**Build Design**

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**Underpinning Specification**

**3 Trinity Willoughby Road**

**Underpinning and Retaining Walls**

1. The Contractor shall be responsible for ensuring that their operations do not in any way impair the safety or condition of the existing structure or the adjacent properties. They shall provide any temporary supports required for this purpose, and shall carefully inspect the condition of the structure both before and during the execution of the work and immediately inform the Engineer and Architect if they consider that any more stringent procedure than that specified is necessary.

2. Before starting the work the Contractor is to check for any services that could be damaged by the work and shall provide for the maintenance of drainage services during the works and for the reinstatement of any services interrupted or disturbed by the excavations.

3. Before completing the bulk excavation, the Contractor must install any temporary propping to the underpins and retaining walls in accordance with the temporary works design and sequence, and this temporary support shall remain in place until the drainage and permanent support structure has been installed.

4. Underpinning and retaining wall installation is to be carried out in short sections not exceeding 1000mm in length, in the numbered sequence shown on the drawings..

5. Where underpinning sections exceed 1.0m, the contractor should inform the engineer 7 days prior to the first excavation so the engineer can attend site to inspect the appropriateness of the underpin length. Where necessary, the engineer may specify a new maximum length.

6. The Engineer and Building Control Officer shall be given the opportunity of examining all excavations, prior to any underpinning or retaining walls being cast.

7. Unless noted otherwise on the drawings, reinforced concrete underpinning and retaining walls are to be constructed in designated concrete C28/35 using sulphate resistant cement and 20mm max aggregate in accordance with BS8500 and BS EN 206-1. Cover to reinforced concrete in contact with the ground to be a minimum of 75mm unless noted otherwise.

8. Underpinning and retaining walls are to be cast to the widths and depths shown on the drawings. As far as practicable excavation and concreting of any section of underpinning or retaining wall shall be carried out on the same day. Un-concreted sections shall be kept covered to prevent the ingress of water.

9. Concrete underpinning is to be stopped off approximately 75mm below the underside of the existing footing, and the final pinning up over the whole extent of the latter is to be carried out with a semi-dry fine concrete, well rammed in as soon as possible after the foundation has set hard. The pinning-up concrete is to consist of 1 part by volume of sulphate resistant cement to 3 parts of aggregate (well graded from 10mm maximum size down to fine sand) with a water/cement ratio by weight of 0.35.

10 The existing wall foundation masonry and corbelling to be cut off after the dry packing has matured using an electric masonry cutter and not a mechanical hammer drill.

11. Excavation to any section of underpinning shall not be commenced until at least 48 hours after completion of any adjacent section of the work.

12. The joint between adjacent sections of mass concrete underpinning is to be formed by creating a rough surface against which the first section is cast. Then, having thoroughly cleaned the exposed concrete face, the adjacent section may be cast. The joint between adjacent sections of reinforced concrete

underpins or retaining walls should be prepared as above, however reinforced concrete underpins are to be dowelled together in accordance with the reinforcement detail drawings.

13. The Contractor is to keep a record of the sequence and dimensions of the underpinning actually carried out, including details of excavation, casting concrete and pinning up for each section.

14. Holes and penetrations for services through underpins and retaining walls are to be set out and detailed by the Architect, including waterproofing details such as puddle flanges or hydrophilic strips, and installed prior to the pouring of concrete.