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Proposed Method Statement and Sequence of Works for:

24 Rosebery Gardens N8 8SH

This method statement is to be read in conjunction with all relevant specifications, drawings and geotechnical reports. Any variations deemed necessary due to site conditions are to be agreed with all relevant parties prior to carrying out the work. No works are to be carried out until all adjoining parties are in agreement and full legal permissions are granted.

The work consists of:

1. The Propping & General Protection of the existing Party Wall to the main building & inspection of the wall (including any making good) prior to commencing the main body of works.
2. The careful formation of Pad-stones for beam bearings in the Party Wall where necessary.
3. The formation of a new basement by forming reinforced concrete retaining walls & bases underpinning the Party Wall, Front Wall & internally of the rear wall.
4. Inspection of existing finishes & Making good the interfaces between existing and newly installed materials.

PRE-CONSTRUCTION INFORMATION/DESIGN REQUIREMENTS

Site Conditions/ Existing structure

The property is a two storey Victorian mid-terrace domestic house with cellar, probably constructed at the turn of the last Century. The external walls are 330mm solid brick up to Ground floor level and 225mm above. The internal walls are masonry at basement level and timber stud above which support timber floor joists and in turn support a pitched timber roof structure. There is a single storey extension to the rear constructed in 2019.

Site Investigations

Trial pits / soil investigations will be required by the Building Inspector in order to establish the depth of the foundations and the nature of the existing ground. We will, however, prepare calculations to show the effects of loading from the new structures which may prove to be within acceptable limits without further investigation.

Geology

By reference to the One Inch Geological Survey Map of the Area it was established that the property is constructed on a shrinkable clay. This material is known to be affected by cycles of wet and dry weather. The presence of trees growing near to a property can cause damage by the action of tree roots growing below shallow foundations. These can cause extraction of moisture at an enhanced rate during unusually dry weather conditions allowing desiccation of the subsoil to take place and movement of the superstructure. There have been a number of unusually dry periods including 1976, 1983, 1989-1996, 2003 and 2006. We are currently in a dry period akin to 1976, therefore any trees within the zone of influence of a building will require maintenance. In this instance, there are no trees within the zone of influence of the foundations

Design Risk Assessment

We consider that this project does not pose a significant health and safety hazard. The refurbishment of the building is relatively straightforward. Construction poses standard levels of risk appropriate for working in a site adjacent to raised ground level and structures.

An Engineer Designed system of temporary props along with carrying out excavations in sequenced sections will reduce risk to an appropriate level for a contractor with the necessary experience in groundworks/basement construction.

Maintenance of the structure does not require special consideration.

As part of our design we will consider/include the following:

- Reinforced concrete structures are to be designed in accordance with the relevant British or European Standard Codes of Practice.
- RC-Walls to external areas are to include weep-holes near their finished base level to reduce water pressure forces on the rear face.
- RC-Walls to internal areas are to be designed with a standard ground water level of $\frac{2}{3}$ the height of the wall with a temporary ground water level of $\frac{3}{4}$ the height of the wall for flood conditions. (These are in excess of conditions expected on site).
- RC-Walls are to be designed to resist a surcharge force of 5.0KN/m^2 applied to the raised ground level behind them when it is used as a garden (or similar) and a surcharge force of 10.0KN/m^2 applied to the raised ground level behind them when it is used as a road. For internal domestic rooms a surcharge force of 2.5KN/m^2 will be used.
- All vertical and Lateral Loads applied to the new structures & foundations are to be calculated in accordance with British Standard Codes of Practice BS-6399.
- All underpinning and construction of retaining walls is to be carried out in sequenced 1.0m wide sections to reduce risk of ground movement.
- Dry Packing is to be installed between new RC Walls & existing foundations to reduce and control rates of settlement.

Final detailed drainage design will be carried out by the Architect and/or a specialist drainage contractor. A Sump pump is to be included to remove water from the base of the structure if necessary.

As noted above the design incorporated within the project is based on simple engineering and construction principals. Normal construction risks are within the capability of a competent Contractor with experience in reinforced concrete construction.

All risks have been reduced as far as possible. We have referred to Construction Industry Council CDM Guidance for Designers Technical Guidance notes T20.002, 005 and 015 together with T10.002 during the design process.

General:

At all times the existing structures will be carefully monitored to ensure no damage due to unsupported work occurs.

During the works inspections will be made by the temporary works engineers* as deemed necessary.

The contractor is to mark up a drawing each day with the pour date of each pin to record progress and to demonstrate that pins are being created in the correct order. The concrete strength can be determined from the dates allowing the Temporary works Engineer to instruct the removal of any props once the concrete has reached adequate strength.

All work will be carried out in a logical sequence with due regard for health and safety issues.

Any unforeseen problems encountered will be notified to both the permanent and temporary works engineers to enable a solution to be agreed upon.

***: The term** Temporary Works Engineer shall refer to either the design engineer for the propping company's design department (if appropriate) or the propping sub-contractors site engineer.

General Monitoring (If requested)

- Monitoring is to be carried out in accordance with Laser Surveys proposals, which requires to installation of 20X20mm Surveying Retro targets to the front and rear elevations of 22 & 26 Rosebery Gardens, and internally to the Party Wall with 26
- Control will be transferred from a fixed control point in the road of Rosebery Road and rear garden.
- Targets are to be installed prior to the structural works commencing.
- Once targets have been installed, weekly surveys will be carried out over a 3 week period in order to set baseline readings. This will help reduce the potential for errors in readings during the works.
- Survey readings are to be taken by Laser Surveys on a weekly basis during the underpinning works, and on a two weekly basis for the excavation works. Reports to be issued 24 hours after survey.

- Monitoring will be linked to trigger values, which are to be set as follows:

MOVEMENT	CATEGORY	ACTION
0mm – 4mm	GREEN	No action required.
4mm – 7.5mm	AMBER	Crack monitoring; Carry out review of adjacent properties; Increase monitoring; Review work procedures; Seek further advice from Structural Engineer.
>7.5mm	RED	Crack monitoring; Cease works immediately; Secure excavation/works against future movement; Carry out review of adjacent properties; Increase monitoring; Review work procedures; seek further advice from Structure Engineer.

- The actions stated above are to be implemented where the trigger level is breached, or where a trend in the data indicates that a breach is imminent.
- The monitoring of movement and procedures to be followed are to be carried out as follows:
 - Carry out survey readings weekly or fortnightly (Subjects to type of works being carried out). Surveys should ideally be carried out at the same time of day, clearly stating the time and date of each reading, weather conditions, name of surveyor taking readings, and difficulties in taking specific readings and notes on the extent of excavation and construction works being carried out at the time of readings.
 - Report to be issued 24 hours after survey, and preferably at the same time each week/fortnightly. This ensures that the Project Team are aware the report is due, the contents are reviewed immediately and any course of action can be taken without delay. A Project Directory will be produced with all contact details, and all parties informed of holidays/sickness of personnel, to ensure that an alternative contact is issued the relevant information. Reports to be issued in electronic format and distributed to the following:

Project Manager
Project Engineer
Party Wall Surveyor

3. In circumstances where the data indicates a potential breach of the trigger value, the Project Engineer should contact London Basements Project Manager, firstly by phone and secondly via email, and give guidance on the course of action. The Project Manager will contact the Site Foreman, and request that a visual inspection be made of the site, and ensure that all temporary works are secure and works are being carried out in accordance with the agreed methods of working. A site visit should be carried out within 24 hours by the Project Engineer, and further guidance given.
4. In circumstances where the data indicates a breach of the trigger values, the Project Manager/Project Engineer must make immediate contact with the Site Fireman, and ensure that the works are ceased, a full inspection is made of the works, and any additional temporary propping/shoring installed to stabilise the work area. Further guidance should be given by the Project Engineer on site prior to the works re-commencing

Contractor Requirements

Contractor is to be responsible for:

Site Health & Safety requirements,

Provision of Site welfare facilities,

Erecting hoarding to secure site & site access points security,

Ensuring demolition works are carried out using hand tools (to limit damage by vibration),

Installing all necessary protective coverings to No.21 & 23 where required.

Ensuring competency of all sub-contractors allowed onto site.

Access:

All Underpinning works are to be carried out from No24 with no access to No.22 or 26 required during the works.

Should limited access along the boundary of No. 22 or 26 be required for the safe installation of any hoarding or other protective measures/ temporary props the following will be applicable;

- All fragile items attached to the Party Wall or Free standing delicate items vulnerable to vibrations are required to be removed to an extent of 1m from the party wall in accordance to Party Wall Award.
- Appropriate material coverings to be laid over any flat surfaces.
- Spreader timber will be placed over protective coverings to any flat surfaces to be walked prior to works commencing.
- Sheets of insulation (polystyrene) will be placed in between the spreader timber.
- Timber hoarding to be constructed if necessary.
- On completion all material will be removed.
- The area worked on will be clean and handed over as per the original condition, & in the unlikely event any damages caused these will be made good by the contractor.

It should also be noted that limited access to No. 26 may be required to carry out the inspection to details at the interface with the Party Wall (see item-3 below) and the completion of any making good works. The protection material should stay in place until all such tasks are completed.

Construction Sequence:

1. Propping & Preparation

- Construct temporary hoarding to front of building generally to form closed site.
- Remove all finishes to Party Wall with No.26 & Inspect existing structure, noting any damage to wall.
- Make good any minor damage to upper levels that could be adversely affected by works below.
- Install temporary props in accordance with Temporary propping Engineer's documentation.
- Inspect & alter temporary props & hoarding as necessary for site conditions prior to commencing works.
- Clear site of any unnecessary materials prior to commencing works.
- Full temporary works details to Contractors details

2. Formation of Pad-stones Steel spreader plates

- Working from inside the property of 24 Rosebery Gardens set out the levels of proposed steel beam bearings & mark out the pad-stone areas on the brickwork.
- Working from the top downwards remove one line of bricks into the wall row by row manually using chisel and hammer until area is exposed.
- Clean away loose debris, reinstate any half bricks to edges & re-point mortar as necessary around edges.
- If using concrete padstones, fix timber shutter to front of void with screws and cast Grade 25 Concrete, compacting at regular intervals.
- Allow 72 Hours to cure, remove shuttering and make good, as necessary prior to installing steelwork.

3. **Steel Fixings**

- Working from inside the property of 24 Rosebery Gardens, set out the levels of proposed steel beam ends & mark out the pocket areas on the brickwork.
- Working from the top downwards remove one line of bricks into the wall row by row manually using chisel and hammer until area is exposed.
- Clean away loose debris, reinstate any half bricks to edges & re-point mortar as necessary around edges.
- Set Steelwork into position & Install compressible packing material in accordance with Structural Details.
- Form timber shuttering across face of wall & cast concrete grade 23 concrete, compacting at regular intervals.
- Allow 72 Hours to cure, remove shuttering and make good, as necessary.
- For Bolt/tie fixings, carefully drill the required diameter hole into the wall (max depth 110mm). Clean hole of loose debris, install resin capsule and bolt in accordance with manufacturer's specifications.

General Note

All cutting into the Party Wall to Form pockets for pad-stones and the like, to be no deeper than one half brick (approximately 112mm). No voids or drilling is to be allowed beyond the centre line of the wall.

4. **Basement Underpinning**

Overview

- Trial pit to be excavated to confirm existence of any existing structure.
- Working in strips not exceeding 1m long excavate to required depth adjacent to existing structure. Side of Excavation to be propped with timber shutters with horizontal braces positioned at regular intervals to prevent lateral movement of earth.
- Lay base reinforcement on adequate spacers with exposed ends of bars for lapping capped for safety, cast new concrete with 100mm kicker and allow 24 hours to cure. (Never excavate two adjacent strips without allowing 3 days between operations).
- Ensure water bar is installed correctly between base and wall.

- Construct wall reinforcement & allow for bonding into next section of wall.
- Ensure ground behind new foundation & wall is fully backfilled and compacted check at regular intervals to ensure this during construction (if necessary install Hy-Rib Reinforcement Permanent formwork against soil, in line with rear face of Party Wall).
- Form timber front shutter to front face of underpin including diagonal brace (see structural details). Cast concrete to required height (within 75mm of soffit of existing footing) and allow 24 hours to cure.
- Ram 3:1 Sand/cement Dry Pack mortar into place between top of RC-wall & underside of existing footing.
- Repeat Process to Structural Engineers sequencing (see engineering plans for details).
- When adjacent sections are opened up the exposed concrete surfaces should be thoroughly cleaned of all loose material & scabbled to form a good key. Also horizontal lap bars to be exposed, cleaned with wire brushes & adjusted as necessary. (Contractor to take all necessary safety precautions when working around exposed bars).
- Once all underpinning bases are complete remaining soil to centre of basement to be excavated.
- Contractor to install all under slab services in accordance with Architects specification.
- Floor slab preparations including Hardcore, Sand Blinding & polythene layer to be installed in accordance with Architects Details.
- Ground Slab Reinforcement to be installed and tied into exposed lap bars to concrete underpinning retaining wall bases. (Reinforcement to pocket around still in-situ diagonal props).
- Cast Slab & allow 3 days to cure.
- Remove diagonal props and infill pockets in Grade C35(SR) concrete to match rest of slab.

5. **Post Work Inspections**

- Surveyors for both sides to inspect wall from No.22/26 & 24's side with Contractor & Engineer.
- Any items of damage not previously identified in the schedule of conditions to be noted and form of repair agreed.
- Contractor to carry out repair works as necessary.
- Surveyors to re-inspect & sign off works.