

Construction Method Statement For

27a Lambolle Road, London, NW3 4HS

PROJECT NO: 813

Produced on 14th April 2016

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Construction Method Statement

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Introduction

This method statement should be read in conjunction with the Structural Engineer's and Architect's drawings and the attached illustrations.

Please also refer to the attached illustration showing underpinning stages. This sketch details the construction method we are likely to adopt, based on the assumed ground conditions consisting London Clay to a depth of excavation.

The key stages are as follows:

- 1) Establish access, hoarding and conveyor
- 2) Temporary support to excavated faces
- 3) Temporary support to floors and walls
- 4) Reinforced concrete underpinning
- 5) Installation of new steel beams
- 6) Excavation, drainage and basement slab
- 7) Internal waterproofing membrane and screed
- 8) Potential impact on the adjoining properties
- 9) Neighbourhood liaison

1. Establish access, hoarding and conveyor

The hoarding will be positioned at the front side of the property, which will be subject to any restrictions imposed by the local governing authority. The layout will be similar to the attached hoarding layout drawing and picture, which details a typical setup over the highway and footpath.

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.

Depending on the requirements of the local governing authority, construct a plywood bulkhead onto the pavement. The hoarding to have plywood roof covering, night-lights and safety notices.

Install temporary electrical and water supplies from Clients permanent connections.

Creating the space beneath your feet

2. Temporary support to excavated faces

Of prime concern during the basement works will be the control of ground movement and ground water to ensure that the effect on adjacent buildings and infrastructure is minimal and within acceptable limits.

Ground conditions will be continuously assessed by a competent person to determine the means and method of supporting any face of any excavation. Our highly trained, experienced and competent Foreman shall ensure that every part of every excavation is inspected at the start of each shift.

Ground water was not encountered during the geotechnical investigation. However in the unlike event that water becomes present a filtered sump and pump system will be installed to ensure that no undue movement within the ground takes place.

Our temporary works proposal for the support of clay soils is typically as follows:

Note: Existing foundation corbel (if applicable) are to be removed prior to any excavation is carried out below the existing foundations, alternatively they may be removed after the underpinning has been carried out. The corbels must not be removed during the excavation period.

Hand excavate a preliminary pit approximately 1.00m wide x 1.00 m long to underside of existing foundation approximately 1.00 m deep. Install 2 No horizontal trench props at top and bottom of the excavation spanning across onto the central soil mass (dumping excavation); use scaffold boards as spreaders at both ends of the props.

Hand excavation the pit to formation level of new re concrete toe, provide at all times adequate lateral support and propping as excavations progresses to maintain acceptable levels of safety. See attached illustration. Rear of excavation is not to remain unsupported for longer than 48 hours and must be propped when the site is unattended.

3. Temporary support to floors and walls

Supporting existing timber floors above basement excavation:

Should the timber floor will remain in situ, it will be supported by a series of steel beams that will support the floors, to provide the open areas in the basement.

Position 100x100mm temporary timber beam lightly packed to underside of joists either side of existing sleeper wall and support with vertical Acrow props @ 750 centres.

Remove sleeper walls and insert steel beam as a replacement. Beams to bear at masonry walls onto concrete padstones (refer to Structural Engineer's details for padstone & beam sizes). Dismantle props and remove timber plates.

Supporting existing walls above basement excavation:

Where steel beams need to be installed directly under load bearing walls, temporary works will be required to enable this work. Support consist the installation of steel needle beams at high level, supported on vertical props, to enable safe removal of brickwork below, and installation of the new beams.

Once the props are fully tightened, the brickwork will be broken out carefully by hand. All necessary platforms and crash decks will be provided during this operation.

Decking and support platforms to enable handling of steel beams will be provided as required. Once full structural bearing is provided via beams 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 dry-packed with a 1:3 (cement: sharp sand) dry-pack layer, between the top of the steel and underside of brickwork above.

Any voids in the brickwork left after removal of needle beams can at this point be repaired by bricking up and/or dry-packing, to ensure continuity of the structural fabric.

4. Reinforced concrete underpinning

This stage consists of the construction of the reinforce concrete underpinning.

The following is to be read in conjunction with the Structural Engineers drawings in respect of reinforcement, dimensions and all associated notes covered on their drawing.

Note: Unsafe foundation corbel and loose masonry a removed prior to any excavation is carried out below existing foundations to allow for a safe working environment.

Otherwise the existing foundation corbel or masonry may be removed after the underpinning has been carried out. The corbels must not be removed during the excavation period.

The walls to the perimeter of the basement will be underpinned in reinforced concrete. The underpins will take the vertical loads from the walls and horizontal loads from the earth.

*The sequence of construction of the underpinning will be in accordance with the sequence on the engineer's drawings. The sequence of the underpinning will be such that any given underpin will be completed, dry-packed, and a minimum period of 48 hours lapsed before an adjacent excavation commenced to form another underpin.

The access pit is first excavated, directly underneath the wall to be underpinned. The width 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 width of any underpinning base will be 1000 mm.

Hand excavate the pit to formation level of new reinforced concrete toe, provide at all times adequate lateral support and propping as excavations progress to maintain acceptable levels of safety.

Insert to each side of the 1000mm wide excavated pit 200x40mm softwood C16 walling planks (see engineering drawing).

The propping to the walling planks will be left in place, until 24 hours after the completion of the underpins. This method ensures that at all times the excavation is controlled, and indeed the integrity of the surrounding soil and structure above is maintained, to enable permanent works construction.

In the event that the existing foundations to the wall are found to be unstable, sacrificial jack props will be installed underneath the foundation to prop the bottom few courses of bricks. These jack props will be left in place and will be incorporated into the concrete stem.

Once the excavation is completed to the design depth and length, the stratum at the proposed founding depth is confirmed as being appropriate by our Forman or the Building Control Inspector.

The design steel reinforcement will be fixed in the toe section of the underpinning base. This will be checked by the Building Control Inspector prior to concreting.

Following construction of the toe, the design steel reinforcement will then be fixed in the stem (or wall) section. This will be checked by the Building Control Inspector prior to concreting. A single sided shutter is then erected, and concrete poured to form the underpinning base up to within 50mm to 75mm of the underside of the existing wall foundations.

Concrete will be chuted into a 'bath' within the excavated basement and placed by wheelbarrow and/or bucket, or mixed on site. The exact arrangement will be finalised when works commence on site.

Excavation for an underpin section will be dug in a day, and the concrete to the base poured by the end of the same day. The concrete to the stem of the underpin will be poured the following day.

On the following day, the gap between the concrete and the underside of the existing foundation will be dry- packed with a mixture of sharp sand and cement (ratio 3:1).

Once the dry-pack has gained sufficient strength, any protrusions of the footings into the site will be carefully trimmed back using hand or mechanical tools. The protrusions will be trimmed back to be flush in-line with the face of the wall above.

A minimum of 48 hours will be allowed before adjacent sections will be excavated to form a new underpin.

5. Installation of new steel beams

The steel beams will be delivered and unloaded by the delivery lorry into the hoarding within the garden area. Materials will be checked off against delivery notes, and any discrepancies advised to the Project Manager.

*Steel beams will be erected progressively as the underpinning and excavation progresses.

Lightweight steels will be moved and erected by hand and installed by fitters working from scaffolds.

6. Excavation, drainage and basement slab construction

Once the underpinning is complete to all walls, the bulk excavation can be completed.

Depending on the structural design it may be a requirement to implement propping to resist sliding forces (as per structural engineering requirements) at the base of the underpins, prior to construction of the new basement slab, and to allow for excavation to formation level. Generally, the underpinning works are completed around the perimeter walls, with the central soil mass (dumpling) left intact as detailed on the attached sheet.

This enables the earth mass to act as a firm support for the underpinning stem single sided shutters, and also to provide a prop force at the base of the pins.

The pump sump units and associated underground drainage will then be installed in conjunction with the mechanical and electrical details and architectural layouts.

Once excavation to formation level has been completed, and the slab cast any temporary shoring can be safely removed.

The design steel reinforcement will then be fixed in the slab. This will be checked by the Structural Engineer and Building Control Inspector prior to concreting.

7. Internal waterproofing membrane and screed

Generally the waterproofing membrane will be in accordance with the manufacturer's recommendation.

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 be applied on the slab surface.

This completes the structural work by Basements Masters, in preparation for the fit out works.

8. Potential impact on the adjoining properties

The proposed basement under the existing property will be formed using an underpinning method, constructed in sections each no wider than 1000mm, with no adjacent underpins constructed within a 48 hour period. This method of construction reduces the amount of potential ground movement and so minimises the effects of settlement of the adjacent structures.

Is not expected to exceed Burland category 1, provided an experienced contractor is appointed who undertakes the works using good practice in accordance with the structural design and follows all agreed method statements, installing all necessary temporary vertical and lateral supports required. In practice some settlement is possible but this should be no worse than 'aesthetic', according to the Category 1 on the Burland Scale. If these conditions are met, any settlement that occurs will be minimal and will be accommodated in the elasticity of the superstructure. This has been borne out by past projects on similar properties.

The design and construction methodology, as described above, deals with the potential risks and ensures the excavation and construction of the proposed basement will not affect the structural integrity of the adjoining properties.

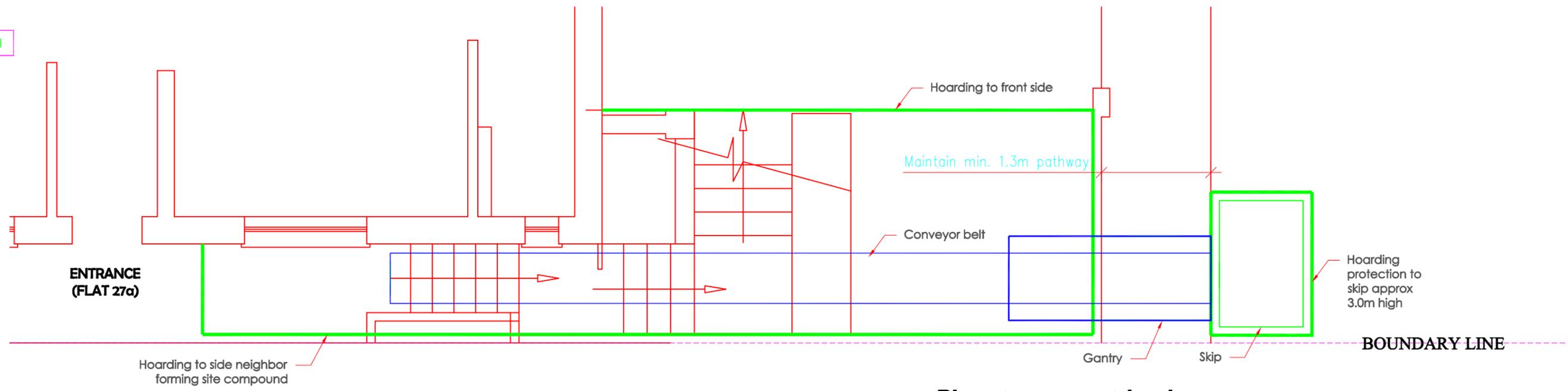
9. Neighbourhood liaison

The contractor will understand the sensitive nature of the site and recognise the importance of the neighbourhood liaison role in ensuring the smooth running of site activities and their relation to the local residents and general public's welfare.

During the excavation and construction works he will ensure that all works are carried out safely and in such a manner that it will not inconvenience pedestrians or other road users and with a positive consideration to the needs of the local residents, site personnel and visitors as well as the general public.

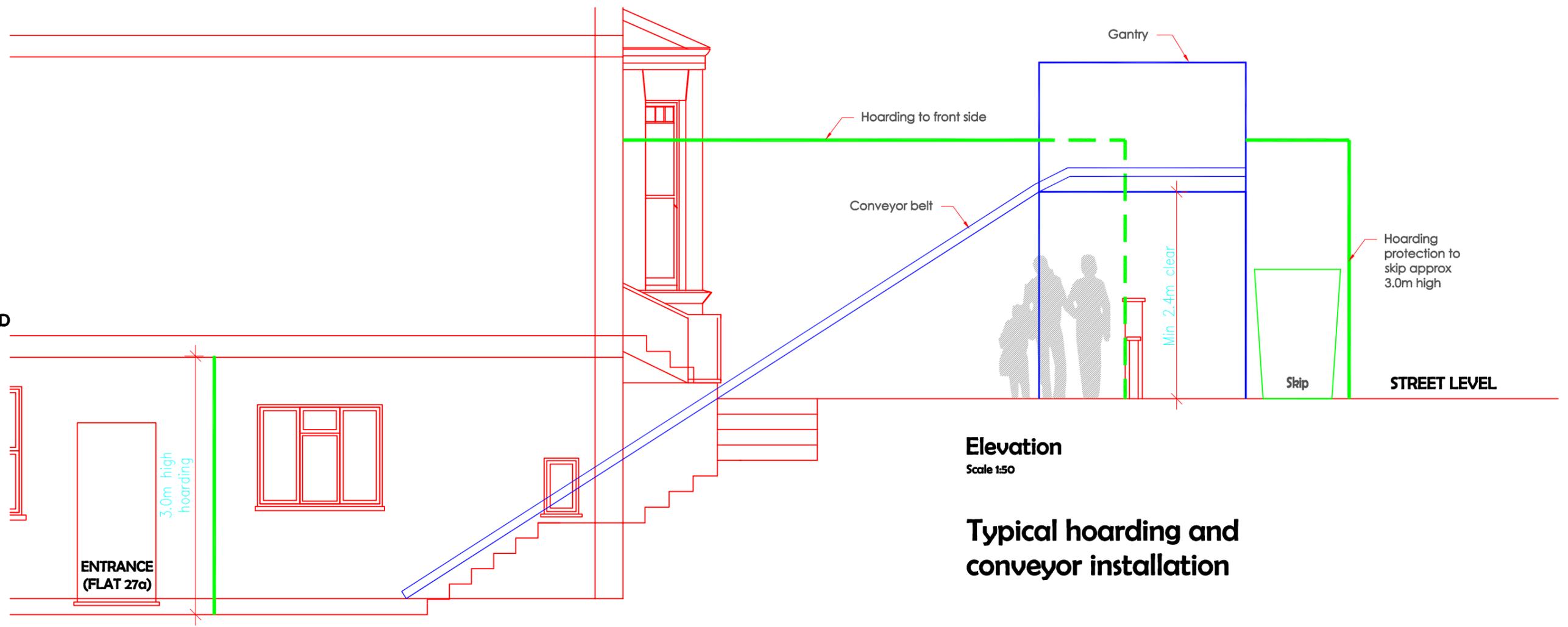
Footways and carriageways will be kept tidy and in a safe condition. Hoardings, safety barriers, lights and other features will be maintained in a safe and tidy condition. The site is to be kept clean and in good order at all times, with surplus materials and rubbish controlled within the site and not allowed to spill over into the surroundings.

Disturbance from site operations due to the effects of noise and dust emissions will be minimised by the use of plant and equipment fitted with suitable noise suppression facilities in accordance with the manufacturer's recommendations.



Plan at pavement level

Scale 1:50



Elevation

Scale 1:50

Typical hoarding and conveyor installation

Rev	Date	Drawn By	Appr. By	Description
A	13/04/16	AI	AI	First issue

Notes:

- For setting out refer to Architect's drawings.
- This drawing to be read in conjunction with all other Architectural and Engineering drawings and all other relevant drawings and Specifications.
- DO NOT SCALE FROM THIS DRAWING: Use figured dimensions only.
- Construction (Design and Management) Regulations 2007 (CDM 2007) - Client's roles and responsibilities**
To comply with CDM 2007, the Client (unless a domestic client) will need to:
 - Check competence and resources of all appointees
 - Ensure there are suitable management arrangements for the project welfare facilities
 - Allow sufficient time and resources for all stages
 - Provide pre-construction information to designers and contractors
- Where projects are notifiable under CDM 2007, clients must also:
 - Appoint a CDM co-ordinator
 - Appoint a principal contractor
 - Make sure that construction work does not start unless a construction phase plan is in place and there are adequate welfare facilities on site
 - Provide information relating to the health and safety file to the CDM co-ordinator
 - Retain and provide access to the health and safety file

Basement Masters

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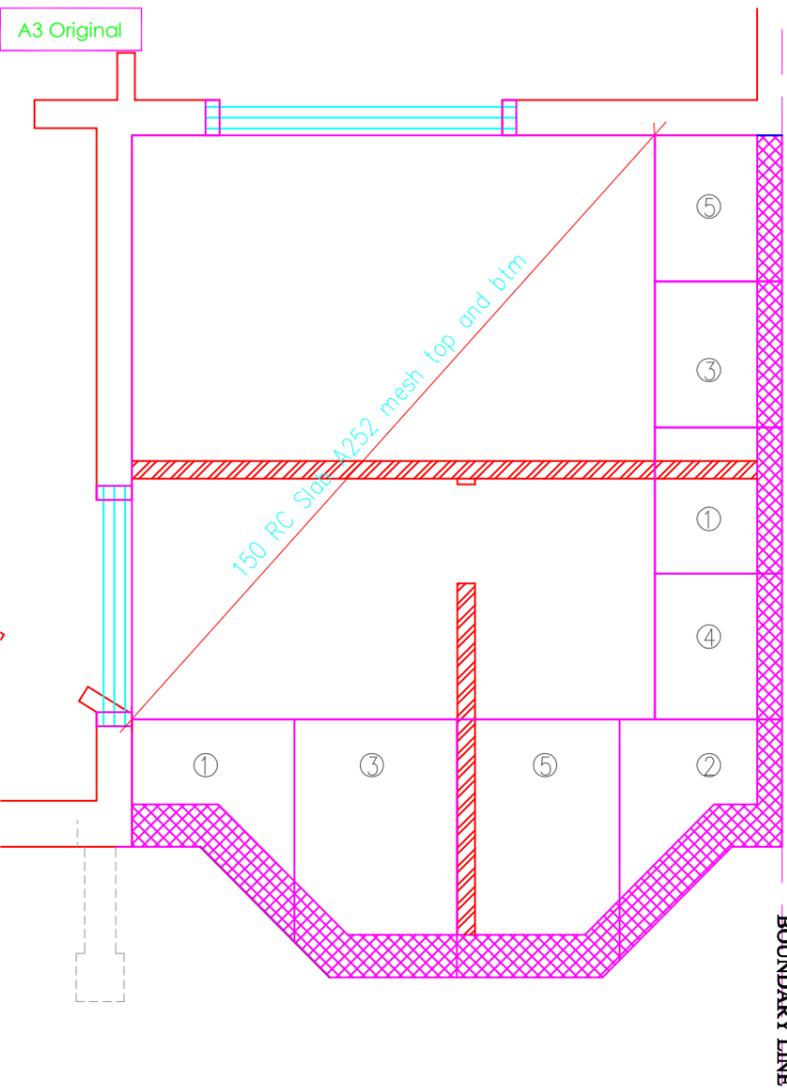
Tel: (020) 8443 7099 5576 Fax: (020) 8366

Project 27a Lambolle Road London	Drawn By AI	Date Draw 13/04/16
Drawing Title Hoarding & conveyor installation	Project Number 813	Scale(s) @ A3 SCALE
Drawing Status CONSTRUCTION	Drawing Number 813/102	Revision A



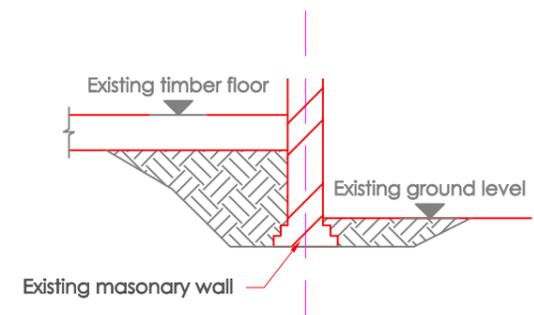
BASEMENT MASTERS Tel 020 8442 7099
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A3 Original

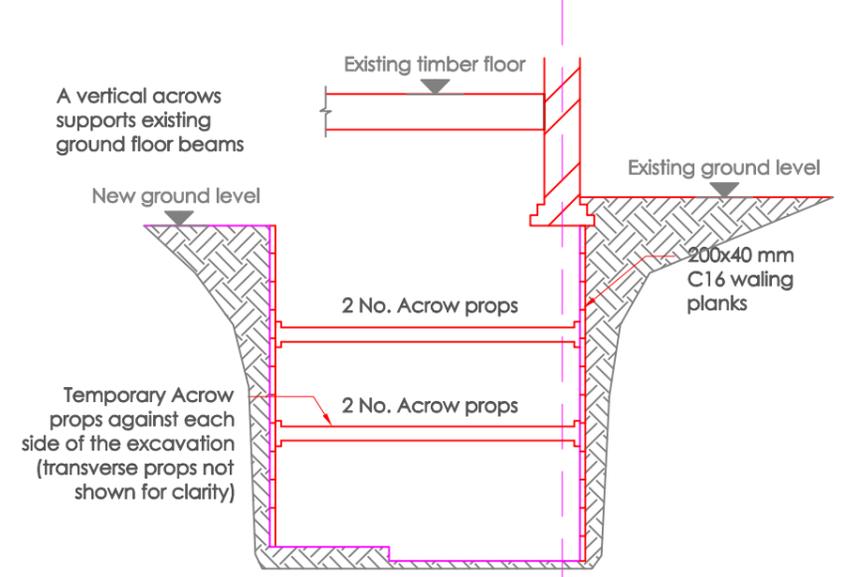


Basement construction sequence
Scale 1:50

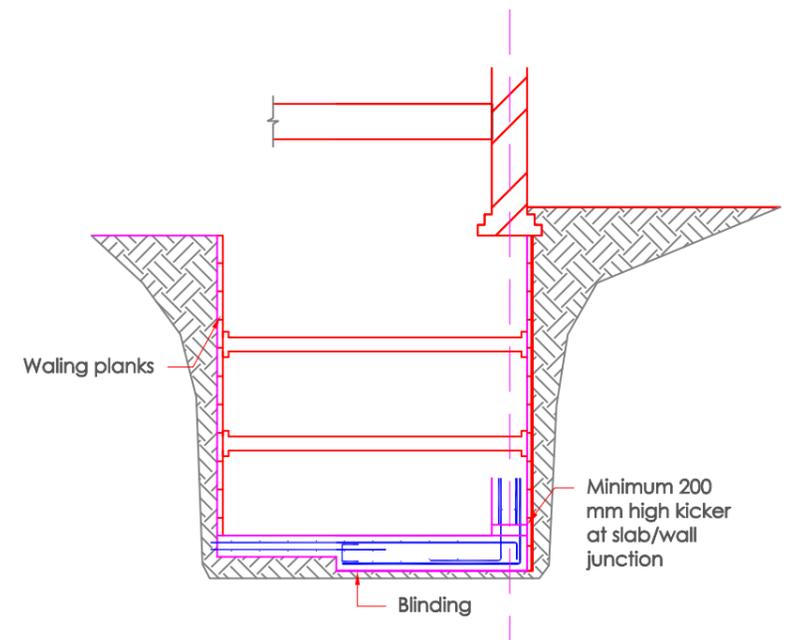
1. Excavate base and walls for units marked 1.
2. Blind base, fix reinforcement and place concrete.
3. After 24 hours fix wall reinforcement, position formwork and place concrete.
4. After 72 hours tightly pack dry mix mortar between concret and underside of wall's footing.
5. Repeat steps 1 to 4 for units marked 2.
6. Repeat steps 1 to 4 for units marked 3.
7. Repeat steps 1 to 4 for units marked 4.
8. Repeat steps 1 to 4 for units marked 5.



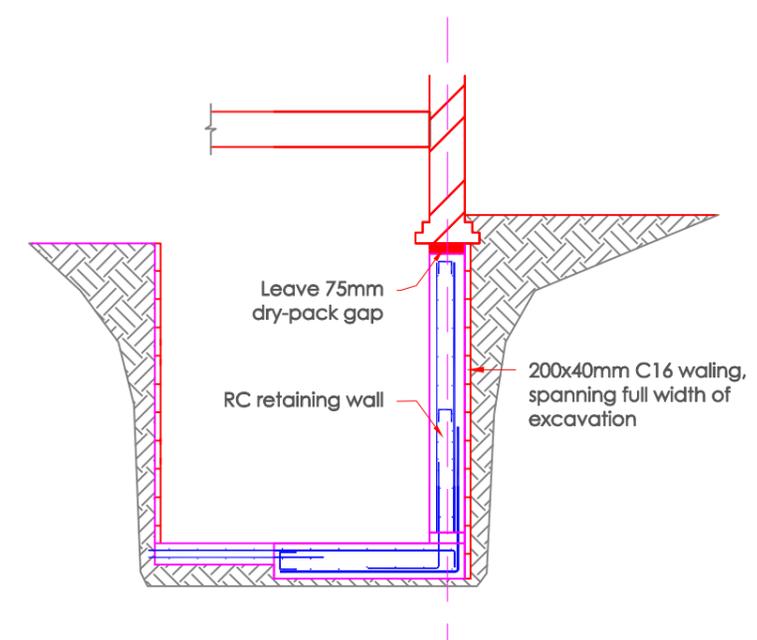
STAGE A
Remove existing slab and reduce site level to achieve suitable working area.



STAGE B
Excavate maximum 1m wide pit, installing temporary shoring to all sides of the excavation progressively as the depth increases



STAGE C
Blind the base of the excavation, tie reinforcement and pour the base of the retaining wall



STAGE D
Install wall reinforcement, wall shuttering (not shown) and cast RC wall. Props to remain as required to stabilise the excavation

General Notes

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