the basement design studio

36 Glenilla Road, London NW3 4AN

Method Statement – New Basement Construction

Date Issued : 5th August 2010

Revision :

Issued By : Terry Foulsham

Checked :

Introduction

- The basement shell at 36 Glenilla Road, London, will be constructed in 7No. key stages, which are detailed herein.
- This method statement should be read in conjunction with the BDS architectural planning Dwg. No.'s 10-039-20 (Sheets 1-2) and 1013-22 (Sheets 1-4).
- Please also refer to the attached underpinning section drawing Sheet 4 (Reinforced Concrete Underpinning). This sketch details the underpinning construction method we are likely to adopt, based on the known ground conditions at the property consisting made ground over dry, stiff clay to depth (Refer to section B below).
- Please also refer to the attached hoarding and conveyor layout sketch (Sheet 5), which details a typical compound layout over the footpath and the highway.
- The key stages are as follows:-

Stage A	- Establish access, hoarding and conveyor
Stage B	- Investigatory works
Stage C	- Reinforced concrete underpinning to main building
Stage D	- Steel frame installation
Stage E	- Drainage and basement slab construction
Stage F	- Formation of openings on upper floors
Stage G	- Internal waterproofing membrane and screed

Temporary Support to Excavated Faces

- Generally in all stages of the works excavations in clays, sands, gravels or other non-cohesive soils may on occasion require temporary shoring. At the discretion of main contractor this may be implemented, depending on observed ground conditions and the surrounding structural environment. Please refer to the attached diagrams, which indicate the temporary works we may adopt during the underpinning works on this project.

A. Establish access, hoarding and conveyor

- The exact location of the hoarding and conveyor is to be finalised, depending on client access requirements, and also any restrictions imposed by the local governing authority. Once these conditions are known the method statement will be amended accordingly.
- Carefully protect and/or remove any internal or external fixtures and fittings affected by the works.
- Erect plywood hoarding with vertical standards, anchored to the ground. The hoarding will be fully secure with a lockable door for access.
- Provide protection to public where conveyor extends over footpath. Depending on local council requirements, construct a plywood bulkhead onto the pavement. Hoarding to have a plywood roof covering, night-lights and safety notices.
- Install conveyor at basement level. Ensure that the conveyor is adequately supported and secured to the hoarding using a temporary scaffold structure.
- Install temporary electrical and water supplies from property permanent connections.

B. Investigatory works

- Prior to any construction the main contractor will undertake the necessary trial pit investigation work to determine the foundation type, width and depth. Information will be reported to the structural engineer and incorporated into the detailed design.
- Based on our knowledge of working in the area and site investigations carried out locally, the subsoil is assumed to consist dry, stiff to very stiff London Clay to depth.
- A desk study will also be undertaken to research any previous works to the property, or indeed neighbouring properties, which may have an impact of the design and construction of the basement works.
- Prior to installation of new structural beams in the superstructure, the main 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 while ensuring that the full integrity of the structure above is maintained.

C. Reinforced concrete underpinning to main building

- Stage C consists the construction of the reinforced concrete underpinning under the property. The exact sequence of construction of the underpinning will be determined by the main contractor in conjunction with the District Surveyor, depending on the structural environment and access constraints.
- The access trench is first excavated, directly underneath the wall to be underpinned. The length of any base is individually assessed on site with due regard to the type and condition of the foundation, and structural geometry above. The maximum length of any underpinning base will be 1200mm.
- Break off projecting brick or concrete footing back to internal face of brick wall. Excavate using hand and compressed air tools removing spoil until the design depth is reached, and removed to muck away conveyor.
- Soils, where unstable in the temporary condition, will be shored. For clays or dense sands exhibiting effective cohesion, shoring may not be implemented. Shoring system design will be undertaken by the main contractor if required as per the attached Sheet 4.
- Once the excavation is completed to the design depth and width. The stratum at the proposed founding depth is confirmed as being appropriate by our engineers.
- The design steel reinforcement will be fixed in the toe section of the underpinning base. This will be checked by the engineer and building control inspector prior to concreting.
- Following construction of the toe section, the design steel reinforcement will then be fixed in the stem (or wall) section. This will be checked by the engineer and building control inspector prior to concreting.
- A single sided shutter is then erected, and concrete poured to form the underpinning base up to a maximum of 75mm below the underside of the existing foundation.
- After 24 hours the temporary wall shutters are removed. The void between the top of the underpin base and underside of the existing foundation will then be drypacked with a mixture of sharp sand and cement (Ratio 3:1).
- A further 24 hours is allowed before adjacent sections can be excavated.
- Construction joints, if required, are formed using a suitable shear key or joggle joint. In exceptional circumstances, dowel bars are incorporated. Typically these are post drilled and resin fixed with specification as per structural design.
- A record will be kept of the sequence of construction, which will be in strict accordance with recognised industry procedures. The as-built records will be updated as necessary and issued to involved parties during the works.

D. Steel frame installation

- The new basement steel frame will consist a system of steel beams and columns that will bear at the new basement level.
- The new steel beams and/or columns will be installed in a sequence to be determined by the main contractor in conjunction with the District Surveyor.
- Where steel beams need to be installed directly under load bearing walls at basement level, temporary works will be required to enable this work. The detailed propping arrangement and temporary works design will be undertaken once the full extent of the structural design is known.
- Generally, if temporary support to load bearing walls is required this will consist the installation of steel needle beams at high level, supported on vertical props, to enable the safe removal of the original brickwork below. These will remain in place until the required openings are formed, and full structural bearing is provided via beams and columns down to the new basement floor level.
- Decking and support platforms to enable handling of steel beams and columns will be provided as required.
- Once full structural bearing is provided via beams and columns down to the new basement floor level, the temporary works will be redundant and can be safely removed.
- Any voids between the top of the permanent steel beams and the underside of the existing walls will be packed out as necessary. Voids will be drypacked with a 1:3 (cement: sharp sand) drypack layer, between the top of the steel and underside of brickwork above.
- Any voids in the brickwork left after removal of needle beams at ground floor level can at this point be repaired by bricking up and/or drypacking, to ensure continuity of the structural fabric.

E. Drainage and basement slab construction

- Once the underpinning and steel installation is complete, the drainage and basement slab can be constructed.
- Once excavation to formation level has been completed in the area of the new drainage and sump unit, the pump sump units and associated underground drainage will be installed in conjunction with the mechanical and electrical details and architectural layouts.
- The design steel reinforcement will be fixed in the slab. This will be checked by the engineer and building control inspector prior to concreting.

F. Internal waterproofing membrane and screed

- Generally the waterproofing membrane will be in accordance with the attached sketch JD-01.
- Once the basement slab is complete, the DELTA internal waterproofing cavity membrane will be installed as per the architectural layouts and manufacturers technical specification.
- The floor finishes which may include insulation and under floor heating, can be laid as per the final architectural details. A cement and sand screed will then be applied on the slab surface.
- This completes the structural work by the main contractor, in preparation for the fit out works.

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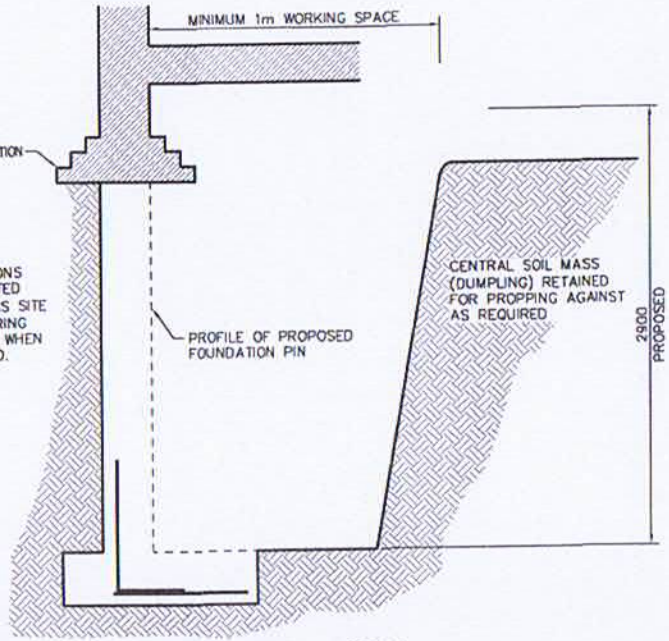
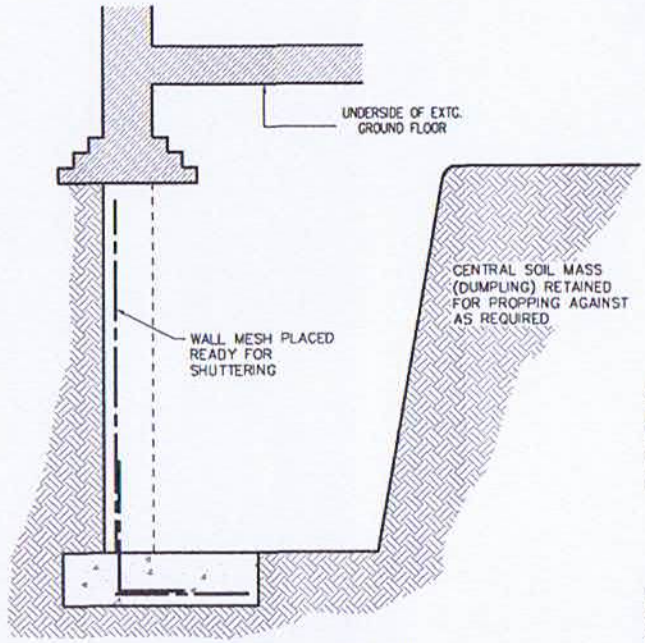
SCALE : 1.50



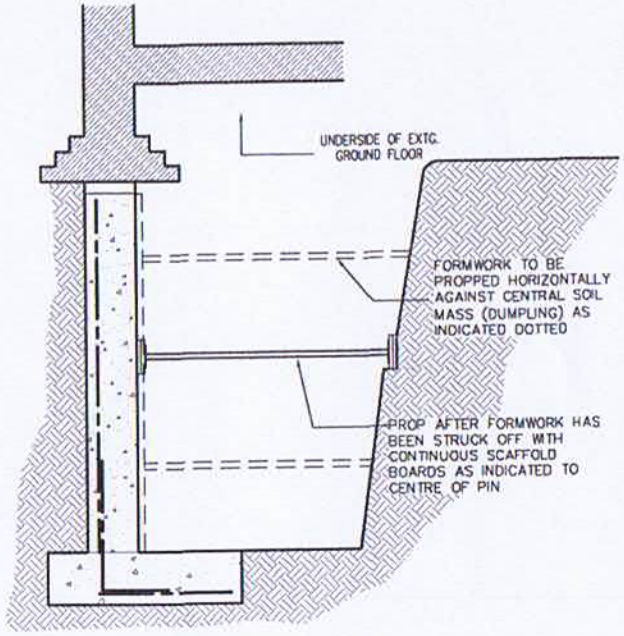
CLAY SOILS – STAGE 1



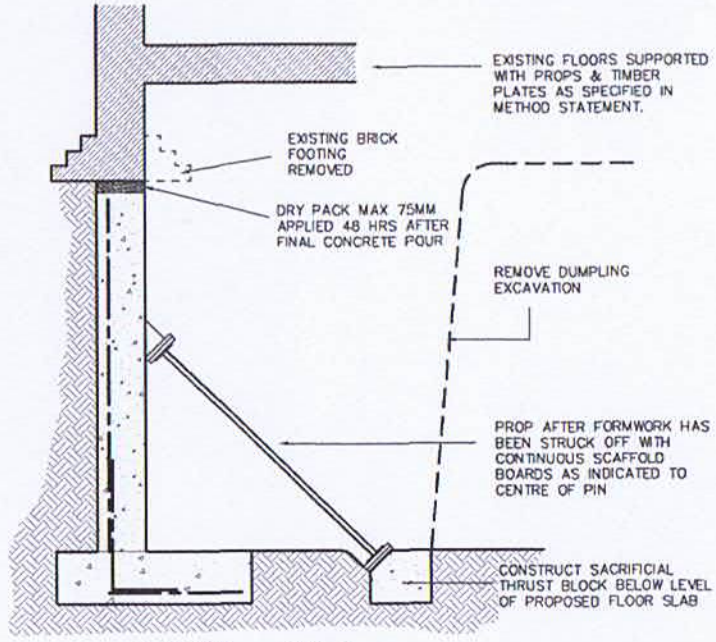
CLAY SOILS – STAGE 2

NOTE RE EXIST. FOUNDATIONS:
THE STAGING OF THE REMOVAL OF EXISTING FOUNDATIONS/CORBELS MAY VARY FROM THE DRAWING (FOLLOWNG SITE INVESTIGATION) REFER TO METHOD STATEMENT.

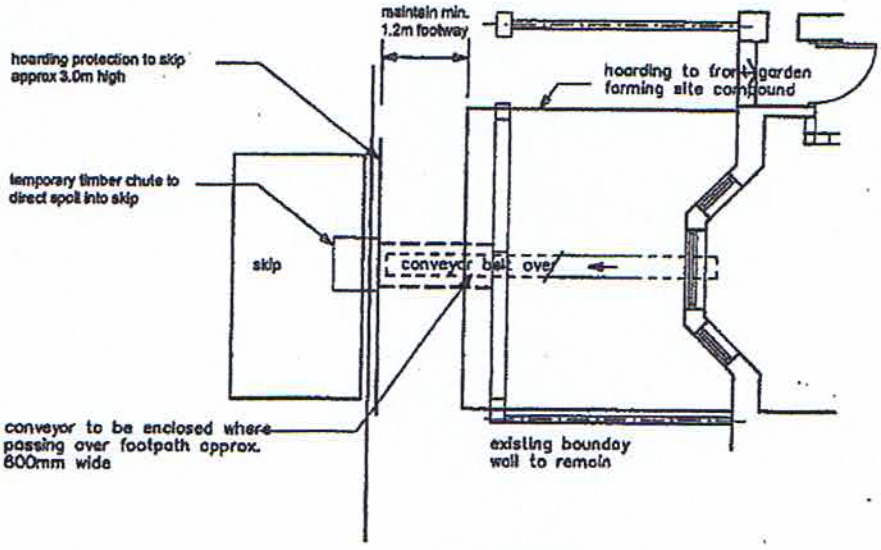
NOTE:
WHERE THE UNDERSIDE OF THE EXISTING FOOTINGS IS FOUND TO BE UNSTABLE IE. IN THE CASE OF LOOSE BRICKWORK AS OPPOSED TO CONCRETE FOUNDATIONS, THEN THE UNDERSIDE IS TO BE SUPPORTED AS NECESSARY WITH A SACRIFICIAL PROP IF REQUIRED.



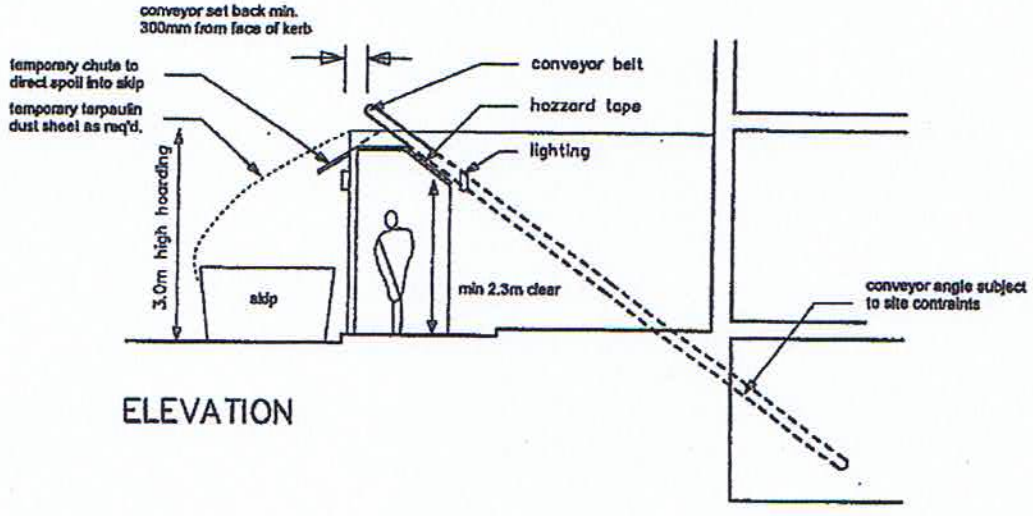
CLAY SOILS – STAGE 3



CLAY SOILS – STAGE 4



PLAN AT PAVEMENT LEVEL



ELEVATION

TYPICAL HOARDING & OVERHEAD CONVEYOR INSTALLATION

The London Basement Company

Innovation House
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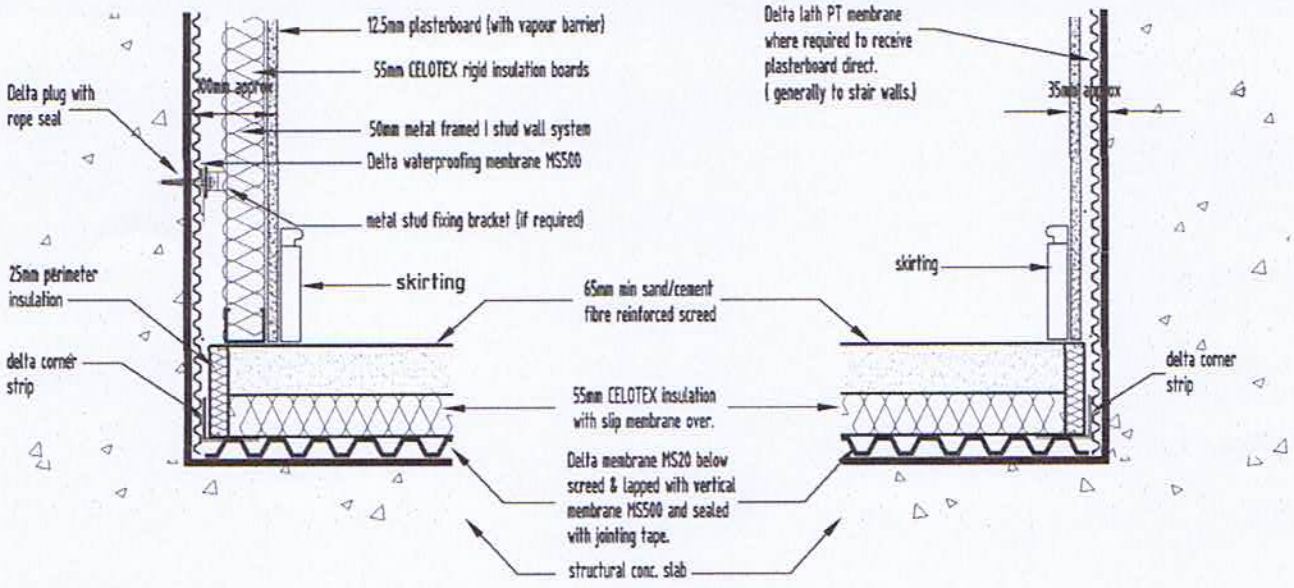
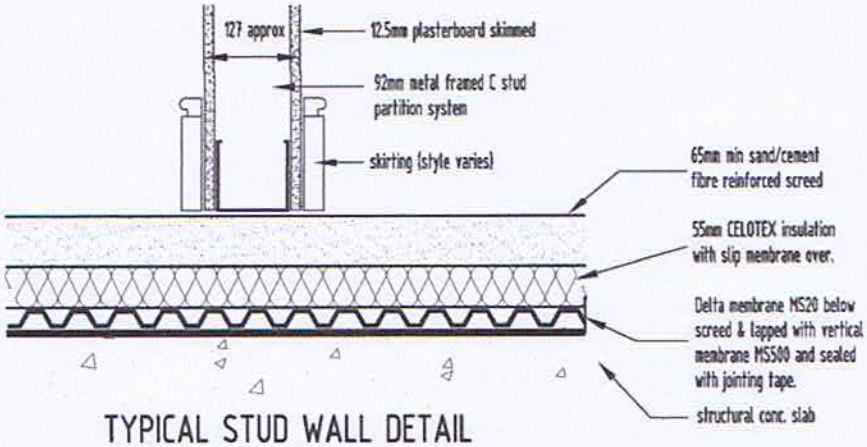
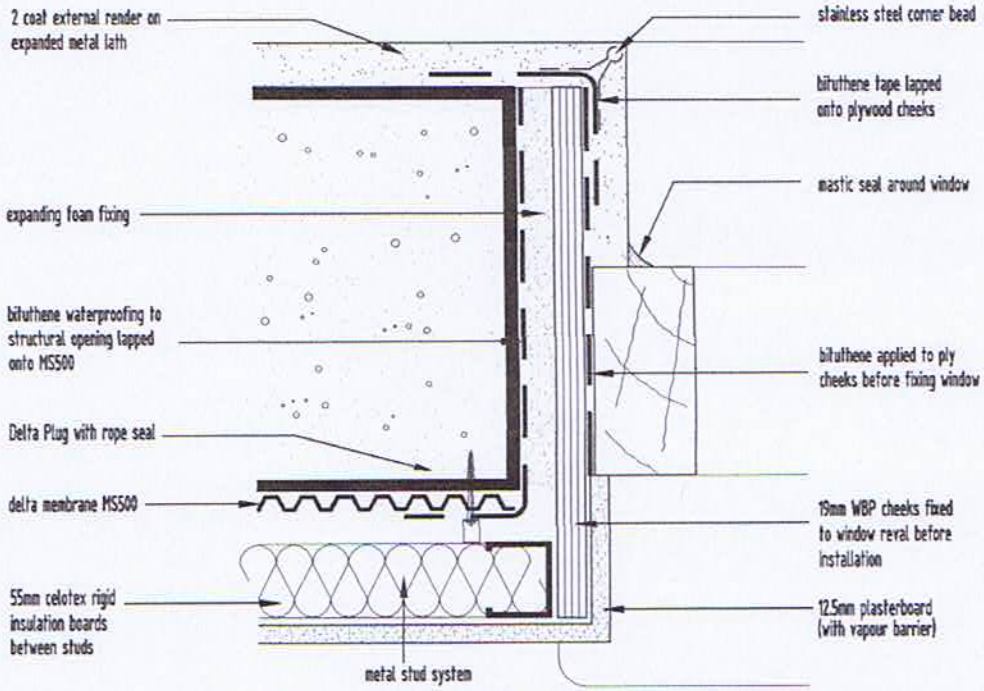
scale 1:100



TYPICAL DETAIL FLOOR/ WALL JUNCTIONS



TYPICAL STUD WALL DETAIL



TYPICAL WINDOW JAMB DETAIL

REV. B	details updated	Sept 09
REV. A	wall insulation revised	Sept 09

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Project: Typical Waterproofing junction details

Client:

Scale: 1:10

Date: Sept. 09

Drawing Title: TYPICAL WALL/ FLOOR JUNCTION DETAILS

Drawing No.: JD - 01 B