SPACE BASEMENTS LTD
50b Chiswick High Road
London
W4 1S2

Basement Method Statement - E

Lidlington Place London

Property Details:
Lidlington Place London

Client Information:
Minh Quach

1.1. This method statement provides an approach that will allow the basement design to be correctly considered during construction. The statement also contains proposals for the temporary support to be provided during the works. The Contractor is responsible for the works on site and the final temporary works methodology and design on this site and any adjacent sites.
1.2. Contact Party Wall Surveyors to inform them of any changes to this method statement.
1.3. On this development, the approach is: construct the underpin segments that will support the permanent steel work. To insert the new steelwork cast the remainder of the retaining walls that will form the perimeter of the basement.
1.4. On this project, the cantilever pins are designed to be inherently stable without lateral support to the top of the wall. However, temporary props will be provided near the head and will provide support until the concrete has gained sufficient strength. The base benefits from propping. This is provided in the final condition by the ground slab. In the temporary condition, the edge of the slab is buttressed against the soil in the middle of the property. Also the skin friction between the concrete base and the soil provides further resistance. The central soil mass is to be removed in 1/3 portions and cross propping subsequently added as the central soil ass is removed
1.5. The bearing pressures have been limited to 100kN/m2. This is standard loading for the local ground conditions and acceptable to Building Control and their approvals
1.6. The structural water proofer must comment on the proposed design and ensure that he is satisfied that the proposals will provide adequate waterproofing.
1.7. Provide engineers with concrete mix, supplier, delivery and placement methods two weeks prior to the first pour. Site mixing of concrete should not be employed apart from in small sections (less than 1m3). The contractor must provide a method on how to achieve site mixing to the correct specification. The contractor must undertake toolbox talks with staff to ensure site quality is maintained.

2. Enabling Works

2.1. The site is to be hoarded with ply board sheets, at least 2.2m high, to prevent unauthorized public access.
2.2. Licenses for skips and conveyors should be posted on the hoarding.
2.3. Provide protection to public where conveyor extends over footpath. Depending on the requirements of the local authority, construct a plywood bulkhead over the pavement. Hoarding to have a plywood roof covering over the footpath, night-lights and safety notices.
2.4. Dewater:
2.4.1.Place a bore hole to the front of the property down to a depth of 6m
2.4.2.Pump water away from site.
2.5. On commencement of construction, the contractor will determine the foundation type, width and depth. Any discrepancies will be reported to the structural engineer in order that the detailed design may be modified as necessary.

3. Basement Sequencing

3.0 Initial excavate area of the basement to a depth of approx. 2150mm and sloping excavation at 40 deg to ground level on all four sides. This to reduce risk of callapse due to depths of excavation.
3.1. Begin by placing cantilevered walls noted on plans. (Cantilevered walls to be placed in accordance with drawing 02C
3.5. Excavate first rear corners of the basement (drawing 02C refers)
3.6. Excavate next in sequence. (drawing 02C refers)
3.7. Continue excavating section pins to form basement. (drawing 02C & 03B refers)
3.8. Place cantilevered retaining wall to the left side of front opening. After 48 hours place cantilevered retaining wall to the right side of front opening.
The underpin bass's will extend half the width of the basement due to the length of toe required. Underpins opposite those that have been constructed and the soil mass removed, to be propped off base of opposite underpin.
Bays marked 01, 01a and 01b to be constructed in sequence and is not ambiguous and these bays will have soil mass. Bays marked 04, 04a and 04b will be propped off bass's already constructed.
3.9. Needle and prop bay wall. Insert support
3.10. Excavate out first 1.2m around front opening.
3.11. Continue cantilevered wall formation around perimeter of basement following the numbering sequence on the drawings 02C
3.11.1. Excavation for the next numbered sequential sections of underpinning shall not commence until at least 48 hours.
3.13.1. Excavate 1/2 of the section of basement floor. As excavation proceeds,
place props at a maximum of 2.5m. Locate props at a third of the height of the wall Excavate a 1/2 of the half section of basement floor.
3.13.2. Continue excavating the next 1/3 and temporary prop then repeat for the final 1/3.
3.13.3. Place below-slab drainage. Recommend that all drainage is encased in
concrete below the slab and cast monolithically with the slab. Placing drainage on pea shingle below the slab allows greater penetration for water ingress.
3.13.5. Building Control Officer and Engineer are to be informed 48 hours before reinforcement is ready and invited for inspection.
3.13.6. Once inspected, pour concrete.

3.14. Provide structure to ground floor and water proofing to retaining walls as required. It is recommended to leave 3-4 weeks between completion of the basement and installing drained cavity. This period should be used to locate and fill any localized leakage of the basement

4. Underpinning and Cantilevered Walls

4.1. Prior to installation of new structural beams in the superstructure, the contractor may undertake the local exploration of specific areas in the superstructure. This will confirm the exact form and location of the temporary works that are required. The permanent structural work can then be undertaken whilst ensuring that the full integrity of the structure above is maintained.
4.3. Excavate first section of retaining wall (no more than 1200mm wide). Where excavation is greater than 1.0m deep, provide temporary propping to sides of excavation to prevent earth collapse
(Health and Safety). A 1000mm width wall has a lower risk of collapse to the heel face.
4.4. Excavation of pins involves working in confined spaces and the following measures should be applied:
o Operatives must wear a harness and there must be a winch above the excavation.
o An attendant must be present at all times, at ground level, while excavation is occupied.
o A rescue plan must be produced prior to the works as well as a task-specific risk and method statement.
o Working in the confined space should require a permit to work.
4.5. Back propping of rear face: Rear face to be propped in the
temporary conditions with a minimum of 2 trench sheets. Trench sheets are to extend over entire height of excavation. Trench sheets can be placed in short sections as the excavation progresses.
4.5.1.If the ground is stable, trench sheets can be removed as the wall reinforcement is placed and the shuttering is constructed.
4.5.2.Where trench sheets are left in a slight over spill may occur past the neighbour's boundary wall line. Where this slight over spill is not allowed by the Party Wall Surveyors then cement particle board should be used as noted below.
4.5.3.Where soft spots are encountered, leave in trench sheets or alternatively back prop with precast lintels or sacrificial boards. If the soil support to the ends of the lintels is insufficient, then brace the ends of the PC lintels with 150x150 C24 timbers and
prop with Acrows diagonally back to the ground.
4.5.4. Where voids are present behind the lintels or trench sheeting, grout voids behind sacrificial propping. Grout to be 3:1 sand/cement packed into voids.
4.5.5.Prior to casting, place layer of DPM between trench sheeting (or PC lintels) and new concrete. The lintels are to be cut into the soil by 150mm either side of the pin. A site stock of a minimum of 10 lintels should be present to prevent delays due to ordering.
4.7. Underpins can be completed in ONE LIFT
4.7.1.Place reinforcement for retaining wall for full height of wall
4.6. If cut face is not straight, or sacrificial boards noted previously have been used, place a 15mm cement particle board between sacrificial sheets or against the soil prior to casting. Cement particle board is to line up with the adjacent owner's face of wall. The method adopted, to prevent localized collapse of the soil, is to install these progressively, one at a time. Cement particle board must be used in any condition where overspill onto the adjacent owner's land is possible.

4.8. Excavate base. Mass concrete heels to be excavated. If soil over is unstable, prop top with PC lintel and sacrificial prop.
4.9. Visually inspect the footings and provide propping to local brickwork. If necessary install sacrificial Acrow, or pit props, and cast into the retaining wall.
4.11. Local Authority inspection to be carried out for approval of excavation base.
4.12. Place reinforcement for retaining wall base and stem. Drive H16 Bars U-bars into soil along centre line of stem to act as shear ties to adjacent wall underpin.
4.13. Site supervisor to inspect and sign off works before proceeding to next stage.
4.13.1. For pins 1, 3 and 5, inform the engineer five days before the reinforcement is ready, to allow for inspection of the reinforcement prior to casting.
4.14. Cast base. On short stems it is possible to cast base and wall at the same time. It is essential that pokers/vibrators are used to compact concrete.
4.15. Concrete Testing:
4.15.1. For first 3 pins take 4 cubes and test at 7 days
then at 14 days and inform engineer of results. Test last cube at 28 days. If cube test results are low then action into concrete specification and placement method must be considered.
4.15.2. If results are good from first three pins, then from the 4th pin onwards take 2 cubes of concrete from every third pin and store for testing. Test one at 28 days. If result is low, test second cube. Provide results to client and design team on request or if values are below those required.
4.15.3. A record of dates for the concrete pouring of each pin must be kept on site.
4.15.4. The location of where cubes were taken and their reference number must be recorded.
4.16. Horizontal temporary prop to base of wall to be inserted. Alternatively cast base against soil.
4.17. Place shuttering and pour concrete for retaining wall. It is essential that pokers/vibrators are used, hitting shutters is **not** considered adequate.
4.19. After 24 hours, the temporary wall shutters can be removed..
4.21. Site supervisor to inspect and sign off for proceeding to the next stage. A record will be kept of the sequence of construction, which will be in strict accordance with recognised industry procedures.

Extending Party Boundary Wall down and reinforced concrete underpinning

4.22. Excavate. concrete base. If soil over unstable prop top with PC lintel and sacrificial prop.
4.25. Local authority inspection to be carried for approval of excavation base.
4.26. Cast reinforced concrete base
4.27. After 24hours put DPM over top of mass concrete base. It is essential that pokers/vibrators are used to compact concrete.
4.28. Place reinforcement for retaining wall. Drive H16 U-Bars into soil along centre line of stem to act as shear ties to adjacent wall. Bottom bars of wall to be bent flush with shutter and fixed with mould release oil.
4.29. Site supervisor to inspect and sign off works for proceeding to next stage.

4.29.1. For pins 1, 3 and 4 inform the engineer 48 hours before the reinforcement is ready, to allow for inspection of the reinforcement prior to casting.
4.30. Place shuttering and pour concrete for retaining wall. Stop a minimum of 75mm from the underside of existing footing. It is essential that pokers/vibrators are used, hitting shutters is not considered adequate.
4.31. Concrete Testing:
4.31.1. For first 3 pins take 4 cubes and test at 7 days, 14 days and inform engineer of results. Test last cube at 28 days. If cube test results are low then action into concrete specification and placement method must be considered
4.31.2. If results are good from first three pins, then from the 4th pin onwards, take 2 cubes of concrete and store for testing from every third pin. Test one at 28 days, if result is low, test second cube. Provide results to client and design team on request or if values are below those required.
4.31.3. A record of pin poured dates must be kept on site.
4.31.4. The location of where cubes were taken and their reference number must be recorded.
4.32. racking temporary prop to base of wall to be inserted..
4.34. After 24 hours the temporary wall shutters are removed.
4.36. Site supervisor to inspect and sign off for proceeding to the next stage. A record will be kept of the sequence of construction, which will be in strict accordance with recognised industry procedures.

Note
The proposed basement is 5300mm away from the nearest building and with the depth of basement excavation 4350mm there will be no surcharge from surrounding buildings

Approval
7.1. Building Control Officer/Approved Inspector to inspect pin bases and reinforcement prior to casting concrete.
7.2. Contractor to keep list of dates of pins inspected and cast.
7.3. One month after the work is completed, the contractor is to contact Adjoining Party Wall Surveyor to attend site and complete final condition survey and to sign off works.