

STRUCTURAL REPORT

PROJECT: 189 Mount View Road – new build house

JOB NO: 695

DATE: 23.05.23

DOCUMENT DETAILS

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REVISION: -

Report

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0. INTRODUCTION

Foster Structures have been commissioned by Liz and Simon Blain to provide a limited scope of structural input in relation to the proposal to add a new detached house within the rear garden of the existing end of terrace house at No. 189 Mount View Road, Haringey, London N4 4JT.

Proposals have been prepared by Lacey and Saltykov Architects on behalf of the client for a new detached two storey house over split levels set at the rear of the existing site – adjoining the existing boundary walls to the rear gardens of the houses at No. 11-14 Highbank Way and the pedestrian alleyway which runs around the side and rear of the site linking the Eastern end of Mount View Road with Highbank Way.

As part of the development of the proposals pre-application feedback has been provided by the local authority (London Borough of Haringey). This pre-application feedback commented (point 13):

"the nature of the works here necessitate a need to understand the impact of such works on the adjoining retaining wall / the gardens to the properties at 11-14 Highbank Way. As such the commissioning of a structural engineer's report is advised and should be submitted with such an application"

This report has been compiled in order to provide the requested structural feedback and address these points.

0.1 Date of Visit

A site visit to the property was carried out on the 5th May 2023 in conjunction with Lacey & Saltykov Architects. The weather at the time of the visit was mainly sunny and dry.

This was a visual inspection and although some measurements of isolated key elements were taken there was no comprehensive recording of the existing structure and this is not a structural survey report. Access was possible into the rear gardens of No. 189 Mount View Road and along the pedestrian alleyway to the rear and side of the site, however access was not possible into the gardens of the properties to No. 11 - 14 Highbank Way. No opening-up works / trialpit investigations were carried out in any areas and no samples were taken for testing.

The following comments should be read in conjunction with the attached site record photos and drawings and the information produced by the architect and arboricultural consultant.

0.2 Exclusions

We confirm that this report was prepared for the purpose it was intended for only. It is also for the attention of the addressee only and no liability to a third party can be accepted by this company for the whole part or any part thereof.

The report is based on a visual inspection of the property. No opening-up works were carried out and no samples were taken for testing.

1. EXISTING SITE DESCRIPTION

1.1: Existing Site

No. 189 Mount View Road is an end of terrace three storey Victorian house set at the lower eastern end of Mount View Road as the road starts to turn south to become Stapleton Hall Road. The property is understood to have been previously extended at the rear with a single storey rear extension. No structural alterations are proposed to the property as part of construction of the new build house and no structural inspection was carried out of the property. Reference to historical maps indicates that the area was developed during the 1890s from assumed farm land / allotment gardens (refer to historical mapping in appendix A). The property falls outside the mapping of the WW II London damage maps however the property is shown intact on the 1949 post war RAF aerial mapping (refer to appendix A).

The historical mapping indicates that immediately to the east of the house – at the corner of the road, there were originally a pair of larger houses – which appear in the pre-war and post war mapping – there always appears to have been a gap immediately to the east of the house where the alleyway now runs, and it does not appear as though the house was ever enclosed on to the east.

In the post war period the rear gardens of the properties to the west of No. 189 Mount View Road appear to have been partly sold off to allow the construction of the houses on Highbank Way to the north of No. 189 (including No. 11-14 which adjoin the garden boundary wall of No. 189). To the north east of the property the Chettle Court housing development was built at the end of the 1960s on the remaining allotment gardens to the north of the property, sat at the top of the railway embankment. The pair of houses immediately to the east of No. 189 were presumably demolished as part of the construction of Chettle Court.

Running from the eastern end of Mount View road a pedestrian alleyway runs along the edge of the site boundary running around the rear of the site and back parallel to Mount View Road to link into Highbank Way.

2. SITE CONTEXT

2.1: Soil conditions

No intrusive geotechnical site investigations have been completed – although a scope of geotechnical investigation comprising boreholes and trialpits will be required as the project is developed to detailed design.

Reference to British Geological mapping (refer to appendix A) indicates that the site is underlain by London Clay. No publicly accessible borehole records are available within the immediate vicinity of the site, however trialpit records from other projects completed on Mount View Road by Foster Structures (refer to appendix A) confirm that as anticipated ground conditions comprise a variable amount of made ground overlying clay. The clay is assumed likely to be of medium / high plasticity (therefore likely affected by adjacent trees).

2.2: Site Topography

The proposed new build house is set within the rear section of the rear garden of No. 189 Mount View Road. The rear garden of No. 189 follows the underlying topography of the hill and is terraced up from the rear elevation of the existing house – so that the rear section of the garden (approx. 64.0m) is about 1.7m above the lower patio level immediately adjacent to the rear elevation of the existing house. The rear section of the garden (where the new house is proposed) is however relatively flat. At the rear the garden has been relatively steeply banked down – presumably to reduce the height of retained soil along the rear retaining wall to the adjacent alleyway.

2.3: Existing site boundary to Highbank Way alleyway

Along the side of the property there is a concrete post / timber fence (as shown in the photo record sheets in appendix B) which provides a boundary to the retained banked earth planters which run along the side of the property between the boundary and the side alleyway to Highbank Way. The banked soil in these planters is retained by what appear to be 215mm thick solid masonry low level retaining walls. These existing retaining walls vary in height from about 400mm to almost a metre. There is evidence of some movement and cracking in these existing retaining walls (refer to photo 7).

The concrete post and timber boundary fence continues along the rear of the property – although along the rear of the garden of No.189 the boundary fence site directly alongside the alleyway with no perimeter soil planters between the fence and the alleyway. The rear section of the garden of No. 189 is banked steeply down to the boundary with the alleyway but is still some 800mm or so above the alleyway level – retained by concrete infill base planks at the bottom of the concrete fence posts (refer to photo 2). There does not however appear to be any signs of significant movement of this retaining boundary fence.

Immediately abutting the end of the boundary fence to No.189 is the higher level concrete retaining wall of the rear garden to No. 13 -14 Highbank Way. The top of the concrete wall is approx. 1.6m above the alleyway level – although it then steps down to a lower level. The wall supports a higher level masonry wall and then a timber fence. There are signs of cracking and some movement of this wall – and then immediately to the west, further along the alleyway a series of timber buttress frames have been installed to the face of the boundary retaining wall as it continues along the side of the parking area to the houses on Highbank Way.

continued....

continued....

2.4: Boundary wall to Highbank Way houses

Along the western side of the rear of the garden to No. 189 Mount View Road a masonry boundary wall separates the garden of No. 189 from the rear gardens of No. 11, No. 12 and No. 13- 14 Highbank Way – with these properties and gardens aligned perpendicular to the garden of No. 189 so that the garden of No. 189 runs along the backs of these Highbank Way properties.

The levels of these adjacent rear gardens is not included within the topographical survey – however by measuring over the top of the wall it appears that these adjoining rear gardens are approx. 700mm - 800mm above the level of the No. 189 Mount View Road garden.

The boundary wall appears to be of solid 215mm thick masonry with a concrete coping and was measured as approximately 3.1m above the Mount View rear garden level.

At the base of the wall there is low level masonry up to around 300 – 400mm above the existing garden level and then an approximately 200mm thick poor quality concrete band before the brickwork continues up. At high level there appear to be what could have been intended to be movement joints across the upper 9-10 courses with evidence of cracking leading down from these joints.

2.5: Trees

An arboricultural Impact assessment has been completed by Bucks Plant Care Ltd. and made available to us identifying those trees to remain and trees to be removed to facilitate the proposed development (including the removal of a small tree at the front of the property to enable site access). This assessment notes that the removal of two garden fruit trees will be required and there will be a minor impact on the RPA of a neighbouring pear tree. Due to the likely shrinkability (shrinking and swelling) of the underlying clay due to changes in moisture content as a result of tree root action it is anticipated that mini pile foundations will be the most appropriate foundations. These foundations will therefore minimise the amount of excavation required within the RPA of adjoining trees.

2.6: Utilities

A copy of the Thames Water asset plan for the property has been made available to us by the client – this is shown within Appendix A (drg. 695/Sk 200). This asset plan indicates that drainage from the site runs along the centre of Mount View Road and then down Stapleton Hall Road – no drainage assets are shown running through the area of the proposed new build house. In addition to the Thames Water asset plan the client has made available to us a copy of recent drainage mapping which it is understood was completed as part of the recent single storey rear extension works to the house. This mapping shows drainage running out under the house to Mount View Road. No drainage is shown on this map within the footprint of the proposed new build house. It is recommended that a desk top utilities search is completed as part of the detailed design to confirm that no other mapped utilities run through the footprint of the proposed house.

3. STRUCTURAL PROPOSALS

Given the ground conditions and the proximity of existing trees it is very likely that the geotechnical site investigation will indicate that either deep strip footings or mini piled foundations are necessary.

The ground floor level of the proposed new house has been set at split levels to minimise the excavations adjacent to the boundary wall and rear gardens to the properties at No. 11-14 Highbank Way.

Excavations will still be required adjacent to the boundary wall however to accommodate the new build-up of ground floor slab, insulation and accompanying finishes.

The depth and extent of the existing footings of the boundary wall have not yet been determined, however within the next stage of design development investigation trialpits will be carried out against the face of this wall to determine the depth and extent of the existing foundations to this wall. If the existing foundations are very shallow, the excavations for the new higher level slab build-up may extend below the underside of the existing adjacent footings. If this is the case then a degree of shallow underpinning may be required to ensure that the existing boundary wall footings are extended down below the underside of any excavations for the new slab build-up.

The levels of the rear gardens to the properties at No. 11-14 Highbank are assumed to be approx. 700 – 800 mm higher than the rear garden level of No. 189 Mount View Road. This boundary wall is therefore acting as a retaining wall providing restraint to the higher level No. 11-14 Highbank gardens. To maintain the lateral restraint which is likely provided by the existing garden level of No. 189 Mount View Road to the base of this wall the new higher level ground floor slab will be designed to provide lateral restraint to the inside face of the wall at ground level – reinstating the likely lateral restraint provided by the garden level of No. 189 Mount View Road.

It is anticipated that the ground floor slab build-up can be designed to span between and over the top of supporting mini piles set well back from the face of the existing wall with the slab cantilevering out over the head of the piles out to the face of the wall to avoid the requirement for piling to be carried out in close proximity to the face of the wall.

4. CONCLUSION

The split levels of the proposed new build house have been developed to minimise the excavations adjacent to the boundary wall and (higher level) rear gardens to the properties at No. 11-14 Highbank Way.

Given the site constraints, soil conditions and existing trees it is likely (subject to the completion of a geotechnical site investigation) that the optimum foundation solutions for the new house will be mini-piled foundations supporting a suspended ground floor level slab. Designing the slab as a cantilever adjacent to the boundary will allow new supporting piles to be set well back from the face of the wall to minimise substructure works adjacent to the wall.

The depth and extent of the existing foundation to this retaining boundary wall will be confirmed by future investigation trialpits. If the existing foundations are particularly shallow then some underpinning may be required to the base of this wall to maintain vertical and lateral support to the existing retained masonry in the permanent condition.

It is anticipated that any underpinning which was found to be required could be completed in a normal sequential manner of dowelled underpins mortar dry packed to the underside of the existing footing without any adverse impact of the stability of the existing boundary wall.

APPENDIX A:
SITE CONTEXT INFORMATION



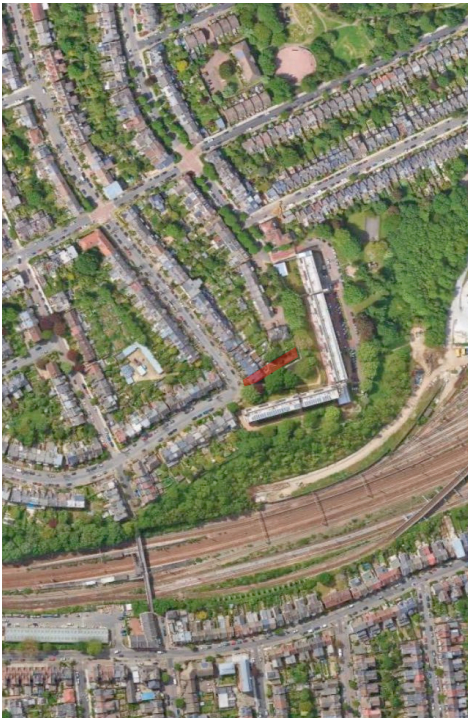
Prior to Mount View Road being developed for housing the area was empty,
London 1896 Ordnance Survey, National Library of Scotland



Property is first seen on ordnance survey in 1915.
London 1915 Ordnance Survey, National Library of Scotland



Aerial photo view of property.
Ordnance Survey Air Photo Mosaics (1944-1950), National Library of Scotland

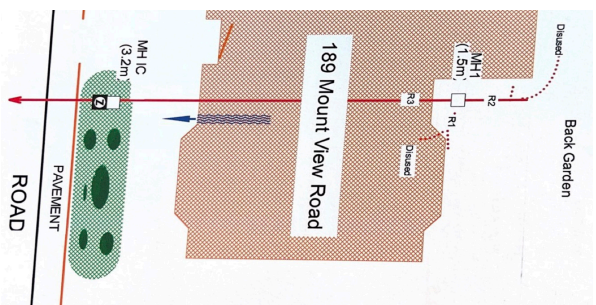


Aerial photo view of property currently, showing Chettle Court, built in the 1970s.
Google Maps



Project:	Mount View Road
Job No:	695
Drawing Title:	Site History
Drawing No:	695/SK100
Date:	19.05.23
Revision:	-
Scale:	-

Trial pit from location adjacent to 189 Mount View Road



Drainage Mapping for 189 Mount View Road

APPENDIX B:
PHOTO RECORD SHEETS

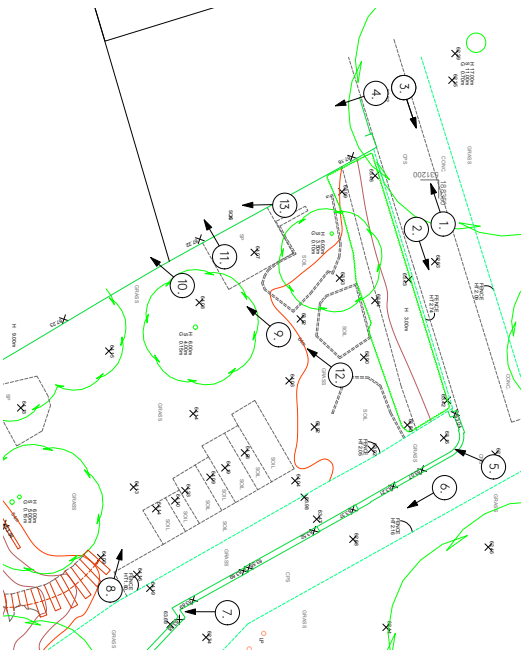


Photo key Plan



1. View west along Highbank Way Alleyway



2. View east along Highbank Way Alleyway



3. View east along Highbank Way Alleyway



4. Retaining wall of No. 14 Highbank Way Alleyway



5. Existing brick retaining wall



Project:	Mount View Road
Job No:	695
Drawing Title:	Photo Sheet 1
Drawing No:	695/SK/300
Date:	15.05.23
Revision:	-
Scale:	NTS

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FOSTER STRUCTURES

General Notes:

This drawing is to be read in conjunction with all architect's information and client requirements. Refer to drawing 500 for general structural notes.

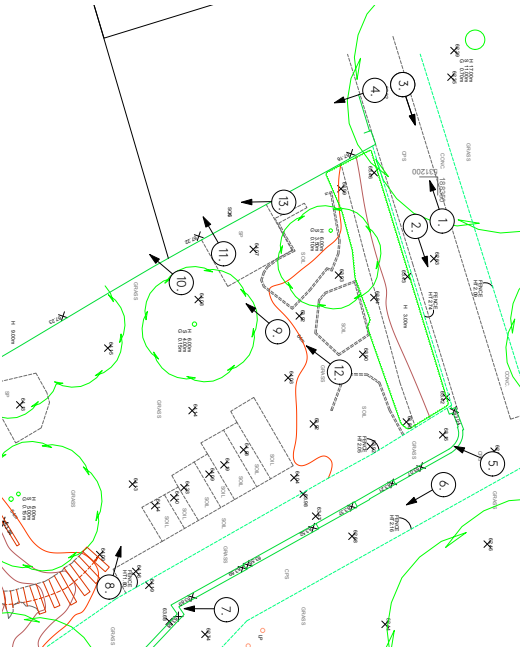


Photo key Plan



6. View south along Highbank Way Alleyway



7. Existing brick retaining wall to Highbank Way Alleyway



8. Rear gardens to 189 Mount View Road



9. Boundary wall to 11 - 14 Highbank Way



Project:	Mount View Road
Job No:	695
Drawing Title:	Photo Sheet 2
Drawing No:	695/SK/301
Date:	15.05.23
Revision:	-
Scale:	NTS

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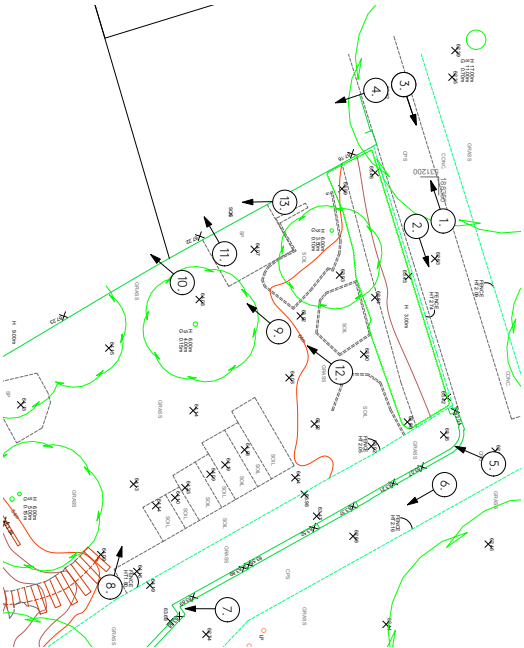


Photo Key Plan



10. Base of boundary wall to 11 - 14 Highbank Way



11. Head of boundary wall to 11 - 14 Highbank Way



12. View of boundary wall to 11 - 14 Highbank Way



13. View over wall into gardens to 11 - 14 Highbank Way



Project:	Mount View Road
Job No:	695
Drawing Title:	Photo Sheet 3
Drawing No:	695/SK/302
Date:	15.05.23
Revision:	-
Scale:	NTS

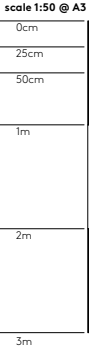
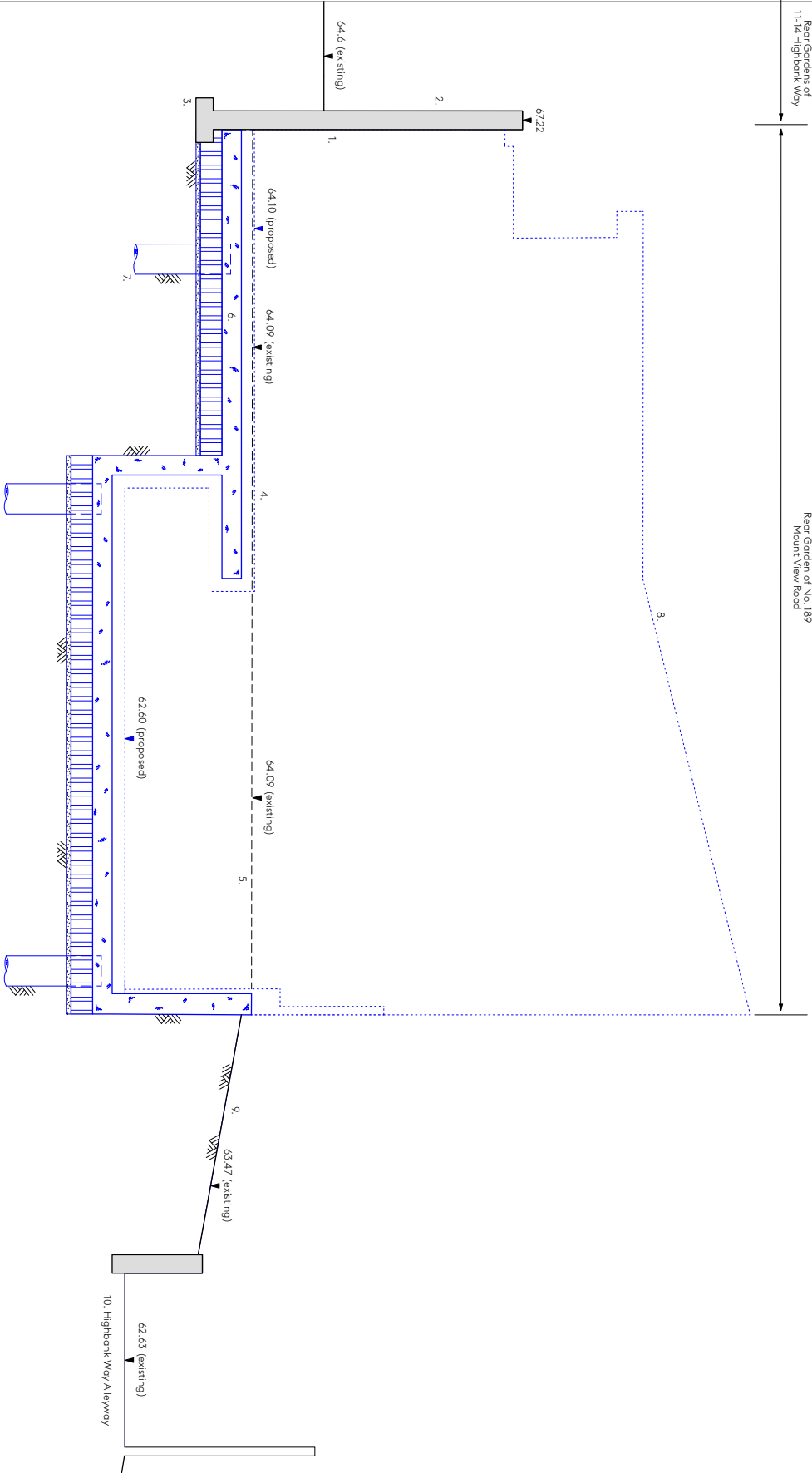
APPENDIX C:
PROPOSED STRUCTURE SECTION

FOSTER STRUCTURES

General Notes:

This drawing is to be read in conjunction with all architect's information and client requirements. Refer to drawing 500 for general structural notes.

1. Indicative assumed level of existing rear gardens to houses at 11-14 Highbank Way.
2. Indicative outline of existing retained masonry boundary wall between rear gardens of houses at 11-14 Highbank Way and rear garden of 189 Mount View Road.
3. Indicative assumed depth and extent of existing (retained) footing to existing boundary wall. Depth and extent of existing boundary wall foundation to be confirmed by site investigation trials.
4. Indicative dotted outline showing proposed finish of upper / lower ground floor of proposed new house.
5. Indicative dotted outline showing existing garden level to rear of 189 Mount View Road to be locally excavated to allow formation of new lowered floor level for new house.
6. Indicative outline of new suspended RC lower / upper ground floor slab to new house. New suspended floor slab assumed laid on Calcrete compressible boarding - all requirements to be confirmed following completion of site investigation works.
7. Indicative outline of assumed new piled foundations - details to be confirmed following completion of geotechnical site investigation works.
8. Indicative dotted outline of new house - refer to architect's drawings for details.
9. Indicative outline of existing banked soil plenum outside site boundary.
10. Indicative outline of existing alleyway to Highbank Way.



Project:	Mount View Road
Job No:	695
Drawing Title:	Section 1
Drawing No:	695/SK500
Date:	17.05.23
Revision:	-
Scale:	1:50 @ A3