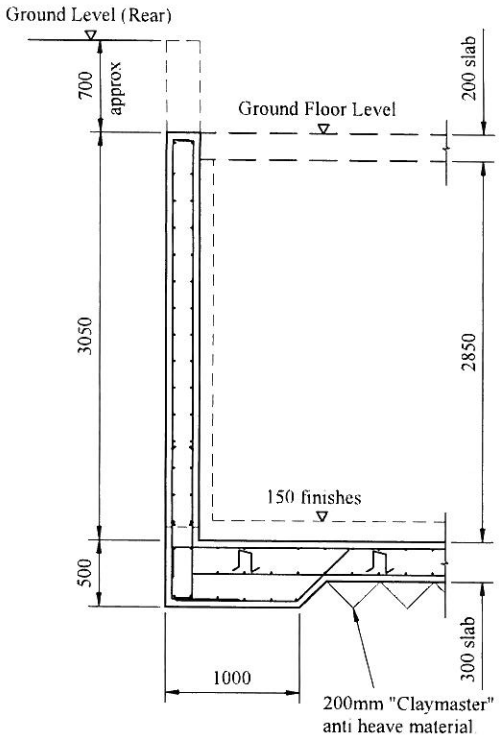
# APPENDIX 6

Proposed Structural & Temporary Works Drawings with Supporting Calculations




# TYPICAL SECTION

## General Notes.

All concrete to have a minimum cube crushing strength of:
Mass Concrete = 25 N/mm2, at 28 days.
Reinforced Concrete = 35 N/mm2, at 28 days.
Nominal Aggregate size is to be 20mm.

All dimensions to be checked on site by the Contractor prior to construction and the Engineer to be informed of any descrepancies.

All new steelwork is to comply with B.S.449, 1969 and later amendments, or B.S.5950 2000 and later amendments as directed.

All new timber is to comply with B.S.5268, 2002, Grade C24 and be treated.

All dimensions are in millimetres unless otherwise stated.

Fire casing to steelwork is to be two layers of 12.5mm Gypsum fireline board with joints taped & staggered. Finished with skim coat of gypsum plaster on Gypsum steel encasement system to achieve 1 hour fire resistance.

All welds are to be continuous 6mm fillet welds unless otherwise stated

This drawing is to be read in conjunction with all relevant Architects and other specialists drawings.
All work to be carried out to the approval of the local Authority District Surveyor or Building Inspector.

Conservatory
38.97
Ridge
Oak?
11m
Planting
Concrete
Grass
Timber Sleepers
Step Up
Gravel
Roof
Brick Wall
Floor level
Fruit
Sm
Bin Store
Top of Foliage - 38.04
Foliage Covered Fence
Unable to Observe
Foliage Obscuring
Kerb
Bollard
Wall
Support
Frame
GU CL 33.76
RWP
Brick Wall
Block Paving
Concrete
Rubble Filled Chamber
SW 100mm
MH CL 33.58
IL 32.92
Drainage Channel
Line of Fence Posts
SW 150mm
MH CL 33.84
IL 31.80
WM
LC
SC
GC
Patio
HERMIT
PLACE
NO 6
NO 4
Plinth
Block Paving
Access to No.7
Cable
Duct
Floor level

# PLAN

1.0 m 3.0m 5.0m 7.0m 9.0m
0.0 2.0m 4.0m 6.0m 8.0m 10.0m

REV | DATE

Drawing
PROPOSED BASEMENT PLAN
AND TYPICAL SECTION

Project
5 HERMIT PLACE
LONDON NW6 4BZ

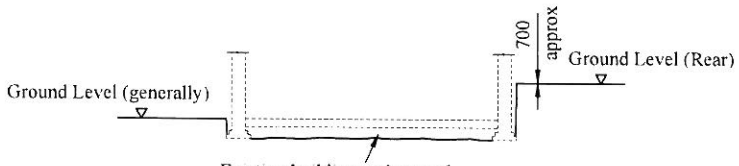
Client
CASTLE TRADING LTD

Architect

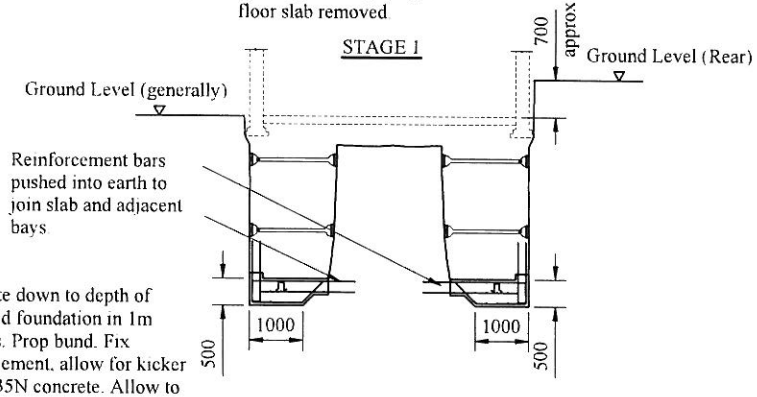

Michael Blacker Partnership
CONSULTING STRUCTURAL & CIVIL ENGINEERS
1, MARK STREET, REDGATE, SURREY RH2 0BL
TELEPHONE 01737 244866 FACSIMILE 01737 224566
e-mail : mgm@blacker.co.uk




| Scale | Drawn | Checked |
|---|---|---|
| 1:100 & 1:20 @ A3 | GRC | |
| Date: DEC 14 | Job No.: 4261 | Drg. No.: 01 |
| | | Rev: - |

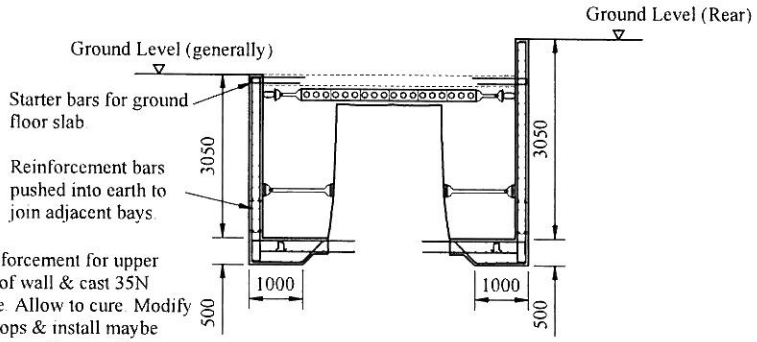



STAGE 1



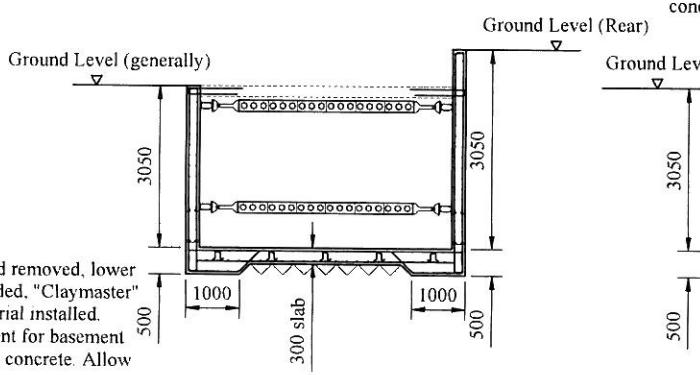

Excavate down to depth of proposed foundation in 1m sections. Prop bund. Fix reinforcement, allow for kicker & cast 35N concrete. Allow to cure

STAGE 2




Fix reinforcement for upper section of wall & cast 35N concrete. Allow to cure. Modify bund props & install maybe props to top of new wall.

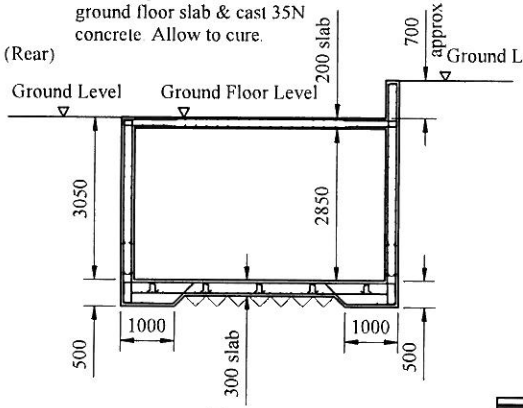
STAGE 3



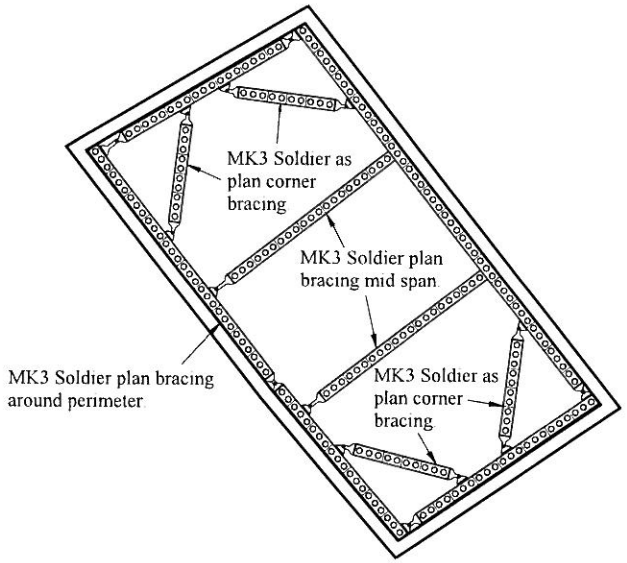

Remaining bund removed, lower Maybe prop added, "Claymaster" anti heave material installed. Fix reinforcement for basement slab & cast 35N concrete. Allow to cure.

STAGE 4

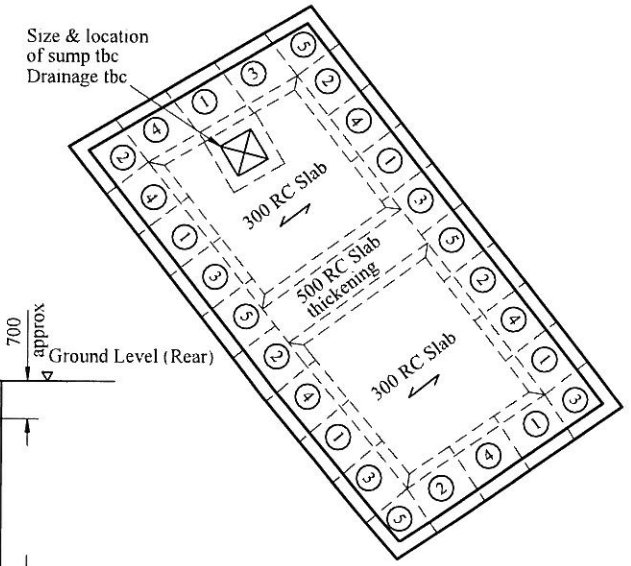
Adjust top Maybe prop & fix shuttering & reinforcement for ground floor slab & cast 35N concrete. Allow to cure.




STAGE 5




# TYPICAL PLAN ON HORIZONTAL PROPPING




# SEQUENCE PLAN

1.0 m 3.0m 5.0m 7.0m 9.0m

0.0 2.0m 4.0m 6.0m 8.0m 10.0m

## General Notes.

All concrete to have a minimum cube crushing strength at:
Mass Concrete = 25 N/mm2, at 28 days.
Reinforced Concrete = 35 N/mm2, at 28 days.
Nominal Aggregate size is to be 20mm.

All dimensions to be checked on site by the Contractor prior to construction and the Engineer to be informed of any discrepancies.

All new steelwork is to comply with B.S.449, 1969 and later amendments, or B.S.5950 2000 and later amendments as directed.

All new timber is to comply with B.S.5268, 2002, Grade C24 and be treated.

All dimensions are in millimetres unless otherwise stated.

Fire casing to steelwork is to be two layers of 12.5mm Gypsum fireline board with joints taped & staggered. Finished with skim coat of gypsum plaster on Gypsum steel encasement system to achieve 1 hour fire resistance.

All welds are to be continuous 6mm fillet welds unless otherwise stated.

This drawing is to be read in conjunction with all relevant Architects and other specialists drawings.
All work to be carried out to the approval of the local Authority District Surveyor or Building Inspector.

## SEQUENCE OF CONSTRUCTION

1. Excavate bays marked 1 on the drawing and obtain the Local Authority Building Inspectors approval for the new foundation bottom.
2. Clean off underside of existing wall footings and replace any loose or missing bricks.
3. Install reinforcement ensuring lap length pushed into earth to connect adjoining bays & slab.
4. Pour concrete for base to the required level. Allow to properly cure for a period of 72 hours
5. Install reinforcement to wall, ensuring lap length pushed into adjoining bay to link them together. Shutter as necessary.
6. Pour concrete for wall to within 75mm of existing footings. Allow to properly cure for a period of 72 hours.
7. Dry pack material is to be made with an expanding additive (Conbex or similar) and be mechanically rammed in and allowed to properly cure.
8. Excavate bays marked 2 and repeat the sequence as for bays marked 1 maintaining the same time period.
9. Repeat the sequence as above for all other bays.
10. No two adjacent bays may be excavated together or opened next to a previous bay until it has been concreted, dry packed and had sufficient time to cure.
11. The contractor must take all necessary precautions and provide all temporary propping and other methods of support as required to ensure the complete stability and integrity of the existing building.
12. If the contractor wishes to deviate in any way from this sequence he must first obtain the approval of the Engineer in writing.

| REV | DATE |
|---|---|
| | |

Drawing: PROPOSED BASEMENT PLAN SEQUENCE & TEMPORARY SUPPORT

Project: 5 HERMIT PLACE LONDON NW6 4BZ

Client: CASTLE TRADING LTD

Architect:


Michael Blacker Partnership
CONSULTING STRUCTURAL & CIVIL ENGINEERS
1, MARK STREET, REIGATE, SURREY RH2 0BL
TELEPHONE 01737 244888 FACSIMILE 01737 224656
e-mail : engs@blacker.co.uk



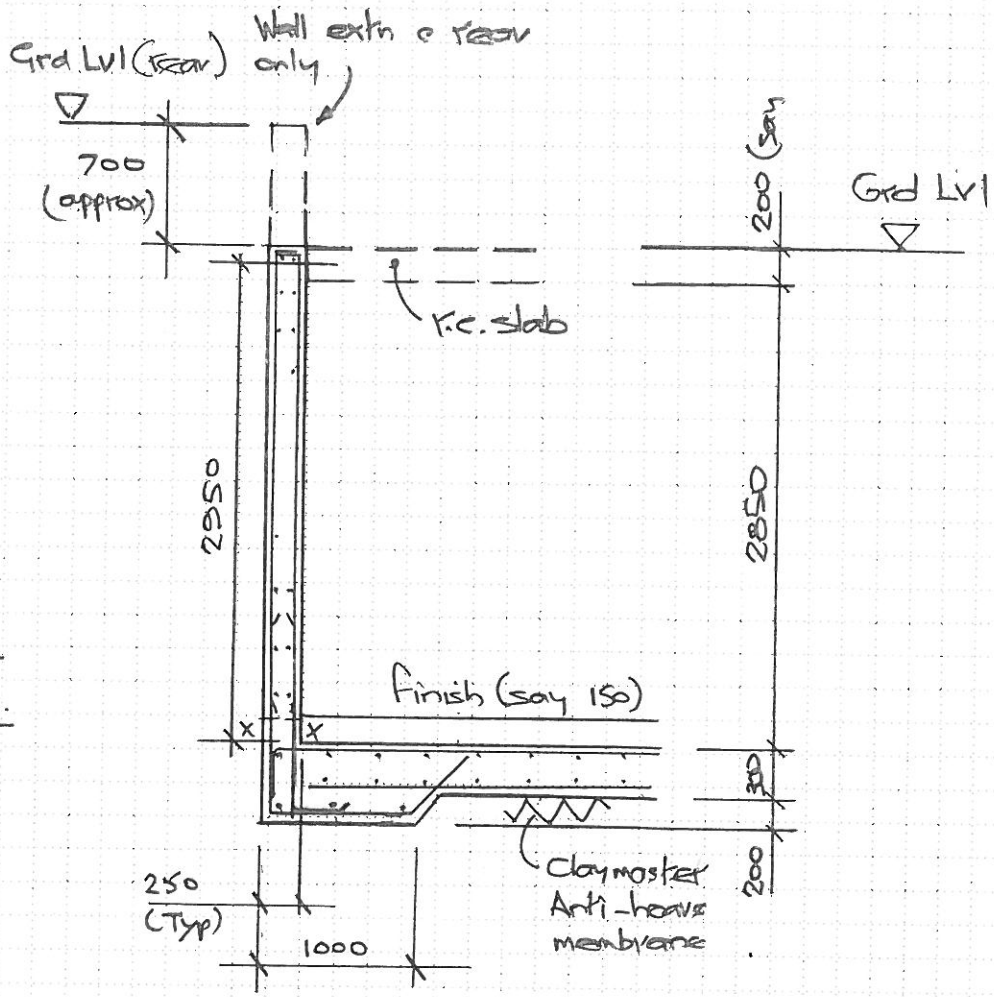

| Scale | Drawn | Checked |
|---|---|---|
| 1:100 & 1:20 @ A3 | GRC | |
| Date: DEC 14 | Job No.: 4201 | Drg. No.: 02 Rev: - |

**Michael Blacker** Partnership
Michael S. Blacker C.Eng. F.I.Struct.E. Andrew Blacker B.Sc.(Hons) C.Eng. M.I.C.E.
CONSULTING STRUCTURAL & CIVIL ENGINEERS
No1 MARK STREET, REIGATE SURREY RH2 0BL
E-MAIL engs@blacker.co.uk
TELEPHONE 01737 244886 FACSIMLE 01737 224556

PROJECT 5 Hermit Place London NW6 4BZ
DRG TITLE
DRG No.

Job No. 4201
Sht. No. 01
Date Dec '14

# Preliminary Basement Wall Design (fcu = 35N/mm²)




Earth density = 18 kN/m³ (say)
θ = 35° k = 0.27
Surcharge 20 kN/m²

## Treat wall as free standing cantilever

M c base of wall (xx)
= 18 × 0.27 × 2.95³ × 1.4/6 + 20 × 0.27 × 2.95² × 1.6/2
= 66.7 kNm/m

cont'd/

Michael Blacker Partnership
Michael S. Blacker C.Eng. F.I.Struct.E. Andrew Blacker B.Sc.(Hons) C.Eng. M.I.C.E.
CONSULTING STRUCTURAL & CIVIL ENGINEERS
No1 MARK STREET, REIGATE SURREY RH2 0BL
E-MAIL engs@blacker.co.uk
TELEPHONE 01737 244886 FACSIMLE 01737 224556

PROJECT 5 Hermit Place London NW6 4BZ
DRG TITLE
DRG No.

Job No. 4201
Sht. No. 02
Date Dec '14

Wall design cont'd

$d = 250-35-10 = 205\,mm$

$K = 66.7/10^3 \times 0.205^2 \times 35 = 0.045$

$A_s = 66.7/0.87 \times 0.5 \times 0.94 \times 0.205 = 796\,mm^2/m$

Provide H16 @ 200mm crs (1010) O.F (Vert)
+ H10 @ 200 mm crs - horiz. E.F (Horiz)

check for M on inner wall face if wall treated as propped cantilever:

$M = 9 \times 20 \times 0.27 \times 2.95^2 \times 1.6/128$
$+ 0.0596 \times 18 \times 0.27 \times 2.95^3 \times 1.4/2$
$= 10.5\,kNm/m$

$d_1 = 250-25-6 = 219\,mm$

$A_s = 10.5/0.87 \times 0.5 \times 0.94 \times 0.219 = 118\,mm^2/m$

provide H12 @ 200mm crs - vert.

Summary:

Vert. reinft: H16 @ 200mm crs - Outer Face
H12 @ 200mm crs - Inner face

Horiz reinft: H10 @ 200mm crs - Each face