TZG PARTNERSHIP
ENGINEERING CONSULTANTS

CONTRACT: Tottenham Street

CONTRACT NO. 6606

DATE: 04/2020

BY: GH

STRUCTURAL INSPECTION REPORT

ISSUE HISTORY

Status	Revision	Issued For	Date	Author
Preliminary	*	Planning	22.04.20	GH

Contents

SUMMARY

TZG Partnership undertook a site inspections of the property at 52 Tottenham Street on 16.08.18, 23.10.18 and 20.02.20, the purpose of which was to gather information for preparation of a feasibility study for future redevelopment of the site, following demolition of the existing building, to provide a mixed use development comprising ground floor affordable workspace (Class B1), four residential units (Class C3) on the upper floors (3 x 1 Bed Units and 1 x 3 Bed Unit), alongside lower ground floor plant, cycle parking and refuse storage.

KEY findings

1. The flank wall and flues to the west boundary of 52 Tottenham Street (52 TS) forming a party wall with 30 Cleveland Street (30 CS) have been raised when the adjoining property was constructed. The 'Party Structure' status of the wall should be confirmed by a Party Wall surveyor. Temporary lateral support will need to be provided to this wall when the existing building is demolished.
2. The east flank wall parallel to Arthur Stanley House (ASH) is separate from the adjoining property, with a void between. The panel of brick separating the two properties on the front and rear elevation may require temporary support or demolition if this can be agreed with the adjoining owner. The 'Party Structure' status of the wall should be confirmed by a Party Wall surveyor.
3. The rear ground floor single storey construction is underlain by a historic basement that has been infilled with Made Ground circa 1850. The basement walls have been underpinned at various different times and with differing construction.
4. The existing basement demise has had several trial pits excavated. These indicate the flank walls with Arthur Stanley House and 30 Cleveland St have been underpinned. The front elevation has not been underpinned. The ground conditions identified in the basement are 'fill'. A geotechnical site investigation has been undertaken by Risk management limit which substantiates this finding.
5. The party and boundary flank walls that have been underpinned are more rigid than the façade and there appears to be differential and progressive movement of the front elevation leading to cracking and sagging of masonry spandrel panels. Further monitoring will be required to ascertain whether this is continuing or has reached a steady state. The existing façade is in poor condition having experience historic movement. It is the opinion of TZG Partnership that the condition of the existing building structure is stable in its current condition and will not collapse, however the occurrence of progressive movement termed 'subsidence' cannot be ruled out at this stage.

17.09.18

Signed Date

George Holland Meng CEng MIStructE

Introduction

The following short report summarises the findings of the site inspection at 52 Tottenham Street London on behalf of Flower Island (UK) Ltd.

The Brief

The proposed development following demolition of the existing building, to provide a mixed use development comprising ground floor affordable workspace (Class B1), four residential units (Class C3) on the upper floors (3 x 1 Bed Units and 1 x 3 Bed Unit), alongside lower ground floor plant, cycle parking and refuse storage.

Existing site

The existing building at 52 Tottenham Street (52 TS) is a 5 storey (including basement) loadbearing masonry building constructed with timber floors and a timber 'butterfly' roof. To the rear of the site is a single storey extension with a lower ground floor level.

The site is land locked with access only from Tottenham street. To the South-West of the property is 30 Cleveland Street (30 CS), an Art Deco period building constructed with a steel frame and concrete floors. This building has a single storey basement. The original 52 Tottenham Street predated this construction. To the rear of the South-West boundary is a lightwell belonging to 30 CS with a floor at their basement level. To the North-West of the site 30 CS wraps around to create a boundary with the rear of 52 TS.

To the North East of the site is Arthur Stanley House (ASH), an office block constructed circa 1960s with a reinforced concrete frame. This building has two basement storeys below ground; B01 representing the upper basement level and B02 representing the lowest basement level.

To the South-East of the site is the principle elevation with Tottenham Street. Existing vaults extend under the pavement to the kerb.

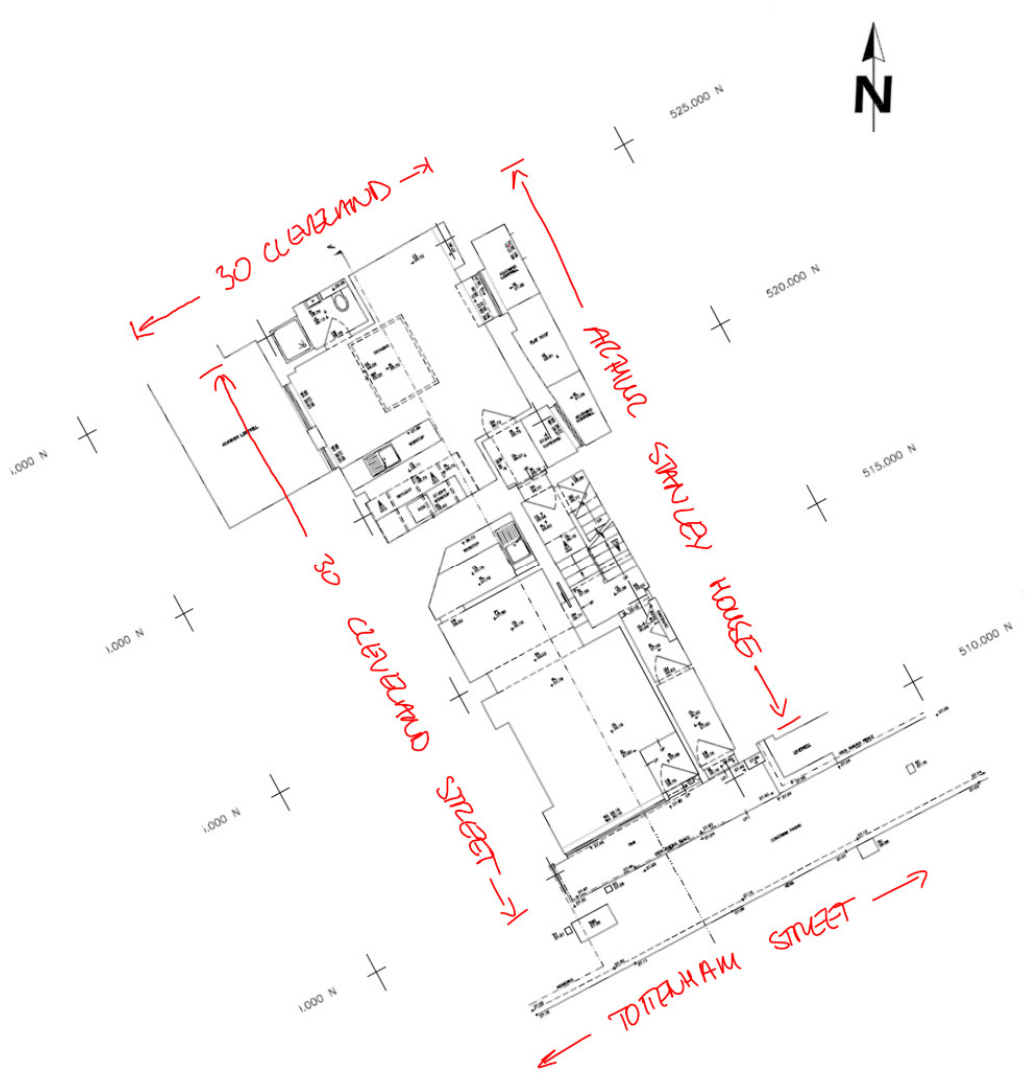

Figure 1 Site plan and description of boundaries

OBSERVATIONS

Front elevation Tottenham Street

The façade is formed of London Stock bricks and appears to have been modified with differing colour bricks coursed in along one edge. To the east the property is bounded by ASH, a concrete frame office block circa 1960. There is an infill panel of masonry on the front elevation between 52 TS and ASH which forms a void between the two buildings.

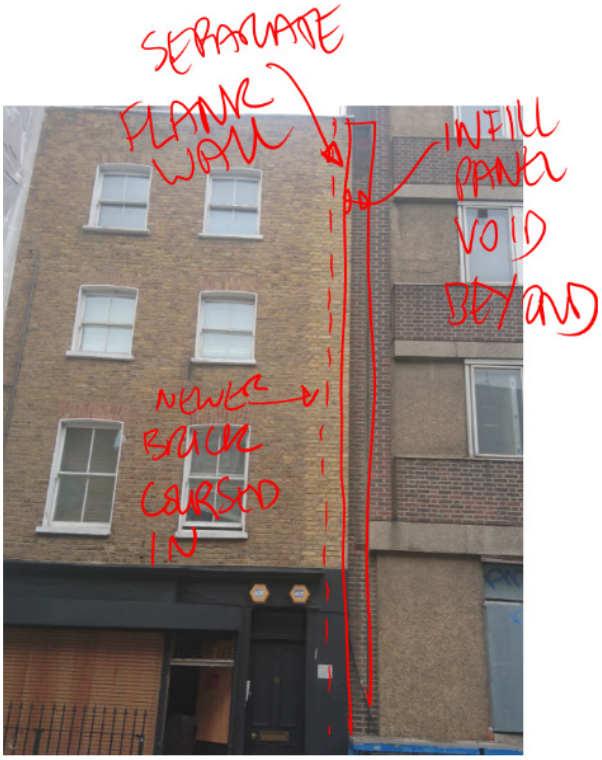

Figure 2 Existing street elevation east boundary

To the west, the property is bounded by 30 CS, an existing 7/8 storey (including basement) loadbearing masonry property circa 1930. The wall between 52 TS and this property appears to be a single 330 thick masonry wall. From roof level of 52 TS to roof level of the adjoining property 30 CS the wall and flues have been raised in later brickwork constructed at the time of the adjoining property. There is evidence of differential movement between the two properties as the junction of 52 TS' parapet with the flank wall has cracked. The adjoining property will require temporary lateral propping to the wall during demolition and construction of the proposed development.

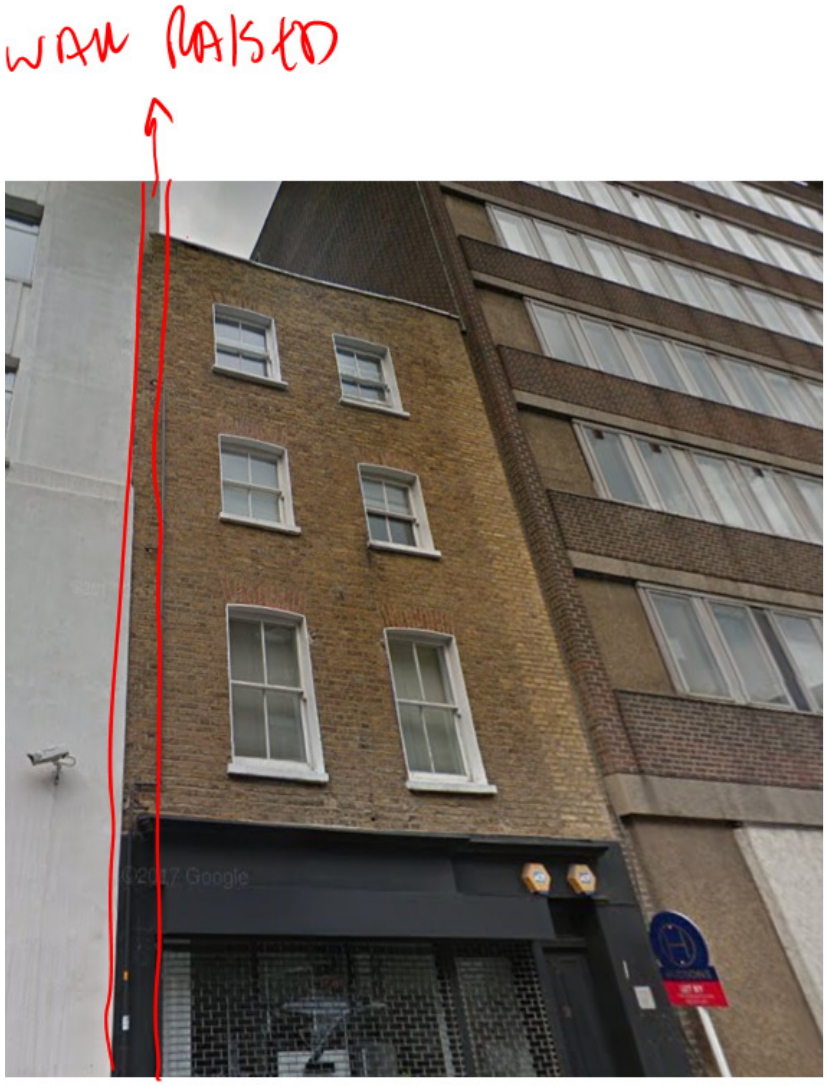

Figure 3 Existing street elevation west boundary

Rear elevation

A similar observation to the front elevation is made to the rear east boundary with the ASH, a wider infill panel of brick is evident separating the two properties where there is a void between the two properties.

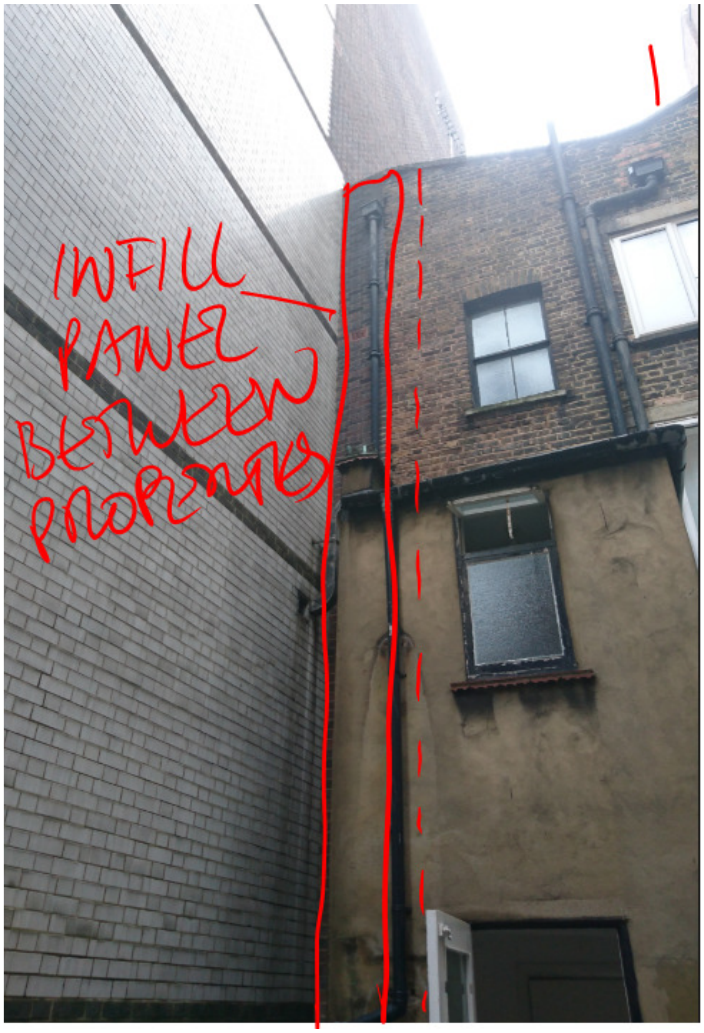

Figure 4 Existing rear elevation east boundary

Furthermore it is evident that the flank wall to the west boundary has been raised on the rear elevation along with the flues.

Figure 5 Existing rear elevation west boundary

Ground floor internal

Toward the front of the property various stud work boxing was evident to the 30 CS west boundary making interpretation of the wall profile inconsistent with that observed externally. Holes were broken through the plasterboard to identify the profile of the masonry party wall.

To the rear of the property is a single storey extension. Two trial holes had already been exposed prior to inspection, these indicate that there was an existing basement to the rear single storey area, there appears to be a variety of construction evident in the trial holes from various periods and likely some underpinning.

The ground conditions were ‘Fill’, a mixture of brick, loose soil and various other construction waste. The fill extended to the base of the trial pits some 2.5m below ground level.

Basement floor internal

An existing basement covers the footprint of the 4 storey property with vaults extending under the pavement.

Three trial pits had already been exposed prior to the inspection. These show the existing footing and mass concrete underpinning to both East and West boundaries to ASH and 30CS.

The underpinning may have been constructed to increase the bearing capacity where the party wall has been raised or to allow construction of a lower floor level for the basements in the adjoining properties.

Various drainage pipes where evident running through the basement, a drainage survey has been undertaken by JPD technical services with the existing outfall to the public sewer through the vaults on Tottenham Street.

The ground conditions below floor level were ‘Fill’, a mixture of brick, loose soil and various other construction waste. The fill extended to the base of the trial pits some 1.2m below basement floor level.

ASH 52 TS boundary wall

Investigations were undertaken along the 52TS and ASH boundary by opening larger holes through the wall and drilling holes through the wall.

To the front half of this boundary are two independent walls with a gap between the two buildings. A historic chimney breast was identified on the back of the 52TS flank wall assumed to be the reason the gap is present between the two buildings. Within the gap, the floor slabs of ASH project out and butt against the flank wall of 52TS, assumed to be constructed to provide horizontal lateral restraint to the masonry wall.

To the rear half of this boundary is a lightwell belonging to ASH. The masonry flank wall of 52TS forms part of this lightwell and has been underpinned to ASH B02 basement level. A hole was drilled through the concrete at the ASH B02 level and has identified the underpins are approximately 850mm thick.

The flank wall of 52TS adjacent to the front gap has been underpinned. A hole drilled through the ASH B02 wall appears to indicate this wall has been underpinned to the lowest level basement. It was not possible to identify the thickness of the underpins as the drill bit was not long enough, however they are at least 600mm thick and would be reasonable to assume they are atleast as thick as the underpins to the rear lightwell wall.

Figure 6 Holes opened in flank wall into gap

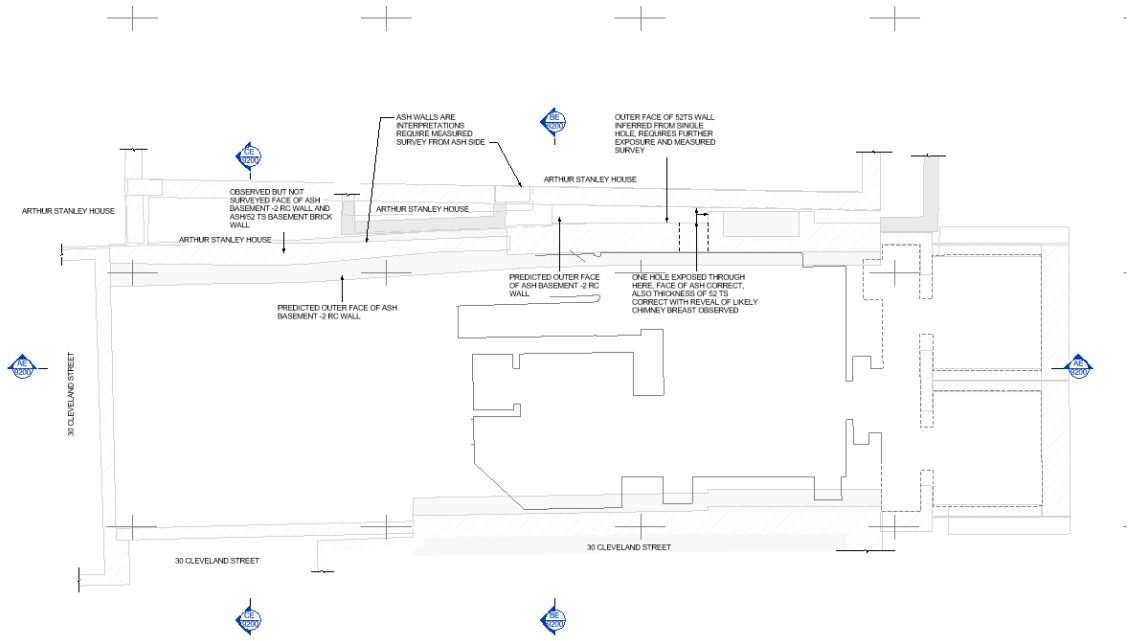

Figure 7 Existing basement plan with ASH boundary investigations

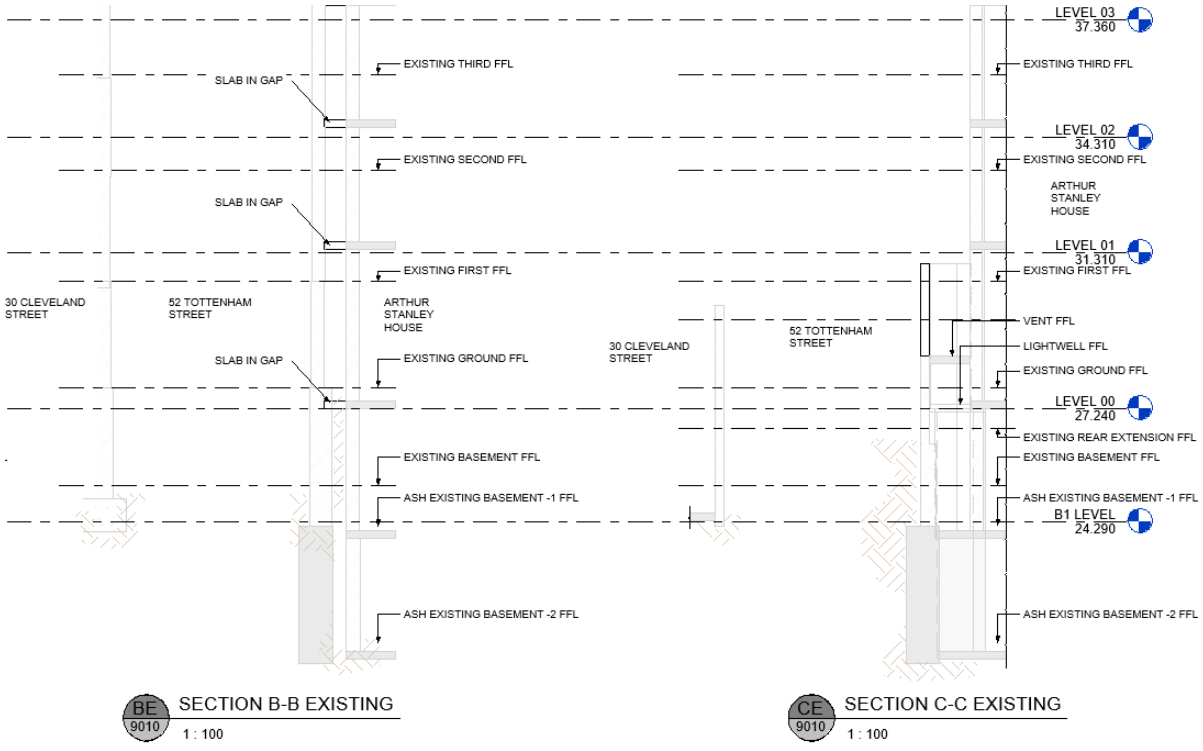

Figure 8 Existing sections with ASH boundary investigations

APPENDIX A – TRIAL HOLE LOGS

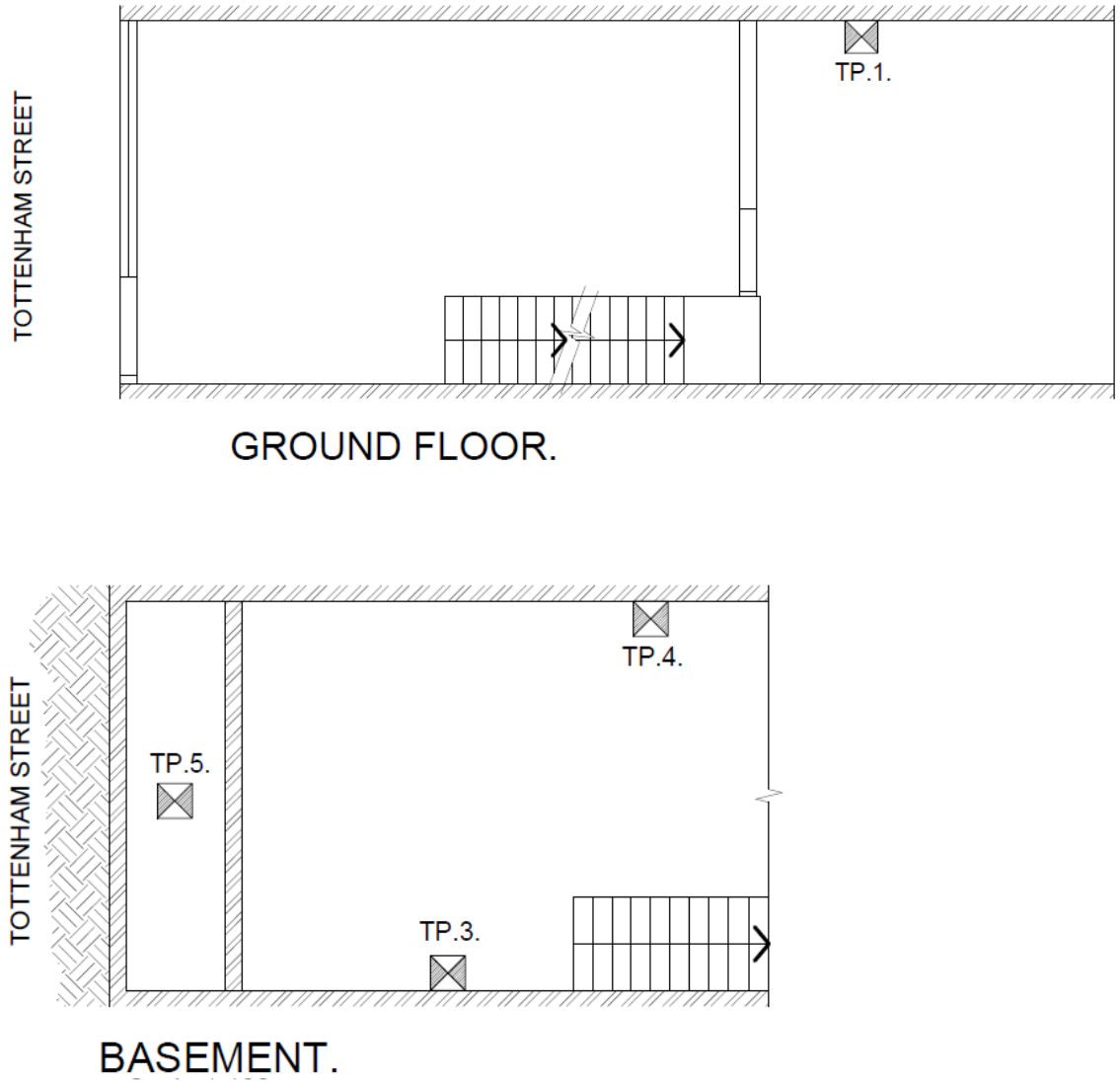

Figure 9 Trial Hole location plans

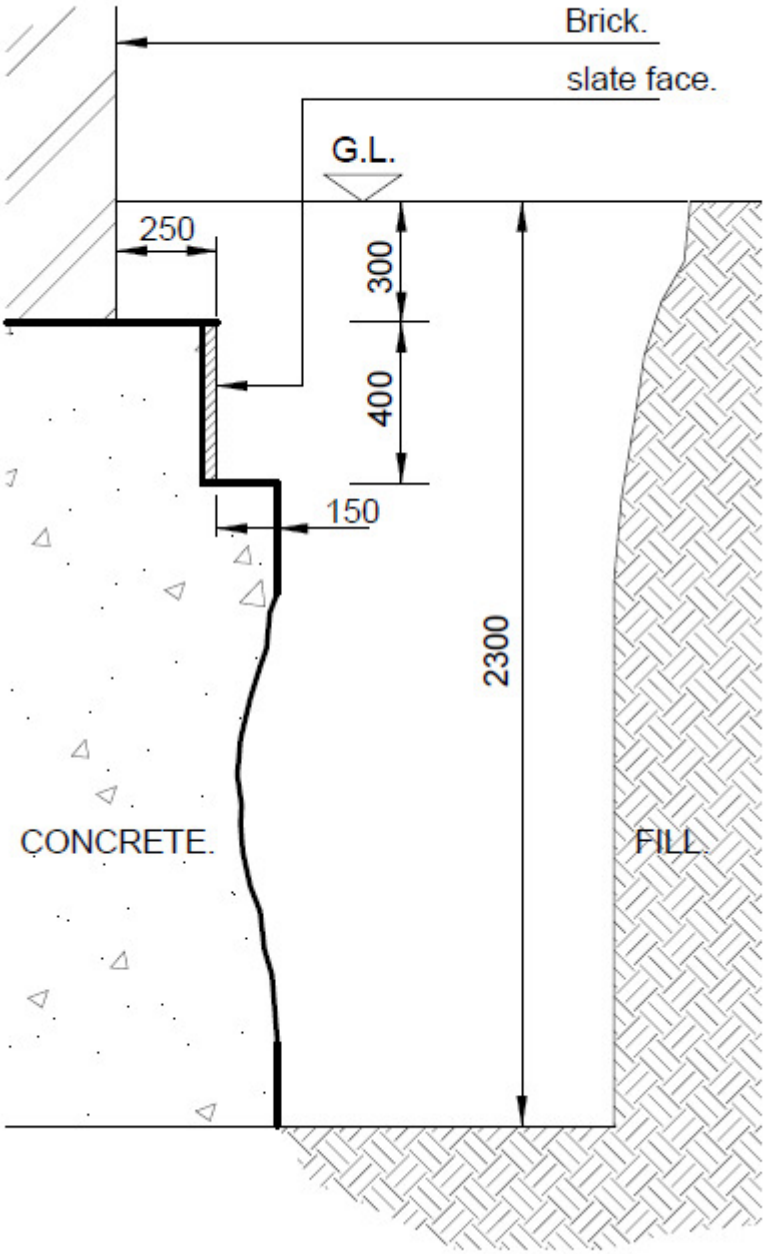

Figure 10 Trial Hole 1 drawing

Figure 11 Trial Hole 1 photo

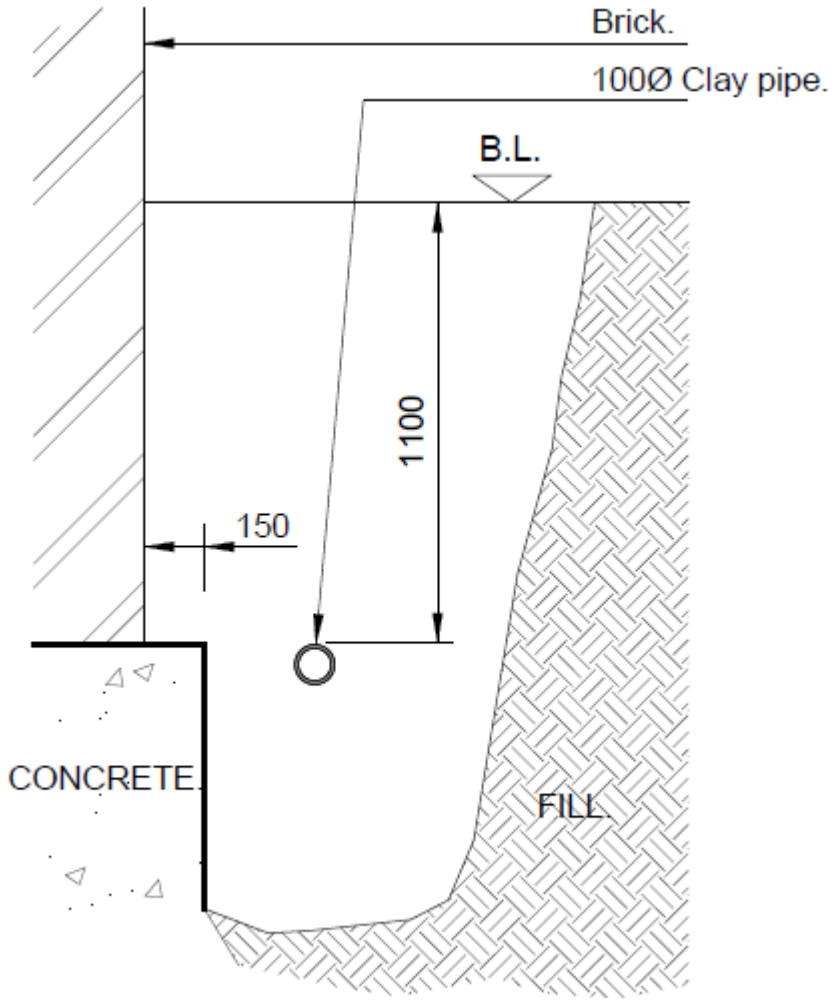

Figure 12 Trial Hole 3 drawing

Figure 13 Trial Hole 3 photo

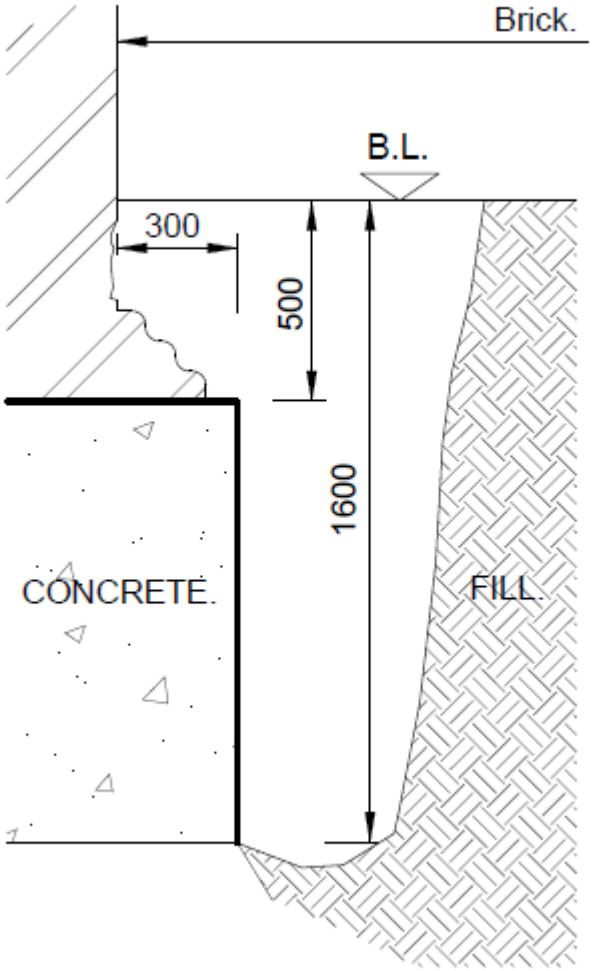

Figure 14 Trail Hole 4 drawing

Figure 15 Trial Hole 4 photo

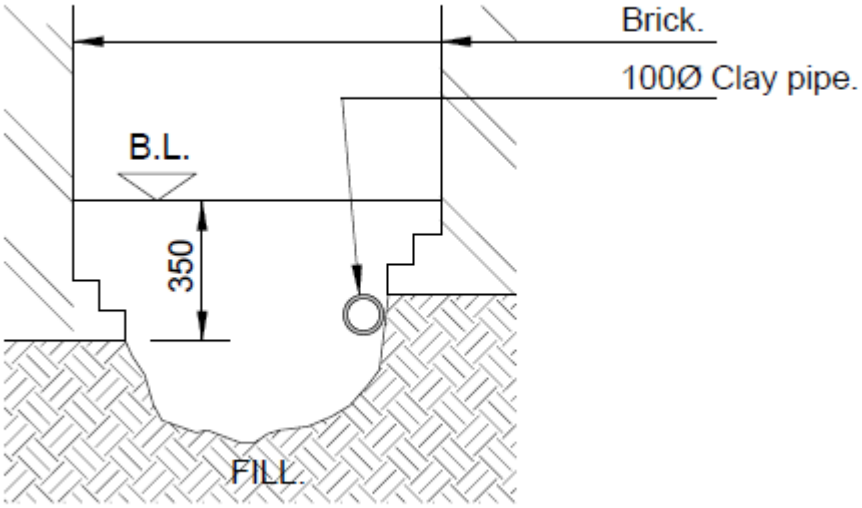

Figure 16 Trial Hole 5 drawing

Figure 17 Trial Hole 5 photo