Appendix D

Ground Movements for 59 Goldhurst Terrace, London

Taking height of adjacent house as H=12.3m and width of block of houses as L=33.0m

Then L/H=2.683

Depth of basement excavation take as 2.75m. Depth of walls 3.2m

Houses adjacent are 0m distant from the basement excavation and wall.

Horizontal movement due to installation of wall

0.05% x 3200mm = 1.60mm

Distance to negligible movement 1.5 x 3200mm = 4800mm

Horizontal movement due to excavation

0.15% x 2750mm = 4.125mm

Distance to negligible movement 4 x 2750mm = 11,000mm

Total horizontal movement is 5.725mm (1.60 + 4.125mm)

Horizontal strain over 11m is 5.725mm /11,000mm x100 = 0.052%

Vertical movement due to installation of wall

0.05% x 3200mm = 1.60mm

Distance to negligible movement 1.5 x 3200mm = 4800mm

Vertical movement due to excavation

(0.10% x 2750mm = 2.75mm from Table 2.4)

Instead use Fig 2.11(b) which is more accurate and shows 0.05% at the wall, 0.1% is never reached by the curve or the measured ground movements, so 0.05% is conservative.

0.05% x 2750mm = 1.375mm

Distance to negligible movement 3.5 x 2750 = 9625mm

Total vertical movement is (1.60 + 1.375) 2.975mm

House slope calculated as (total vert settl at 0m – settl at 11m/11m (in units of mm per m.)

To calculate Δ(Delta) the house slope is plotted against the deflection and the maximum Δ(Delta) was found to be 0.8545mm at 6.0m form the basement wall.

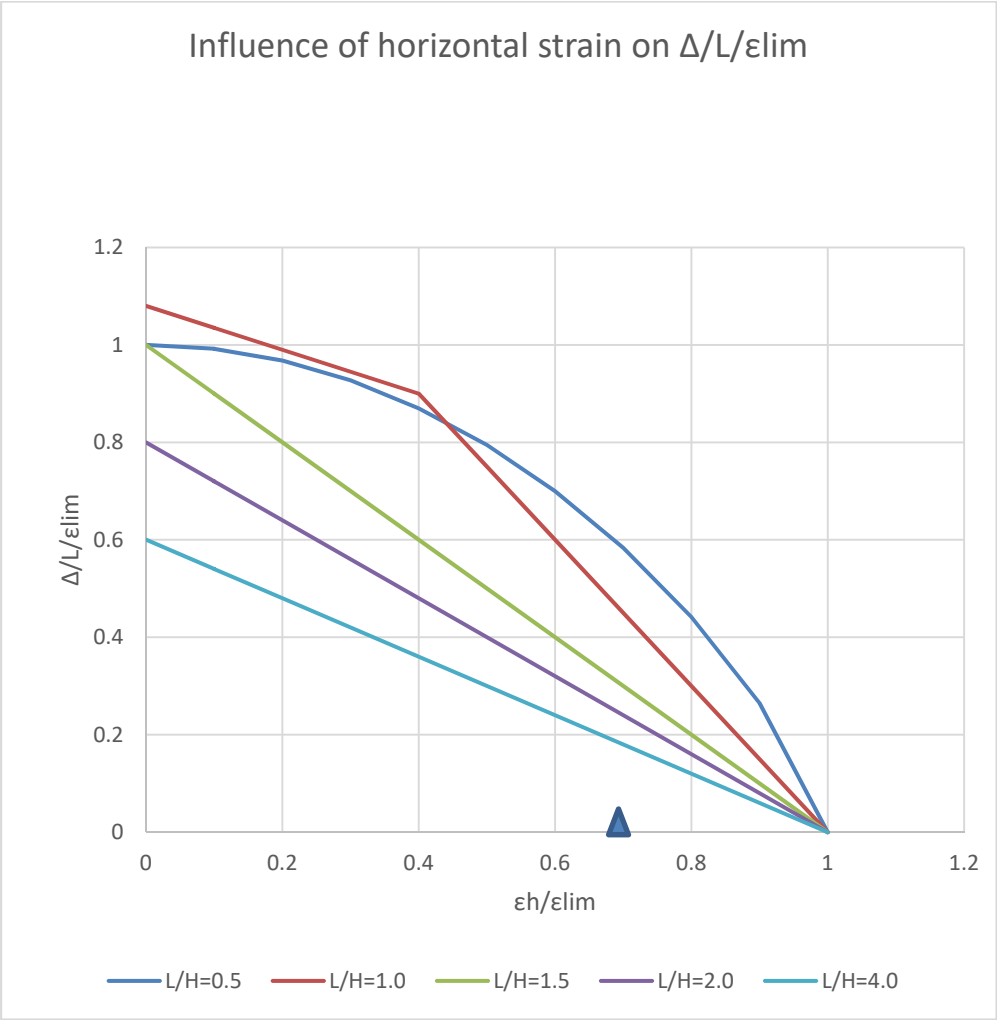
Δ(Delta) /length = 0.8545/11000= 7.76E-05

Δ(Delta) /length/Elim for Category 1 = 7.76E-05 / 0.075 = 0.0010346 = 1.4E-03

Horizontal strain/Elim for Category 1 = 0.052091 / 0.075 = 0.6945466

The above plotted on CIRIA 580 Fig 2.18b fall below the L/H = 4 (as required).

Therefore anticipated Damage Category according to C580 Table 2.5 is negligible to very slight.



These calculations are for stiff support in firm to stiff clay such in the London Clay.

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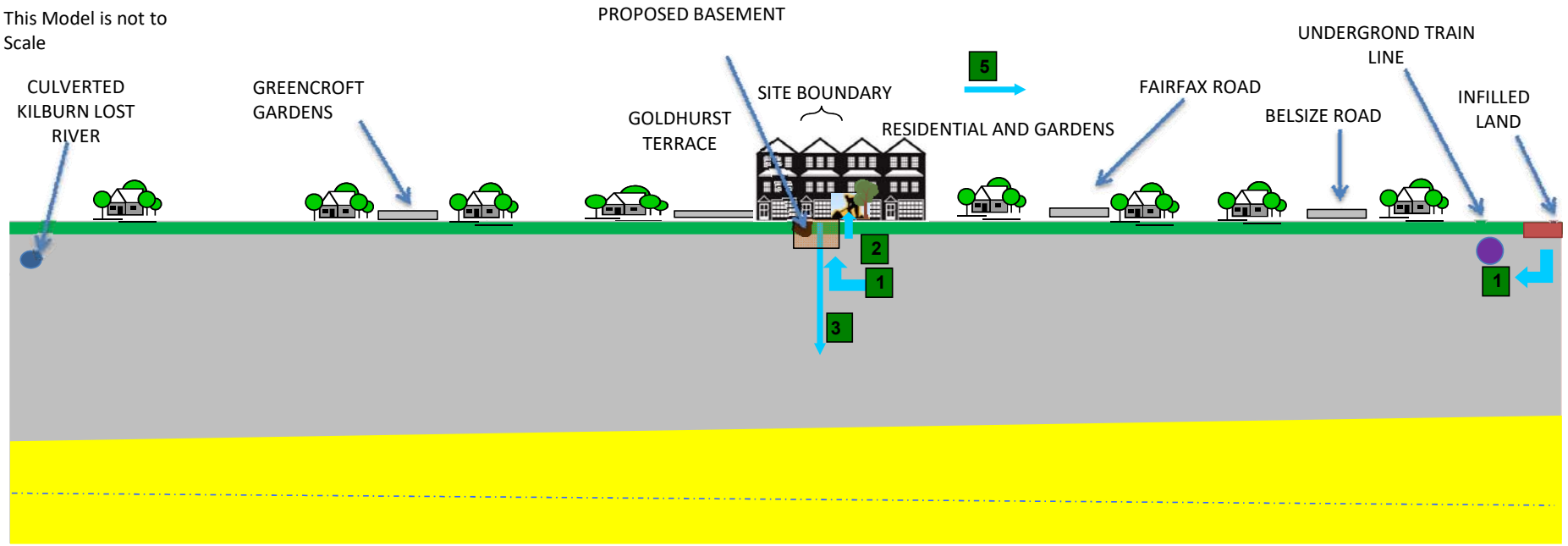
59 GOLDHURST TERRACE, CAMDEN
Conceptual Model

This Model is not to Scale



SOURCES	PATHWAYS	RECEPTORS	RISK
HISTORICAL USE AS OPENLAND CURRENT USE AS RESIDENTIAL OFF SITE RESIDENTIAL	1 Inhalation of vapours from landfiull/mining	Workmen / Future site users / adjacent land uses	Low to mod No landfill within 250m. No Radon. Monitoring indicates no landfill gases
	2 Ingestion and or skin contact	Workmen / Future site users / occupants /adjacent land uses	Low - site is not contaminated whe tested
	3 Ingestion of drinking water / leaching to groundwater	Groundwater.	Low - No abstractions within 2000m
	4 Leaching to surface water	No surface water within 250m of site	Low - no surface water within 250m of site
	5 Inhalation of dust	Workmen / adjacent land users	Low - Appropriate measures during construction
	6 Slope Failure	Future land users	Low - No slopes within 250m
	7 Off site migration	Neighbouring land users.	Low - neighbouring land is residential since 1894

GEOLOGY

- MADE GROUND
- RESIDUAL CLAY
- LONDON CLAY
- THANET SAND AND CHALK

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