PRICE&MYERS

1-5 Portpool Lane

London EC1N 7UU

Basement Impact Assessment - Scoping & Screening Study

Contents

Appendices

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October 2014
23092

1 Introduction

Price & Myers have been appointed by Spot Property Company Ltd to assist their Architect, Stiff + Trevillion, in the preparation of a Basement Impact Assessment (BIA). At this stage only stage 1 (screening) and stage 2 (scoping) have been carried out. This BIA has been prepared in line with Camden Council's CPG4 document. The information in this report is on desk study searches of the area.

1.1 The Site

Portpool Lane runs east to west between Grays Inn Road and Leather Lane, London. The site occupies a rectangular plot of approximately 25m x 10m in plan. The site is bounded by Portpool Lane to the south of the site; a communal garden to the north; and office buildings to the east and west. Historic maps included in Appendix A show the site was developed prior to 1836. The WWII Bomb Damage Map (Appendix A) suggest that the site suffered total destruction. There is no known history of seasonal shrink-swell subsidence in the local area. The top layer of natural ground is gravels (see Appendix B) which is not prone to shrinking and swelling.

1.2 The Existing Building

A four-storey building (that includes a basement) currently occupies the majority of the site. The building was constructed in the mid-20th century and is used as a commercial office space. The building is of traditional single skin construction with concrete floors supported by columns and beams.

1.3 Stage 1 Screening

The purpose of the screening stage of the BIA is to identify any matters of concern which should be investigated further through the BIA process. The screening process has been undertaken as outlined in the Camden Planning Guidance – Basement and Lightwells CPG4 and the Camden geological, hydrogeological and hydrological study prepared by ARUP.

The screening flow charts given in GPG4 have been used and are provided below. Those that have been identified as being relevant are discussed in the following Scoping Stage.

Subterranean, ground water, flow	Response	Refer to:
Is the site located directly above an aquifer?	Yes	Refer Appendix B and section 2
Will the proposed basement extended beneath the water table surface?	No	Refer Appendix B and section 4
Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	No	Refer Appendix B and section 2
Is the site within the catchment of the pond Chains on Hampstead Heath, or within 50m of the ponds?	No	Refer Appendix B
Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	No	Refer to section 4
As part of the site drainage, will more surface water (e.g. rainfall	No	Refer to section 4

and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDS)?		
Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just ponds chains on Hampstead Heath) or spring line.	No	Refer Appendix B and section 2
Slope Stability		
Does the existing site include slopes, natural or manmade, greater than 7°? (approximately 1 in 8)	No	Refer to section 2
Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)	No	Refer to section 2
Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)	No	Refer to section 2
Is the site within a wider hillside setting in which the general slope is greater than 7° ? (approximately 1 in 8)	No	Refer to section 2
Is the London Clay the shallowest strata at the site?	No	Refer Appendix B and section 2
Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree zones where trees are to be retained?	No	Refer to section 2
Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?	No	Refer to section 2
Is the site within an area of previously worked ground?	No	Refer Appendix B and section 2
Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	Yes – Aquifier & No –Water Table	Refer Appendix B and section 4
Is the site within 50m of the Hampstead Heath ponds?	No	Refer Appendix B
Is the site within 5m of a highway or pedestrian right of way?	Yes	Refer to section 2
Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	No	Refer to section 3
Is the site over (or with the exclusion zone of) any tunnels e.g.	No	Refer Appendix B

railway lines?		
Surface flow and flooding		
Is the site within the catchment of the pond Chains on Hampstead Heath?	No	Refer Appendix B
As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?	No	Refer to section 4
Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	No	Refer to section 4
Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?	No	Refer to section 4
Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No	Refer to section 4
Is the site in an area identified to have surface water risk according to either the Local Flood Risk Management Strategy or the Strategic Flood Risk Assessment or is it at risk from flooding, for example because the proposed basement is below the static water level of nearby surface water feature?	No	Refer to section 4

1.4 Stage 2 Scoping

The purpose of the scoping stage of the BIA is to define further the potential impacts identified within the screening stage as requiring additional investigation. These are addressed in sections 2, 3 & 4 of this document. The scoping stage has been undertaken as outlined in Camden Planning Guidance – Basements and Light wells CPG4 and the Camden geological, hydrogeological and hydrological study prepared by ARUP.

2.0 Surveys and Ground Conditions

2.1 Local Geology

The published geological maps of the area are included in Appendix B and indicate that the site is underlain by Hackney Gravels over London Clay. The Hackney Gravels are designated as a secondary Aquifer by the Environment Agency.

2.2 Local Ground Levels

The site and surrounding area is relatively flat. There are no slopes greater than 7 degrees within or surrounding the site.

2.3 Local Surface Water or Below Ground Water Features

The 'Lost Rivers of London' map (see Appendix B) shows the River Lee approximately 400m to the east of the site under what is now Farringdon Road. There are no other nearby watercourses.

2.4 Local Groundwater Levels

A Site Investigation has not been carried out at this stage. A review of nearby boreholes published on the British Geological Society – GeoRecords Plus+ website, indicates that the water table is approximately 5.5m below ground level (BGL).

2.5 Local Surface Finishes

The entire site is currently hard standing.

2.6 Current Local Surface Water Pathway

All surface water within the site is currently discharged into the public sewers.

2.7 Nearby Trees

Within the communal gardens to the north of the site, are three existing trees within close proximity. An Arboriculturist has inspected these tress and determined that no parts of the proposed building is within the RPAs of any of the trees to be retained. Subject to the implementation of protective measures, their construction will not cause unacceptable damage to roots or rooting environments as a result of root severance or damage, or compaction or pollution of the soil.

3 Proposals

3.1 Permanent Works

The proposed works involves demolishing all but the basement walls of the existing building and creating a new concrete framed building over the same footprint. In order to create a level access at ground floor, the new basement will be deepened by approximately 1.5m. This will require the existing basement walls to be underpinned with reinforced footings that will also form part of the basement slab.

As the public footpath is adjacent to the south of the site, the Highways Agency will need to be consulted on the proposed works. The eastern neighbouring property shares a partywall with our site. The deepening of the foundations to this partywall by approximately 1.5m is not a significant increase and the foundations are still expected to be bearing on the same layer of gravel.

The site drainage strategy for the proposed scheme will remain as existing. Due to the site being underlain by clay, options such as soakaways and permeable paving will not be feasible solutions to minimise any discharge into the public sewer. The design and detail of this will need to be developed in the next stage, and agreed with Thames Water. The level of the public sewer is unknown, but it is assumed the new basement level drainage will need to be pumped.

3.2 Temporary Works

The most significant temporary works operation will be the underpinning works to the basement. The underpins will be installed in sequence and backfilled before progressing with the adjacent underpins. Once all the underpins are complete, temporary props will be installed so that the basement can be excavated to the required depth. The basement slab will then be cast and once it has reached sufficient strength, the temporary props can be removed and construction of the concrete frame can proceed in a conventional manner.

4 Ground Water and Local Hydrogeology

Rainwater falling on the Heath soaks through the permeable sands and forms into springs where it meets the impermeable clay layers. Many of London's Lost Rivers have their sources at this junction, and one of the tributaries of the River Lee is recorded as having passed close to the site – refer to the Lost Rivers of London map in Appendix B.

As the water table is approximately 5.5m BGL, and the construction for the new basement level will extend down approximately 3.5 metres BGL, the new extension cannot have an impact on the existing ground water flows.

The site is largely developed with 100% of the site impermeable hardstanding. Therefore, the proposed development will not increase the existing levels of surface water run-off.

Camden Council recently employed engineers, Arup, to carry out an investigation of the effects of below ground development on local hydrogeology. Arup Geotechnics subsequently published a 'Subterranean Development Scoping Study', the conclusions of which include the statement that '..[c]oncerns about the significance of the impact of subterranean development on groundwater levels and groundwater flows are likely to be misplaced. It is likely that such effects, if any, will be small and that they may be less significant than seasonal or other variations in the groundwater level.'

5 Conclusion

The scoping and screening stages of a basement impact assessment, as required for planning by the London Borough of Camden, has been undertaken by Price and Myers for the proposed minor increase to the existing basement at 1- 5 Portpool Lane. It is concluded that the proposed development is unlikely to result in any specific issues relating to land or slope stability, or the hydrogeology and hydrology of the site. Suitable construction methods will ensure slope stability at the site and there should not be any negative impact on the groundwater. All issues of concern have been identified in the scoping stage and therefore no additional site investigation needs to be undertaken at this stage.

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Appendix A – Site Location Plan

Map 1: Street Map

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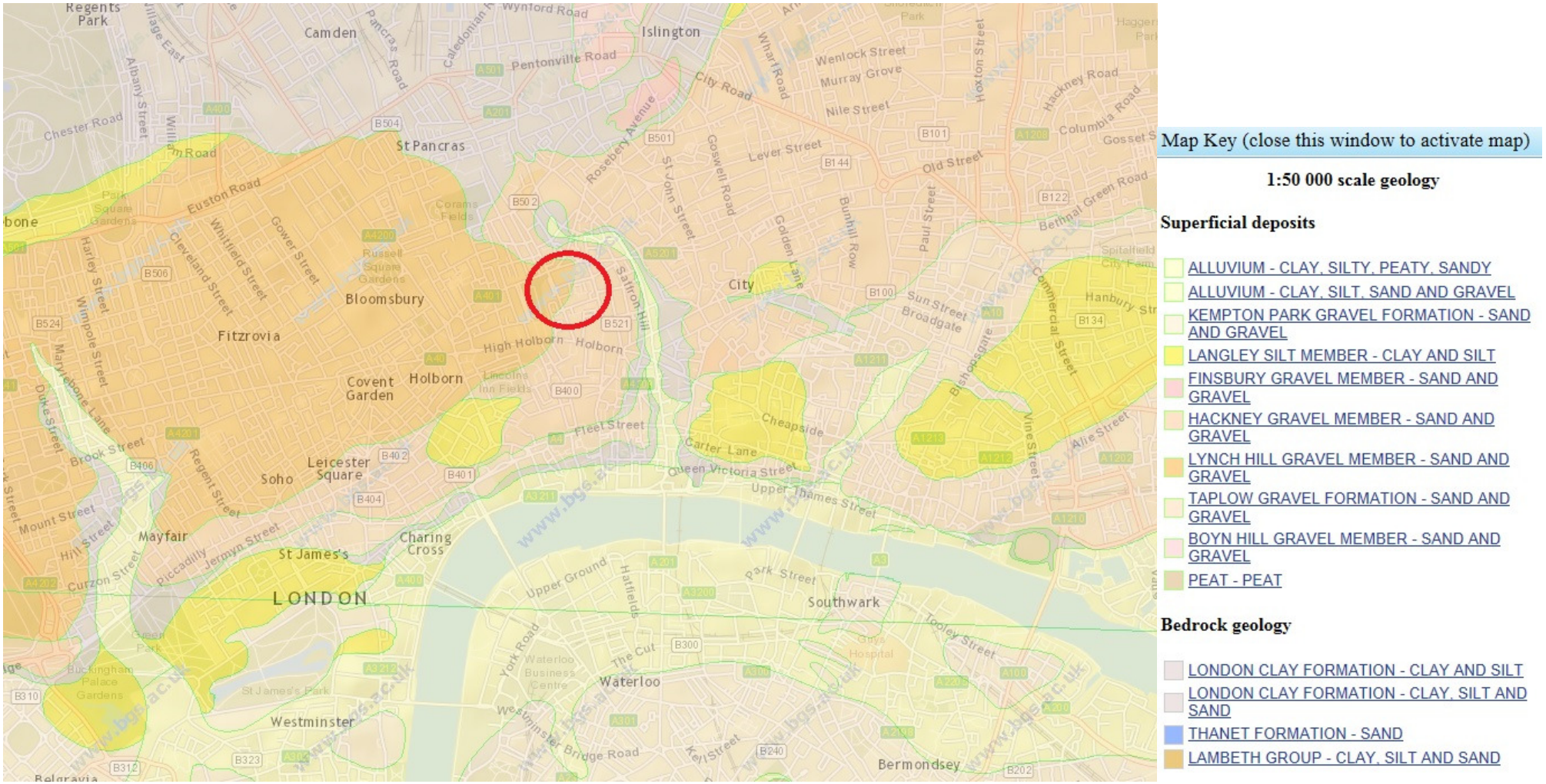
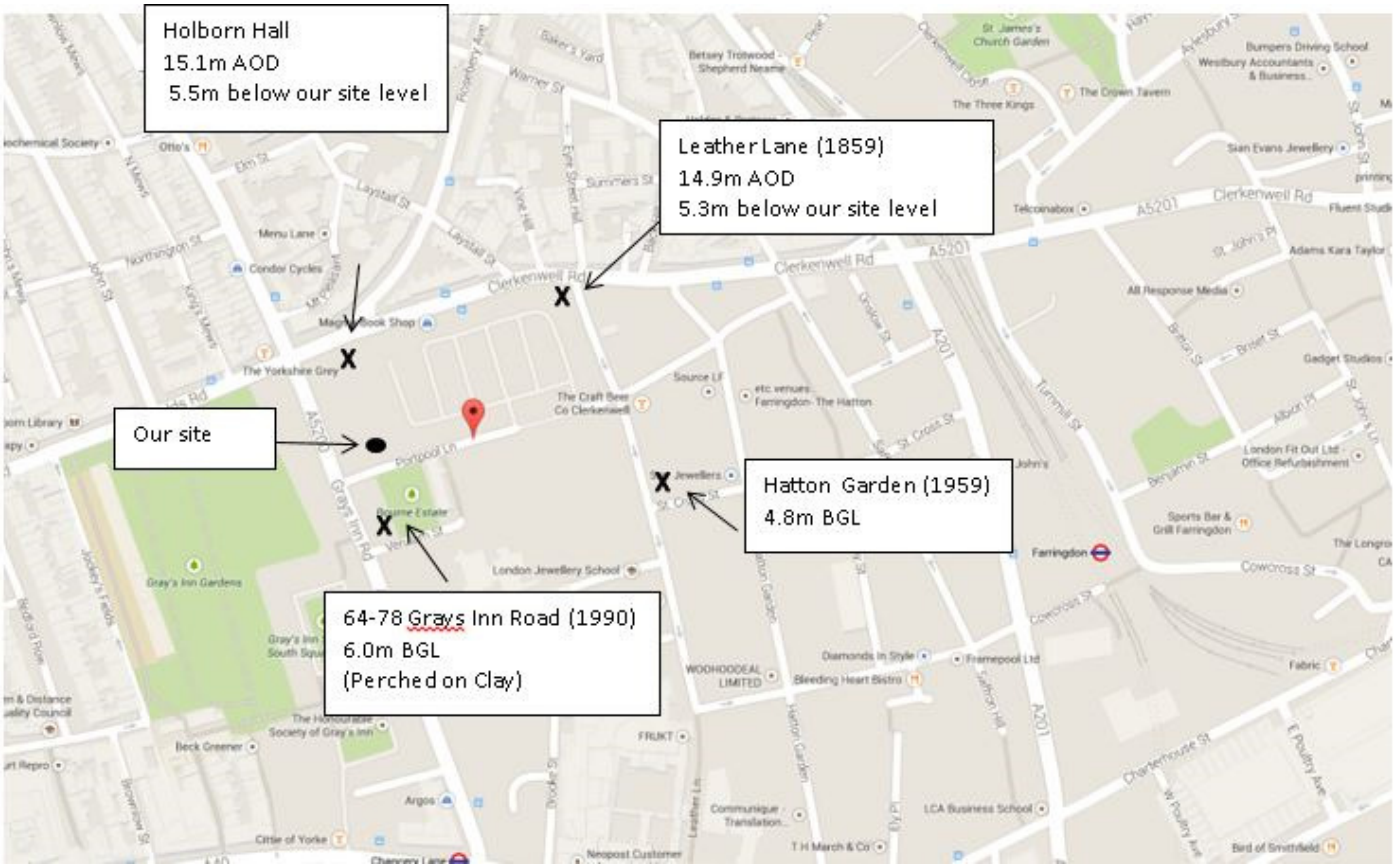
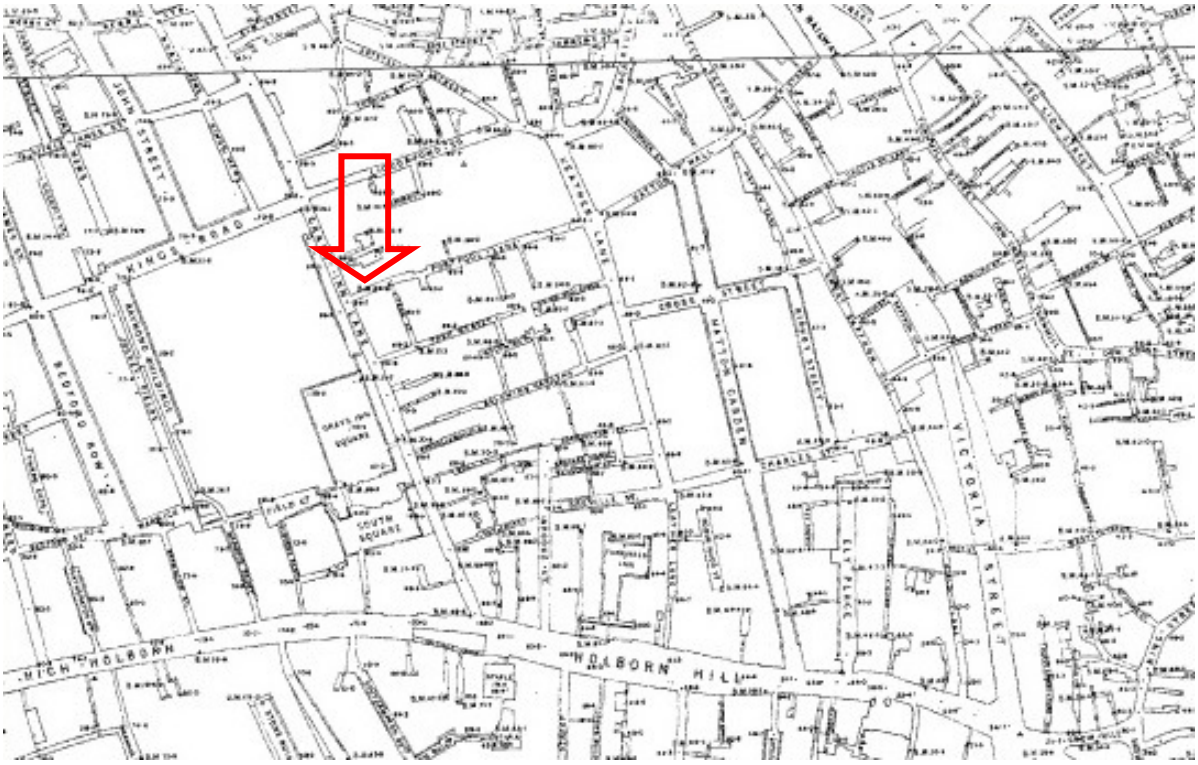
Appendix B – Desk Study Searches



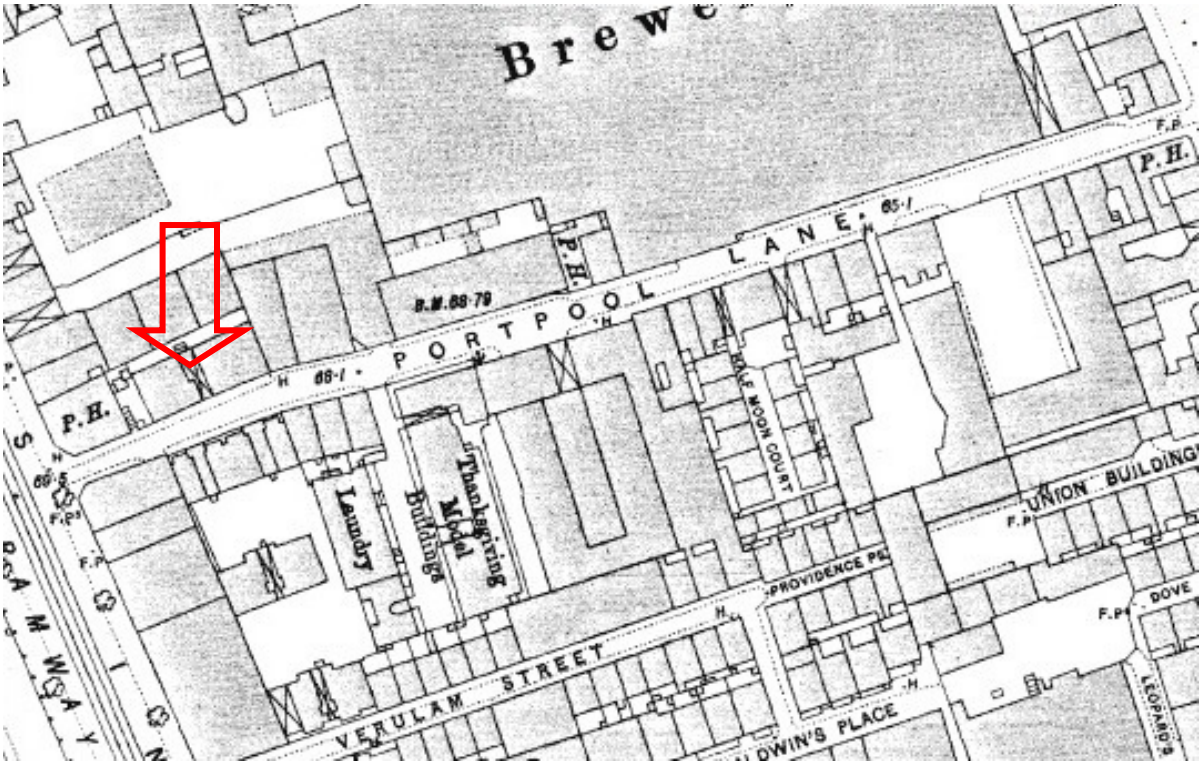
Map 2: Geological Map



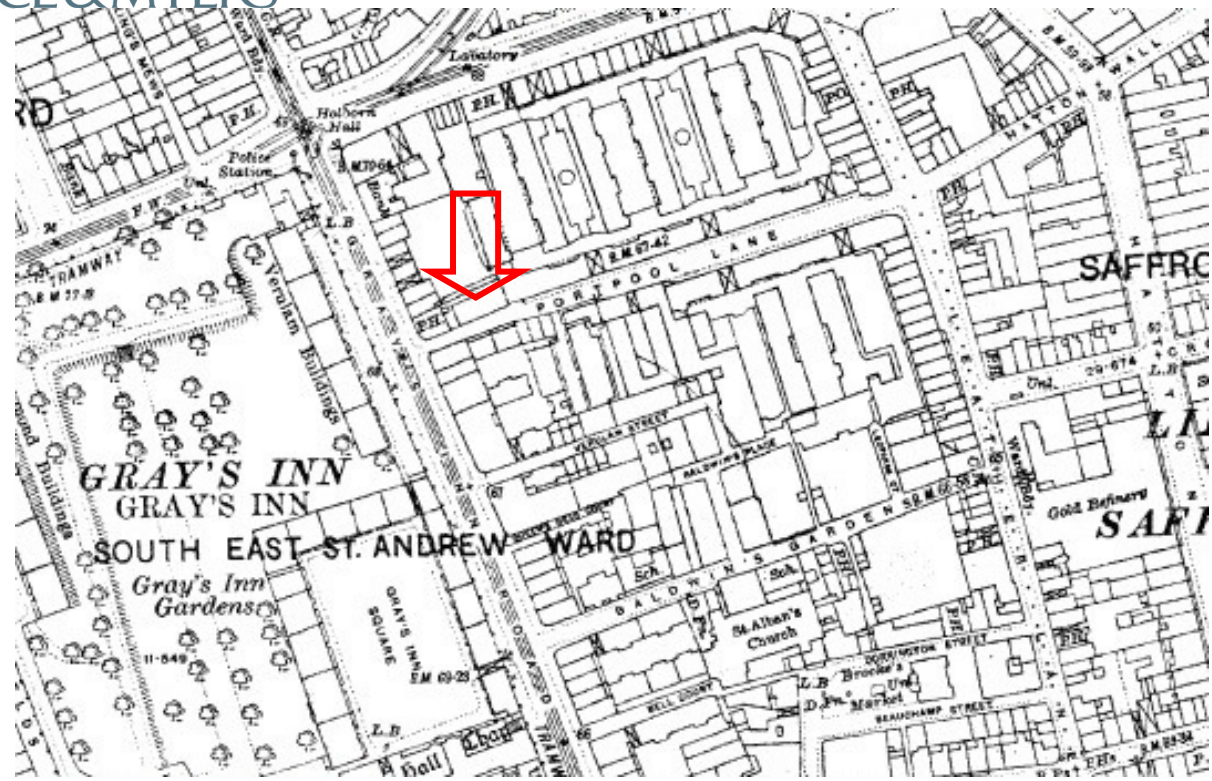
Map 3: Recorded Water Table Depths from Nearby Boreholes



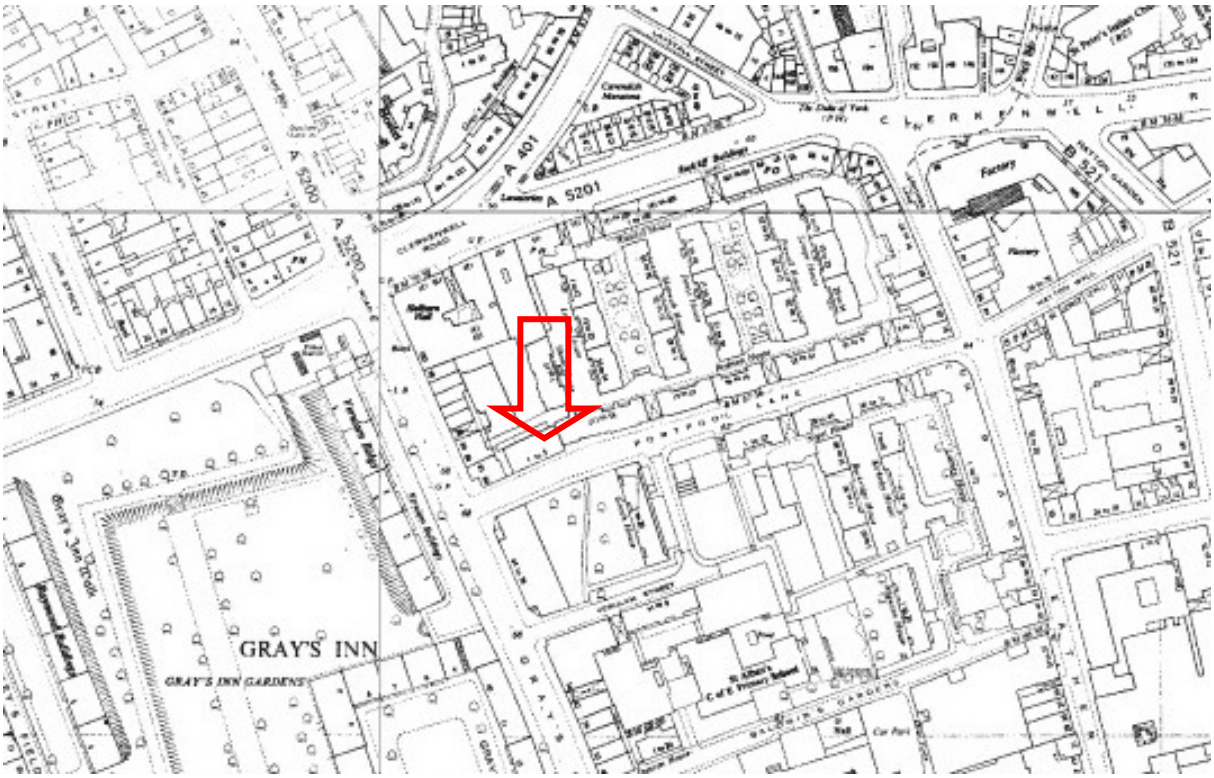
Map 4: Ordnance Survey Map 1851



Map 5: Ordnance Survey Map 1896



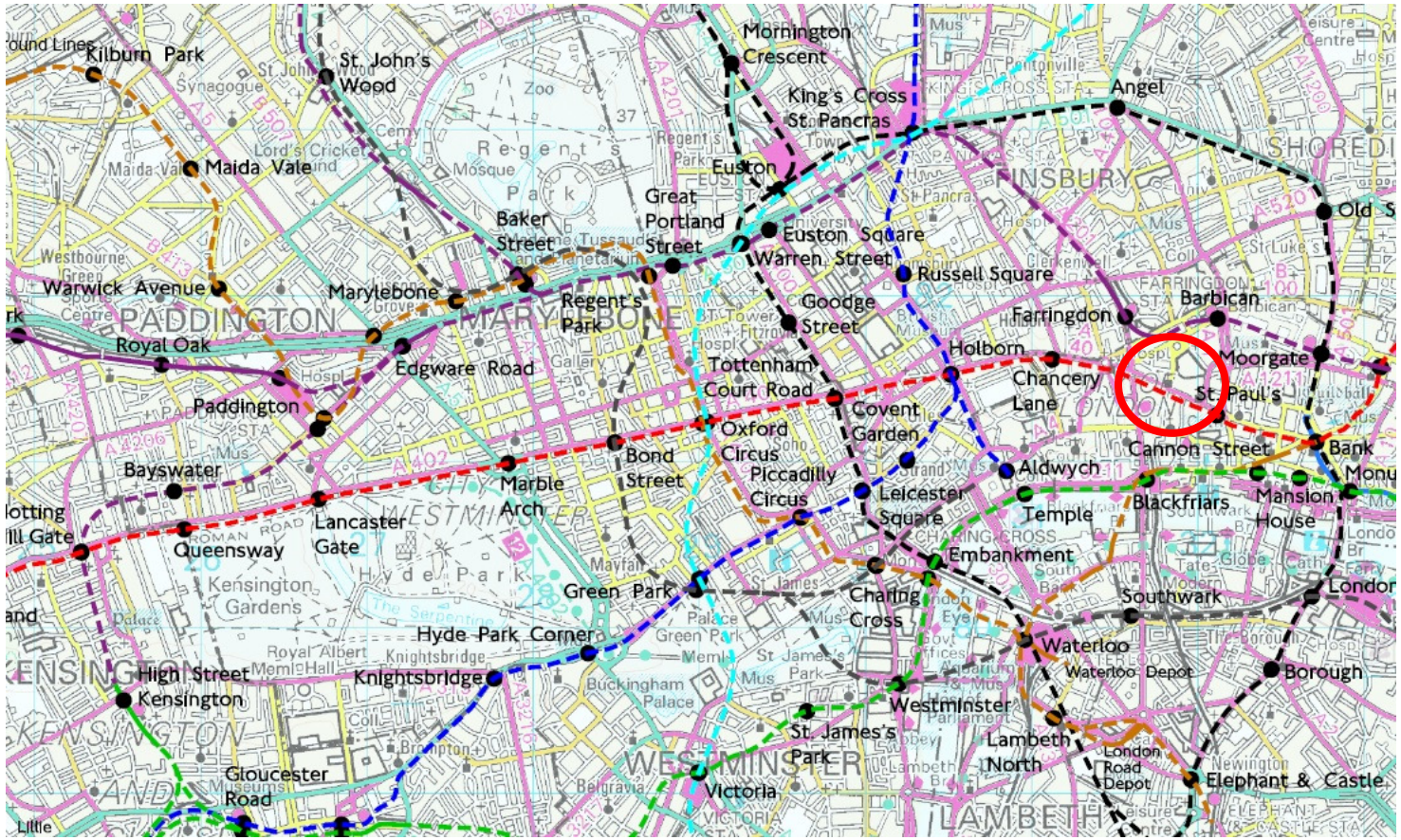
Map 6: Ordnance Survey Map 1916



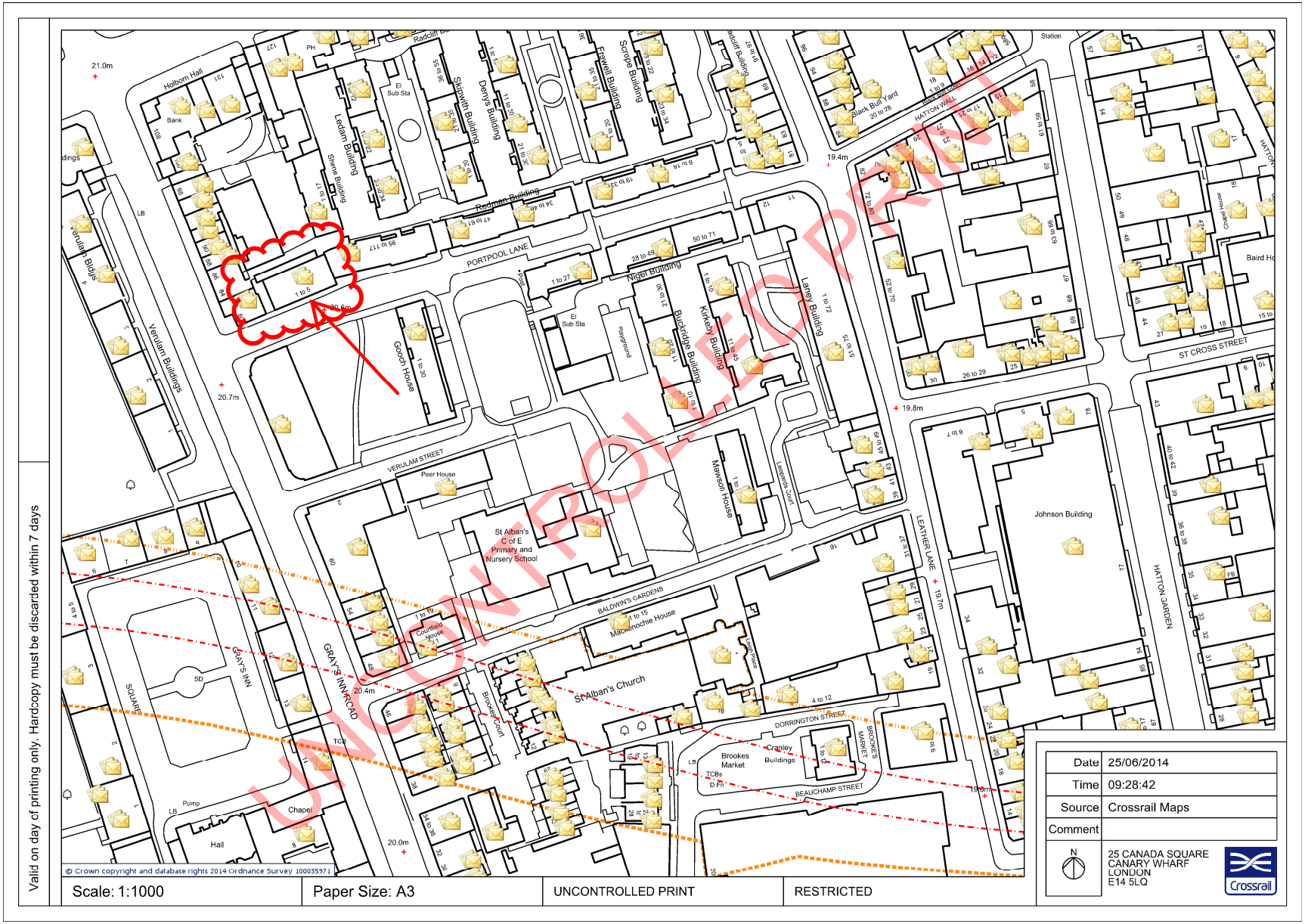
Map 7: Ordnance Survey Map 1965-1968

Map 8: Bomb Damage Map

Map 8: Lost Rivers of London Map



Map 9: Tube Map



Map10: Crossrail Map