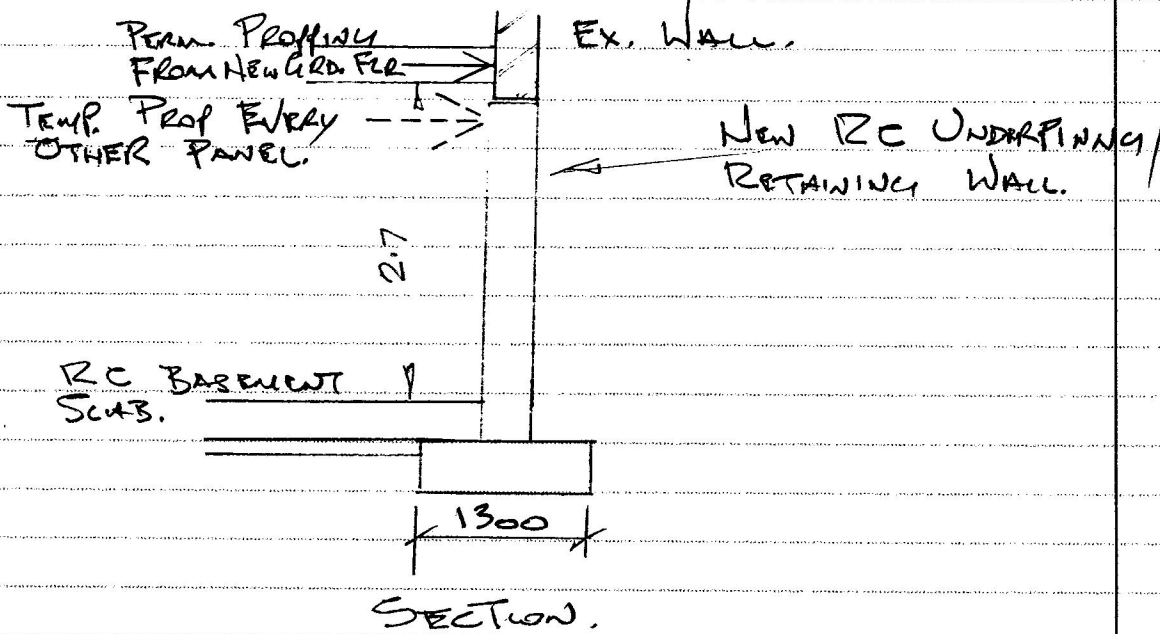


CALCULATION SHEET

New Basement Underpinning/Retaining Wall
 Under Frank Wall.



Load To Ex. Foundation From Above.
 Incl. 1m Width Floors.

BRICKWORK LWR GRD - 1st. Flrs.	= 6.6 x 36 x 20	= 47.5 kN/m
" 1st. - 2nd Flrs	= 6 x 25 x 20	= 30.0 u u
FLOOR DEAD	5 x 1 x 1	= 5.0 u u
" SUPER	5 x 1.5 x 1	= 7.5 u u
ROOF TOTAL	1.6 x 2	= 3.2 u u
	TOTAL	= <u>93.2 u u</u>

NEW RC WALL = 3 x 4 x 25 = 30.0 u u
 TOTAL = 123.2 u u

SOIL STRESS = $\frac{123.2}{1.3} = 95 \text{ kN/m}^2$

RETAINED SOIL GRAVELLY FIRM CLAY 20 kN/m³

SURCHARGE = 10 kN/m²

SOIL PRESSURE COEFFICIENT $\mu = 0.35$

Robert Savage & Associates

architects designers structural engineers

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PROJECT 13A CROSSFIELD RD

LONDON NW3

SHEET No.

C3

Date

No. of Sheets

CALCULATION SHEET

PERMANENT COMBINATION.

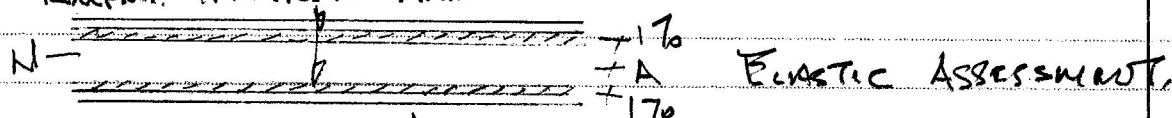
$$M = \frac{W h^2}{8} + 0.125 W_2 \cdot 3 h = \frac{3.5 \times 3^2}{8} + 0.128 \times 51.5 \times 3$$
$$= 23.7 \text{ kN.m. ELASTIC}$$

400 mm THICK WALL C35A CONC.
AST T12 @ 150 = 754 mm²

$$f_{y-st} = \frac{23.7 \times 10^6}{350 \times 9 \times 754} = 100 \text{ N/mm}^2.$$

FOR 2mm CRACK WIDTH. $f_{y-st} = 130 \text{ N/mm}^2 > 100$

REINFT. TRANSPOSED AREA



CHECK FOR UNCRACKED SECTION.

$$Z/M = \frac{b d^2}{6} \text{ CONC.} = \frac{10^3 \times 400^2}{6} = 26.67 \times 10^6 \text{ mm}^3$$

$$Z_{st}/M = \frac{2 \times 754 \times 14 \times 170^2}{182} = 3.35 \times 10^6 \text{ mm}^3$$

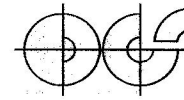
$$\text{TOTAL} = 26.67 + 3.35 = 30.02 \times 10^6 \text{ mm}^3$$

$$f_{yt \text{ conc.}} = \frac{23.7 \times 10^6}{30.02 \times 10^6} = 0.79 \text{ N/mm}^2 \text{ ELASTIC.}$$

MAX $f_{y \text{ conc.}}$ FOR UNCRACKED SECTION = 1.6 N/mm²

$$0.79 < 1.6$$

BASEMENT DESIGN CONFORMS TO A GRADE 3 STANDARD.



MONITORING METHOD STATEMENT

Contract/Job Name	
Contract/Job Number	
Date	
Method Statement Written by	Artur Migacz
Method Statement Approved by	
Signature of Approver	

1 INTRODUCTION

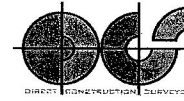
This Method Statement describes the specific safe working methods which will be used to carry out the work. It gives details of how the work will be carried out and what health and safety issues and controls are involved.

2 DESCRIPTION OF WORK

Due to excavation works at **13A CROSSFIELD RD** monitoring of the neighbouring buildings has been commissioned.

3 SCOPE OF WORK

In order to check the walls movement detailed monitoring of approximately **40** targets at **13A & 12 CROSSFIELD RD** will be provided. The targets will be



installed in pairs at low and high level along the facades. The targets will be monitored in X-, Y- and Z-axis on weekly basis.

4 METHOD OF WORK

- Instrumentation

The monitoring will be carried out using instrument Leica Total Station TCA1800 with angle measurement accuracy **1"** and distance measurement accuracy **1 mm + 2 ppm**, Leica Tripods and Leica Prism Kits.

- Survey Control

Permanent survey control will be established with Survey Nails drilled and epoxy resined into solid surfaces where possible and additional control stations in the form of retro-reflective targets established away from the site will be used. The monitored targets will be installed in places where visual access is not obstructed.

- Plant and Equipment

All survey equipment used will carry up to date calibration certificates, and will be battery powered.

5 LOCATION OF WORK

Work will be carried out within:

- **13A CROSSFIELD RD.**
- Public areas