water.

3.6 Please include details of the location of any water meter serving the property.

Records indicate that the property is served by multiple water meters.

Charging

4.1.1 – Who is responsible for providing the sewerage services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the sewerage undertaker for the area.

4.1.2 – Who is responsible for providing the water services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the water undertaker for the area.

4.2 Who bills the property for sewerage services?

If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk

4.3 Who bills the property for water services?

If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk

4.4 Is there a meter installed at this property?

Records indicate that there is a meter installed at this property.

4.5 Trade Effluent Consent

Are there any trade effluent consents relating to this site/property for disposal of chemically enhanced waste?

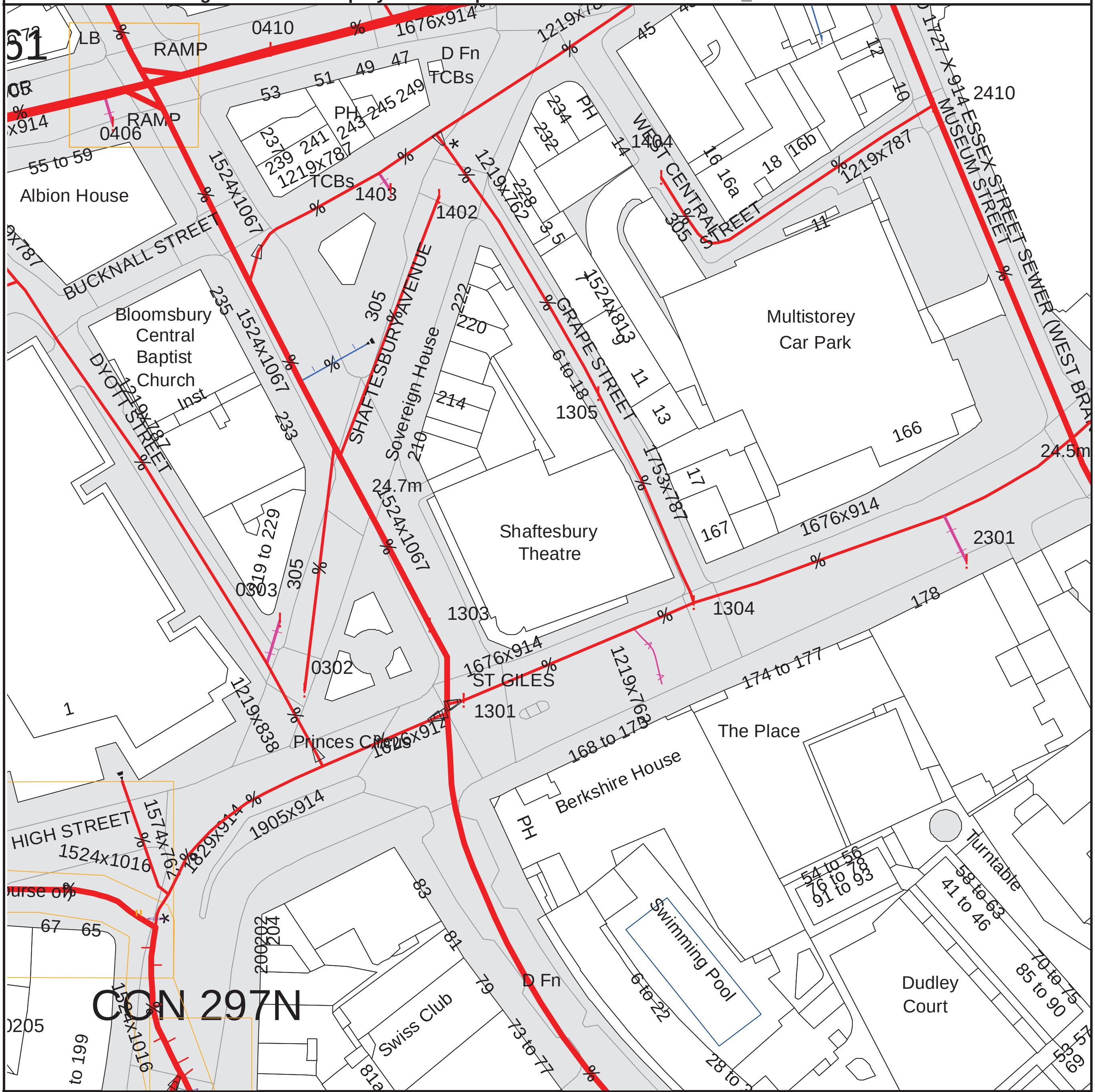
No.

Payment for this Search

A charge will be added to your suppliers account.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information.

CommercialDW Drainage and Water Enquiry Sewer Map- CDWS/CDWS Standard/2017_3670875



The width of the displayed area is 200m

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no survey information is available.

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1305	24.15	20.1
1404	25.2	21.73
1304	23.52	19.43
141A	n/a	n/a
2410	25.15	20.6
2301	n/a	n/a
1301	23.34	19.14
0302	23.34	18.84
1303	23.59	17.34
0303	n/a	n/a
1402	25.13	21.01
1403	n/a	n/a
0406	25.56	n/a
0410	25.36	9.49

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Sewer Key - Commercial Drainage and Water Enquiry

Public Sewer Types (Operated & Maintained by Thames Water)

Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

Trunk Surface Water

Trunk Foul

Storm Relief

Trunk Combined

Vent Pipe

Bio-solids (Sludge)

Proposed Thames Surface Water Sewer

Proposed Thames Water Foul Sewer

Gallery

Foul Rising Main

Surface Water Rising Main

Combined Rising Main

Sludge Rising Main

Proposed Thames Water Rising Main

Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

Air Valve

Dam Chase

Fitting

Meter

Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

Control Valve

Drop Pipe

Ancillary

Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

Outfall

Undefined End

Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

Public/Private Pumping Station

Change of characteristic indicator (C.O.C.I.)

Invert Level

Summit

Areas

Lines denoting areas of underground surveys, etc.

Agreement

Operational Site

Chamber

Tunnel

Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

Foul Sewer

Surface Water Sewer

Combined Sewer

Gulley

Culverted Watercourse

Proposed

Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.

2) All measurements on the plans are metric.

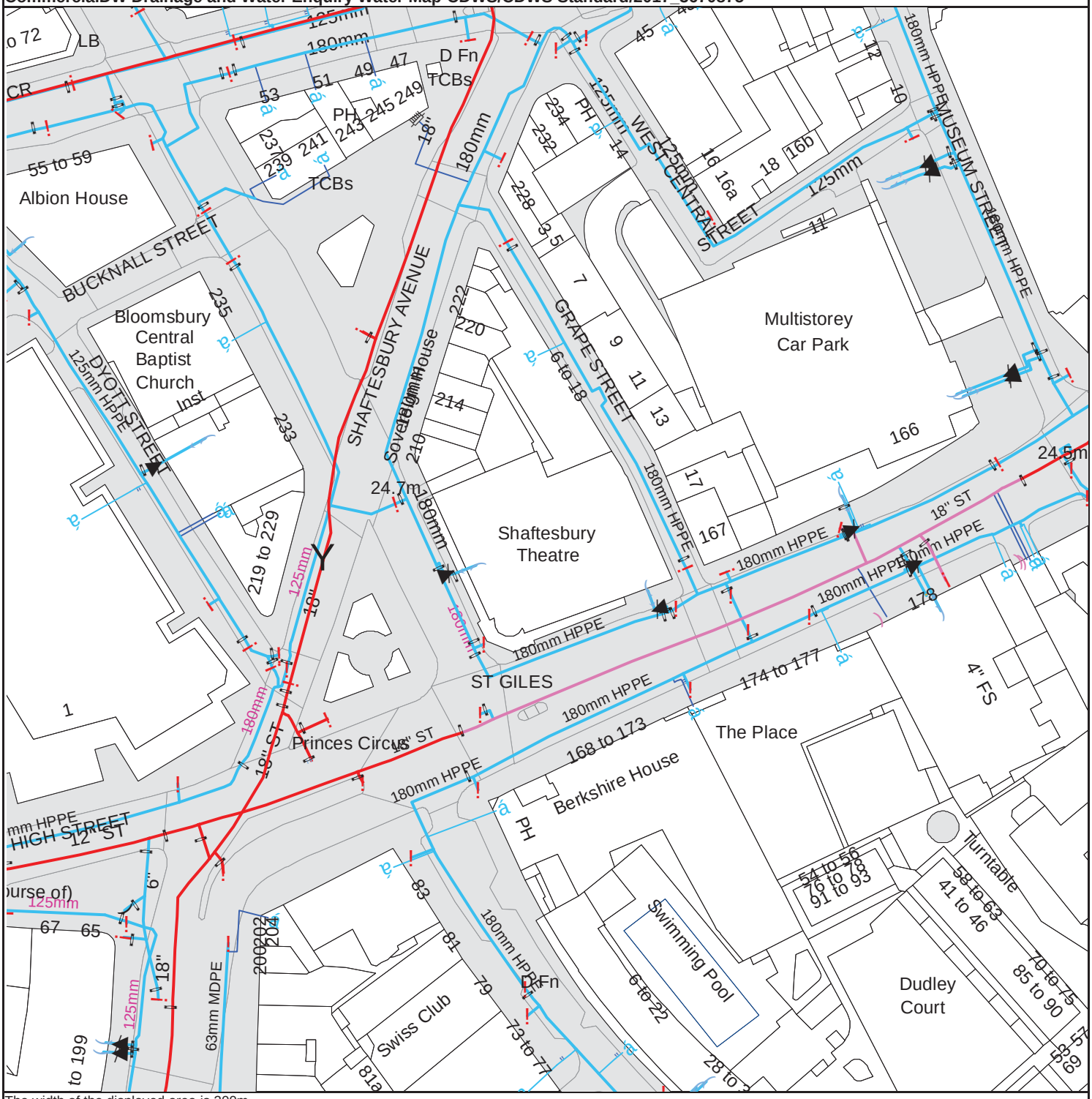
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.

4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

5) 'na' or '0' on a manhole level indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in milimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Searches on 0118 925 1504.

CommercialDW Drainage and Water Enquiry Water Map-CDWS/CDWS Standard/2017_3670875



The width of the displayed area is 200m

Waterworks Key - Commercial Drainage and Water Enquiry

Water Pipes (Operated & Maintained by Thames Water)

4"

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

16"

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

3" SUPPLY

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

3" FIRE

Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.

3" METERED

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indiates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

For your guidance:

- Thames Water Property Searches Complaints Procedure:
  - Thames Water Property Searches offers a robust complaints procedure. Complaints can be made by telephone, in writing, by email (searches@thameswater.co.uk) or through our website (www.thameswater-propertysearches.co.uk)

As a minimum standard Thames Water Property Searches will:

- endeavour to resolve any contact or complaint at the time of receipt. If this isn't possible, we will advise of timescales;
- investigate and research the matter in detail to identify the issue raised (in some cases third party consultation will be required);
- provide a response to the customer within 10 working days of receipt of the complaint;
- provide compensation, if no response or acknowledgment that we are investigating the case is given within 10 working days of receipt of the complaint;
- keep you informed of the progress and, depending on the scale of investigation required, update with new timescales as necessary;
- provide an amended search, free of charge, if required;
- provide a refund if we find your complaint to be justified; take the necessary action within our power to put things right.

If you want us to liaise with a third party on your behalf, just let us know.

If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager, for resolution, who will respond again within 5 working days.

If you remain dissatisfied with our final response you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). Please refer to the final page of the search for further details.

Question 1.1

For your guidance:

- The Water Industry Act 1991 defines Public Sewers as those which Thames Water have responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purposes only.
- The company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.
- Assets other than public sewers may be shown on the copy extract, for information.

Question 1.2

For your guidance:

- The “water mains” in this context are those, which are vested in and maintainable by the water company under statute.
- Assets other than public water mains may be shown on the plan, for information only.
- Water companies are not responsible for private supply pipes connecting the property to the public water main and do not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Question 2.1

For your guidance:

- Water companies are not responsible for any private drains that connect the property to the public sewerage system and do not hold details of these. The property owner will normally have sole responsibility for private drains serving the property. These may pass through land outside the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- If foul water does not drain to the public sewerage system, the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.2

For your guidance:

- Sewerage Undertakers are not responsible for any private drains that connect the property to the public sewerage system, and do not hold details of these.
- The property owner will normally have sole responsibility for private drains serving the property. These private drains may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- In some cases, 'Sewerage Undertakers' records do not distinguish between foul and surface water connections to the public sewerage system.
- At the time of privatisation in 1989, Sewerage Undertakers were sold with poorly-kept records of sewerage infrastructure. The records did not always show which properties were connected for surface water drainage purposes. Accordingly, billing records have been used to provide an answer for this element of the drainage and water search.
- Due to the potential inadequacy of 'Sewerage Undertakers' infrastructure records with respect to surface water drainage, it is the customer's responsibility to inform the Sewerage Undertaker that they do not receive the surface water drainage service. If on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.
- If surface water from the property does not drain to the public sewerage system, the property may have private facilities in the form of a soakaway or private connection to a watercourse.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.3

For your guidance:

- If surface water from the property drains to a public sewer, then a surface water drainage charge is payable.
- Where a surface water drainage charge is currently included in the property's water and sewerage bill but, on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Question 2.4

For your guidance:

- Thames Water has a statutory right of access to carry out work on its assets. Employees of Thames Water or its contractors may, therefore, need to enter the property to carry out work.
- Please note if the property was constructed after 1st July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public sewer running within the boundary of the property may restrict further development. The Company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.4.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public pumping station within the boundary of the property may restrict further development. The company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.5

For your guidance:

- From the 1st October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.
- The presence of a public sewer within 30.48 metres (100 feet) of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.5.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The presence of a public pumping station within 50 metres of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.6

For your guidance:

- Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.
- This enquiry is of interest to purchasers who will want to know whether or not the property will be linked to a public sewer.
- Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.
- Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991 and meeting the requirements of 'Sewers for Adoption' 6th Edition.

Question 2.7

For your guidance:

- From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have been approved or consulted about any plans to erect a building or extension on the property over or in the vicinity of these.
- Buildings or extensions erected over a sewer in contravention of building controls may have to be removed or altered.

Question 2.8

For your guidance:

- For reporting purposes buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water Utilities Ltd on Tel: 0800 316 9800 or website www.thameswater.co.uk

Question 2.9

For your guidance:

- The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.
- The sewerage undertaker's records were inspected to determine the nearest sewage treatment works.
- It should be noted that there may be a private sewage treatment works closer than the one detailed above that has not been identified.
- As a responsible utility operator, Thames Water Utilities Ltd seeks to manage the impact of odour from operational sewage works on the surrounding area. This is done in accordance with the Code of Practice on Odour Nuisance from Sewage Treatment Works issued via the Department of Environment, Food and Rural Affairs (DEFRA). This Code recognises that odour from sewage treatment works can have a detrimental impact on the quality of the local environment for those living close to works. However DEFRA also recognises that sewage treatment works provide important services to communities and are essential for maintaining standards in water quality and protecting aquatic based environments. For more information visit www.thameswater.co.uk

Question 3.1

For your guidance:

- The Company does not keep details of private supplies. The situation should be checked with the current owner of the property.

Question 3.2

For your guidance:

- The boundary of the property has been determined by reference to the plan supplied. Where a plan was not supplied, the Ordnance Survey Record was used. If the Water undertaker mentioned in Question 4.1.2 is not Thames Water Utilities Ltd the boundary of the property has been determined by the Ordnance Survey.
- The presence of a public water main within the boundary of the property may restrict further development within it. Water companies have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.

Question 3.3

For your guidance:

- This enquiry is of interest to purchasers who will want to know whether or not the property will be linked to the mains water supply.

Question 3.4

For your guidance:

- "Low water pressure" means water pressure below the regulatory reference level, which is the minimum pressure when demand on the system is not abnormal.
- Water Companies are required to include in the Regulatory Register that is presented annually to the Director General of Water Services, properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level)
- The reference level of service is a flow of 9 litres/minute at a pressure of 10metres / head on the customer's side of the outside stop valve (osv). The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap. The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served. For two properties, a flow of 18 litres/minute at a pressure of 10metres/head on the customers' side of the osv is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS6700 or the Institute of Plumbing handbook.
- **Allowable exclusions** The Company is required to include in the Regulatory Register properties receiving pressure below the reference level, provided that allowable exclusions listed below do not apply.
- **Abnormal demand:** This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand, which are normally expected. Companies should exclude from the reported figures properties which are affected by low pressure only on those days with the highest peak demands. During the report year companies may exclude, for each property, up to five days of low pressure caused by peak demand.
- **Planned maintenance:** Companies should not report low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low-pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.
- **One-off incidents:** This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as pressure reducing valves or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.
- **Low-pressure incidents of short duration:** Properties affected by low pressure, which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded from the reported figures.
- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water pressure.

Question 3.5

For your guidance:

- Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table shows the normal ranges of hardness.

Thames Water Hardness Category	Calcium (mg/l)	Calcium Carbonate (mg/l)	English Clarke degrees	French degrees	General/ German degrees
Soft	0 to 40	0 to 100	0 to 7	0 to 10	0 to 5.6
Medium	41 to 80	101 to 200	8 to 14	11 to 20	5.7 to 11.2
Hard	Over 80	Over 200	Over 14	Over 20	over 11.2

- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water hardness.

Question 3.6

For your guidance:

- Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the water services for this property. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Question 4.4

For your guidance:

- The Water Industry Act 1991 Section 150, The Water Resale Order 2001 provides protection for people who buy their water or sewerage services from a person or company instead of directly from a water or sewerage company. Details are available from the Office of Water Services (OFWAT) website is www.ofwat.gov.uk.
- The Company may install a meter at the premises where a buyer makes a change of use of the property or where the buyer uses water for:
  - Watering the garden other than by hand (this includes the use of sprinklers).
  - Automatically replenishing a pond or swimming pool with a capacity greater than 10,000 litres.
  - A bath with a capacity in excess of 230 litres.
  - A reverse osmosis unit
- Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the sewerage and water services for this property. For a list of all potential retailers of sewerage and water services for the property please visit www.open-water.org.uk.

Question 4.5

For your guidance:

- If a Trade effluent consent applies to the premises which are the subject of this search, it is for the applicant to satisfy itself as to the suitability of the consent for its client's requirements. The occupier of any trade premises in the area of a sewerage undertaker may discharge any trade effluent proceeding from those premises into the undertaker's public sewers if he does so with the undertaker's consent. If, in the case of any trade premises, any trade effluent is discharged without such consent or other authorisation, the occupier of the premises shall be guilty of an offence.
- Please note any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.
- For further information regarding Trade Effluent consents please contact: Trade Effluent Control, Crossness STW, Belvedere Road, Abbey Wood London SE2 9AQ.

CommercialDW Drainage and Water Enquiry Terms and Conditions

Customer and Clients are asked to note these terms, which govern the basis on which this CommercialDW Drainage & Water Enquiry is supplied

Definitions

'Client' means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.
'Company' means a water service company or their data service provider producing the Report.
'Customer' means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.
'Order' means any request completed by the Customer requesting the Report.
'Property' means the address or location supplied by the Customer in the Order.
'Report' means the drainage and/or water report prepared by The Company in respect of the Property.
'Thames Water" means Thames Water Utilities Limited registered in England and Wales under number 2366661 whose registered office is at Clearwater Court, Vastern Road, Reading, Berks, RG1 8DB;

Agreement

1 Thames Water agrees to supply the Report to the Customer and the Client subject to these terms. The scope and limitations of the Report are described in paragraph 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client. The Customer and Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

The Report

2. Whilst Thames Water will use reasonable care and skill in producing the Report, it is provided to the Customer and the Client on the basis that they acknowledge and agree to the following:-

2.1 The information contained in the Report can change on a regular basis so Thames Water cannot be responsible to the Customer and the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.

2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.

2.3 The information contained in the Report is based upon the accuracy, completeness and legibility of the address and other information supplied by the Customer or Client.

2.4 The Report provides information as to the location and connection of existing services and should not be relied on for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Thames Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liability therefore.

2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes and the maps must not be relied on in the event of excavation or other works made in the vicinity of apparatus shown on any maps.

Liability

3 Thames Water shall not be liable to the Client for any failure, defect or non-performance of its obligations arising from any failure of, or defect in any machine, processing system or transmission link or anything beyond Thames Water's reasonable control or the acts or omissions of any party for whom Thames Water are not responsible.

3.1 Where the Customer sells this report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Thames Water shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever and the Customer shall indemnify Thames Water in respect of any claim by the Client.

3.2 Where a report is requested for an address falling within a geographical area where Thames Water and another Company separately provide Water and Sewerage Services, then it shall be deemed that liability for the information given by Thames Water or the Company as the case may be will remain with Thames Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Thames Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement Thames Water will therefore not be liable in any way for the accuracy of that information and will supply that information as agent for the Company from which the information was obtained.

3.3 Except in respect of death or personal injury caused by negligence, or as expressly provided in these Terms:

3.3.1 The entire liability of Thames Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and

3.3.2 Thames Water shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs or expenses;

Copyright and Confidentiality

4. The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of Thames Water or the Company as the case may be. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided

4.1 The Customer or Client is entitled to make copies of the Report but is not permitted to copy any maps contained in, or attached to the Report

4.2 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.

4.3 The Customer and Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on the Report.

Payment

5. Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Thames Water, without any set off, deduction or counterclaim.

5.1 Unless payment has been received in advance, Customers shall be invoiced for the agreed fee once their request has been processed. Any such invoice must be paid within 14 days. Where the Customer has an account with Thames Water, payment terms will be as agreed with Thames Water.

5.2 No payment shall be deemed to have been received until Thames Water has received cleared funds.

5.3 If the Customer fails to pay Thames Water any sum due Thames Water shall be entitled but not obliged to charge the Customer interest on the sum from the due date for payment at the annual rate of 2% above the base lending rate from time to time of Natwest Bank, accruing on a daily basis until payment is made. Thames Water reserves the right to claim interest under the Late Payment of Commercial Debts (Interest) Act 1998.

5.4 Thames Water reserves the right to increase fees on reasonable prior written notice at any time.

Cancellations or Alterations

6. Once an Order is placed, Thames Water shall not be under any obligation to accept any request to cancel that Order and payment for the Order shall still be due upon completion of the Report. In cases where an error has been made in the original Order (e.g. the Customer has supplied an incorrect address), the Customer will need to place a second Order, detailing the correct information, and shall be liable to pay a second charge in accordance with clause 5 above.

Delivery

7. On receiving your order the reports will be posted to you within 10 working days from receipt.

7.1 Delivery is subject to local post conditions and regulations. All items should arrive within 12 working days, but Thames Water cannot be held responsible should delays be caused by local post conditions, postal strikes or other causes beyond the control of Thames Water.

General

8. If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall be affected.

8.1 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.

8.2 Nothing in this notice shall in any way restrict the Customer or Clients statutory or any other rights of access to the information contained in the Report.

These Terms & Conditions are available in larger print for those with impaired vision.

Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of TWUL until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. TWUL does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at TWUL's discretion for increased administration costs.

A copy of TWUL's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800.

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the goods or services covered by this invoice falls under the regulation of the Water Industry Act 1991, and you remain dissatisfied you can refer your complaint to CC Water on 0845 039 2837 (it will cost you the same as a local call) or write to them at 11 Belgrave Road, London SW1V 1RB.

Ways to pay your bill

By Post – Cheque only, made payable to 'Thames Water Utilities Ltd' writing your Thames Water account number on the back. Please fill in the payment slip below and send it with your cheque to Thames Water Utilities Ltd., PO Box 223, Swindon SN38 2TW	**By BACS Payment** direct to our bank on account number 90478703, sort code 60-00-01 may be made. A remittance advice must be sent to Thames Water Utilities Ltd., PO Box 223, Swindon SN38 2TW. Or fax to 01793 424599 or email: cashoperations@thameswater.co.uk	**Telephone Banking** By calling your bank and quoting your invoice number and the Thames Water`s bank account number 90478703 and sort code 60-00-01	**By Swift Transfer** You may make your payment via SWIFT by quoting **NWBKGB2L** together with our bank account number 90478703, sort code 60-00-01 and invoice number

Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if he finds that you have suffered actual loss as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Sewer Flooding
History Enquiry

Property Searches

RSK Environment Limited

Frogmore Road Frogmore Road In

Search address supplied	Shaftesbury Theatre 210 Shaftesbury Avenue London WC2H 8DP

Your reference	371647
Our reference	SFH/SFH Standard/2017_3670876
Received date	**17 October 2017**
Search date	**17 October 2017**

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Sewer Flooding
History Enquiry

Property Searches

Search address supplied: Shaftesbury Theatre,210,Shaftesbury Avenue,London,WC2H 8DP

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

(i) any negligent or incorrect entry in the records searched;

(ii) any negligent or incorrect interpretation of the records searched;

(iii) and any negligent or incorrect recording of that interpretation in the search report

(iv) compensation payments

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
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0845 070 9148

Sewer Flooding
History Enquiry

Thames Water Property Searches

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Sitecheck Flood

Overall Flood Risk — PASSED

The property is considered to be at minimal or no risk of flooding. However, you should ask the seller if the property has flooded in the past. The property buyer may wish to visit the online viewer to explore the surrounding area.

Insurability

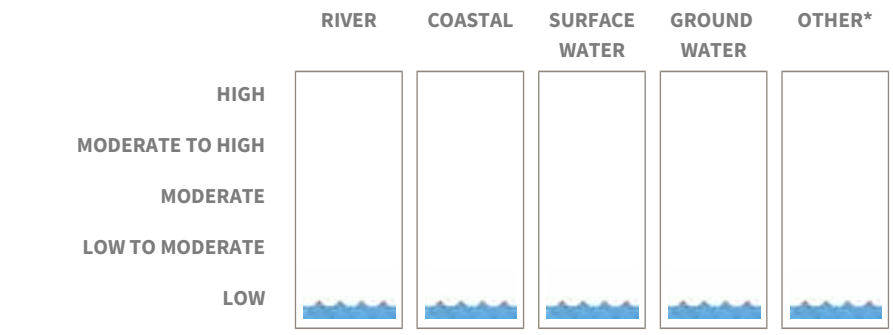
We recommend you obtain buildings and contents insurance terms before exchange of contracts.

Flood Defences

Are there existing river/coastal flood defences that have been identified and taken into account in our overall risk assessment?	No

Individual Flood Risks

The gauges below detail the level and type of individual flood risks at the property.



* Includes historic flood events, proximity to surface water features and elevation above sea level

This report is issued for the property described as:
Shaftesbury Theatre, 210 Shaftesbury Avenue, London, WC2H 8DP

Report Reference:
143186047

National Grid Reference:
530140 181350

Customer Reference:
87557703_SCF

Report Date:
17 October 2017

Click here to view the **online viewer or go to:**

http://landmark.ly/fRJ6ej

CONTACT DETAILS

If you require any assistance please contact our customer support team on:

0844 844 9966

or by email at:

helpdesk@landmark.co.uk

Professional Opinion and Recommendations

Please see below our recommendations and next steps with regards to the property.

Overall Flood Risk **PASSED**

Professional Opinion

Landmark Information Group have identified the property to be within an area that is at minimal or no risk of flooding.

The property purchaser may wish to investigate any additional flood risks to the property highlighted on the flood gauges using the viewer.

Flood Defences

No river/coastal flood defences have been identified or considered as part of Landmark's overall risk of flooding.

Recommendations

1. Ask the seller to confirm whether the property or the surrounding area has flooded before. If it has, please contact us for advice.

Insurance

We recommend you obtain buildings and contents insurance terms before exchange of contracts.

Flood Risk

Flood risk is based on probability; to understand more about flood and the information reviewed, including flood protection measures, please explore the online viewer or visit the 'Know Your Flood Risk' website at: www.knowyourfloodrisk.co.uk.

Useful Information:

No physical site inspection has been carried out or is proposed. This report highlights only the information which we have determined should be drawn to your attention however, other risks may be present. To review the complete information and for a full list of the data used for this report, please see the Useful Information section on the online viewer, available at http://landmark.ly/fRJ6ej.

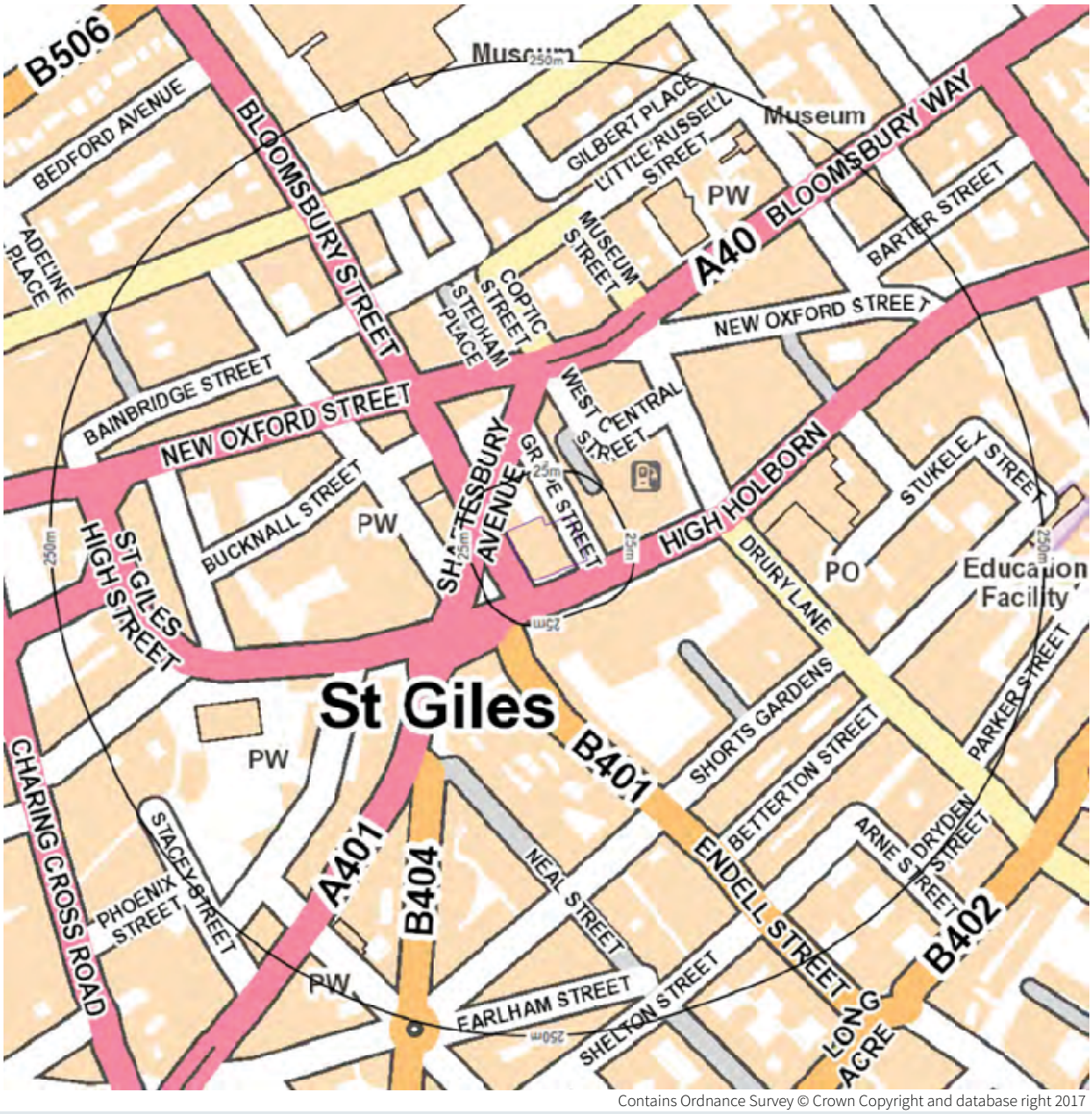
Next Steps:

If you require any assistance, please contact our customer service team 0844 844 9966 or helpdesk@landmark.co.uk

Property Location

Location Plan

The map below shows the location of the property



Property

Search Radii

Property Purchaser Guide

Understanding this report

The purpose of this report is to provide a professional opinion on the likelihood of flooding at the property. The front page provides an overall assessment, an indication of the availability of insurance, as well as a flood gauge which is broken down into River, Coastal, Surface, Groundwater and Other flood risks to help visualise the potential flood risks. Within the report, we provide recommendations and further detail of any risk requiring further attention.

Overall Flood Risk

The overall flood risk is an assessment of all the flood data which has been analysed. It may differ from the individual risks on the flood gauge as we consider the overall risk to the property.

Risk Rating

Landmark Information Group provide one of three possible responses for the Overall Flood Risk at the property. These are:

Passed: this means no risk of flooding has been identified.

Passed moderate: this means that while potential flood risks have been found, these are not considered significant or frequent enough for a Further Action to be issued. The property purchaser should refer to the online viewer to explore these potential issues further.

Further Action: this means a significant risk of flooding at the property has been identified. Further assessment will be required.

Insurability

Based on the data assessed within this report, an indication of whether buildings insurance is likely to be available and affordable is provided.

Flood Defences

If river/coastal flood defences are known to be present, these are assumed to be operational and are taken into consideration in our Overall Flood Risk analysis.

Individual Flood Risks

These enable you to easily identify your level of risk from the various causes of flooding. However, a residual risk of flooding may be present if flood defences fail. We therefore, provide on the Professional Opinion and Recommendation page the level of risk should any defences identified fail. It is important to note that flood defences do not usually protect the site against groundwater or surface water.

Flooding Types

There are several types of flooding taken into account when making our overall opinion. These are explained below. Where a risk is found, this is shown on the front page and further details are provided within the body of the report.

River Flooding

River flooding occurs when rivers and streams are unable to carry away floodwaters within their usual drainage channels. River flooding can cause widespread and extensive damage because of the sheer volume of water.

Coastal Flooding

Coastal flooding results from a combination of high tides, low lying land and sometimes stormy conditions. Coastal flooding can cause widespread and extensive damage because of the sheer volume of water.

Surface Water Flooding

Surface water flooding is common during prolonged or exceptionally heavy downpours, when rainwater does not drain away into the normal drainage systems or soak away into the ground.

Ground Water Flooding

Groundwater flooding generally occurs during long and intense rainfall when underground water levels rise above surface level. Groundwater flooding may last for weeks or several months.

Other Flooding

We analyse any historic flood events records, the proximity of the property to surface water features and the elevation of the property above sea level to enhance our overall analysis of the property.

Next Steps:

If you require any assistance, please contact our customer service team **0844 844 9966** or **helpdesk@landmark.co.uk**.

Preparation for a Flood Event

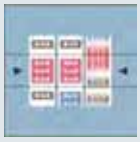
Understanding Flood Risk

It is important to understand that flooding can happen anywhere, even if the property is not near to a watercourse or the sea. This is because in periods of very heavy rainfall, water can collect in many places where there may be a dip in the ground or a barrier blocking the water's path. Severe rainfall events can also lead to water rising from under the ground as the ground becomes saturated and water is unable to drain away naturally.

The impacts of flooding are not just financial as flooding can also devastate lives, causing both severe disruption at the time as well as continued disturbance through the drying out period in the months that follow. Therefore, it is important to consider any potential flood risk when purchasing a property.

How is the Overall Flood Risk Calculated?

Impact: We consider the expected depths of flooding at your property. Low depths, for example, 10cm, are unlikely to put people at risk but water damage to buildings and contents may be significant without any flood protection. High water depths, for example 1m, may severely threaten the safety of people and may cause extensive damage to buildings. It may be dangerous to keep deep floods out of a building because of the large weight of water pressing against the wall.



Likelihood: Flood risk is based on probability and different approaches to flood protection may be needed depending upon how likely flooding is expected. A common way of expressing how likely a flood event is to occur is 'return period'. For example, a 1:100 year event has a 1% likelihood of occurring in any given year, whereas a 1:200 year event has a 0.5% likelihood of occurring in any given year. The 1:200 event would be expected to result in a greater extent of flooding than the 1:100 event, as it would be more severe, but the likelihood of it occurring is lower.

Useful Information

Additional Considerations

You may wish to consider the following potential liabilities that fall outside the scope of our flood risk screening methodology.

Riparian Ownership

Riparian ownership applies when someone owns a site with a watercourse inside or next to it.

A riparian owner has rights and responsibilities under common law relating to the stretch of watercourse. Their primary responsibility is to keep it free of obstructions that could hinder normal water flow. Failure to carry out these responsibilities could result in civil action.

A riparian owner should check before carrying out any works near to the edge of a river, as such works may be subject to bylaws. If infringed, this could lead to enforcement action by The Environment Agency. There is a presumption that the boundary between properties abutting a watercourse is the centre line of that watercourse. A solicitor should check the deeds or the Index Map to confirm whether this is the case.

The Environment Agency published a useful guide called “Living on the Edge” for owners of land or property alongside a watercourse.

Sometimes, The Environment Agency or other organisations managing flood risk have statutory rights of access to properties. This is for maintaining, repairing, or rebuilding parts of a watercourse. Or for accessing, or repairing monitoring equipment.

Development Control

A redevelopment site which is close to, but not adjoining, a watercourse may be subject to planning controls. The Environment Agency are normally consulted regarding any development within 20m of a main river and internal drainage boards should be contacted about developments close to drainage channels. Navigation authorities are normally consulted regarding any development within 250m of a canal, although this varies on a site by site basis.

The Environment Agency should be contacted with regards to development (other than minor development) in Flood Zones 2 and 3.

Sewer Flooding

In times of extreme rainfall events sewers can overflow and cause local flooding. Ofwat’s ‘DG5 - At Risk Registers’ record properties that have flooded from sewers and are at risk of flooding again, with separate registers for internal and external flooding. The At Risk Registers are maintained by each of the ten water and sewerage companies in England and Wales and details of properties subject to sewer flooding are normally kept for between two and five years. These registers are not necessarily complete as not all episodes of past flooding may be recorded. The relevant water and sewerage provider can answer specific enquiries. The response provided is based on the information held. Sometimes, the water and sewerage provider is unable to confirm whether the site has flooded, but provides a response based on all properties connected to a local sewer network (normally up to ten properties). This is due to the way in which the data is collected.

Useful Information

The Purpose and Scope of the Report

The Sitecheck Flood report is a desktop flood risk screening report, designed to satisfy the concerns raised by the Law Society Practice Note and to enable buyers and property professionals to assess the risk of flooding. It examines two key areas: (1) the overall risk of flooding at a site taking into account any flood defences present (where these are identified within the vicinity of the property and based on the presence of flood defences registered by The Environment Agency). It should be noted that a residual risk of flooding may remain if such defences were to fail owing to extreme weather conditions, over-topping or poor maintenance. In addition, it should be noted that flood defences do not generally offer protection against groundwater or surface water flooding (2) how flood risk affects the availability of insurance for a site. Where no flood defences are present in the vicinity of the property the overall risk rating provides a worst case scenario which may be alleviated by smaller scale local flood defences or recently constructed flood defences not currently registered by The Environment Agency.

Where several flood risks have been identified, the report highlights the most risky and details the information Landmark consider should be drawn to your attention as part of the conveyancing transaction. However, other flood risks may be present. A buyer may wish to review the complete information at and around the property using the online viewer.

The Sitecheck Flood report is a general purpose indicative screening tool, and is intended to provide a useful initial analysis for a commercial conveyancing transaction. It does not provide an alternative to a property specific assessment, such as the Flood Solutions Consult Report, which should be used when this report suggests 'Further Action'.

The Individual Flood Risks

The individual flood risk gauges on the front page highlight the individual river, coastal, surface water, ground water and other types of flooding risk at the property, taking into consideration any flood defences found. These risks are used to determine the overall flood risk to the property. The individual flood risks are demonstrated in the gauges as follows:

High **Moderate To High**	Landmark consider the individual flood risk to be significant. This is because there is a potential flood risk that would be likely to occur fairly frequently or the predicted depth of any flood event would result in significant impact and/or there is a flood water storage area on property and/or there is information to suggest a flood has happened in the past. It is recommended that you refer to the Overall Flood Risk and take note of the Professional Opinion and Recommendations as further action will be required.
Moderate	Landmark consider the individual flood risk to be moderate. This is either because of a potential flood that is likely to occur with moderate frequency, or because the predicted depth of potential flooding at the property is likely to be shallow and insufficient to cause a significant issue. It is recommended that you check the Overall Flood Risk result and refer to the Professional Opinion and Recommendations for guidance and next steps.
Low To Moderate	This describes areas that Landmark Information Group consider are at low to moderate risk flooding. These are areas where we have found some indication of potential flood risk, however any resulting flooding would be expected to be infrequent, or have a low predicted depth. It is recommended that you check the Overall Flood Risk to the property as this may differ from the individual flood risks.
Low	This describes areas that Landmark Information Group consider are at minimal or no risk of flooding. These are areas where there may be some indications of potential flood risk, however any flooding would be expected to be very infrequent, or have a very low predicted depth. It is recommended that you check the Overall Flood Risk to the property as this may differ from the individual flood risks.

Useful Information

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Group Ltd, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD.
Tel: 0844 844 9966
Fax: 0844 844 9980
Email: helpdesk@landmark.co.uk
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- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

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- Conduct business in an honest, fair and professional manner.
- Handle complaints speedily and fairly.
- Ensure that products and services comply with industry registration rules and standards and relevant laws.
- Monitor their compliance with the Code.

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TPOs Contact Details:
The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP

Tel: 01722 333306
Fax: 01722 332296
Website: www.tpos.co.uk
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