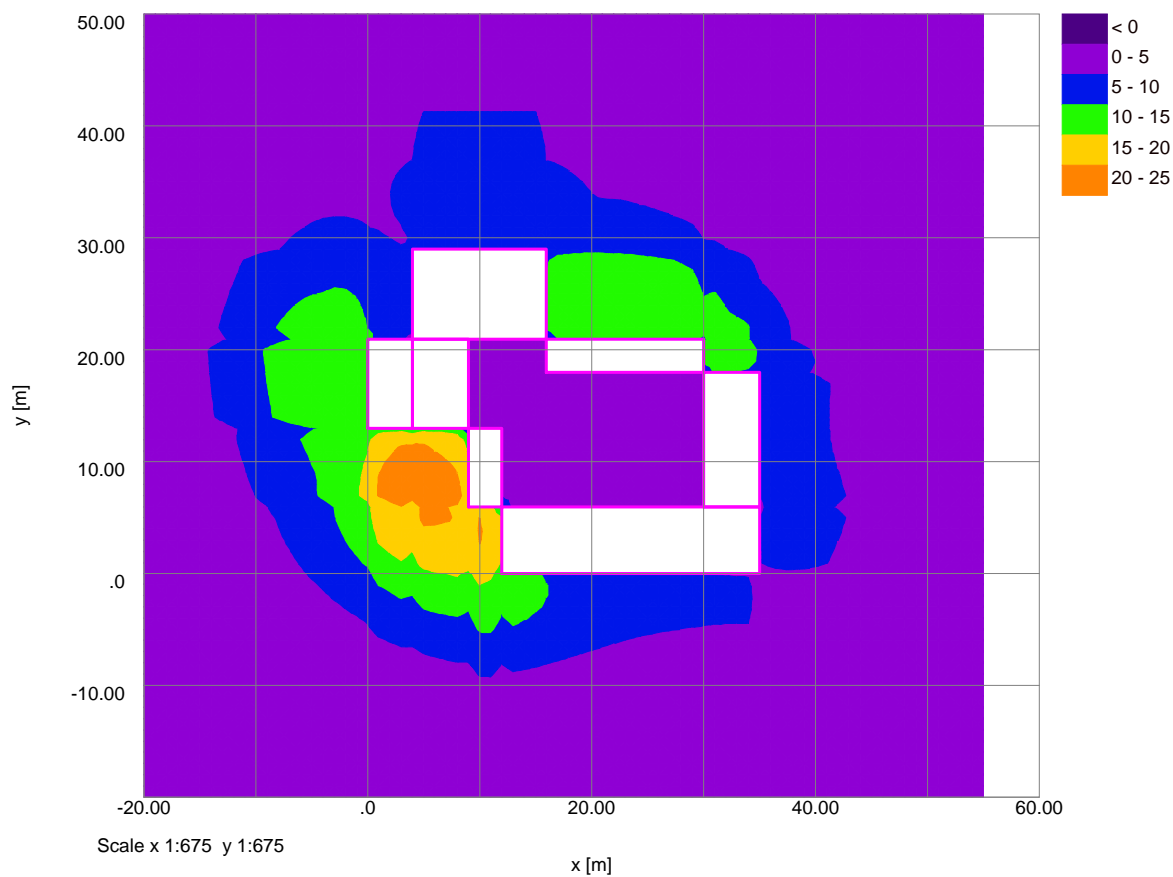


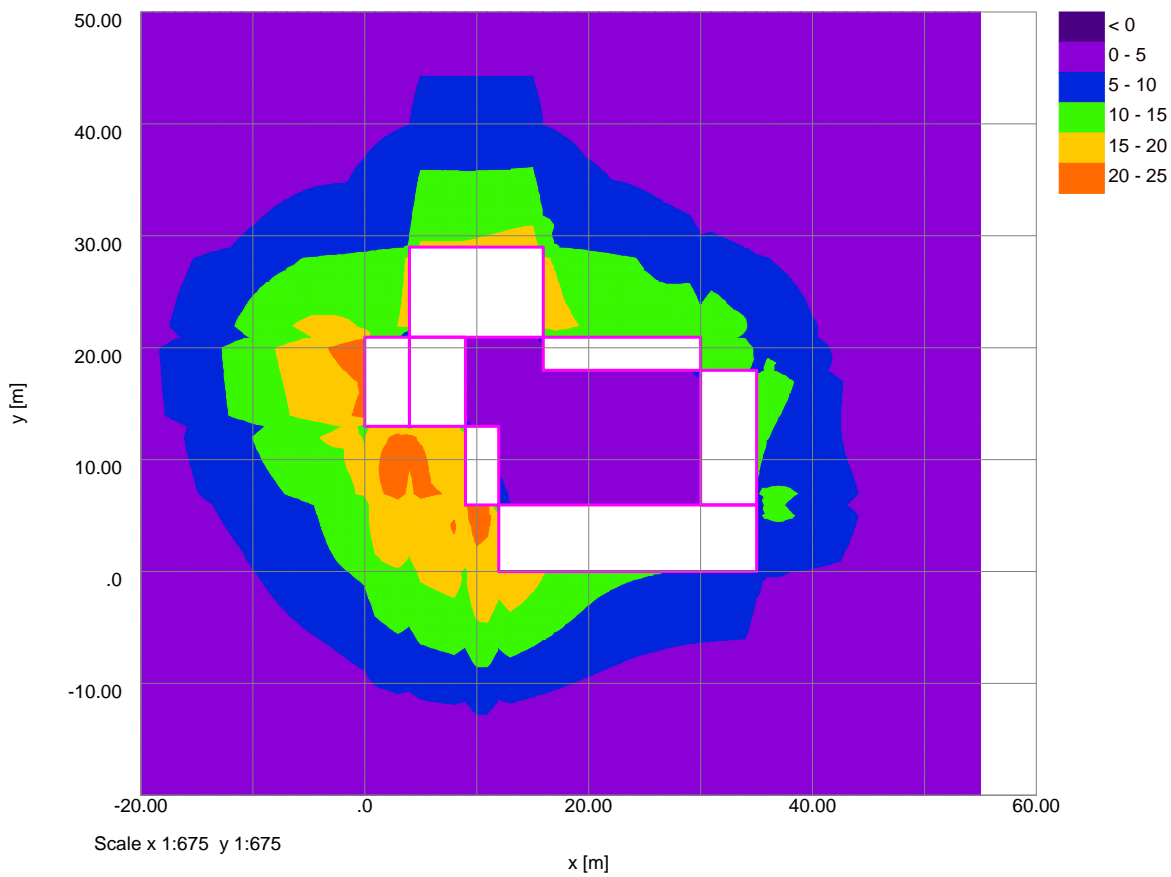
| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

Vertical Settlement Contours: Grid 1 (level 94.000m) (Interval 5mm)



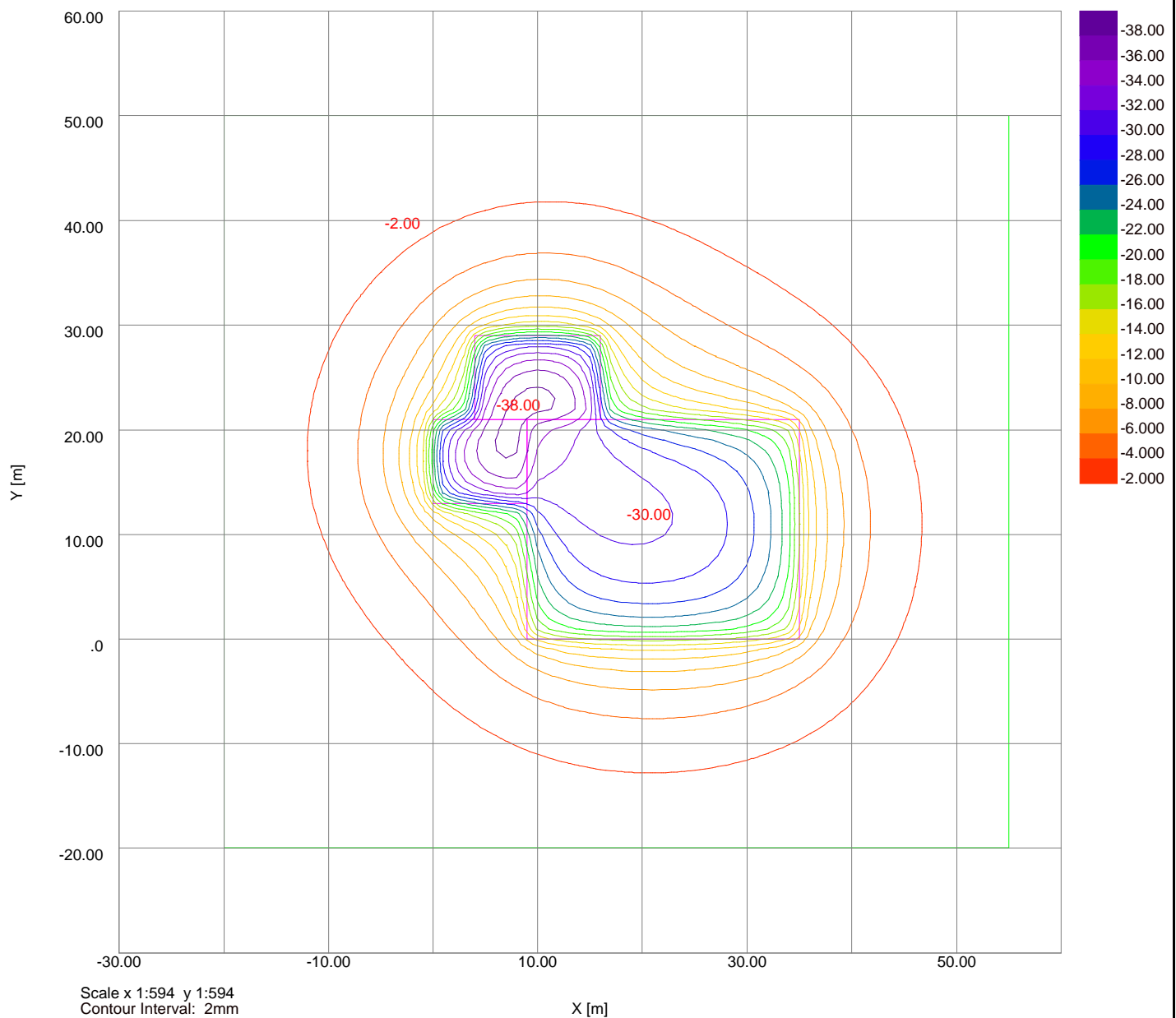
| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

Horizontal Displacement Contours: Grid 1 (level 94.000m) Interval 5mm



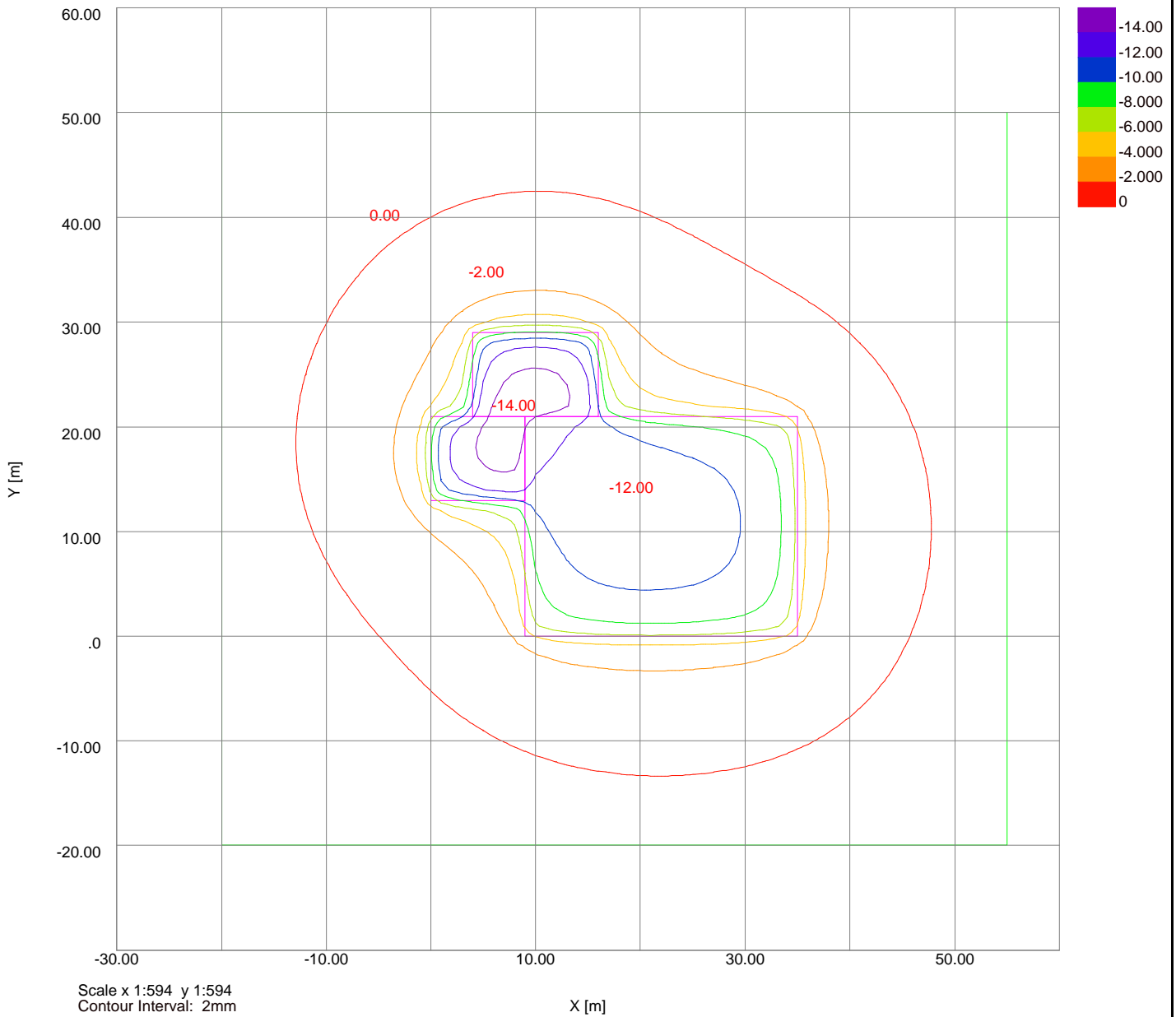
| | | |
|---------------|-----------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date | Checked |

Settlement Contours : Grid 1 at 90.0000m



| | | |
|---------------|-----------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date | Checked |

Settlement Contours : Grid 1 at 90.0000m



Building Damage Assessment (X-DISP)



22 Frogal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

Specific Building Damage Results - Horizontal Displacements

Structure: No 20 Frogal Way | Sub-structure: North Elevation

| Dist. | Coordinates | | | Displacements | | |
|--------|-------------|---------|----------|---------------|--------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | -2.00000 | 4.00000 | 95.00000 | 7.0228 | 7.2801 | 6.3349 |
| 1.0041 | -1.00000 | 3.90909 | 94.90909 | 7.0818 | 8.0508 | 6.3238 |
| 2.0082 | 0.00000 | 3.81818 | 94.81818 | 7.0012 | 8.8117 | 6.1746 |
| 3.0124 | 1.00000 | 3.72727 | 94.72727 | 7.3028 | 11.739 | 6.2100 |
| 4.0165 | 2.00000 | 3.63636 | 94.63636 | 7.4614 | 12.381 | 6.3098 |
| 5.0206 | 3.00000 | 3.54545 | 94.54545 | 7.4527 | 13.048 | 6.2408 |
| 6.0247 | 4.00000 | 3.45455 | 94.45455 | 7.2505 | 11.437 | 6.1852 |
| 7.0289 | 5.00000 | 3.36364 | 94.36364 | 6.8916 | 13.690 | 5.6239 |
| 8.0330 | 6.00000 | 3.27273 | 94.27273 | 6.3743 | 13.662 | 5.1112 |
| 9.0371 | 7.00000 | 3.18182 | 94.18182 | 5.9885 | 14.097 | 4.6876 |
| 10.041 | 8.00000 | 3.09091 | 94.09091 | 5.1882 | 14.871 | 3.8205 |
| 11.045 | 9.00000 | 3.00000 | 94.00000 | 5.5659 | 16.563 | 4.0435 |

d - Displacements include imported displacements.

Structure: No 20 Frogal Way | Sub-structure: East Elevation

| Dist. | Coordinates | | | Displacements | | |
|--------|-------------|----------|----------|---------------|--------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 9.00000 | 3.00000 | 94.00000 | 5.5659 | 16.563 | -16.563 |
| 1.0000 | 9.00000 | 2.00000 | 93.95455 | 3.7836 | 12.702 | -12.702 |
| 2.0000 | 9.00000 | 1.00000 | 93.90909 | 3.8822 | 12.181 | -12.181 |
| 3.0000 | 9.00000 | 0.00000 | 93.86364 | 2.3690 | 11.629 | -11.629 |
| 4.0000 | 9.00000 | -1.00000 | 93.81818 | 1.9359 | 11.965 | -11.965 |
| 5.0000 | 9.00000 | -2.00000 | 93.77273 | 1.3792 | 11.850 | -11.850 |
| 6.0000 | 9.00000 | -3.00000 | 93.72727 | 0.92028 | 11.391 | -11.391 |
| 7.0000 | 9.00000 | -4.00000 | 93.68182 | 0.75112 | 10.950 | -10.950 |
| 8.0000 | 9.00000 | -5.00000 | 93.63636 | 0.59391 | 10.360 | -10.360 |
| 9.0000 | 9.00000 | -6.00000 | 93.59091 | 0.46325 | 9.6693 | -9.6693 |
| 10.000 | 9.00000 | -7.00000 | 93.54545 | 0.35926 | 8.9097 | -8.9097 |
| 11.000 | 9.00000 | -8.00000 | 93.50000 | 0.27795 | 8.1020 | -8.1020 |

d - Displacements include imported displacements.

Structure: No 20 Frogal Way | Sub-structure: South Elevation

| Dist. | Coordinates | | | Displacements | | |
|--------|-------------|----------|----------|---------------|--------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 9.00000 | -8.00000 | 93.50000 | 0.27795 | 8.1020 | 0.87064 |
| 1.0102 | 8.00000 | -7.85714 | 93.57143 | 0.67179 | 8.9115 | 0.59524 |
| 2.0203 | 7.00000 | -7.71429 | 93.64286 | 1.0207 | 8.8080 | 0.23515 |
| 3.0305 | 6.00000 | -7.57143 | 93.71429 | 1.3216 | 8.6716 | -0.081946 |
| 4.0406 | 5.00000 | -7.42857 | 93.78571 | 1.5749 | 8.5132 | -0.35510 |
| 5.0508 | 4.00000 | -7.28571 | 93.85714 | 1.8121 | 7.4122 | -0.74568 |
| 6.0609 | 3.00000 | -7.14286 | 93.92857 | 2.0074 | 8.0548 | -0.84807 |
| 7.0711 | 2.00000 | -7.00000 | 94.00000 | 2.2163 | 7.8710 | -1.0809 |

d - Displacements include imported displacements.

Structure: No 20 Frogal Way | Sub-structure: West Elevation

| Dist. | Coordinates | | | Displacements | | |
|---------|-------------|----------|----------|---------------|--------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 2.00000 | -7.00000 | 94.00000 | 2.2163 | 7.8710 | 6.6398 |
| 0.97539 | 1.66667 | -6.08333 | 94.08333 | 2.4500 | 8.2044 | 6.8732 |
| 1.9508 | 1.33333 | -5.16667 | 94.16667 | 2.7702 | 8.6257 | 7.1595 |
| 2.9262 | 1.00000 | -4.25000 | 94.25000 | 3.0845 | 8.9774 | 7.3828 |
| 3.9016 | 0.66667 | -3.33333 | 94.33333 | 3.3827 | 9.2600 | 7.5464 |
| 4.8770 | 0.33333 | -2.41667 | 94.41667 | 3.6808 | 9.5016 | 7.6717 |
| 5.8523 | 0.00000 | -1.50000 | 94.50000 | 4.0713 | 8.1109 | 6.2312 |
| 6.8277 | -0.33333 | -0.58333 | 94.58333 | 4.5378 | 8.1759 | 6.1329 |
| 7.8031 | -0.66667 | 0.33333 | 94.66667 | 5.4100 | 8.1777 | 5.8365 |
| 8.7785 | -1.00000 | 1.25000 | 94.75000 | 5.8251 | 8.1190 | 5.6395 |
| 9.7539 | -1.33333 | 2.16667 | 94.83333 | 6.2417 | 7.9514 | 5.3396 |
| 10.729 | -1.66667 | 3.09091 | 94.91667 | 6.6457 | 7.6719 | 4.9389 |
| 11.705 | -2.00000 | 4.00000 | 95.00000 | 7.0228 | 7.2801 | 4.4418 |

d - Displacements include imported displacements.

Structure: The Cottage | Sub-structure: West Elevation

| Dist. | Coordinates | | | Displacements | | |
|---------|-------------|----------|----------|---------------|------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 50.00000 | 10.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 0.91001 | 50.25000 | 9.12500 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 1.82000 | 50.50000 | 8.25000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 2.73000 | 50.75000 | 7.37500 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 3.6401 | 51.00000 | 6.50000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 4.5501 | 51.25000 | 5.62500 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 5.4601 | 51.50000 | 4.75000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 6.3701 | 51.75000 | 3.87500 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 7.2801 | 52.00000 | 3.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |

Structure: The Cottage | Sub-structure: South Elevation

| Dist. | Coordinates | | | Displacements | | |
|--------|-------------|---------|----------|---------------|------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 52.00000 | 3.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 1.0308 | 53.00000 | 3.25000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 2.0616 | 54.00000 | 3.50000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 3.0923 | 55.00000 | 3.75000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 4.1231 | 56.00000 | 4.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |

Structure: The Cottage | Sub-structure: North Elevation

| Dist. | Coordinates | | | Displacements | | |
|--------|-------------|----------|----------|---------------|------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 56.00000 | 12.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 1.0541 | 55.00000 | 11.66667 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 2.1082 | 54.00000 | 11.33333 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 3.1623 | 53.00000 | 11.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 4.2164 | 52.00000 | 10.66667 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 5.2705 | 51.00000 | 10.33333 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 6.3246 | 50.00000 | 10.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - West Elevation

| Dist. | Coordinates | | | Displacements | | |
|-------|-------------|-----|-----|---------------|------|--|
| | x | y | z | x | y | Along Perpendicular the Line to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |



22 Frogmal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

| x | y | z | x | y | Along the Line | Perpendicular to Line |
|---------|----------|----------|----------|------|----------------|-----------------------|
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] |
| 0.0 | 44.00000 | 33.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 0.84984 | 44.16667 | 32.16667 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 1.6997 | 44.33333 | 31.33333 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 2.5495 | 44.50000 | 30.50000 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 3.3993 | 44.66667 | 29.66667 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 4.2492 | 44.83333 | 28.83333 | 99.00000 | 0.0 | 0.0 | 0.0 |
| 5.0990 | 45.00000 | 28.00000 | 99.00000 | 0.0 | 0.0 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - South Elevation

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 45.00000 | 28.00000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.2748 | 46.25000 | 28.25000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.5495 | 47.50000 | 28.50000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.8243 | 48.75000 | 28.75000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.0990 | 50.00000 | 29.00000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - East Elevation

| Dist. | Coordinates | | | Displacements | | | |
|---------|-------------|----------|----------|---------------|------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 50.00000 | 29.00000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.84984 | 49.83333 | 29.83333 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.6997 | 49.66667 | 30.66667 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.5495 | 49.50000 | 31.50000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.3993 | 49.33333 | 32.33333 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.2492 | 49.16667 | 33.16667 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.0990 | 49.00000 | 34.00000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - North Elevation

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 49.00000 | 34.00000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.2748 | 47.75000 | 33.75000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.5495 | 46.50000 | 33.50000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.8243 | 45.25000 | 33.25000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.0990 | 44.00000 | 33.00000 | 99.00000 | 0.0 | 0.0 | 0.0 | 0.0 |

Structure: Garage Block | Sub-structure: South Elevation

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|----------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | -3.00000 | 29.00000 | 96.00000 | 5.9375 | -1.2718 | 6.0350 | 0.67111 |
| 1.0541 | -2.00000 | 28.66667 | 96.00000 | 8.7763 | -1.1214 | 8.6805 | 1.7114 |
| 2.1082 | -1.00000 | 28.33333 | 96.00000 | 9.0353 | -0.89030 | 8.8532 | 2.0126 |
| 3.1623 | 0.00000 | 28.00000 | 96.00000 | 9.3487 | -0.58120 | 9.0528 | 2.4049 |
| 4.2164 | 1.00000 | 27.66667 | 96.00000 | 9.6973 | -0.59095 | 9.3866 | 2.5059 |
| 5.2705 | 2.00000 | 27.33333 | 96.00000 | 10.066 | -0.60036 | 9.7393 | 2.61309 |
| 6.3246 | 3.00000 | 27.00000 | 96.00000 | 10.447 | -0.60359 | 10.102 | 2.7310 |

Structure: Garage Block | Sub-structure: East Elevation

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|----------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 3.00000 | 27.00000 | 94.00000 | 14.493 | -0.63045 | 2.2242 | -14.336 d |
| 1.0198 | 3.20000 | 28.00000 | 94.00000 | 10.463 | -0.52999 | 1.5323 | -10.364 |
| 2.0396 | 3.40000 | 29.00000 | 94.00000 | 7.0922 | -0.45798 | 0.94181 | -7.0443 |
| 3.0594 | 3.60000 | 30.00000 | 94.00000 | 2.3575 | -5.8940 | -5.3172 | -3.4676 |
| 4.0792 | 3.80000 | 31.00000 | 94.00000 | 0.72943 | -6.5988 | -6.3276 | -2.0094 |
| 5.0990 | 4.00000 | 32.00000 | 94.00000 | 0.065296 | -8.7004 | -8.5186 | -1.7703 d |

Structure: Garage Block | Sub-structure: North Elevation

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|---------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 4.00000 | 32.00000 | 94.00000 | 0.065296 | -8.7004 | -2.2242 | 8.2333 d |
| 1.0541 | 3.00000 | 32.33333 | 94.16667 | 1.6861 | -5.6113 | -3.3741 | 4.7901 |
| 2.1082 | 2.00000 | 32.66667 | 94.33333 | 2.5014 | -4.6810 | -3.8533 | 3.6498 |
| 3.1623 | 1.00000 | 33.00000 | 94.50000 | 2.8554 | -3.9343 | -3.9530 | 2.8295 |
| 4.2164 | 0.00000 | 33.33333 | 94.66667 | 2.8757 | -3.3601 | -3.8855 | 2.2467 |
| 5.2705 | -1.00000 | 33.66667 | 94.83333 | 3.0733 | -3.1351 | -3.9069 | 2.0023 |
| 6.3246 | -2.00000 | 34.00000 | 95.00000 | 3.1782 | -3.0050 | -3.9654 | 1.8458 |

Structure: Garage Block | Sub-structure: West Elevation

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|---------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | -2.00000 | 34.00000 | 95.00000 | 3.1782 | -3.0050 | 2.3234 | 3.7058 |
| 1.0198 | -2.20000 | 33.00000 | 95.20000 | 3.7607 | -2.8952 | 2.1015 | 4.2555 |
| 2.0396 | -2.40000 | 32.00000 | 95.40000 | 4.3730 | -2.6586 | 1.7494 | 4.8095 |
| 3.0594 | -2.60000 | 31.00000 | 95.60000 | 4.9708 | -2.2890 | 1.2697 | 5.3232 |
| 4.0792 | -2.80000 | 30.00000 | 95.80000 | 5.5049 | -1.8091 | 0.69451 | 5.7522 |
| 5.0990 | -3.00000 | 29.00000 | 96.00000 | 5.9375 | -1.2718 | 0.082615 | 6.0716 |

Structure: Pathway Wall | Sub-structure: Adjoining Garage

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|---------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 4.00000 | 32.00000 | 95.00000 | 0.065296 | -6.5294 | 1.9387 | -6.2352 |
| 1.0440 | 5.00000 | 31.70000 | 95.10000 | 0.089903 | -9.7479 | 2.8871 | -9.3109 |
| 2.0881 | 6.00000 | 31.40000 | 95.20000 | 0.13550 | -9.8889 | 2.9713 | -9.4329 |
| 3.1321 | 7.00000 | 31.10000 | 95.30000 | 0.18727 | -10.035 | 3.0628 | -9.5576 |
| 4.1761 | 8.00000 | 30.80000 | 95.40000 | 0.24519 | -10.189 | 3.1626 | -9.6886 |
| 5.2202 | 9.00000 | 30.50000 | 95.50000 | 0.30867 | -10.356 | 3.2715 | -9.8309 |
| 6.2642 | 10.00000 | 30.20000 | 95.60000 | 0.37093 | -10.539 | 3.4066 | -10.064 |
| 7.3082 | 11.00000 | 29.90000 | 95.70000 | 0.42155 | -10.733 | 3.5396 | -10.331 |
| 8.3522 | 12.00000 | 29.60000 | 95.80000 | 0.45047 | -11.244 | 3.6623 | -10.640 |
| 9.3963 | 13.00000 | 29.30000 | 95.90000 | 0.44312 | -11.613 | 3.7615 | -10.996 |
| 10.440 | 14.00000 | 29.00000 | 96.00000 | 0.38011 | -12.020 | 3.8181 | -11.404 |



22 Froggal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

| Dist. | Coordinates | | | Displacements | | | |
|--------|-------------|----------|----------|---------------|---------|----------------|-----------------------|
| | x | y | z | x | y | Along the Line | Perpendicular to Line |
| [m] | [m] | [m] | [m] | [mm] | [mm] | [mm] | [mm] |
| 0.0 | 14.00000 | 29.00000 | 96.00000 | 0.38011 | -12.020 | -11.905 | -1.7052 |
| 1.0062 | 14.11111 | 30.00000 | 96.11111 | 0.29315 | -11.522 | -11.419 | -1.5637 |
| 2.0123 | 14.22222 | 31.00000 | 96.22222 | 0.22088 | -10.992 | -10.901 | -1.4334 |
| 3.0185 | 14.33333 | 32.00000 | 96.33333 | 0.16145 | -10.441 | -10.359 | -1.3134 |
| 4.0246 | 14.44444 | 33.00000 | 96.44444 | 0.11299 | -9.8717 | -9.7988 | -1.2024 |
| 5.0308 | 14.55556 | 34.00000 | 96.55556 | 0.073862 | -9.2898 | -9.2248 | -1.0993 |
| 6.0369 | 14.66667 | 35.00000 | 96.66667 | 0.042636 | -8.6977 | -8.6398 | -1.0029 |
| 7.0431 | 14.77778 | 36.00000 | 96.77778 | 0.018132 | -8.0975 | -8.0460 | -0.91224 |
| 8.0492 | 14.88889 | 37.00000 | 96.88889 | 0.0 | -7.5000 | -7.4541 | -0.82824 |
| 9.0554 | 15.00000 | 38.00000 | 97.00000 | 0.0 | -7.1250 | -7.0814 | -0.78682 |

Specific Building Damage Results - Vertical Displacements

Structure: No 20 Froggal Way | Sub-structure: North Elevation

| Dist. | Coordinates | | | Displacements | |
|--------|-------------|----------|----------|---------------|------|
| | x | y | z | x | z |
| [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 14.00000 | 29.00000 | 95.00000 | 6.3941 | |
| 1.0041 | 14.00000 | 3.90909 | 94.90909 | 7.0131 | |
| 2.0082 | 0.00000 | 3.81818 | 94.81818 | 7.6396 | |
| 3.0124 | 1.00000 | 3.72727 | 94.72727 | 9.5854 | |
| 4.0165 | 2.00000 | 3.63636 | 94.63636 | 10.137 | |
| 5.0206 | 3.00000 | 3.54545 | 94.54545 | 10.682 | |
| 6.0247 | 4.00000 | 3.45455 | 94.45455 | 9.8161 | |
| 7.0289 | 5.00000 | 3.36364 | 94.36364 | 11.175 | |
| 8.0330 | 6.00000 | 3.27273 | 94.27273 | 11.068 | |
| 9.0371 | 7.00000 | 3.18182 | 94.18182 | 11.195 | |
| 10.041 | 8.00000 | 3.09091 | 94.09091 | 11.411 | |
| 11.045 | 9.00000 | 3.00000 | 94.00000 | 17.927 | d |

Structure: No 20 Froggal Way | Sub-structure: East Elevation

| Dist. | Coordinates | | | Displacements | |
|--------|-------------|----------|----------|---------------|------|
| | x | y | z | x | z |
| [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 9.00000 | 3.00000 | 94.00000 | 17.927 | d |
| 1.0000 | 9.00000 | 2.00000 | 93.95455 | 10.075 | |
| 2.0000 | 9.00000 | 1.00000 | 93.90909 | 9.7448 | |
| 3.0000 | 9.00000 | 0.00000 | 93.86364 | 8.3437 | |
| 4.0000 | 9.00000 | -1.00000 | 93.81818 | 7.6225 | |
| 5.0000 | 9.00000 | -2.00000 | 93.77273 | 6.8694 | |
| 6.0000 | 9.00000 | -3.00000 | 93.72727 | 6.1016 | |
| 7.0000 | 9.00000 | -4.00000 | 93.68182 | 5.4865 | |
| 8.0000 | 9.00000 | -5.00000 | 93.63636 | 4.8116 | |
| 9.0000 | 9.00000 | -6.00000 | 93.59091 | 4.1152 | |
| 10.000 | 9.00000 | -7.00000 | 93.54545 | 3.4333 | |
| 11.000 | 9.00000 | -8.00000 | 93.50000 | 2.7963 | |

Structure: No 20 Froggal Way | Sub-structure: South Elevation

| Dist. | Coordinates | | | Displacements | |
|--------|-------------|----------|----------|---------------|------|
| | x | y | z | x | z |
| [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 9.00000 | -8.00000 | 93.50000 | 2.7963 | |
| 1.0102 | 8.00000 | -7.85714 | 93.57143 | 2.9083 | |
| 2.0203 | 7.00000 | -7.71429 | 93.64286 | 2.8400 | |
| 3.0305 | 6.00000 | -7.57143 | 93.71429 | 2.7517 | |
| 4.0406 | 5.00000 | -7.42857 | 93.78571 | 2.6511 | |
| 5.0508 | 4.00000 | -7.28571 | 93.85714 | 2.3669 | |
| 6.0609 | 3.00000 | -7.14286 | 93.92857 | 2.4243 | |
| 7.0711 | 2.00000 | -7.00000 | 94.00000 | 4.1467 | d |

Structure: No 20 Froggal Way | Sub-structure: West Elevation

| Dist. | Coordinates | | | Displacements | |
|---------|-------------|----------|----------|---------------|------|
| | x | y | z | x | z |
| [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 2.00000 | -7.00000 | 94.00000 | 4.1467 | d |
| 0.97539 | 1.66667 | -6.08333 | 94.08333 | 2.6918 | |
| 1.9508 | 1.33333 | -5.16667 | 94.16667 | 3.1954 | |
| 2.9262 | 1.00000 | -4.25000 | 94.25000 | 3.5819 | |
| 3.9016 | 0.66667 | -3.33333 | 94.33333 | 4.0518 | |
| 4.8770 | 0.33333 | -2.41667 | 94.41667 | 4.5454 | |
| 5.8523 | 0.00000 | -1.50000 | 94.50000 | 4.4011 | |
| 6.8277 | -0.33333 | -0.58333 | 94.58333 | 4.8442 | |
| 7.8031 | -0.66667 | 0.33333 | 94.66667 | 5.3200 | |
| 8.7785 | -1.00000 | 1.25000 | 94.75000 | 5.6844 | |
| 9.7539 | -1.33333 | 2.16667 | 94.83333 | 5.9964 | |
| 10.729 | -1.66667 | 3.08333 | 94.91667 | 6.2385 | |
| 11.705 | -2.00000 | 4.00000 | 95.00000 | 6.3941 | |

Structure: The Cottage | Sub-structure: West Elevation

| Dist. | Coordinates | | | Displacements | |
|---------|-------------|----------|----------|---------------|------|
| | x | y | z | x | z |
| [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 50.00000 | 10.00000 | 99.00000 | 0.0 | |
| 0.91001 | 50.25000 | 9.12500 | 99.00000 | 0.0 | |
| 1.8200 | 50.50000 | 8.25000 | 99.00000 | 0.0 | |
| 2.7300 | 50.75000 | 7.37500 | 99.00000 | 0.0 | |
| 3.6401 | 51.00000 | 6.50000 | 99.00000 | 0.0 | |
| 4.5501 | 51.25000 | 5.62500 | 99.00000 | 0.0 | |
| 5.4601 | 51.50000 | 4.75000 | 99.00000 | 0.0 | |
| 6.3701 | 51.75000 | 3.87500 | 99.00000 | 0.0 | |
| 7.2801 | 52.00000 | 3.00000 | 99.00000 | 0.0 | |

Structure: The Cottage | Sub-structure: South Elevation

| Dist. | Coordinates | | | Displacements | |
|--------|-------------|---------|----------|---------------|------|
| | x | y | z | x | z |
| [m] | [m] | [m] | [m] | [mm] | [mm] |
| 0.0 | 52.00000 | 3.00000 | 99.00000 | 0.0 | |
| 1.0308 | 53.00000 | 3.25000 | 99.00000 | 0.0 | |
| 2.0616 | 54.00000 | 3.50000 | 99.00000 | 0.0 | |
| 3.0923 | 55.00000 | 3.75000 | 99.00000 | 0.0 | |
| 4.1231 | 56.00000 | 4.00000 | 99.00000 | 0.0 | |



22 Froggal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

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

Structure: The Cottage | Sub-structure: North Elevation

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|-----|
| 0.0 | 56.00000 | 12.00000 | 99.00000 | 0.0 |
| 1.0541 | 55.00000 | 11.66667 | 99.00000 | 0.0 |
| 2.1082 | 54.00000 | 11.33333 | 99.00000 | 0.0 |
| 3.1623 | 53.00000 | 11.00000 | 99.00000 | 0.0 |
| 4.2164 | 52.00000 | 10.66667 | 99.00000 | 0.0 |
| 5.2705 | 51.00000 | 10.33333 | 99.00000 | 0.0 |
| 6.3246 | 50.00000 | 10.00000 | 99.00000 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - West Elevation

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

Vertical Offset 1

| | | | | |
|---------|----------|----------|----------|-----|
| 0.0 | 44.00000 | 33.00000 | 99.00000 | 0.0 |
| 0.84984 | 44.16667 | 32.16667 | 99.00000 | 0.0 |
| 1.6997 | 44.33333 | 31.33333 | 99.00000 | 0.0 |
| 2.5495 | 44.50000 | 30.50000 | 99.00000 | 0.0 |
| 3.3993 | 44.66667 | 29.66667 | 99.00000 | 0.0 |
| 4.2492 | 44.83333 | 28.83333 | 99.00000 | 0.0 |
| 5.0990 | 45.00000 | 28.00000 | 99.00000 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - South Elevation

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|-----|
| 0.0 | 45.00000 | 28.00000 | 99.00000 | 0.0 |
| 1.2748 | 46.25000 | 28.25000 | 99.00000 | 0.0 |
| 2.5495 | 47.50000 | 28.50000 | 99.00000 | 0.0 |
| 3.8243 | 48.75000 | 28.75000 | 99.00000 | 0.0 |
| 5.0990 | 50.00000 | 29.00000 | 99.00000 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - East Elevation

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

Vertical Offset 1

| | | | | |
|---------|----------|----------|----------|-----|
| 0.0 | 50.00000 | 29.00000 | 99.00000 | 0.0 |
| 0.84984 | 49.83333 | 29.83333 | 99.00000 | 0.0 |
| 1.6997 | 49.66667 | 30.66667 | 99.00000 | 0.0 |
| 2.5495 | 49.50000 | 31.50000 | 99.00000 | 0.0 |
| 3.3993 | 49.33333 | 32.33333 | 99.00000 | 0.0 |
| 4.2492 | 49.16667 | 33.16667 | 99.00000 | 0.0 |
| 5.0990 | 49.00000 | 34.00000 | 99.00000 | 0.0 |

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - North Elevation

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|-----|
| 0.0 | 49.00000 | 34.00000 | 99.00000 | 0.0 |
| 1.2748 | 47.75000 | 33.75000 | 99.00000 | 0.0 |
| 2.5495 | 46.50000 | 33.50000 | 99.00000 | 0.0 |
| 3.8243 | 45.25000 | 33.25000 | 99.00000 | 0.0 |
| 5.0990 | 44.00000 | 33.00000 | 99.00000 | 0.0 |

Structure: Garage Block | Sub-structure: South Elevation

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|--------|
| 0.0 | -3.00000 | 29.00000 | 96.00000 | 3.9239 |
| 1.0541 | -2.00000 | 28.66667 | 96.00000 | 5.5908 |
| 2.1082 | -1.00000 | 28.33333 | 96.00000 | 5.4901 |
| 3.1623 | 0.00000 | 28.00000 | 96.00000 | 5.2166 |
| 4.2164 | 1.00000 | 27.66667 | 96.00000 | 4.9844 |
| 5.2705 | 2.00000 | 27.33333 | 96.00000 | 4.5606 |
| 6.3246 | 3.00000 | 27.00000 | 96.00000 | 3.9069 |

Structure: Garage Block | Sub-structure: East Elevation

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

Vertical Offset 1

| | | | | |
|--------|---------|----------|----------|----------|
| 0.0 | 3.00000 | 27.00000 | 94.00000 | 8.3277 d |
| 1.0198 | 3.20000 | 28.00000 | 94.00000 | 3.6881 |
| 2.0396 | 3.40000 | 29.00000 | 94.00000 | 2.3750 |
| 3.0594 | 3.60000 | 30.00000 | 94.00000 | 2.2953 |
| 4.0792 | 3.80000 | 31.00000 | 94.00000 | 2.8934 |
| 5.0990 | 4.00000 | 32.00000 | 94.00000 | 5.8287 d |

d - Displacements include imported displacements.

Structure: Garage Block | Sub-structure: North Elevation

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|----------|
| 0.0 | 4.00000 | 32.00000 | 94.00000 | 5.8287 d |
| 1.0541 | 3.00000 | 32.33333 | 94.16667 | 3.0305 |
| 2.1082 | 2.00000 | 32.66667 | 94.33333 | 2.8837 |
| 3.1623 | 1.00000 | 33.00000 | 94.50000 | 2.7558 |
| 4.2164 | 0.00000 | 33.33333 | 94.66667 | 2.6203 |
| 5.2705 | -1.00000 | 33.66667 | 94.83333 | 2.6132 |
| 6.3246 | -2.00000 | 34.00000 | 95.00000 | 2.6113 |

d - Displacements include imported displacements.

Structure: Garage Block | Sub-structure: West Elevation

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|--------|
| 0.0 | -2.00000 | 34.00000 | 95.00000 | 2.6113 |
| 1.0198 | -2.20000 | 33.00000 | 95.20000 | 2.8524 |
| 2.0396 | -2.40000 | 32.00000 | 95.40000 | 3.1057 |
| 3.0594 | -2.60000 | 31.00000 | 95.60000 | 3.3711 |
| 4.0792 | -2.80000 | 30.00000 | 95.80000 | 3.6457 |
| 5.0990 | -3.00000 | 29.00000 | 96.00000 | 3.9239 |



22 Froggnal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

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

Structure: Pathway Wall | Sub-structure: Adjoining Garage

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|--------|
| 0.0 | 4.00000 | 32.00000 | 95.00000 | 3.2441 |
| 1.0440 | 5.00000 | 31.70000 | 95.10000 | 4.7102 |
| 2.0881 | 6.00000 | 31.40000 | 95.20000 | 4.9837 |
| 3.1321 | 7.00000 | 31.10000 | 95.30000 | 4.4370 |
| 4.1761 | 8.00000 | 30.80000 | 95.40000 | 4.2763 |
| 5.2202 | 9.00000 | 30.50000 | 95.50000 | 4.1074 |
| 6.2642 | 10.00000 | 30.20000 | 95.60000 | 3.9589 |
| 7.3082 | 11.00000 | 29.90000 | 95.70000 | 3.8147 |
| 8.3522 | 12.00000 | 29.60000 | 95.80000 | 3.6763 |
| 9.3963 | 13.00000 | 29.30000 | 95.90000 | 3.5429 |
| 10.440 | 14.00000 | 29.00000 | 96.00000 | 3.4107 |

Structure: Pathway Wall | Sub-structure: Adjoining Garden

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

Vertical Offset 1

| | | | | |
|--------|----------|----------|----------|--------|
| 0.0 | 14.00000 | 29.00000 | 96.00000 | 3.4107 |
| 1.0062 | 14.11111 | 30.00000 | 96.11111 | 4.1653 |
| 2.0123 | 14.22222 | 31.00000 | 96.22222 | 4.6799 |
| 3.0185 | 14.33333 | 32.00000 | 96.33333 | 5.0000 |
| 4.0246 | 14.44444 | 33.00000 | 96.44444 | 5.1625 |
| 5.0308 | 14.55556 | 34.00000 | 96.55556 | 5.1951 |
| 6.0369 | 14.66667 | 35.00000 | 96.66667 | 5.1168 |
| 7.0431 | 14.77778 | 36.00000 | 96.77778 | 4.9374 |
| 8.0492 | 14.88889 | 37.00000 | 96.88889 | 4.6571 |
| 9.0554 | 15.00000 | 38.00000 | 97.00000 | 4.3449 |

Specific Building Damage Results - All Segments

Structure: No 20 Froggnal Way | Sub-structure: North Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|--|---------|---------|---------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 0.49033 | Sagging | 0.0 | -0.0011016 | 220.33E-6 | 11.016E-6 | -616.40E-6 | 3148.3 | 0 (Negligible) |
| | 2 | 0.49033 | 1.9788 | Hogging | 0.023459 | -0.0070037 | 0.020973 | 148.56E-6 | -0.0019378 | 3005.7 | 0 (Negligible) |
| | 3 | 2.4691 | 2.8296 | Sagging | 0.024239 | 0.0012198 | 0.024250 | -99.425E-6 | -0.0019378 | 1434.2 | 0 (Negligible) |
| | 4 | 5.2987 | 1.4978 | Hogging | 0.055350 | -0.031486 | 0.045816 | 559.33E-6 | -0.0013538 | 2563.5 | 0 (Negligible) |
| | 5 | 6.7965 | 1.3541 | Sagging | 0.020412 | -0.051116 | 0.016342 | 559.33E-6 | -0.0013538 | 4446.1 | 0 (Negligible) |
| | 6 | 8.1505 | 2.8495 | Hogging | 0.13962 | -0.036086 | 0.12614 | 864.30E-6 | -0.0064884 | 126.02 | 2 (Slight) |

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

Structure: No 20 Froggnal Way | Sub-structure: East Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|--|---------|--------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 7.1198 | Hogging | 0.085372 | 0.079831 | 0.12749 | -0.0038459 | 0.0078225 | 103.99 | 2 (Slight) |
| | 2 | 7.1198 | 1.5064 | Sagging | 520.84E-6 | 0.063168 | 0.063288 | -690.30E-6 | 695.95E-6 | 45640.1 | 1 (Very Slight) |
| | 3 | 8.6262 | 2.3738 | Hogging | 0.0011869 | 0.076904 | 0.077120 | -807.05E-6 | 695.95E-6 | 19061.1 | 2 (Slight) |

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

Structure: No 20 Froggnal Way | Sub-structure: South Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|--|---------|--------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 4.0576 | Sagging | 0.0036690 | -0.030370 | 0.0064110 | 386.81E-6 | 281.54E-6 | 4630.1 | 0 (Negligible) |
| | 2 | 4.0576 | 2.9424 | Hogging | 0.039300 | -0.023886 | 0.032074 | 386.81E-6 | -0.0017055 | 495.40 | 0 (Negligible) |

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

Structure: No 20 Froggnal Way | Sub-structure: West Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|--|---------|--------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 3.0363 | Hogging | 0.042369 | 0.025081 | 0.054760 | -293.44E-6 | 0.0014912 | 404.22 | 1 (Very Slight) |
| | 2 | 3.0363 | 2.3657 | Sagging | 0.011080 | -0.021346 | 0.0082948 | 0.0014790 | -505.96E-6 | 5726.5 | 0 (Negligible) |
| | 3 | 5.4020 | 2.0997 | Hogging | 0.010281 | -0.046111 | 0.011060 | 0.0014790 | -487.89E-6 | 6680.7 | 0 (Negligible) |
| | 4 | 7.5017 | 4.1983 | Sagging | 0.0040161 | -0.035346 | 0.0074145 | 509.91E-6 | -487.89E-6 | 10469.1 | 0 (Negligible) |

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

Structure: The Cottage | Sub-structure: West Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|--|--|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0 | All settlements are less than the Settlement Trough Limit Sensitivity. | | | | | | | | | | |

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

Structure: The Cottage | Sub-structure: South Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|--|--|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| [m] | | [m] | [m] | | [%] | [%] | [%] | | | [m] | |
| 0 | All settlements are less than the Settlement Trough Limit Sensitivity. | | | | | | | | | | |



22 Frognal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

Vertical Offset from Line for Vertical Movement
 Segment Start Length Curvature Deflection Average Max. Maximum Maximum Min. Damage
 Ratio Horizontal Tensile Gradient of Gradient of Radius of Category
 Strain Strain Displacement Displacement Curvature
 Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: The Cottage | Sub-structure: North Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | | | | | | | | | | | |

All settlements are less than the Settlement Trough Limit Sensitivity.
 Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - West Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | | | | | | | | | | | |

All settlements are less than the Settlement Trough Limit Sensitivity.
 Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - South Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | | | | | | | | | | | |

All settlements are less than the Settlement Trough Limit Sensitivity.
 Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - East Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | | | | | | | | | | | |

All settlements are less than the Settlement Trough Limit Sensitivity.
 Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - North Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | | | | | | | | | | | |

All settlements are less than the Settlement Trough Limit Sensitivity.
 Tensile horizontal strains are +ve, compressive horizontal strains are -ve.

Structure: Garage Block | Sub-structure: South Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 6.3000 | Sagging | 0.026407 | 0.064417 | 0.10353 | -0.0025035 | -0.0015773 | 514.75 | 2 (Slight) |

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

Structure: Garage Block | Sub-structure: East Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 5.0000 | Hogging | 0.096232 | -0.21060 | 0.069442 | 0.0061754 | 0.0045526 | 269.83 | 1 (Very Slight) |

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

Structure: Garage Block | Sub-structure: North Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|--------|---------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 5.8720 | Hogging | 0.037734 | -0.019193 | 0.027420 | 532.33E-6 | 0.0026560 | 335.38 | 0 (Negligible) |
| | 2 | 5.8720 | 0.42795 | None | 0.0 | -0.0055418 | 0.0011084 | 55.422E-6 | 1.8643E-6 | 43862. | 0 (Negligible) |

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

Structure: Garage Block | Sub-structure: West Elevation

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 5.0000 | Hogging | 600.11E-6 | -0.043627 | 0.0087311 | 600.37E-6 | -272.93E-6 | 84311. | 0 (Negligible) |

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

Structure: Pathway Wall | Sub-structure: Adjoining Garage

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature | Damage Category |
|---|---------|--------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |
| 0 | 1 | 0.0 | 4.3979 | Sagging | 0.027777 | 0.028353 | 0.068743 | -907.58E-6 | -0.0014030 | 549.61 | 1 (Very Slight) |
| | 2 | 4.3979 | 6.0021 | Hogging | 431.50E-6 | 0.010500 | 0.011029 | -129.30E-6 | 161.74E-6 | 118470. | 0 (Negligible) |

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

Structure: Pathway Wall | Sub-structure: Adjoining Garden

| Vertical Offset from Line for Vertical Movement | Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement | Maximum Gradient of Vertical Displacement | Min. Radius of Curvature | Damage Category |
|---|---------|-------|--------|-----------|------------------|---------------------------|---------------------|---|---|--------------------------|-----------------|
| Calculations | | [m] | [m] | [m] | [%] | [%] | [%] | | | [m] | |



22 Froggal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

| Calculations | [m] | [m] | [m] | [%] | [%] | [%] | Curve | Curve | [m] | | | |
|--------------|-----|-----|-----|--------|---------|----------|----------|----------|------------|------------|--------|-----------------|
| | 0 | 1 | 0.0 | 9.0000 | Sagging | 0.014714 | 0.053367 | 0.073897 | -589.80E-6 | -749.61E-6 | 4030.7 | 1 (Very Slight) |

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

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

Structure: No 20 Froggal Way | Sub-structure: North Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Maximum Slope | Maximum Settlement | Maximum Tensile Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature (Hogging) | Min. Radius of Curvature (Sagging) | Damage Category |
|--|------------------|---------------------------|---------------|--------------------|------------------------|---------------------|---|---|------------------------------------|------------------------------------|-----------------|
| [m] | [%] | [%] | [mm] | [mm] | [%] | [%] | [mm] | [mm] | [m] | [m] | |
| 0 | 0.13962 | -0.051116 | -0.0064884 | 17.633 | 0.12614 | 864.30E-6 | -0.0064884 | 126.02 | 1434.2 | 2 | (Slight) |

Structure: No 20 Froggal Way | Sub-structure: East Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Maximum Slope | Maximum Settlement | Maximum Tensile Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature (Hogging) | Min. Radius of Curvature (Sagging) | Damage Category |
|--|------------------|---------------------------|---------------|--------------------|------------------------|---------------------|---|---|------------------------------------|------------------------------------|-----------------|
| [m] | [%] | [%] | [mm] | [mm] | [%] | [%] | [mm] | [mm] | [m] | [m] | |
| 0 | 0.085372 | -0.079831 | 0.0078225 | 17.927 | 0.12749 | -0.0038459 | 0.0078225 | 103.99 | 45640.2 | 2 | (Slight) |

Structure: No 20 Froggal Way | Sub-structure: South Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Maximum Slope | Maximum Settlement | Maximum Tensile Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature (Hogging) | Min. Radius of Curvature (Sagging) | Damage Category |
|--|------------------|---------------------------|---------------|--------------------|------------------------|---------------------|---|---|------------------------------------|------------------------------------|-----------------|
| [m] | [%] | [%] | [mm] | [mm] | [%] | [%] | [mm] | [mm] | [m] | [m] | |
| 0 | 0.039300 | -0.030370 | -0.0017055 | 4.0255 | 0.032074 | 386.81E-6 | -0.0017055 | 495.40 | 4630.1 | 0 | (Negligible) |

Structure: No 20 Froggal Way | Sub-structure: West Elevation

| Vertical Offset from Line for Vertical Movement Calculations | Deflection Ratio | Average Horizontal Strain | Maximum Slope | Maximum Settlement | Maximum Tensile Strain | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement Curve | Maximum Gradient of Vertical Displacement Curve | Min. Radius of Curvature (Hogging) | Min. Radius of Curvature (Sagging) | Damage Category |
|--|------------------|---------------------------|---------------|--------------------|------------------------|---------------------|---|---|------------------------------------|------------------------------------|-----------------|
| [m] | [%] | [%] | [mm] | [mm] | [%] | [%] | [mm] | [mm] | [m] | [m] | |
| 0 | 0.042369 | -0.046111 | 0.0014912 | 6.3934 | 0.054760 | 0.0014790 | 0.0014912 | 404.22 | 5726.5 | 1 | (Very Slight) |

Structure: The Cottage | Sub-structure: West Elevation

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

Structure: The Cottage | Sub-structure: South Elevation

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

Structure: The Cottage | Sub-structure: North Elevation

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

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - West Elevation

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

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - South Elevation

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

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - East Elevation

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

Structure: No 20 Perrins Walk | Sub-structure: Outbuilding - North Elevation

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

Structure: Garage Block | Sub-structure: South Elevation



22 Froggal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

| Vertical Offset from Line for Vertical | Deflection Ratio | Average Horizontal Strain | Maximum Slope | Maximum Settlement | Max. Tensile Strain | Maximum Gradient of Horizontal Displacement | Maximum Gradient of Vertical Displacement | Min. Radius of Curvature (Hogging) | Min. Radius of Curvature (Sagging) | Damage Category |
|---|------------------|---------------------------|---------------|--------------------|---------------------|---|---|------------------------------------|------------------------------------|-----------------|
| Calculations | [m] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0 | 0.026407 | 0.064417 | -0.0015773 | 5.5883 | 0.10353 | -0.0025035 | -0.0015773 | - | 514.75 | 2 (Slight) |
| Structure: Garage Block Sub-structure: East Elevation | | | | | | | | | | |
| Calculations | [m] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0 | 0.096232 | -0.21060 | 0.0045526 | 8.3277 | 0.069442 | 0.0061754 | 0.0045526 | 269.83 | - | 1 (Very Slight) |
| Structure: Garage Block Sub-structure: North Elevation | | | | | | | | | | |
| Calculations | [m] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0 | 0.037734 | -0.019193 | 0.0026560 | 5.8287 | 0.027420 | 532.33E-6 | 0.0026560 | 335.38 | - | 0 (Negligible) |
| Structure: Garage Block Sub-structure: West Elevation | | | | | | | | | | |
| Calculations | [m] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0 | 600.11E-6 | -0.043627 | -272.93E-6 | 3.8969 | 0.0087311 | 600.37E-6 | -272.93E-6 | 84311. | - | 0 (Negligible) |
| Structure: Pathway Wall Sub-structure: Adjoining Garage | | | | | | | | | | |
| Calculations | [m] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0 | 0.027777 | 0.028353 | -0.0014030 | 4.7076 | 0.068743 | -907.58E-6 | -0.0014030 | 118470. | 549.61 | 1 (Very Slight) |
| Structure: Pathway Wall Sub-structure: Adjoining Garden | | | | | | | | | | |
| Calculations | [m] | [%] | | [mm] | [%] | | | [m] | [m] | |
| 0 | 0.014714 | 0.053367 | -749.61E-6 | 5.1941 | 0.073897 | -589.80E-6 | -749.61E-6 | - | 4030.7 | 1 (Very Slight) |

Specific Building Damage Results - Critical Segments within Each Structure

| Structure Name | Parameter | Critical Sub-Structure | Critical Segment | Start | End | Curvature | Maximum Slope | Maximum Settlement | Max. Tensile Strain | Min. Radius of Curvature (Hogging) | Min. Radius of Curvature (Sagging) | Damage Category |
|--------------------|--|------------------------|------------------|--------|---------|-----------|---------------|--------------------|---------------------|------------------------------------|------------------------------------|-----------------|
| No 20 Froggal Way | Maximum Slope | East Elevation | 1 | 0.0 | 7.1198 | Hogging | 0.0078225 | 17.927 | 0.12749 | 103.99 | - | 2 (Slight) |
| | Maximum Settlement | East Elevation | 1 | 0.0 | 7.1198 | Hogging | 0.0078225 | 17.927 | 0.12749 | 103.99 | - | 2 (Slight) |
| | Max. Tensile Strain | East Elevation | 1 | 0.0 | 7.1198 | Hogging | 0.0078225 | 17.927 | 0.12749 | 103.99 | - | 2 (Slight) |
| | Min. Radius of Curvature (Hogging) | East Elevation | 1 | 0.0 | 7.1198 | Hogging | 0.0078225 | 17.927 | 0.12749 | 103.99 | - | 2 (Slight) |
| | Min. Radius of Curvature (Sagging) | North Elevation | 3 | 2.4691 | 5.2987 | Sagging | 0.0019378 | 10.678 | 0.024250 | - | 1434.2 | 0 (Negligible) |
| The Cottage | All settlements are less than the Settlement Trough Limit Sensitivity. | | | | | | | | | | | |
| No 20 Perrins Walk | All settlements are less than the Settlement Trough Limit Sensitivity. | | | | | | | | | | | |
| Garage Block | Maximum Slope | East Elevation | 1 | 0.0 | 5.0000 | Hogging | 0.0045526 | 8.3277 | 0.069442 | 269.83 | - | 1 (Very Slight) |
| | Maximum Settlement | East Elevation | 1 | 0.0 | 5.0000 | Hogging | 0.0045526 | 8.3277 | 0.069442 | 269.83 | - | 1 (Very Slight) |
| | Max. Tensile Strain | South Elevation | 1 | 0.0 | 6.3000 | Sagging | 0.0015773 | 5.5883 | 0.10353 | - | 514.75 | 2 (Slight) |
| | Min. Radius of Curvature (Hogging) | East Elevation | 1 | 0.0 | 5.0000 | Hogging | 0.0045526 | 8.3277 | 0.069442 | 269.83 | - | 1 (Very Slight) |
| | Min. Radius of Curvature (Sagging) | South Elevation | 1 | 0.0 | 6.3000 | Sagging | 0.0015773 | 5.5883 | 0.10353 | - | 514.75 | 2 (Slight) |
| Pathway Wall | Maximum Slope | Adjoining Garage | 1 | 0.0 | 4.3979 | Sagging | 0.0014030 | 4.7076 | 0.068743 | - | 549.61 | 1 (Very Slight) |
| | Maximum Settlement | Adjoining Garden | 1 | 0.0 | 9.0000 | Sagging | 749.61E-6 | 5.1941 | 0.073897 | - | 4030.7 | 1 (Very Slight) |
| | Max. Tensile Strain | Adjoining Garden | 1 | 0.0 | 9.0000 | Sagging | 749.61E-6 | 5.1941 | 0.073897 | - | 4030.7 | 1 (Very Slight) |
| | Min. Radius of Curvature (Hogging) | Adjoining Garage | 2 | 4.3979 | 10.4000 | Hogging | 161.74E-6 | 4.2404 | 0.011029 | 118470. | - | 0 (Negligible) |
| | Min. Radius of Curvature (Sagging) | Adjoining Garage | 1 | 0.0 | 4.3979 | Sagging | 0.0014030 | 4.7076 | 0.068743 | - | 549.61 | 1 (Very Slight) |

Specific Building Damage Results - All Combined Segments

| Structure | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
|-------------------|------------------|--------------|-----------|------------------|---------------------------|---------------------|-----------------|
| No 20 Froggal Way | North Elevation | | | | | | |



22 Frognal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

| [m] | [m] | [m] | [%] | [%] | [%] | | |
|--|------------------|--------------|-----------|------------------|---------------------------|---------------------|-----------------|
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Frognal Way Sub-structure: East Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Frognal Way Sub-structure: South Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Frognal Way Sub-structure: West Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: The Cottage Sub-structure: West Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: The Cottage Sub-structure: South Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: The Cottage Sub-structure: North Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Perrins Walk Sub-structure: Outbuilding - West Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Perrins Walk Sub-structure: Outbuilding - South Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Perrins Walk Sub-structure: Outbuilding - East Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: No 20 Perrins Walk Sub-structure: Outbuilding - North Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: Garage Block Sub-structure: South Elevation | | | | | | | |
| Vertical Offset from Line for Vertical Movement Calculations | Combined Segment | Start Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| [m] | [m] | [m] | [%] | [%] | [%] | | |
| No structures have segments combined. | | | | | | | |
| Structure: Garage Block Sub-structure: East Elevation | | | | | | | |



22 Frognal Way

Damage Assessment

| | | |
|---------------|---------------------|---------|
| Job No. | Sheet No. | Rev. |
| J14302 | | |
| Drg. Ref. | | |
| Made by MP | Date 02-Apr-2015 | Checked |

| Vertical Offset from Line for Vertical Movement | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
|---|------------------|-------|--------|-----------|------------------|---------------------------|---------------------|-----------------|
| Calculations | | [m] | [m] | | [%] | [%] | [%] | |
| No structures have segments combined. | | | | | | | | |
| Structure: Garage Block Sub-structure: North Elevation | | | | | | | | |
| Vertical Offset from Line for Vertical Movement | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| Calculations | | [m] | [m] | | [%] | [%] | [%] | |
| No structures have segments combined. | | | | | | | | |
| Structure: Garage Block Sub-structure: West Elevation | | | | | | | | |
| Vertical Offset from Line for Vertical Movement | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| Calculations | | [m] | [m] | | [%] | [%] | [%] | |
| No structures have segments combined. | | | | | | | | |
| Structure: Pathway Wall Sub-structure: Adjoining Garage | | | | | | | | |
| Vertical Offset from Line for Vertical Movement | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| Calculations | | [m] | [m] | | [%] | [%] | [%] | |
| No structures have segments combined. | | | | | | | | |
| Structure: Pathway Wall Sub-structure: Adjoining Garden | | | | | | | | |
| Vertical Offset from Line for Vertical Movement | Combined Segment | Start | Length | Curvature | Deflection Ratio | Average Horizontal Strain | Max. Tensile Strain | Damage Category |
| Calculations | | [m] | [m] | | [%] | [%] | [%] | |
| No structures have segments combined. | | | | | | | | |

Extracts from 20 Perrins Walk Investigation (J11048)

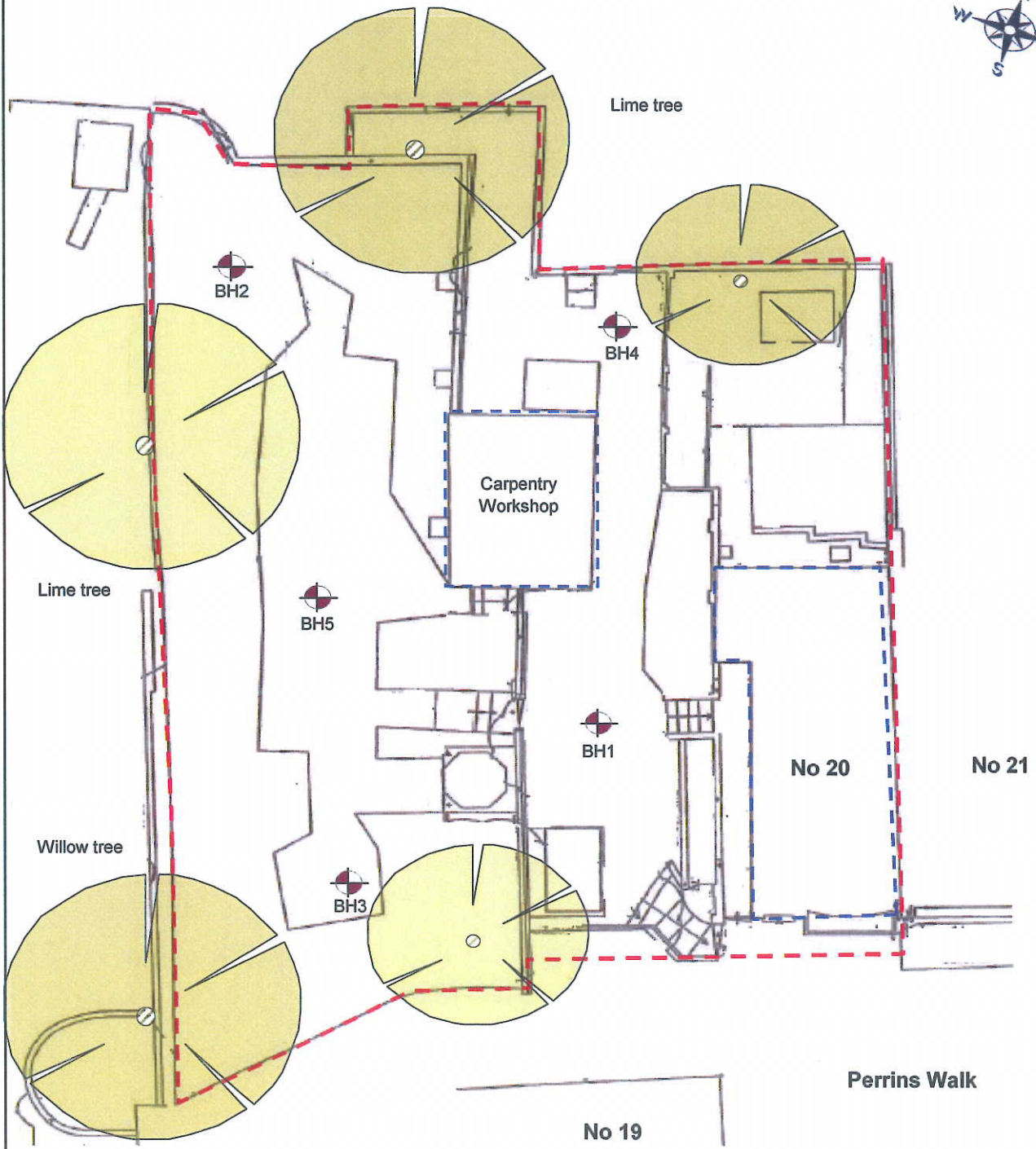
Site 20 Perrins Walk, Hampstead, London NW3

Job Number
J11048

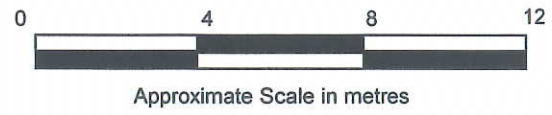
Client Mrs Fiona Aboymova

Sheet
1 / 1

Engineer Elliott Wood



| | |
|---|--------------------|
|  | Site Boundary |
|  | Existing Buildings |



| | | | | |
|---|-------------------|-------------------------------------|-------------------------------------|-----------------------------|
| Excavation Method Drive-in Window Sampler | Dimensions | Ground Level (mOD) 100.18 | Client Mrs Fiona Aboymova | Job Number J11048 |
| | Location | Dates 09/03/2011 | Engineer Elliott Wood | Sheet 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|-----------|----------------|-----------------|---------------|-------------|-----------------------|--|--------|-------|
| 0.20 | D1 | | | | (0.65) | Made Ground (black sandy slightly clayey silt with roots and rootlets, occasional gravel, coal and fine brick fragments) | | |
| 0.80 | D2 | | | 99.53 | 0.65 (0.35) | Made Ground (orange-brown silty slightly sandy clay with gravel, brick and fine charcoal fragments) | | |
| 1.30 | D3 | | | 99.18 | 1.00 | 'Stiff' orange-brown silty sandy CLAY with occasional gravel and rootlets down to 1.6 m. Desiccated Soil | | |
| 1.80 | D4 | | | | | | | |
| 2.20 | D5 | | | 98.18 | 2.00 (1.00) | Soft brown mottled orange-brown and grey silty sandy CLAY with occasional gravel | | |
| 3.00 | D6 | | | 97.18 | 3.00 (2.00) | Firm brown mottled bluish grey silty sandy slightly sandy CLAY with partings of orange-brown sand and traces of selenite | | |
| 3.50 | D7 | | | | | | | |
| 4.50 | D8 | | | | | | | |
| | | | | 95.18 | 5.00 | Complete at 5.00m | | |

Remarks
Groundwater not encountered.
Groundwater monitoring standpipe installed to a depth of 5.0 m.

| | |
|---------------------------------|------------------------|
| Scale (approx) 1:50 | Logged By ML |
| Figure No. J11048.BH2 | |




| | | | | |
|---|-------------------|------------------------------------|-------------------------------------|-----------------------------|
| Excavation Method Drive-in Window Sampler | Dimensions | Ground Level (mOD) 99.04 | Client Mrs Fiona Aboymova | Job Number J11048 |
| | Location | Dates 09/03/2011 | Engineer Elliott Wood | Sheet 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|-----------|----------------|-----------------|----------------------|----------------|-----------------------|--|--------|-------|
| 0.30 | D1 | | | | (1.00) | Made Ground (dark brown becoming brown slightly clayey sandy silt with gravel, brick and charcoal fragments) | | |
| 1.10 | D2 | | | 98.04 | 1.00 (0.75) | Soft brown silty very sandy CLAY with occasional gravel | | |
| 2.00 | D3 | | | 97.29 | 1.75 | Firm orange-brown mottled pale grey silty sandy CLAY with occasional gravel | | |
| 3.00 | D4 | | Seepage(1) at 3.00m. | | (2.95) | | | ▽1 |
| 4.00 | D5 | | | | | | | |
| 5.00 | D6 | | | 94.34 94.04 | 4.70 (0.30) 5.00 | Dark grey silty slightly sandy CLAY with traces of selenite | | |
| | | | | | | Complete at 5.00m | | |

Remarks
Groundwater monitoring standpipe installed to a depth of 5.0 m.

| | |
|---------------------------------|------------------------|
| Scale (approx) 1:50 | Logged By ML |
| Figure No. J11048.BH3 | |

| | | | | |
|---|-------------------|------------------------------------|-------------------------------------|-----------------------------|
| Excavation Method Drive-in Window Sampler | Dimensions | Ground Level (mOD) 99.50 | Client Mrs Fiona Aboymova | Job Number J11048 |
| | Location | Dates 09/03/2011 | Engineer Elliott Wood | Sheet 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|-----------|----------------|-----------------|---------------|-------------|-----------------------|--|--|-------|
| 0.30 | D1 | | | | (1.00) | Made Ground (orange-brown clayey sandy silt with gravel, brick and charcoal fragments) |  | |
| 1.00 | D2 | | | 98.50 | 1.00 (0.65) | Very soft silty very sandy CLAY with occasional gravel |  | |
| 2.10 | D3 | | | 97.85 | 1.65 | Firm brown mottled orange-brown and grey silty sandy CLAY |  | |
| 3.00 | D4 | | | | (3.35) | | | |
| 4.50 | D5 | | | | 5.00 | | | |
| | | | | 94.50 | 5.00 | Complete at 5.00m | | |

| | | |
|---|---------------------------------|------------------|
| Remarks Groundwater not encountered. Groundwater monitoring standpipe installed to a depth of 5.0 m. | Scale (approx) | Logged By |
| | 1:50 | ML |
| | Figure No. J11048.BH5 | |

Site Plan

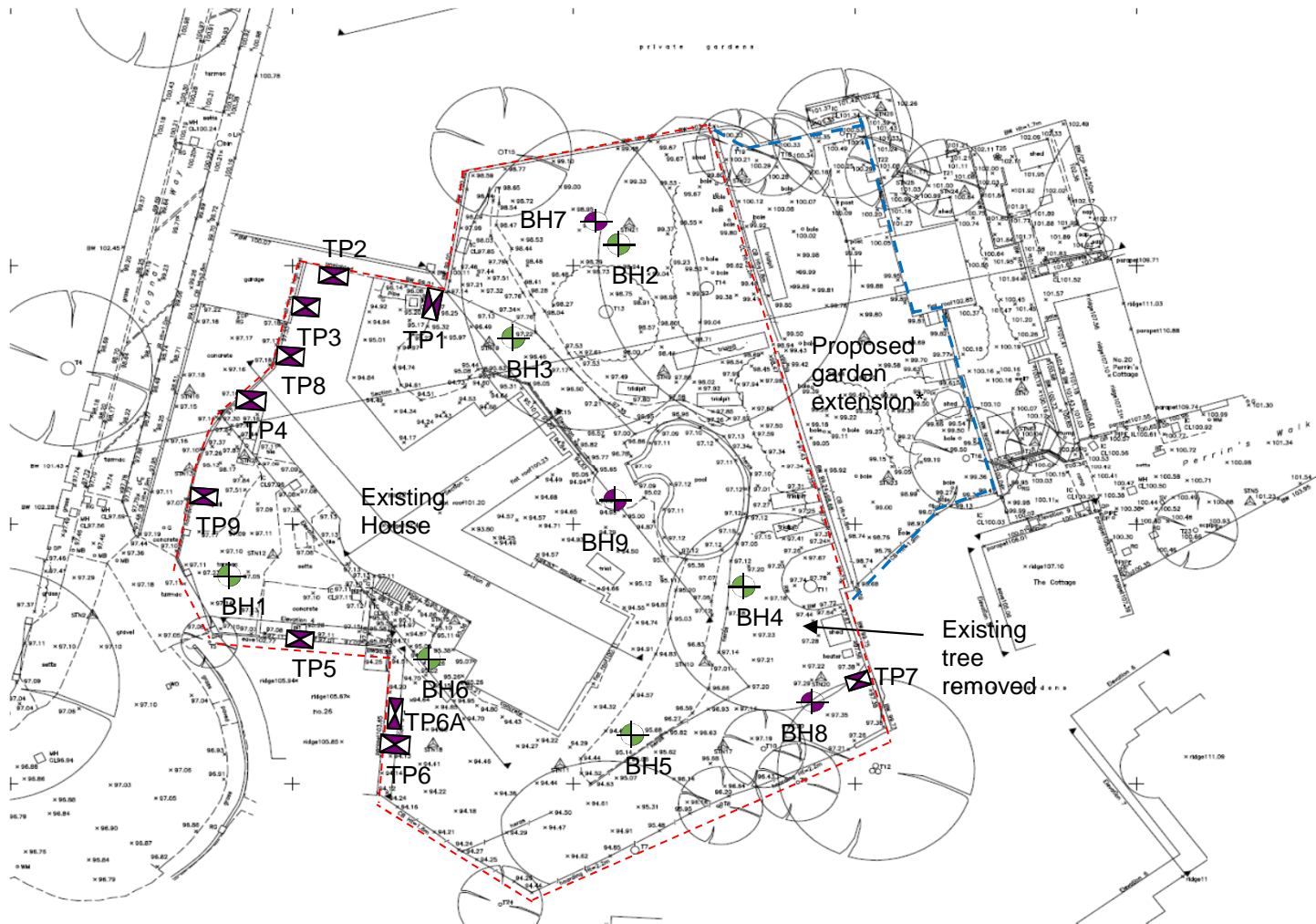
Site 22 Frognal Way, London, NW3

Client Ironside & Malone Design & Build 2 Ltd

Engineer Price & Myers

Job Number
J14302

Sheet
1 / 1



Approximate Scale in metres

Key

-  2010 BH
-  2014 BH

*Refer to site plan for No 20 Perrins Walk

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

We have offices at

Widbury Barn
Widbury Hill
Ware
Hertfordshire
SG12 7QE
tel 01727 824666
mail@gea-ltd.co.uk

Church Farm
Gotham Road
Kingston on Soar
Notts
NG11 0DE
tel 01509 674888
midlands@gea-ltd.co.uk

Enquiries can also be made on-line at

www.gea-ltd.co.uk

where information can be found on all of the services that we offer.

