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Link to published version (if available): 10.1680/geng.13.00037

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## Site progress listing and figures

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 75</td>
<td>May 76</td>
<td>Site investigation</td>
</tr>
<tr>
<td>Late 78</td>
<td></td>
<td>Demolition of small area in centre of site</td>
</tr>
<tr>
<td>Nov 78</td>
<td>May 79</td>
<td>Initial installation of ground and building instrumentation</td>
</tr>
<tr>
<td>Dec 78</td>
<td>May 79</td>
<td>Pile installation and testing</td>
</tr>
<tr>
<td>Feb 79</td>
<td>Oct 79</td>
<td>Main demolition</td>
</tr>
<tr>
<td>Nov 81</td>
<td>May 82</td>
<td>Installation of tunnel instrumentation</td>
</tr>
<tr>
<td>Apr 82</td>
<td>May 83</td>
<td>Excavation to max depth of 5m.</td>
</tr>
<tr>
<td>June 82</td>
<td></td>
<td>Sheet pile wall constructed along Ossulston Street</td>
</tr>
<tr>
<td>Jul 82</td>
<td>Aug 82</td>
<td>Guide trenches constructed for secant piling</td>
</tr>
<tr>
<td>Jun 82</td>
<td>Dec 82</td>
<td>South wall constructed</td>
</tr>
<tr>
<td>Sep 82</td>
<td>May 83</td>
<td>West wall constructed</td>
</tr>
<tr>
<td>Jun 82</td>
<td>May 83</td>
<td>East wall constructed</td>
</tr>
<tr>
<td>Jan 83</td>
<td>May 83</td>
<td>North wall constructed</td>
</tr>
<tr>
<td>Jun 83</td>
<td>Sep 83?</td>
<td>Construction of bored piling, progressing northwards</td>
</tr>
<tr>
<td>Apr 84</td>
<td>May 84</td>
<td>Ground anchor trials</td>
</tr>
<tr>
<td>Jul 84</td>
<td>Oct 84</td>
<td>Start of main excavation and construction contract</td>
</tr>
<tr>
<td>Jul 84</td>
<td>Oct 84</td>
<td>Capping beams on east and west walls</td>
</tr>
<tr>
<td>Jul 84</td>
<td>Oct 84</td>
<td>Installation of steel columns</td>
</tr>
<tr>
<td>Jul 84</td>
<td>Sept 84</td>
<td>Pressure relief wells</td>
</tr>
<tr>
<td>Jul 84</td>
<td>Aug 84</td>
<td>Sheet piles at north end</td>
</tr>
<tr>
<td>Jul 84</td>
<td>Aug 84</td>
<td>Short bored piles in central area</td>
</tr>
<tr>
<td>Aug 84</td>
<td>Dec 84</td>
<td>Excavation in the Central Area along site perimeters to facilitate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>construction of anchors</td>
</tr>
<tr>
<td>Sep 84</td>
<td>Jan 85</td>
<td>Ground anchorages</td>
</tr>
<tr>
<td>Oct 84</td>
<td>Oct 84</td>
<td>0.7m skim in the South Area</td>
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<tr>
<td>Nov 84</td>
<td>Mar 85</td>
<td>Construction of the LGF and B½ slabs in the South Area</td>
</tr>
<tr>
<td>Apr 85</td>
<td>Jun 85</td>
<td>South Area reduced from 14.3mOD to 10mOD</td>
</tr>
<tr>
<td>Feb 85</td>
<td>Apr 85</td>
<td>Central area reduced to 8mOD</td>
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<tr>
<td>Apr 85</td>
<td>Jun 85</td>
<td>B1 raft constructed in the Central Area</td>
</tr>
<tr>
<td>May 85</td>
<td>Jun 85</td>
<td>Ground anchorages at north end</td>
</tr>
<tr>
<td>Jul 85</td>
<td>Aug 85?</td>
<td>South Area reduced to 9.2mOD for B1</td>
</tr>
<tr>
<td>Jul 85</td>
<td>Sep 85</td>
<td>Excavation and construction of B2 raft in northern half of Central Area</td>
</tr>
<tr>
<td>Oct 85</td>
<td>Dec 85</td>
<td>Excavation and construction of B2 raft in southern half of Central Area</td>
</tr>
<tr>
<td>Sep 85</td>
<td>Nov 85</td>
<td>Construction of B1 slab in South Area</td>
</tr>
<tr>
<td>Nov 85</td>
<td>Apr 86</td>
<td>South Area reduced to 5mOD for B2</td>
</tr>
<tr>
<td>Feb 86</td>
<td>May 86</td>
<td>Construction of B2 slab in the South Area</td>
</tr>
<tr>
<td>May 86</td>
<td></td>
<td>LGF started in Central Area</td>
</tr>
<tr>
<td>May 86</td>
<td>Aug 86</td>
<td>South Area reduced to 0mOD for B3</td>
</tr>
<tr>
<td>May 86</td>
<td>Aug 86</td>
<td>Construction of LGF slab in Central Area</td>
</tr>
<tr>
<td>Jul 86...</td>
<td></td>
<td>Superstructure underway</td>
</tr>
<tr>
<td>Sep 86</td>
<td></td>
<td>Ground anchorages de-stressed</td>
</tr>
<tr>
<td></td>
<td>Oct 86</td>
<td>Construction of B3 slab in South Area</td>
</tr>
<tr>
<td>Oct 86...</td>
<td></td>
<td>South Area reduced to -5.4mOD for B4 and the undercroft</td>
</tr>
<tr>
<td>Dec 86</td>
<td>Aug 87</td>
<td>Construction of the B4 slab in the South Area</td>
</tr>
<tr>
<td>...Apr 87</td>
<td></td>
<td>Superstructure complete to Level 7</td>
</tr>
</tbody>
</table>
Detailed Construction Sequence in Central Area

Between August 1984 and January 1985 the ground anchors were installed, access to the walls being provided by excavating 10m wide trenches along the edge of the site. Anchorages had working loads of up to 800kN; they were placed at 2.1m centres at levels 16.0mOD, 13.0mOD and 10.5mOD. Details of their design, construction and testing have been published by Raison (1987a, b). Additional anchorages were installed later to support sheet piling on the northern perimeter of the area. The remainder of the Central Area was excavated to the level of the soffit of the B1 raft (8mOD) between February and April 1985 and the B1 raft was constructed by June.

The sequence of excavation and construction below level B1 was designed to maintain a continuous east west prop between the secant pile retaining walls, either through the unexcavated soil, or the structure. Excavations in areas overlying the Victoria Line Tunnels and adjacent to the north boundary wall were required to be carried out in small bays to minimise ground movements.

Excavation in the northern half of the Central Area to reduce the level to about 2mOD started in July and was complete by September 1985. Construction of the B2 raft began immediately after trimming and blinding. Excavation in the southern half of the Central Area started in October 1985 with the B2 raft construction complete in December 1985.

Construction of the B1 suspended floor slab in the Central area started in October 1985 and was complete by March 1986. This slab provided the continuous low level propping in both the east west and north south direction.

References:
Figure A1 Site Layout Mid 1978
Figure A2 Site Layout April 1982
Figure A3 Site Layout showing old foundations
Figure A4 Site Layout June 1982
Figure A5 Site Layout August 1982
Figure A6 Site Layout November 1982
Figure A7 Site Layout February 1983
Figure A8 Site Layout May 1983
Figure A9 Site Layout October 1983 showing piles
Figure A10 Site Layout July 1984
Figure A11 Site Layout October 1984 showing wells
Figure A12 Site Layout November 1984
Figure A13 Site Layout December 1984
Figure A14 Site Layout January 1985
Figure A15 Site Layout February 1985
Figure A16 Site Layout March 1985
Figure A17 Site Layout April 1985
Figure A18 Site Layout May 1985
Figure A19 Site Layout June 1985
Figure A20 Site Layout July 1985
Figure A21 Site Layout August 1985
Figure A22 Site Layout September 1985
Figure A23 Site Layout October 1985
Figure A24 Site Layout November 1985 showing slabs
Figure A25 Site Layout November 1985
Figure A26 Site Layout December 1985
Figure A27 Site Layout January 1986 showing slabs
Figure A28 Site Layout January 1986
Figure A29 Site Layout February 1986 showing slabs
Figure A30 Site Layout February 1986
Figure A31 Site Layout March 1986 showing slabs
Figure A32 Site Layout March 1986
Figure A33 Site Layout April 1986
Figure A34 Site Layout May 1986 showing slabs
Figure A35 Site Layout May 1986
Figure A36 Site Layout June 1986
Figure A37 Site Layout July 1986
Figure A38 Site Layout August 1986
Figure A39 Site Layout September 1986
Figure A40 Site Layout October 1986
Figure A41 Site Layout October 1986
Figure A42 Site Layout November 1986
Figure A43 Site Layout December 1986
Figure A44 Site Layout January 1987
Figure A45 Site Layout February 1987
Figure A46 Site Layout March 1987
Figure A47 Site Layout April 1987
Figure A48 Site Layout May 1987
Figure A49 Site Layout June 1987
Figure A50 Site Layout July 1987
Figure A51 Site Layout August 1987
Figure A52 Site Layout October 1991
Figure A53 Site Layout January 1992
Figure A54 Site Layout March 1992
Figure A55 Site Layout August 1992
Figure A56 Site Layout November 1992
Figure A57 Site Layout June 1993
Location of footing bases and foundations removed during excavations between May 1982 and June 1983. Footings founded at about 15 mOD.
Secant piling complete in May 1983

South Area excavation
March to May 1983

Figure A8
SITE LAYOUT
OCTOBER 1983

Figure A9
Figure A18
Parcel Description Progress

2070 Excavations as shown

2070 Slab Construction as Shown

18.5 mOD

15.0 mOD

10.0 mOD

10.0 mOD

16.75 mOD

4.4 mOD

5.0 mOD

SITE LAYOUT MARCH 1986

Slabs over omitted for clarity

Figure A31
Parcel Description Progress
2070 Excavations as shown
2105 Slab construction as shown

18.5 mOD

15.0 mOD

10.0 mOD

10.0 mOD

16.75 mOD

B1

LGF

0.5 mOD

-0.4 mOD

SITE LAYOUT
JULY 1936

Scale 1:1000

0 50m

Figure A37
Parcel Description Progress
2070 Slab Construction as shown

18.5 mOD
15.0 mOD
10.0 mOD
10.0 mOD
16.75 mOD

-0.4 mOD

SITE LAYOUT SEPTEMBER 1986

Figure A39
Figure A51
Complete to L7 by April 1987

Phase 1AB complete by December 1988

Figure A53
SITE LAYOUT
AUGUST 1992
Figure A55