5.0 Outline Construction Sequence

The following section describes our envisaged sequence for the construction of the basement based on the construction and temporary works techniques described in the previous section. The contractor may put forward alternative solutions to suit his programme and method of working. Regardless no structural works will commence without a detailed temporary works design, drawing and calculation package in place including all necessary method statements.
5.0 Outline Construction Sequence

STAGE 1 – SITE SET UP AND SOFT STRIP

- Mobilisation and prepare site with all necessary hoarding and associated health and safety and security requirements.
- Locate all existing services and identify those affected by the new works and take necessary actions as required by M+E engineer, drainage engineer and Thames Water.
- Check all boundary conditions are as to be expected and report any variations to the engineer.
- Remove existing trees and vegetation in accordance with the Arboricultural report’s recommendations and protect specific trees and their roots as advised.
- Remove all internal non load bearing partitions.
- Confirm details of existing structure are as expected and report any variations to the engineer.
5.0 Outline Construction Sequence

STAGE 2 - PILING

- Reduce the external areas to the grade level below the new piling mat.
- Install appropriate piling mat. Compaction of hardcore shall only be carried out using non-vibrating methods.
- When piling adjacent to existing structures set out and install steel pile casings screwed down to approximately 3.0m below ground.
- Install additional internal sacrificial plunge column piles required for support/restraint of the temporary props and needle beams.
5.0 Outline Construction Sequence

STAGE 3 – SUPPORT TO EXISTING STRUCTURE ABOVE

- Install temporary needle beams through the front façade. Support is taken from the plunge column piles. Ensure the top of the needle beams is packed tight to the underside of the existing masonry.
- Typically the needles are installed at a level just above the proposed upper ground floor. This allows the masonry below to be removed providing an opened up working area at lower ground.
- Install temporary steel frames to support up the existing steel frame at the rear of No. 6 at upper ground floor level. Support for the new temporary frames is taken from the plunge column piles.
5.0 Outline Construction Sequence

STAGE 4 – REMOVE LOWER GROUND FLOOR STRUCTURE

- Following installation of the temporary works the existing load bearing structure can be removed at lower ground floor including the steel columns. This creates an open working area to assist construction of the basement beneath.
5.0 Outline Construction Sequence

STAGE 5 - UNDERPINNING

- Break out the existing lower ground floor slab and install the underpins beneath the western party wall (shared with No. 8) and around the perimeter of the front garden area in a hit and miss sequence in accordance with the specification and install propping as required.
- Ensure that the underpins are propped against the rear of the new excavations to ensure stability.
5.0 Outline Construction Sequence

STAGE 6 - CAPPING BEAM

- Locally reduce the ground level and cast RC pile capping beam to tie the head of the piles together.
5.0 Outline Construction Sequence

STAGE 7 – EXCAVATION AND HIGH LEVEL HORIZONTAL PROPPING

- Reduce the external ground level in the rear garden sufficiently to allow installation of the steel wailer beams and temporary props to the contiguous piles at a level just above the proposed new capping slab.
- Reduce the internal ground level sufficiently to allow installation of a steel wailing beam along the top of the new rear underpinning. This beam is propped back across the full width of the site with support taken from the sacrificial plunge column piles.
- Carefully break off and remove the existing unwanted foundations and stepped brick footings.
5.0 Outline Construction Sequence

STAGE 8 – BULK EXCAVATION AND LOW LEVEL HORIZONTAL PROPPING

- Upon completion of all the temporary works the bulk excavation of the site can be undertaken.
- The soil will be excavated and removed using micro excavators up to ground level within the front garden area. At the front of the site a gantry will support a conveyor and loading beam allowing the soil to be loaded directly onto the lorries as they sit under the conveyor.
- When the internal ground level is excavated sufficiently install steel walling beams along the base of the piles and underpinning at a level just above the proposed new basement raft slab. Similar to the high level horizontal propping the waller beams are propped back across the full width of the site with support taken from the sacrificial plunge column piles.
5.0 Outline Construction Sequence

STAGE 9 – LOW LEVEL BASEMENT RC RAFT SLAB AND POOL WALLS

- Once the excavation reaches the formation level within the footprint of the pool, prepare the sub-base and reinforcement, include starter bars for the RC walls extending up.
- Cast the low level basement raft slab leaving pockets around the temporary sacrificial plunge piles.
- Prepare shuttering and reinforcement for new pool walls, pour concrete and allow curing.
5.0 Outline Construction Sequence

STAGE 10 – BASEMENT RC RAFT SLAB

- Prepare the basement raft slab sub-base and reinforcement. Include starter bars for the RC walls extending up.
- Cast the basement raft slab leaving pockets around the temporary sacrificial plunge piles.

SECTIONAL VIEW OF STRUCTURAL MODEL

AERIAL VIEW OF STRUCTURAL MODEL
5.0 Outline Construction Sequence

STAGE 11 – BASEMENT RC WALLS AND COLUMNS

- Prepare shuttering and reinforcement for new perimeter and internal walls from basement to lower ground floor level, pour concrete and allow curing.
5.0 Outline Construction Sequence

STAGE 12 – LOWER GROUND FLOOR RC CAPPING SLAB

- Prepare formwork and reinforcement and cast new lower ground floor RC capping slab. Leave openings where the sacrificial piles pass through.
5.0 Outline Construction Sequence

STAGE 13 – REINSTATE ORIGINAL LOWER GROUND FLOOR STRUCTURE

- Reinstate the original steel columns between the new lower ground floor slab and the original ground floor steel beams.
- Reinstate the original load-bearing masonry walls between the new lower ground floor slab and the original ground floor steel beams.
5.0 Outline Construction Sequence

STAGE 14 - REMOVE TEMPORARY WORKS

- The new basement raft slab and lower ground floor capping slab provide permanent restraint to the bottom and top of the underpinning and piles respectively therefore all horizontal propping can therefore be removed at this stage.
- Following the reinstatement of the original ground floor structure the vertical temporary frames can be removed also.
- Cut down the piles to allow the uninterrupted layer of earth above the new capping slab.
- The new earth can be placed from this stage onwards.
5.0 Outline Construction Sequence

STAGE 15 – SUPERSTRUCTURE, NON STRUCTURAL INTERNAL FIT OUT AND LANDSCAPING

- Complete superstructure above lower ground floor capping slab.
- Install waterproofing and tanking to Architect’s specification.
- Install any drainage required.
- Fit out the interior and complete the landscaping.
Appendix A

Preliminary Form Structural Drawings

<table>
<thead>
<tr>
<th>Document No.</th>
<th>Title</th>
<th>Revision</th>
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<tbody>
<tr>
<td>142182 L(00)01</td>
<td>Existing Lower Ground Floor Plan</td>
<td>P1</td>
</tr>
<tr>
<td>142182 L(00)02</td>
<td>Existing Ground Floor Plan</td>
<td>P1</td>
</tr>
<tr>
<td>142182 L(23)00</td>
<td>Proposed Basement Plan</td>
<td>P2</td>
</tr>
<tr>
<td>142182 L(23)01</td>
<td>Proposed Lower Ground Floor Plan</td>
<td>P2</td>
</tr>
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Notes

THIS DRAWING IS COPYRIGHT OF FORM.

DO NOT SCALE FROM THIS DRAWING WORK ONLY TO FIGURED

THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK. ALL ERRORS AND OMISSIONS ARE TO BE REPORTED TO THE ENGINEER.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SERVICES ENGINEERS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

KEY

WALL TYPES

EXISTING WALL.

EXISTING WALL TO BE REMOVED.

NEW 20N/mm² BRICKWORK IN DESIGNATION (iii) MORTAR.

NEW 7N/mm² MEDIUM DENSE BLOCKWORK IN DESIGNATION (iii) MORTAR.

LINE