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1. Introduction

Heyne Tillett Steel have been commissioned by Channing School to undertake a Flood Risk Assessment (FRA) for the proposed redevelopment of the Main House on the Channing Senior School site. This report has been prepared to support the planning application submitted to the London Borough of Haringey (LBH) for this development.

The report aims to incorporate and demonstrate compliance with the following national, regional and local planning policy guidance and statutory requirement as far as reasonably possible.

- + National Planning Policy Framework (NPPF), 2023
- + Planning Practice Guidance, 2021
- + The London Plan, 2021
- + Draft London Regional Flood Risk Appraisal, 2018
- + LBH Local Plan Strategic Policies, 2013
- + Draft LBH Strategic Flood Risk Assessment (SFRA), 2015
- + LBH Local Flood Risk Management Strategy
- + LBH Surface Water Management Plan (SWMP), 2011

2. Site Description

2.1 Site Location

The development is located at the National Grid reference of 528715E, 187337E with the postcode N6 5HF. It is bounded by Cholmeley Park to the West and Highgate Hill High Street to the South.

The site is located within the LBH with the minor development consisting of an approximate area of 0.19 ha or 1900m². The location of the site is shown in Image 1.

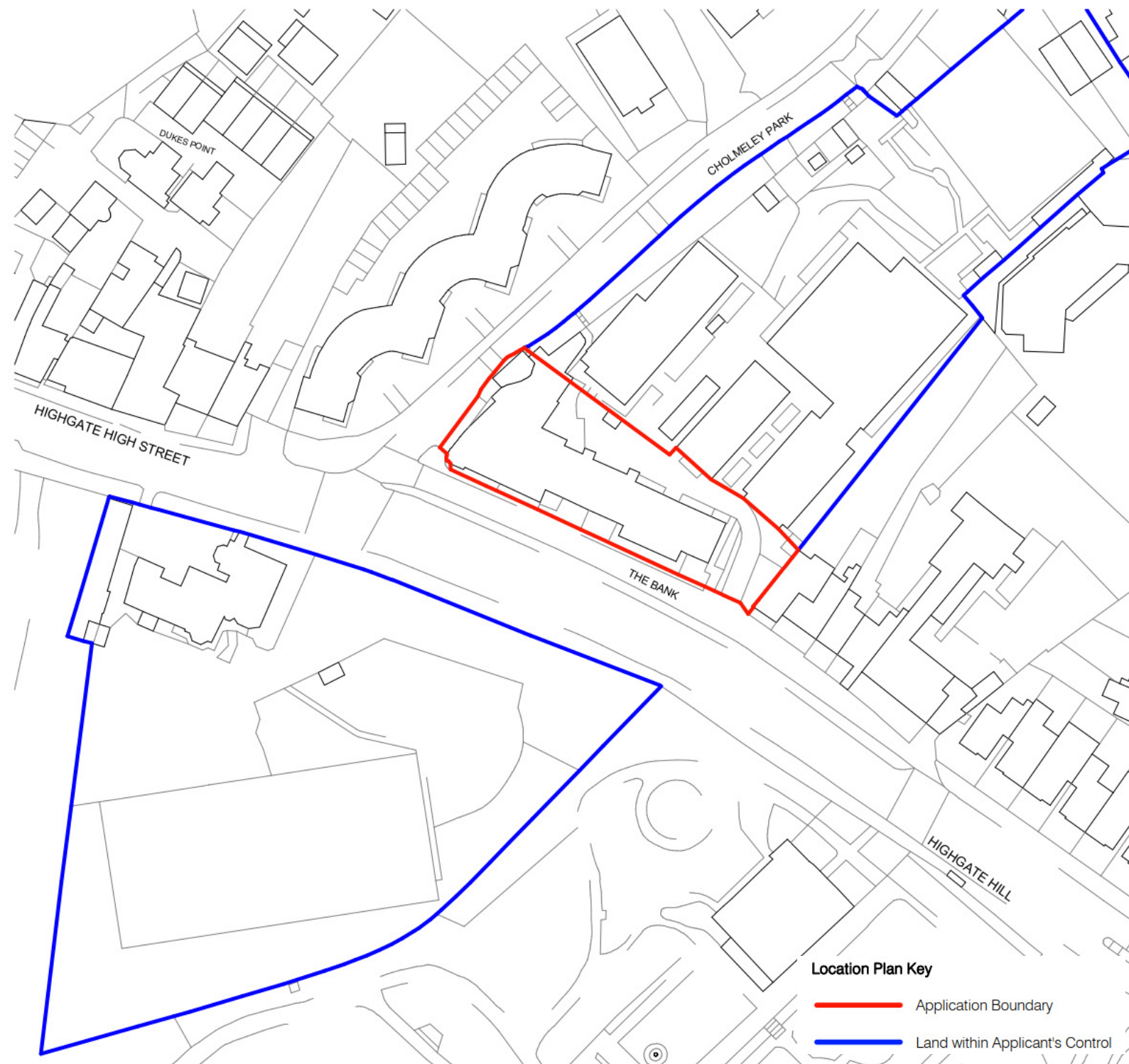


Image 1 - Site Location

2.2 Existing Development

Channing School is an independent secondary school for girls. The development is sited on the corner of Cholmeley Park Road and The Bank and consists of three individual sections: Channing House to the West, Slingley House / West View House in the centre and Haigh House to the East. The entire building is considered to be listed as the connected buildings Slingley and Westview House are Grade II listed.

A copy of the existing architectural general arrangements are shown in Appendix A.

2.3 Proposed Development

The proposals include the redevelopment of the existing Main House building of Channing School with the extension of the lightwell and basement. The project is a minor development.

A copy of the proposed architectural general arrangements are shown in Appendix B.

2.4 Site Topography and Geology

A topographical survey was conducted at the site during August 2023. The survey shows the site to be relatively flat, with an average ground level of 114m. However, there is a steep slope towards the northeast of the building, with a maximum drop of 8m. The extension is proposed to be built within this area. A copy of the topographical survey is shown in Appendix C.

Historic borehole logs from the British Geological Survey (BGS) were accessed to understand the geology of the site. This showed that the ground conditions comprise of Made Ground, underlain with sandy clay (Bagshot Formation). The BGS logs showed sandy clay was encountered between 1 – 15m below ground level (bgl).

3. Flood Risk Assessment

The risk of flooding to the site will be assessed in accordance with the technical guidance document to the NPPF and the NPPG for flood risk and coastal change. Sources including the Environment Agency (EA)’s flood maps and the LBH will be referenced to determine the flood risk within the development.

3.1 Flooding from Rivers and Sea

As presented in Image 2, the Environmental Agency (EA)’s Flood Map for Planning shows that the site is located in Flood Zone 1. Table 1 is an extract from the technical guidance document to the NPPF which has been used to determine the flood risk vulnerability classification for the proposed development. This proposed development is classed as “More Vulnerable”.

Table 2 has also been extracted from the NPPF and it sets out the compatibility of different land uses based on their flood risk vulnerability. As the proposed development falls in Flood Zone 1 and is classified as “More Vulnerable”, the proposed use is acceptable, with no exception test required to justify the proposed development.

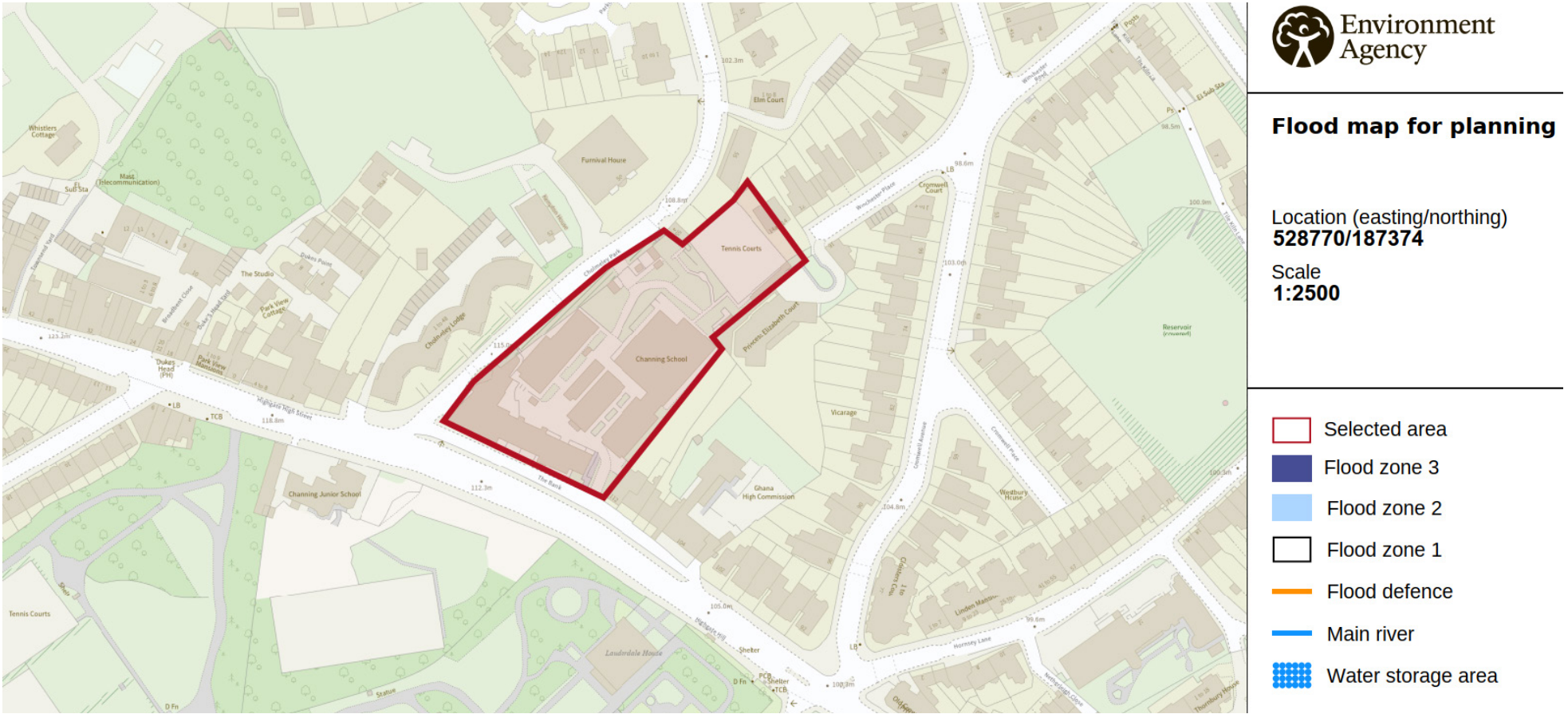


Image 2 - Flood Map for Planning

More Vulnerable
+ Hospitals
+ Residential institutions such as residential care homes, children’s homes, social services homes, prisons and hostels.
+ Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
+ Non-residential uses for health services, nurseries and educational establishments .
+ Landfill* and sites used for waste management facilities for hazardous waste.
+ Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Flood risk vulnerability classification	Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception Test required	✓	✓
Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
Zone 3b functional floodplain	Exception Test required	✓	✗	✗	✗

Key: ✓ Development is appropriate.
✗ Development should not be permitted.

Table 2 - Flood risk vulnerability and flood zone ‘compability’

Table 1 - Flood risk vulnerability classification

3.2 Flooding from Fluvial/Tidal Sources

Fluvial flooding is flooding caused by rivers, watercourses or ditches overflowing. Tidal flooding is flooding caused by elevated sea levels or overtopping by wave action. In estuarine areas, flooding might arise from either fluvial or tidal flooding, or a combination of the two.

Although the LBH contains areas that are situated within Flood Zones 2 and 3, the site is located east in the borough which is within Flood Zone 1. Flood Zone 1 is defined as land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%). Therefore, this confirms that the risk of flooding from rivers and sea is considered to be low for the site.

3.3 Flooding from Surface Water

Surface water flooding occurs when the volume of rainwater during storm events exceeds the capacity of infiltrating ground media or overwhelms the existing drainage network but forms overland flow routes and/or ponding instead. This is typically associated with topographical low points.

The EA's long term surface water flood risk map is shown in Image 03. The site is shown to be at very low risk of surface water flooding as illustrated on Image 4.

This source of flooding is assessed to be low risk.

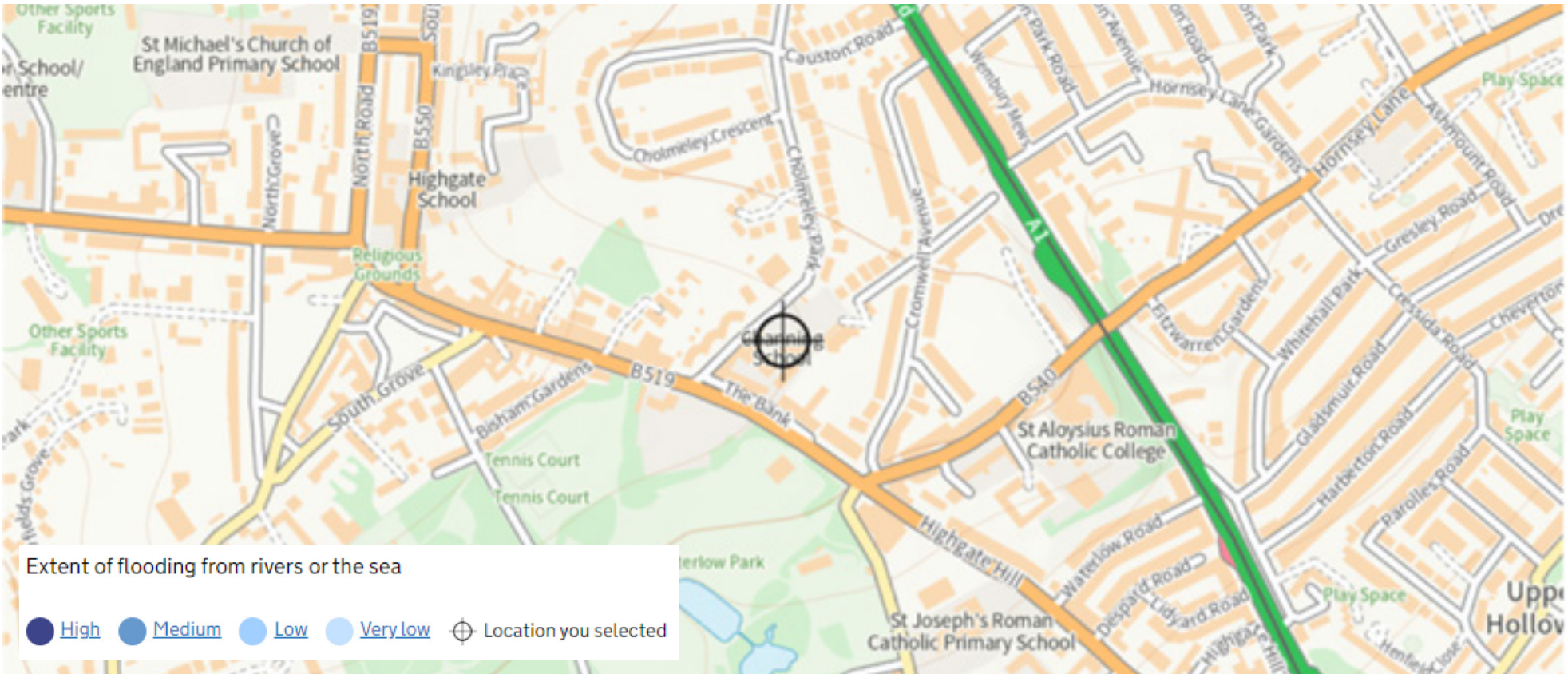


Image 3 - Extent of fluvial flooding (extract from EA website)

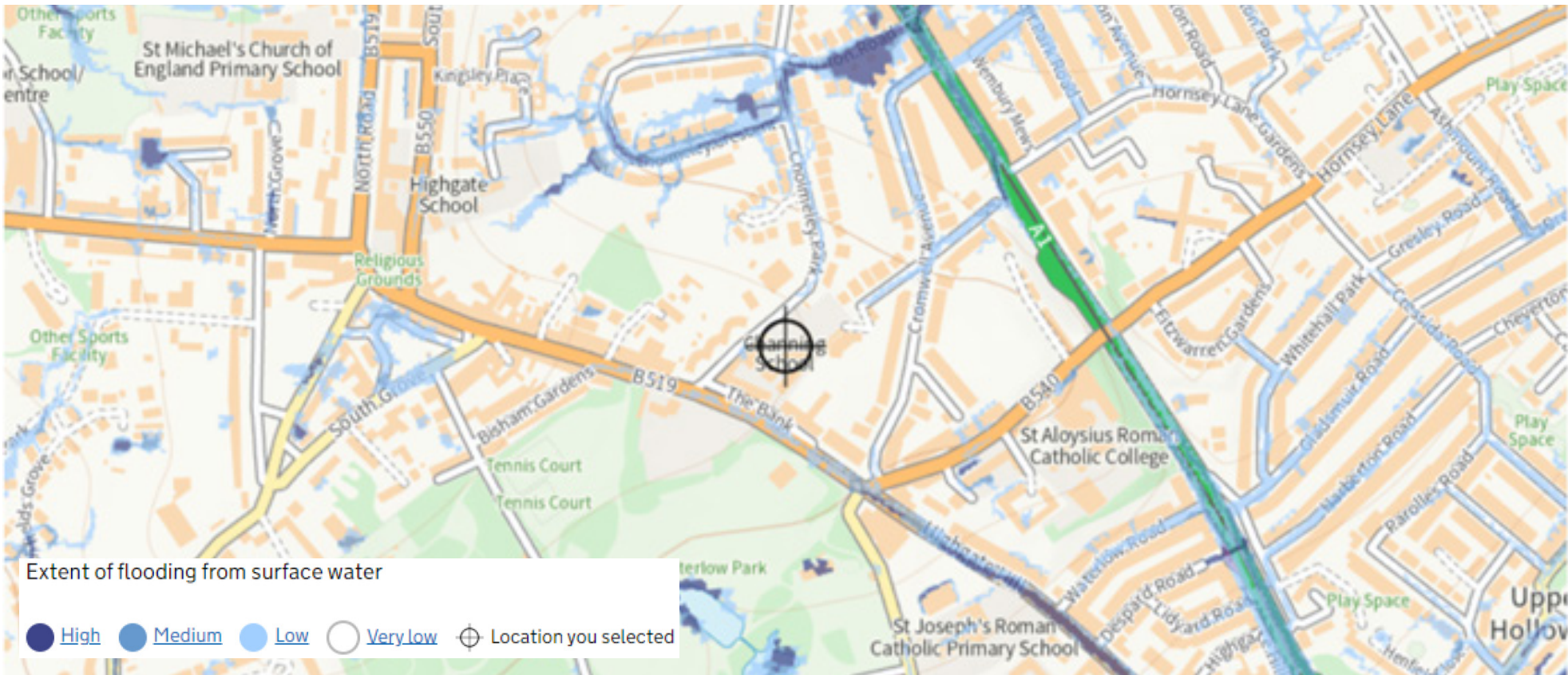


Image 4 - Extent of surface water flooding (extract from EA website)

3.4 Critical Drainage Areas

The LBH SWMP detailed key flood risk areas and defined Local Flood Risk Zones (LFRZs) and Critical Drainage Areas (CDAs). The Drain London Tier 2 Technical Specification defines LFRZs as:

“the actual spatial extent of predicted flooding in a single location. LFRZs are discrete areas of flooding that do not exceed the national criteria for a ‘Flood Risk Area’ but still affect houses, businesses or infrastructure”

And CDAs as:

“a discrete geographic area (usually a hydrological catchment) where multiple and interlinked sources of flood risk (surface water, groundwater, sewer and/or river) often cause flooding in a Flood Risk Area during severe weather thereby affecting people, property or local infrastructure.”

The borough has been divided into various CDAs, with the proposed site situated within Group4_062. Analysis of the flood maps shows the site is not at risk as although it is located within a CDA, it is not located within a LFRZ. Therefore, the risk of surface water flooding is deemed low.

A copy of the CDAs within Haringey is shown in Image 5.

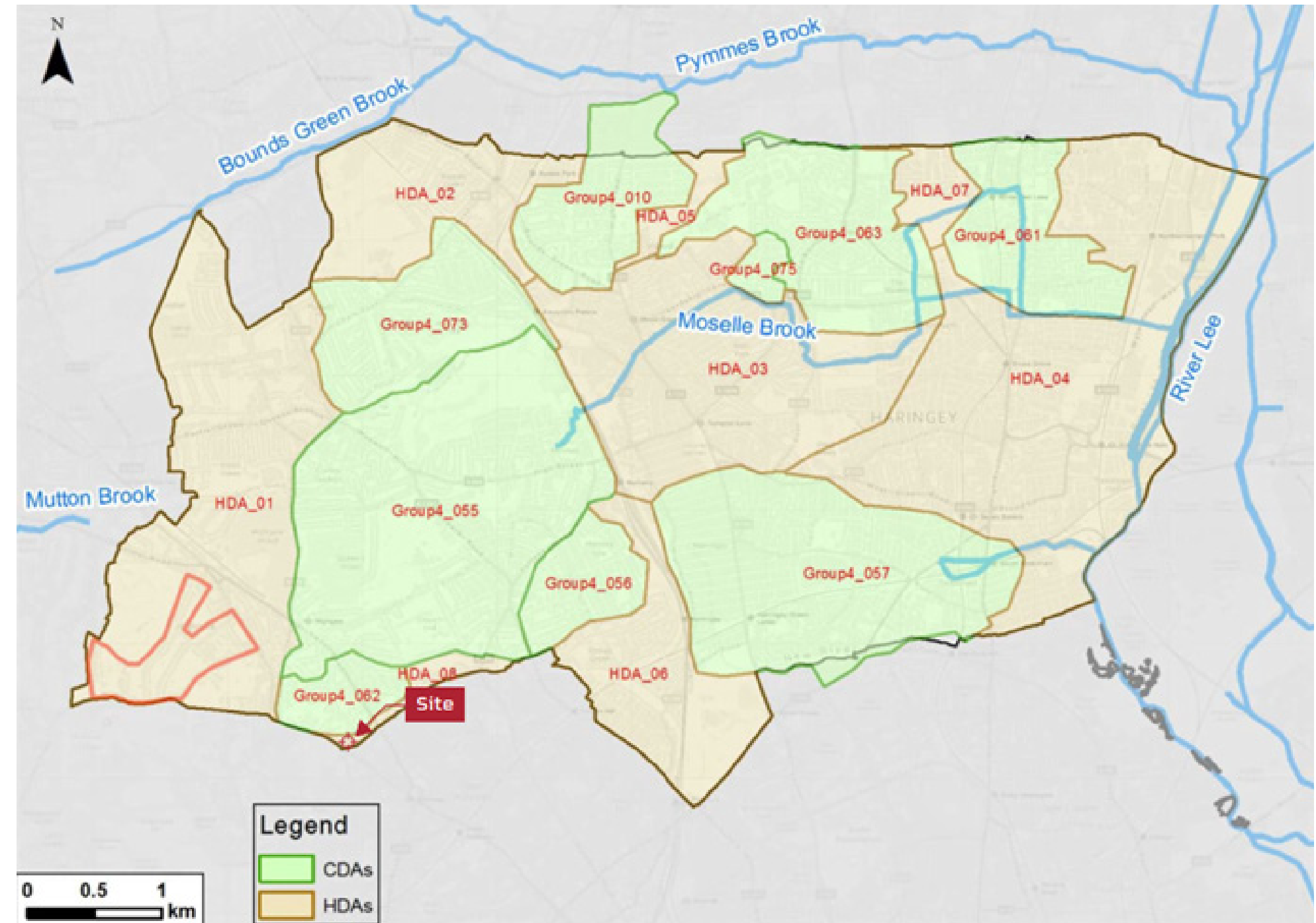


Image 5 - CDAs within Haringey

3.5 Flooding from Sewers

Sewer flooding is typically caused by heavy rainfall or blockages in the system. The frequency of sewer flooding is increasing due to climate change, population growth and increased impermeable areas. There is an increased risk of sewer flooding within Tower Hamlets due to London having combined sewers, as opposed to separate networks which deal with foul waters and surface water separately.

The LBH SFRA and Preliminary Flood Risk Assessment (PFRA) collated data from Thames Water to provide a high-level analysis of sewer relating flood incidents. Locations of the areas of sewer flooding were identified using a four-digit postcode. Data collected showed the majority of sewer flood events were located east and south of Haringey, especially in Highgate. However, the number of sewer incidents were recorded to be low with 1 – 5 sewer flood events recorded. Appendix D shows the number of recorded sewer flood incidents within the borough.

Therefore, the risk of flooding from sewer is assessed to be low.

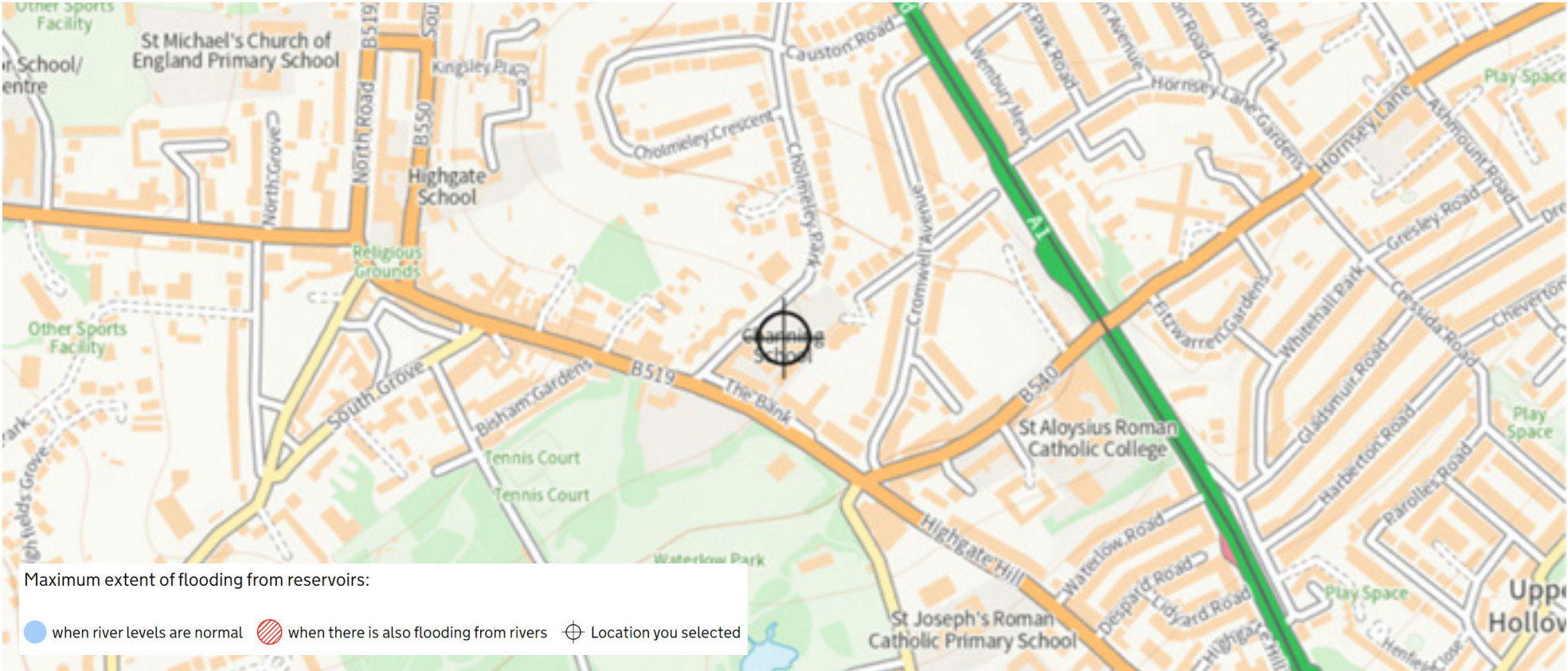


Image 6 - Flood Risk from Reservoir (extract from EA website)

3.6 Flooding from Reservoirs, Canals, and other Artificial Water Sources

There are no reservoirs, canals or other artificial water sources in the vicinity of the site which could pose a risk of flooding to the site. This can be seen on the EA's long term flood risk map shown in Image 6. Therefore, the risk of flooding from reservoirs, canals and other artificial water sources is considered to be very low.

3.7 Flooding from Groundwater

Groundwater flooding can occur on sites that are located on permeable ground. After a prolonged period of rainfall, a considerable rise in the water table can result in inundation for extended periods of time.

The LHB SFRA concluded that the Borough is at low susceptibility of groundwater flooding. Additionally, the site is underlain by bagshot formation, which is comprised of sand, which is permeable.

Therefore, the risk of groundwater flooding is low.

4. Existing Drainage Arrangements

4.1 Public Drainage Network

The Thames Water asset map for the area surround the development was obtained and can be seen in Image 7.

The site is bounded by a separate 229mm diameter foul and surface water sewer located on Cholmeley Park to the northwest of the site. A 375mm diameter combined sewer is also located on Highgate High Street to the south.

A copy of the Thames Water sewer record is contained in Appendix E.

4.2 Existing On-site Drainage

A CCTV survey was conducted in October 2023, showing a separate foul and surface water network for the below ground drainage network of the site. Both the foul and surface water systems discharge into the Thames Water public foul and surface water sewers, respectively, in Cholmeley Park.

It is proposed to reuse the existing onsite connections as far as feasible. As part of the works, the existing drainage system will be fully jetted and cleaned with any defects remediated accordingly.

The complete site contains various school buildings with each building consisting of their own drainage network.

A copy of the CCTV survey is shown in Appendix F.

Further CCTV survey work is required to investigate the internal drainage conditions of the building. This will determine the condition of the existing drainage network and if any existing drainage can be reused.

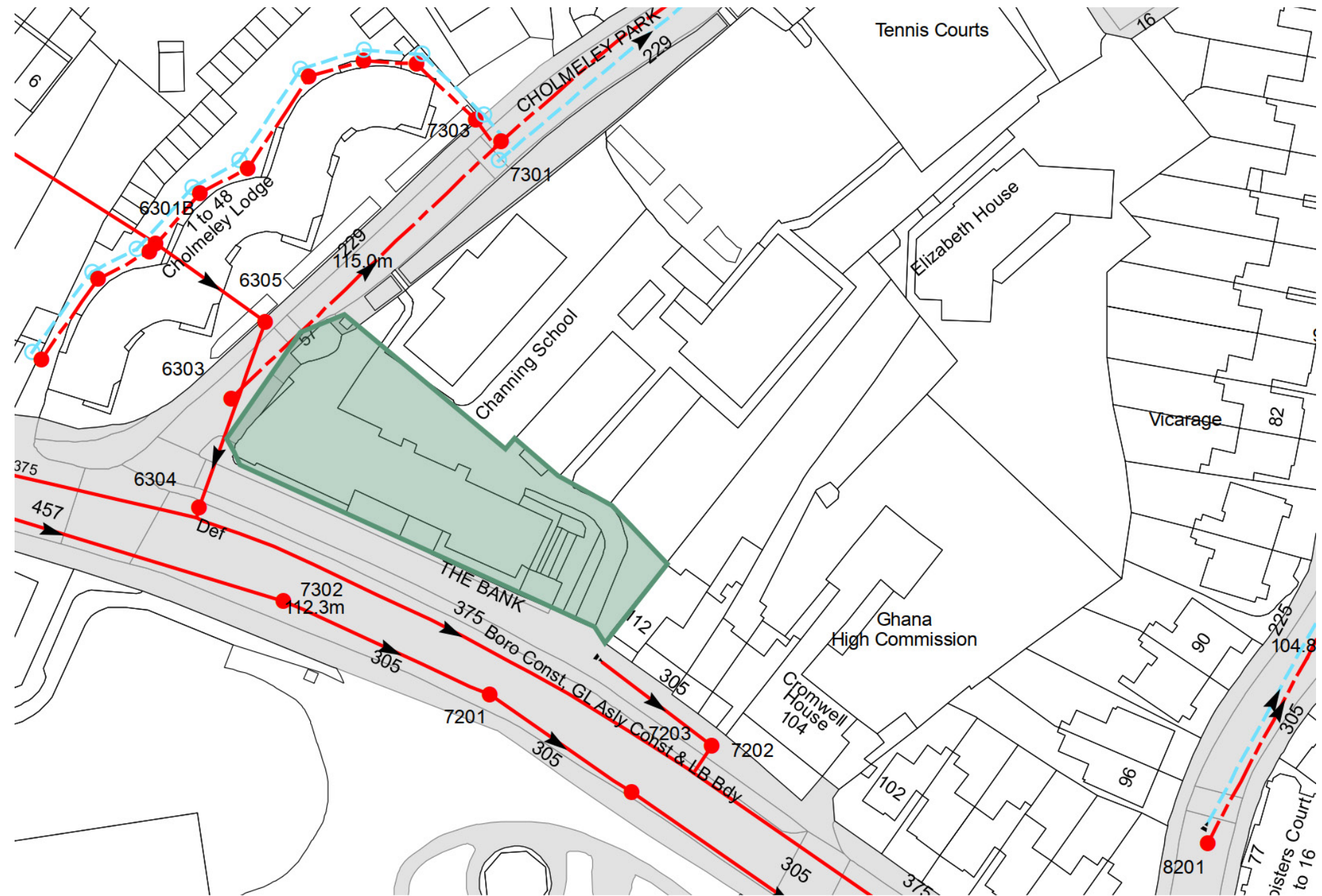


Image 7 - Thames Water Asset Map Location

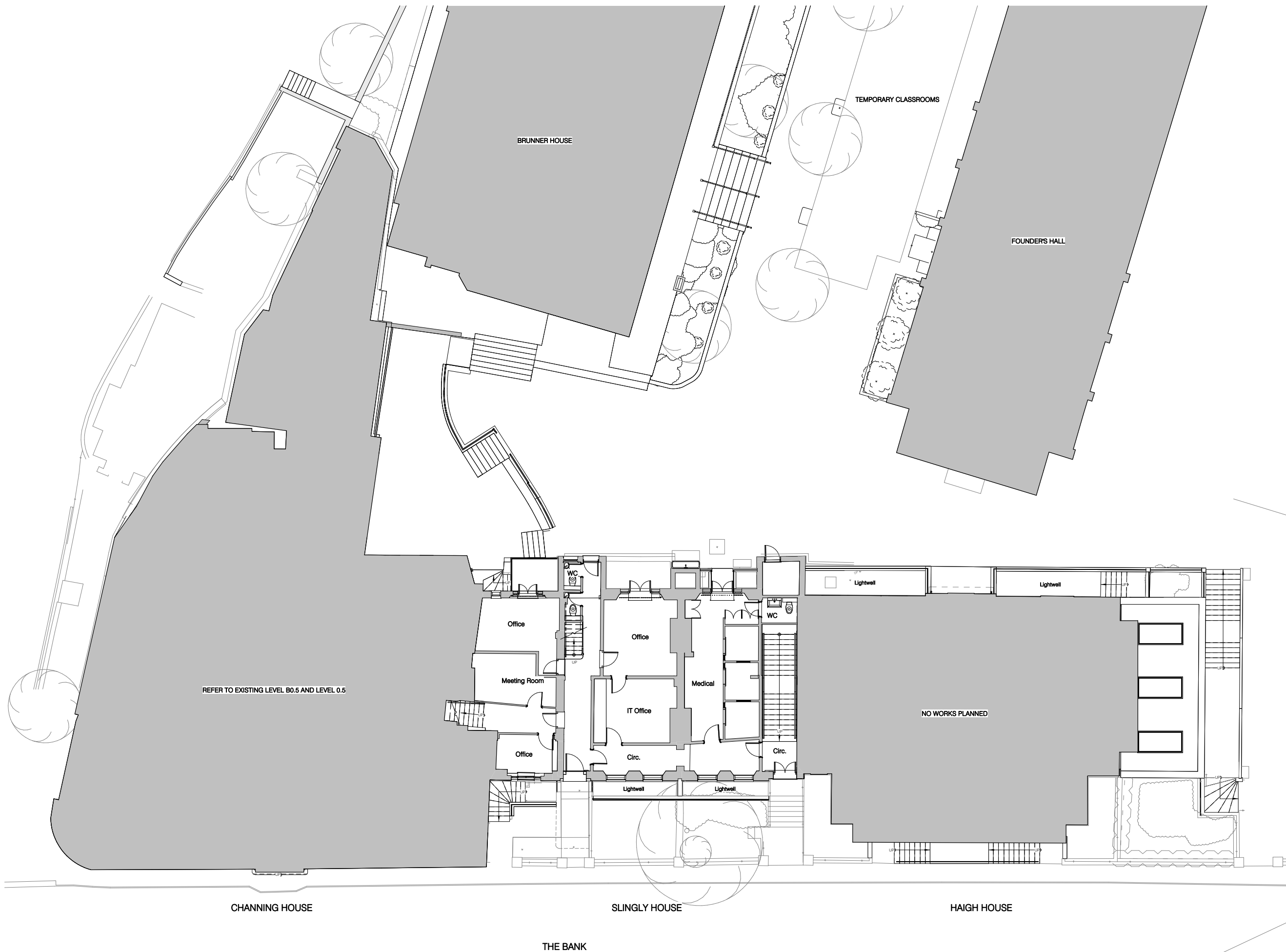
5. Conclusion

This FRA report has been prepared in accordance with local and national planning policy, along with guidance documents including the LBH flood risk and policy documents. The proposed development aims to comply with local and national planning policy on flood risk.

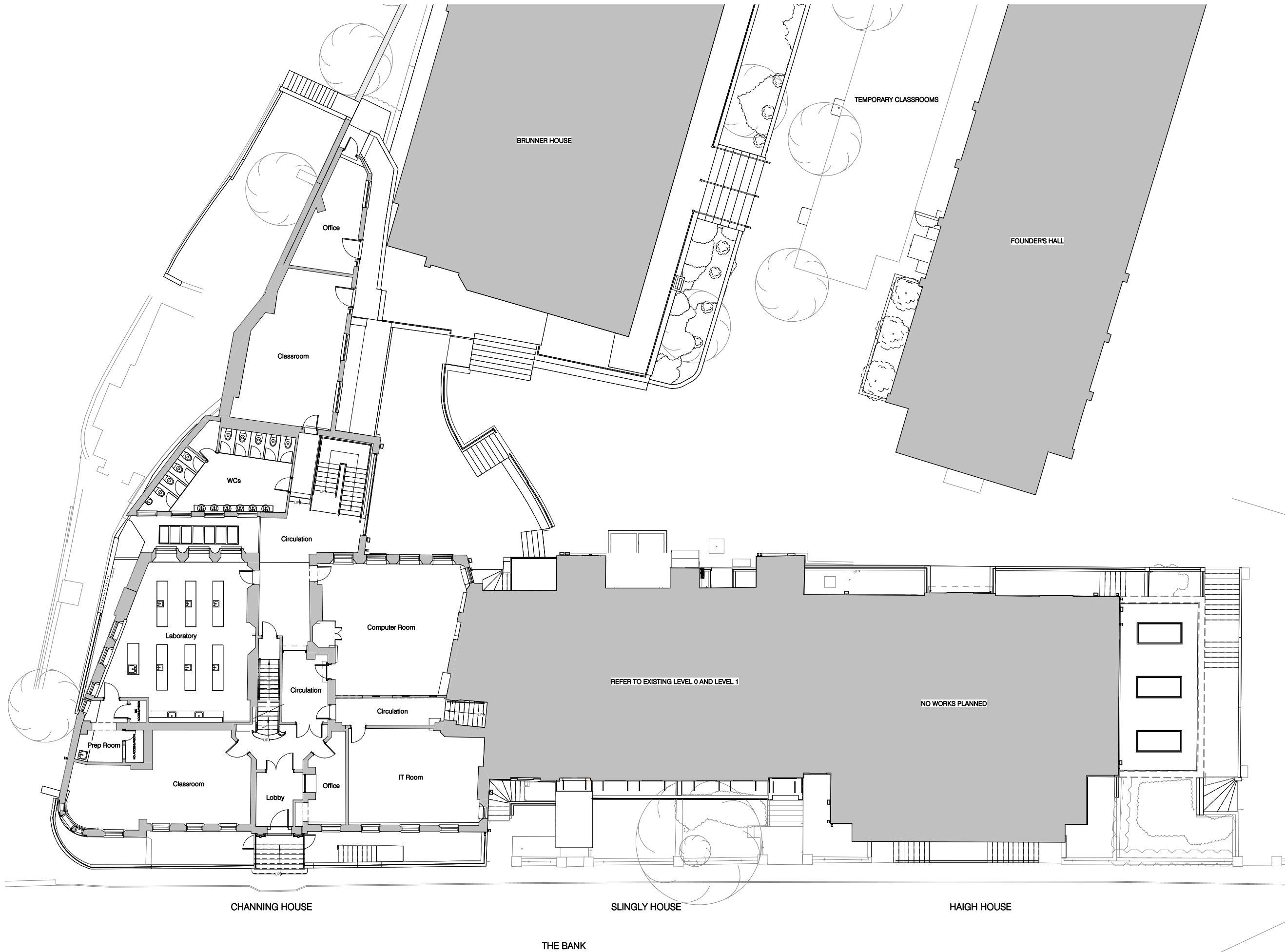
This report has confirmed that the development site is at low risk from all sources of flooding.

Appendix A

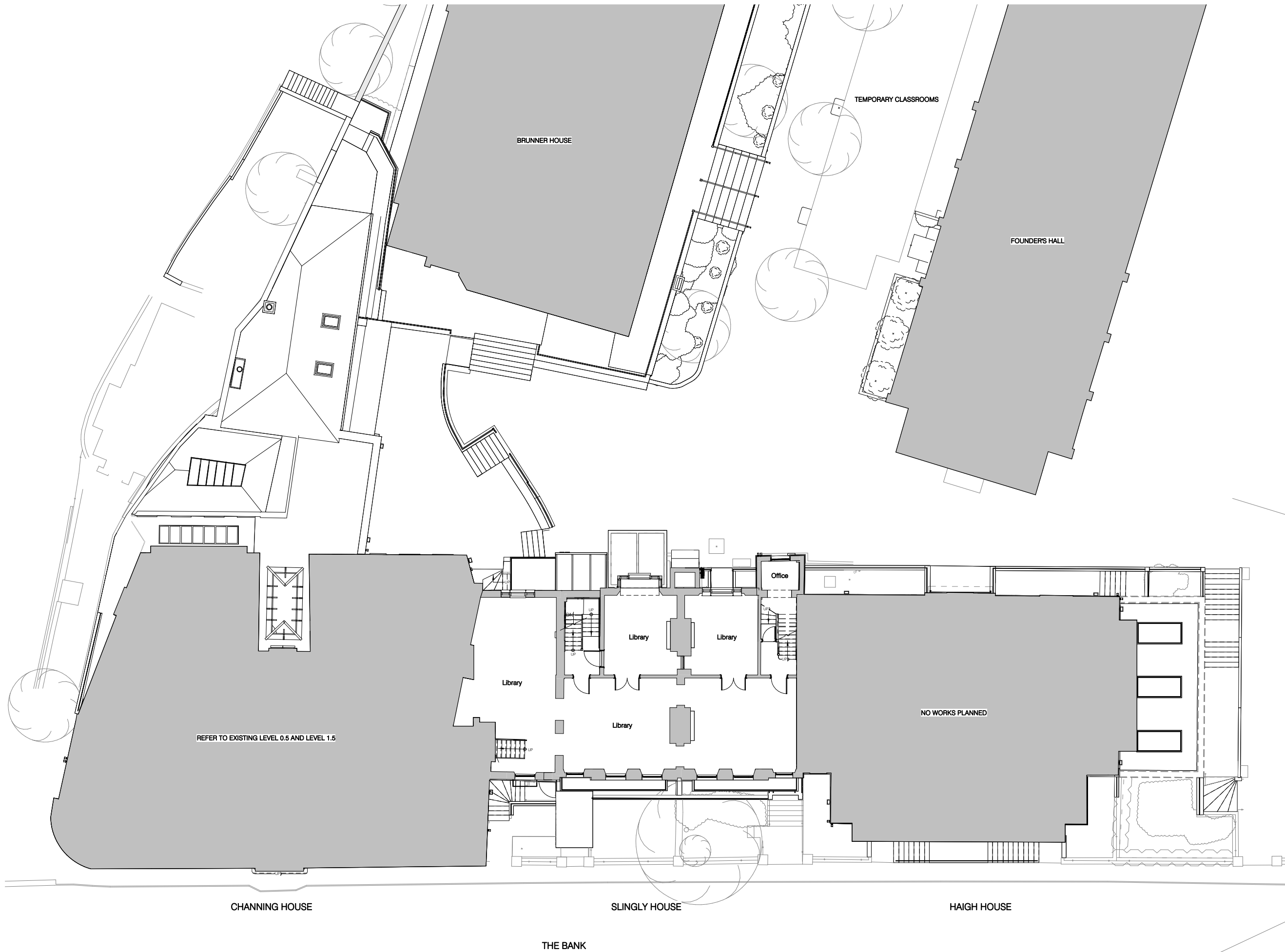
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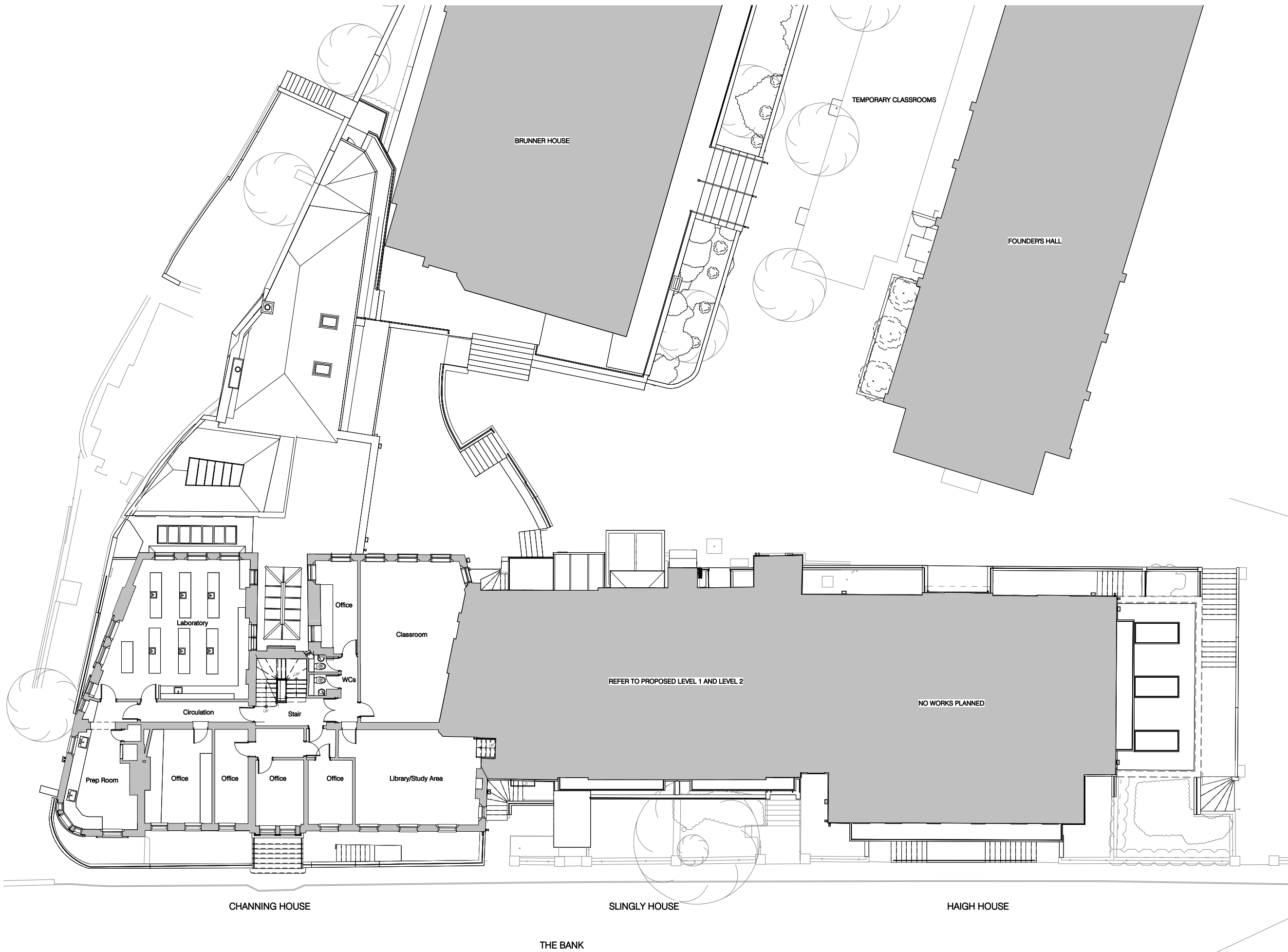


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Channing School For Girls		
Document Title		
Main School Building		
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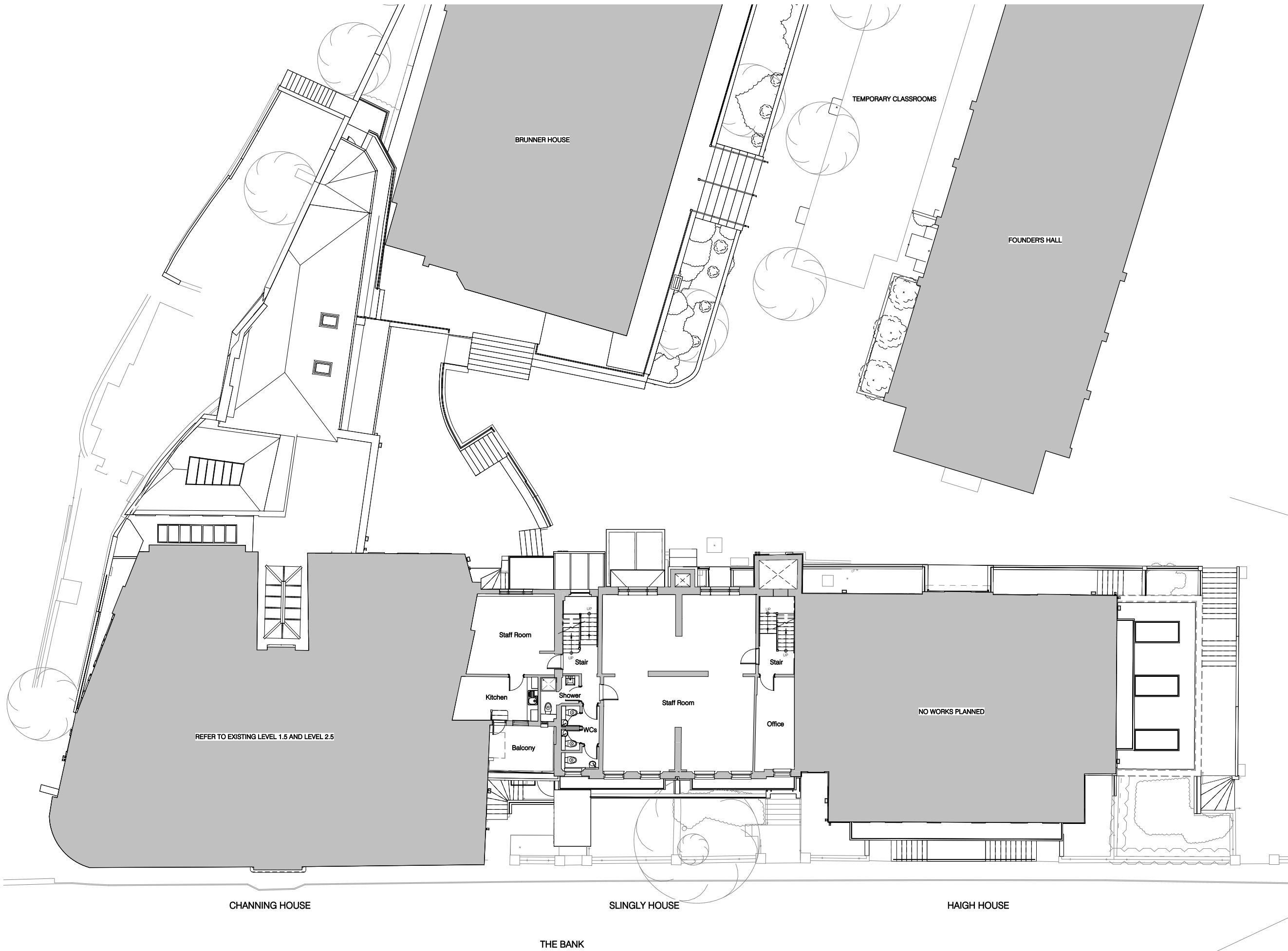


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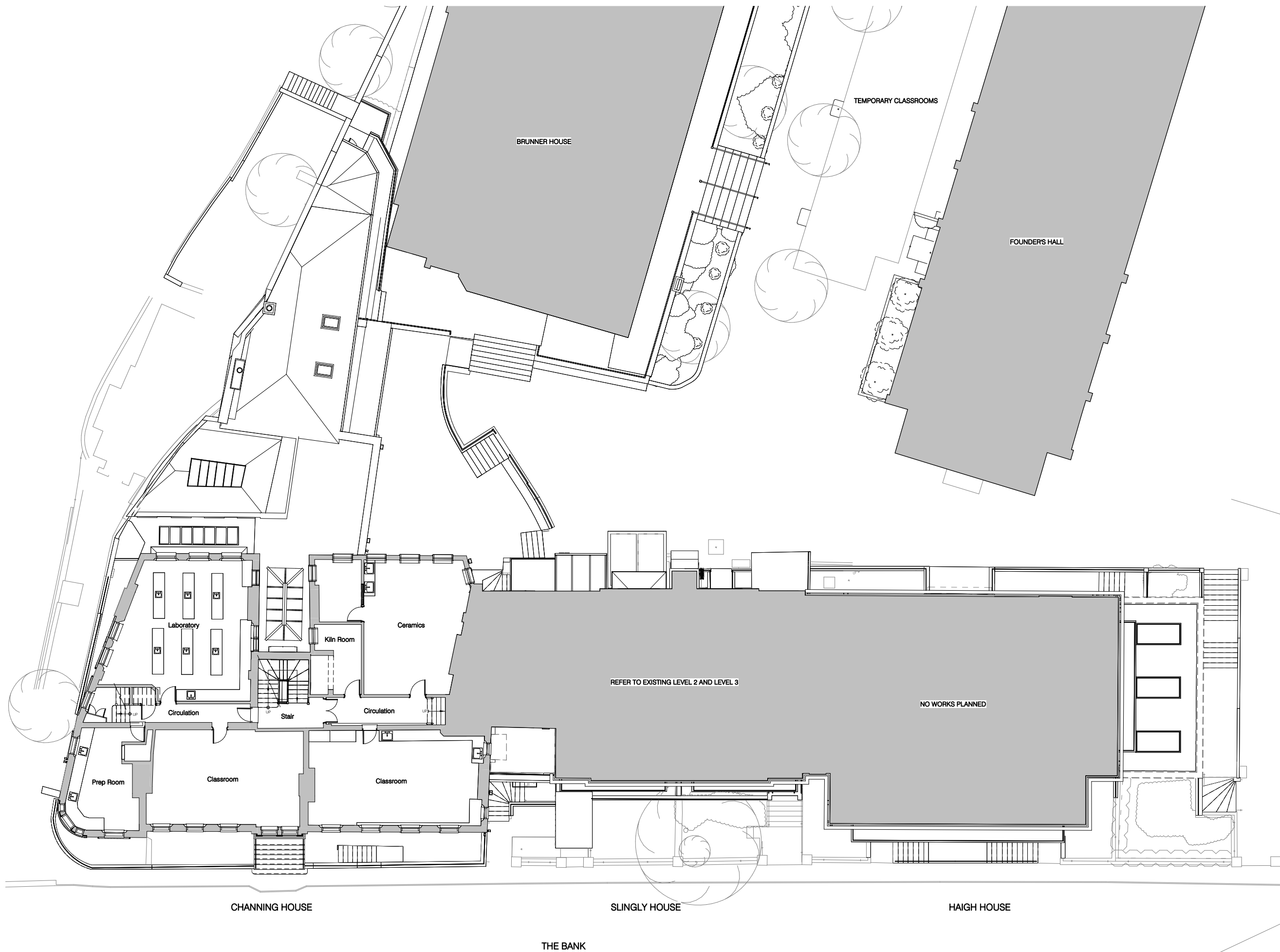


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Channing School For Girls		
Document Title		
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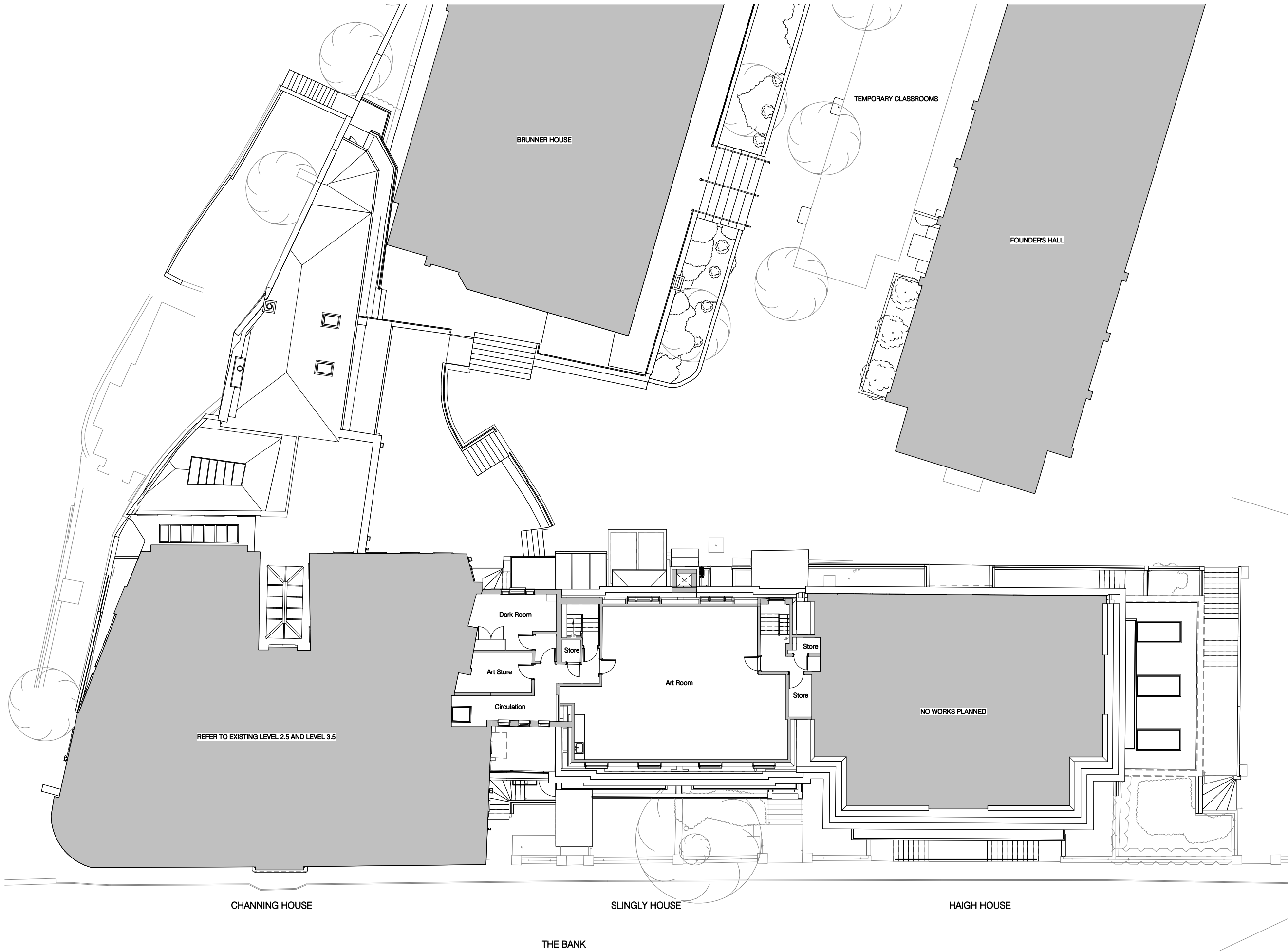


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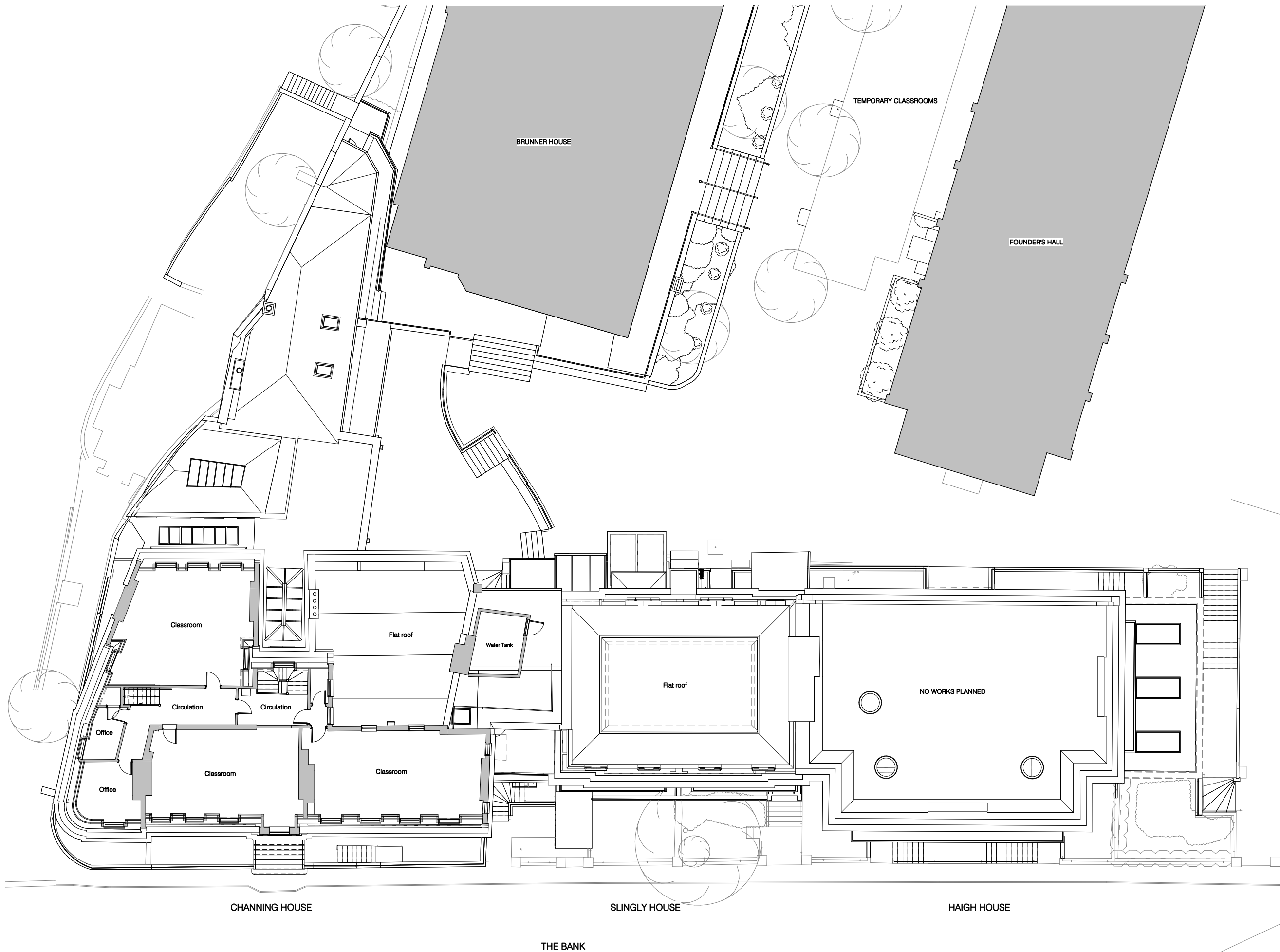


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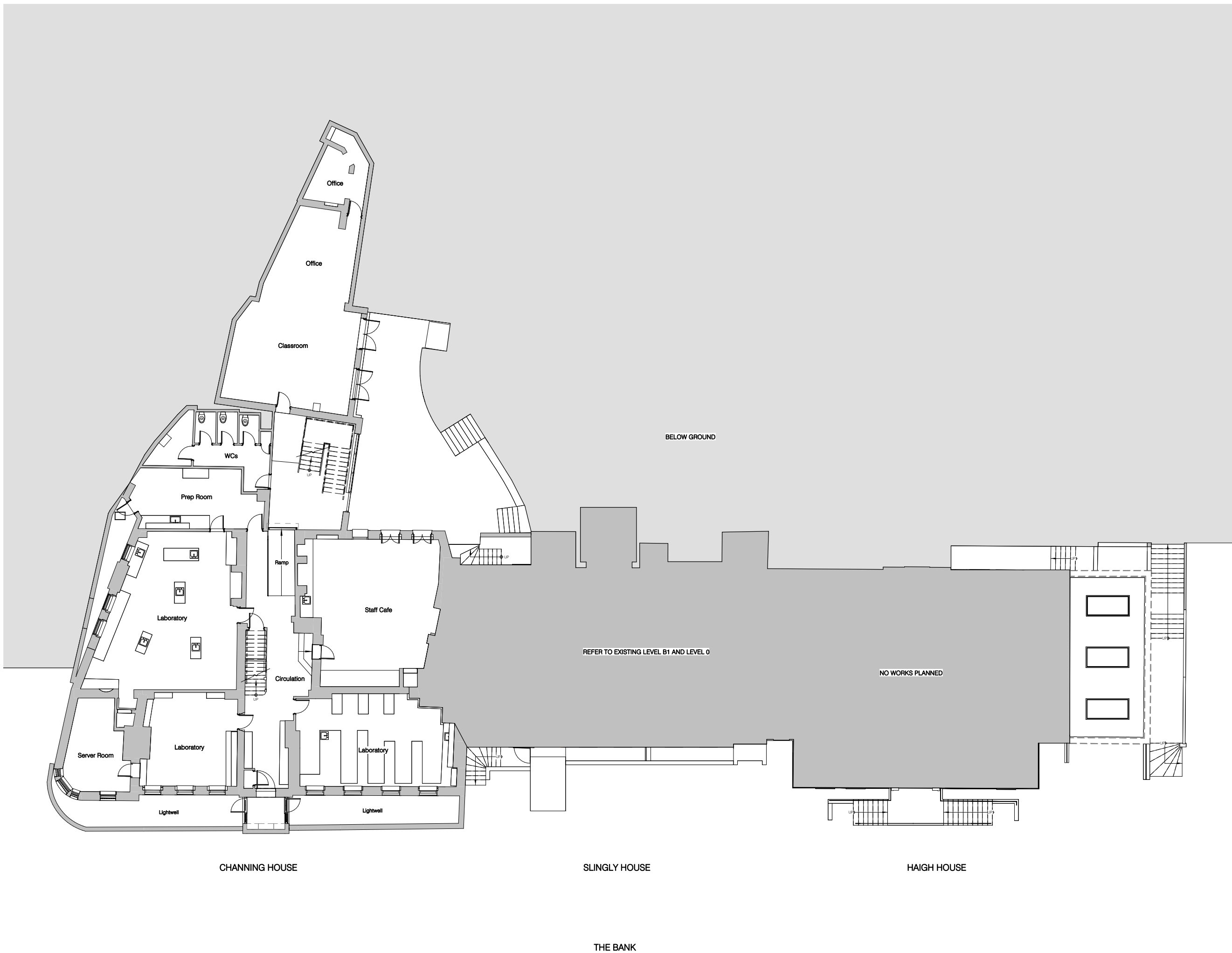


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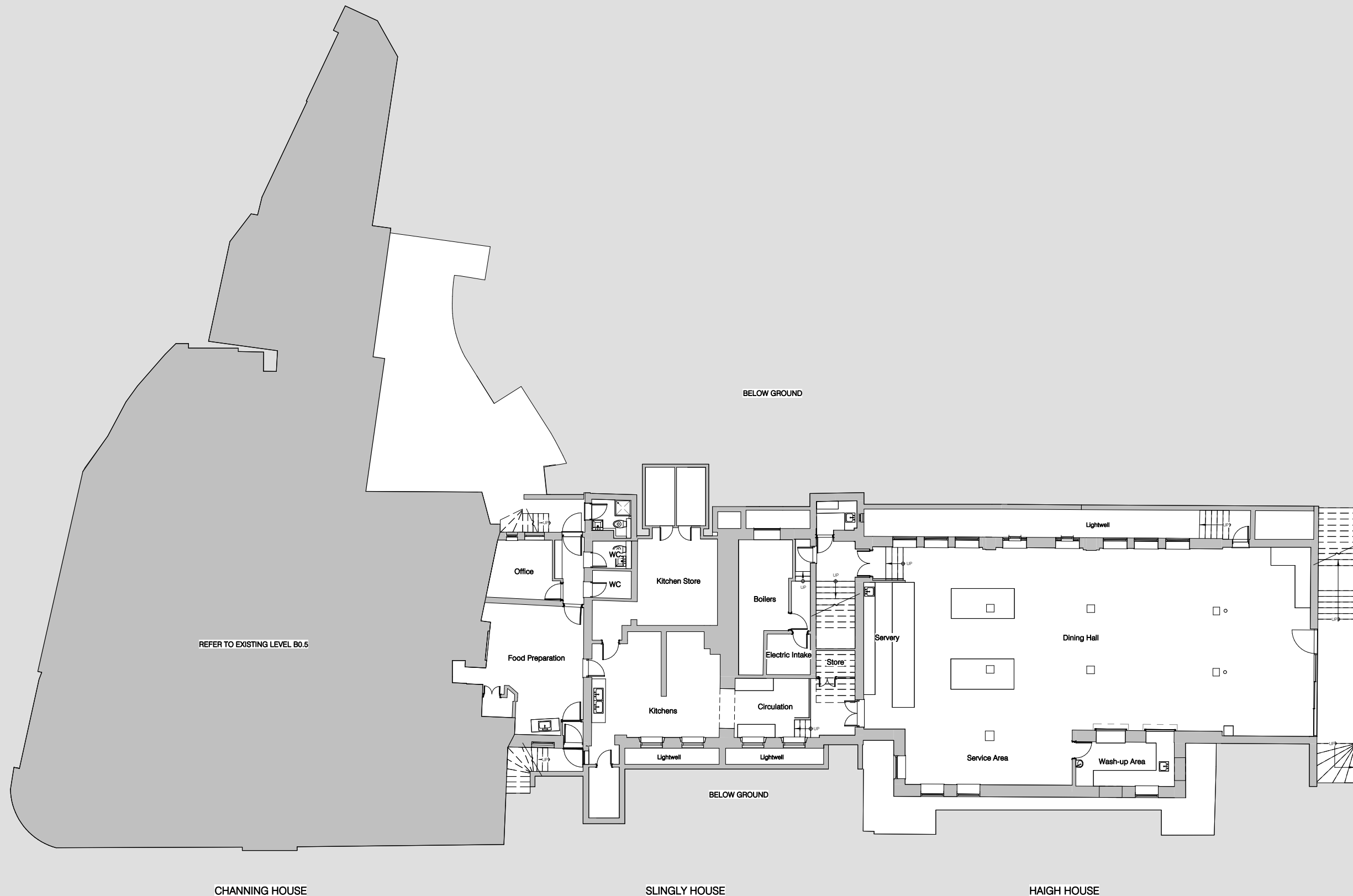
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Document Title		
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Channing School For Girls		
Document Title		
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NVB Architects		
Channing School For Girls		
Document Title		
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Project Stage	Purpose	Scale
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Rev.	Description	
Client & Project		
NVB Architects		
Channing School For Girls		
Document Title		
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Project Stage	Purpose	Scale
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Appendix B

Proposed General Arrangements

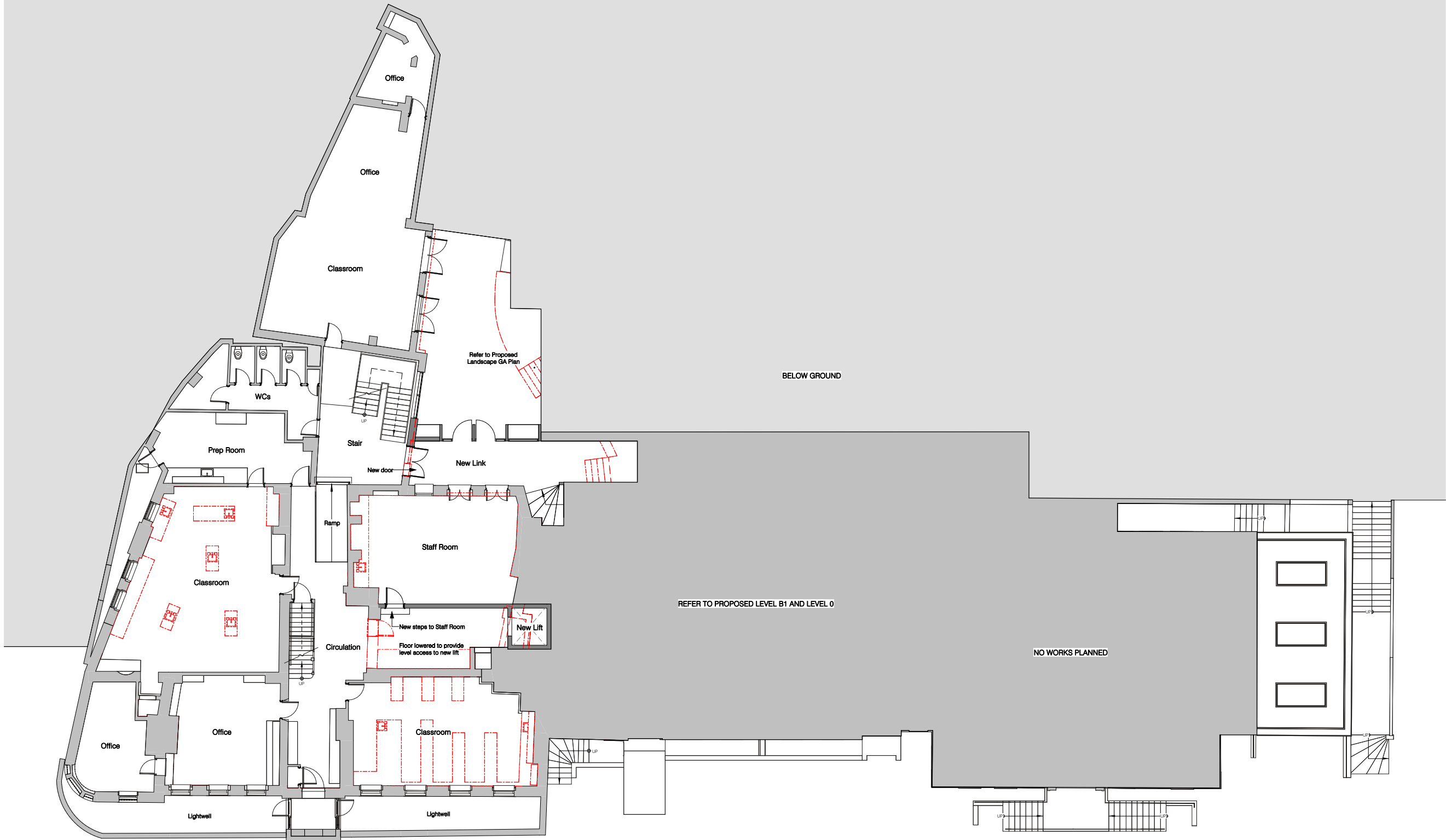


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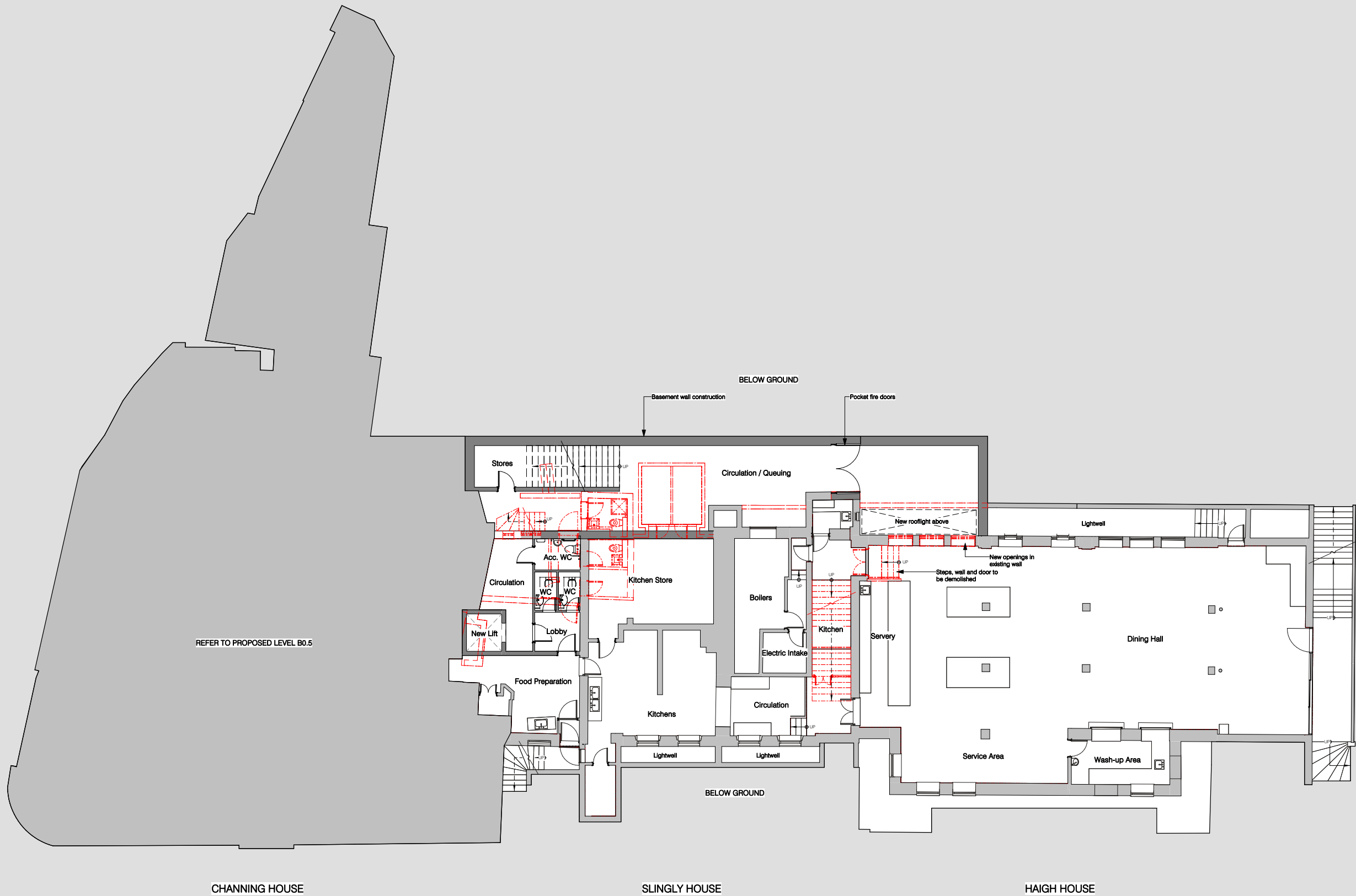
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- Proposed walls
- Demolitions



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Channing School For Girls		
Document Title		
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Project Stage	Purpose	Scale
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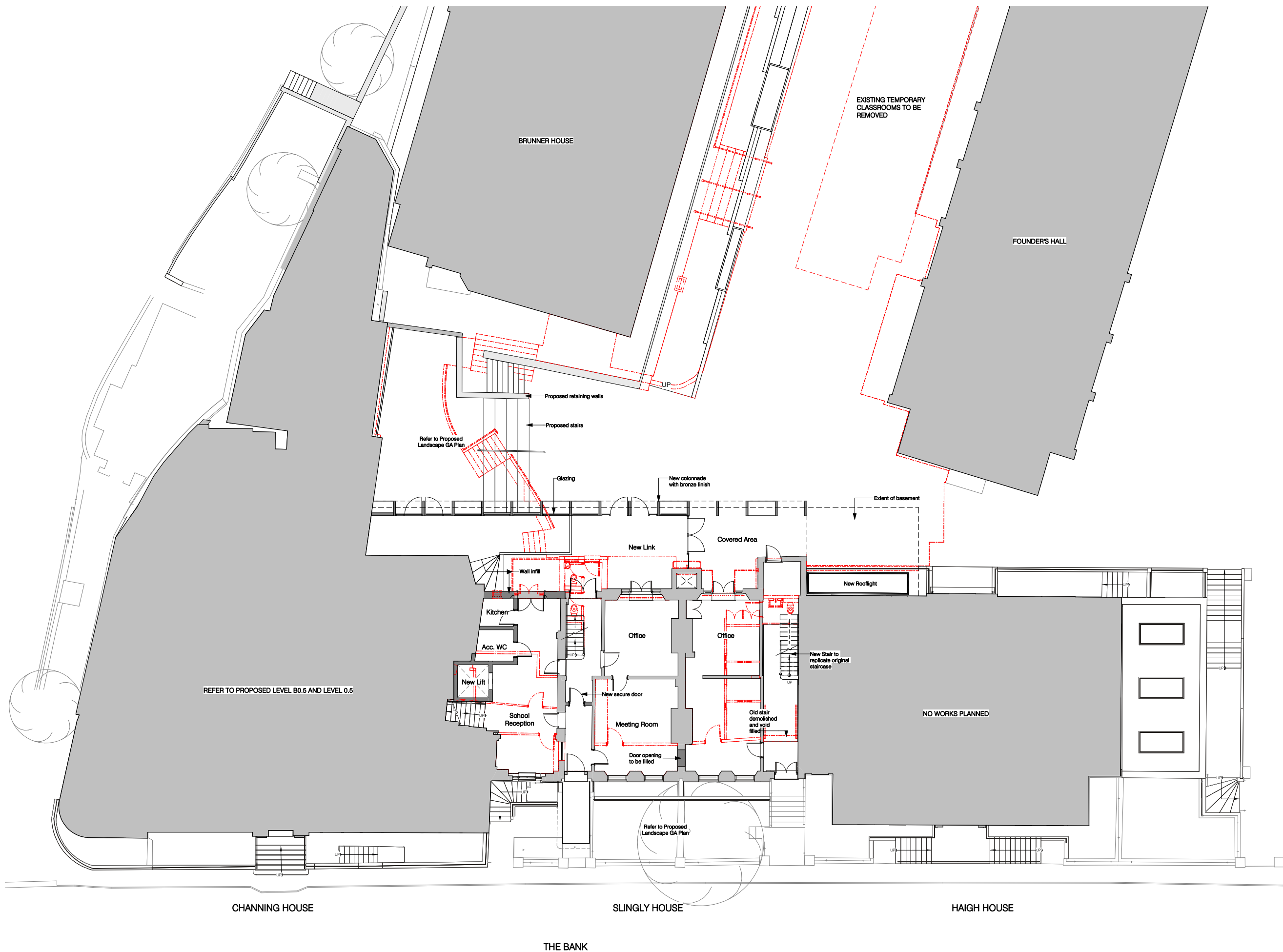
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- Demolitions



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Channing School For Girls		
Document Title		
Main School Building		
Proposed Plan - Basement Level 1		
Project Stage	Purpose	Scale
RIBA 2	PRE-APPLICATION	1:100 @A1
Document Reference	Revision	Status
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- Demolitions



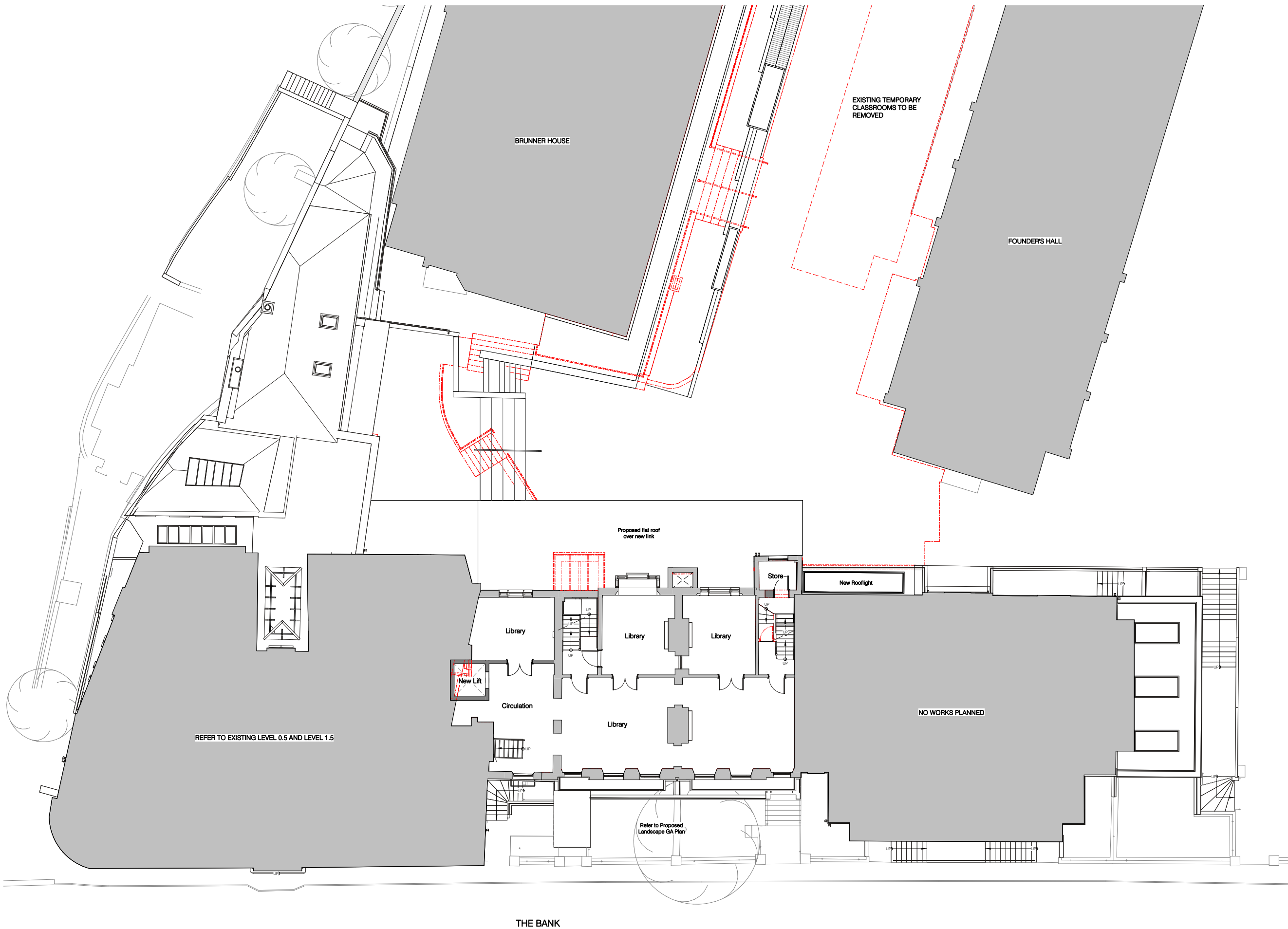
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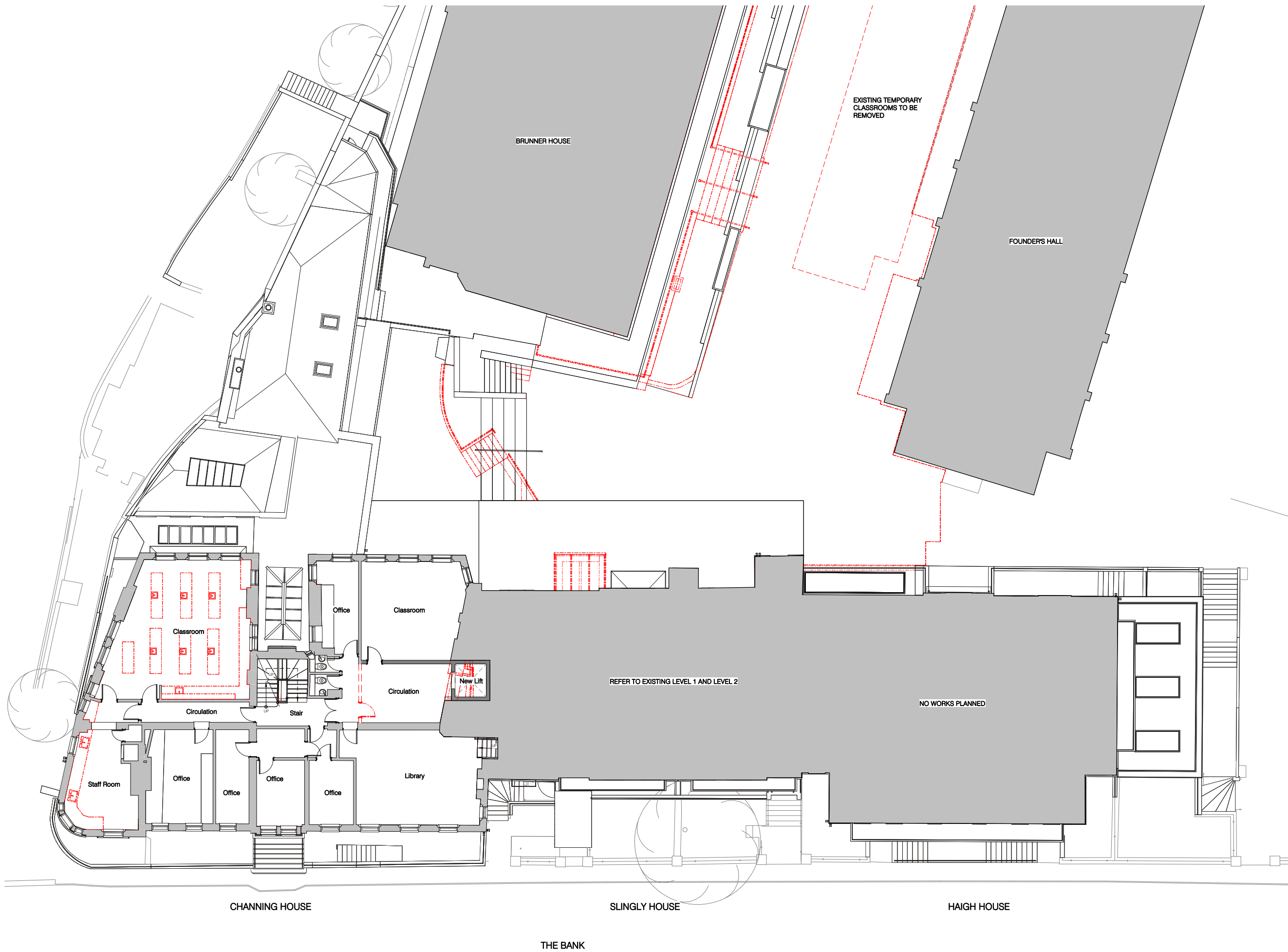
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Key

- Existing walls
- Proposed walls
- Demolitions



P02 Issued for Pre-Application Advice
Rev. Description Date 08/11/2023

Client & Project
NVB Architects
Channing School For Girls

Document Title
Main School Building
Proposed Plan - Level 1.5

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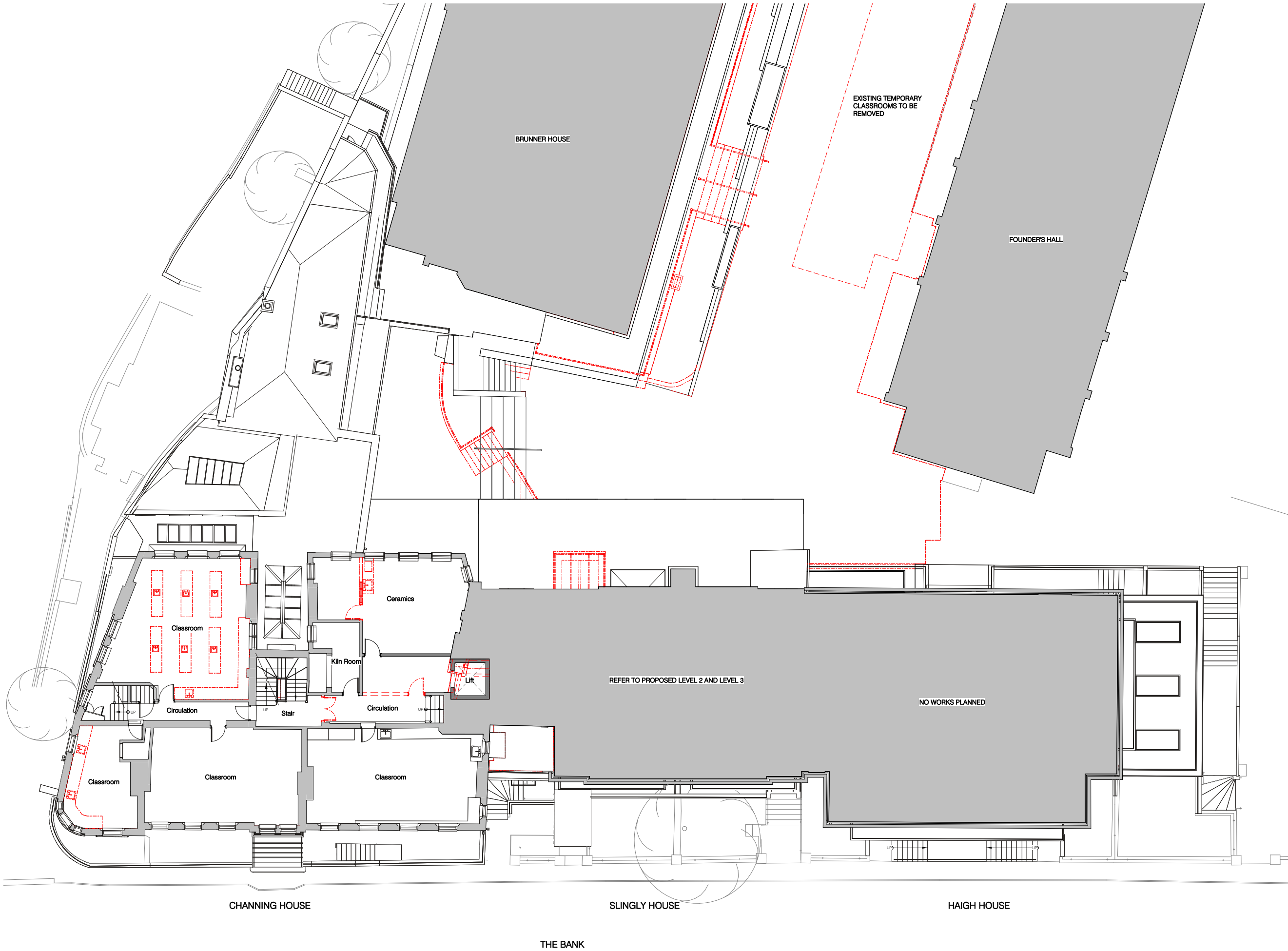
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- Demolitions



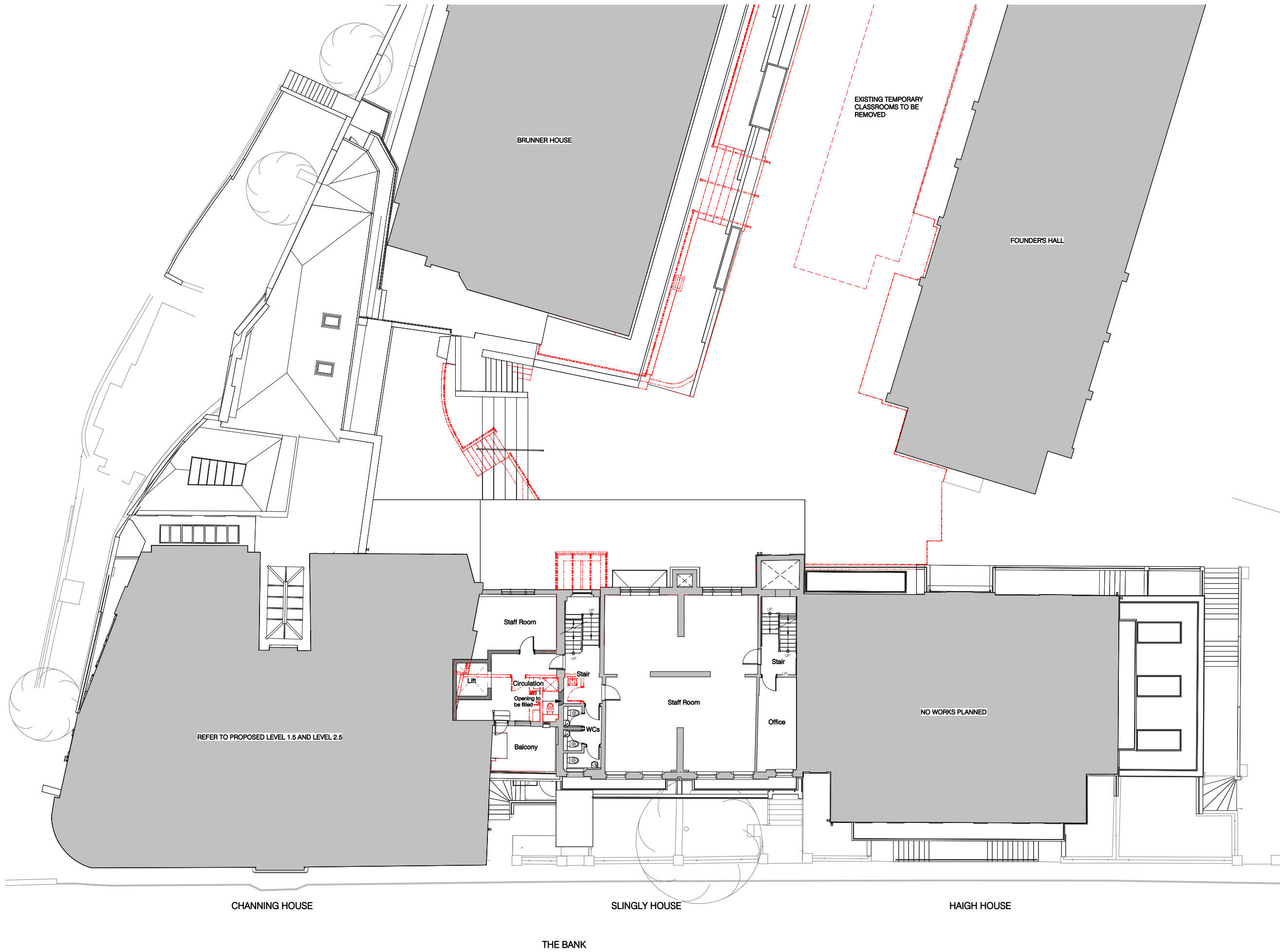
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Key

- Existing walls
- Proposed walls
- Demolitions



P02 Issued for Pre-Application Advice
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Channing School For Girls

Document Title
Main School Building
Proposed Plan - Level 2

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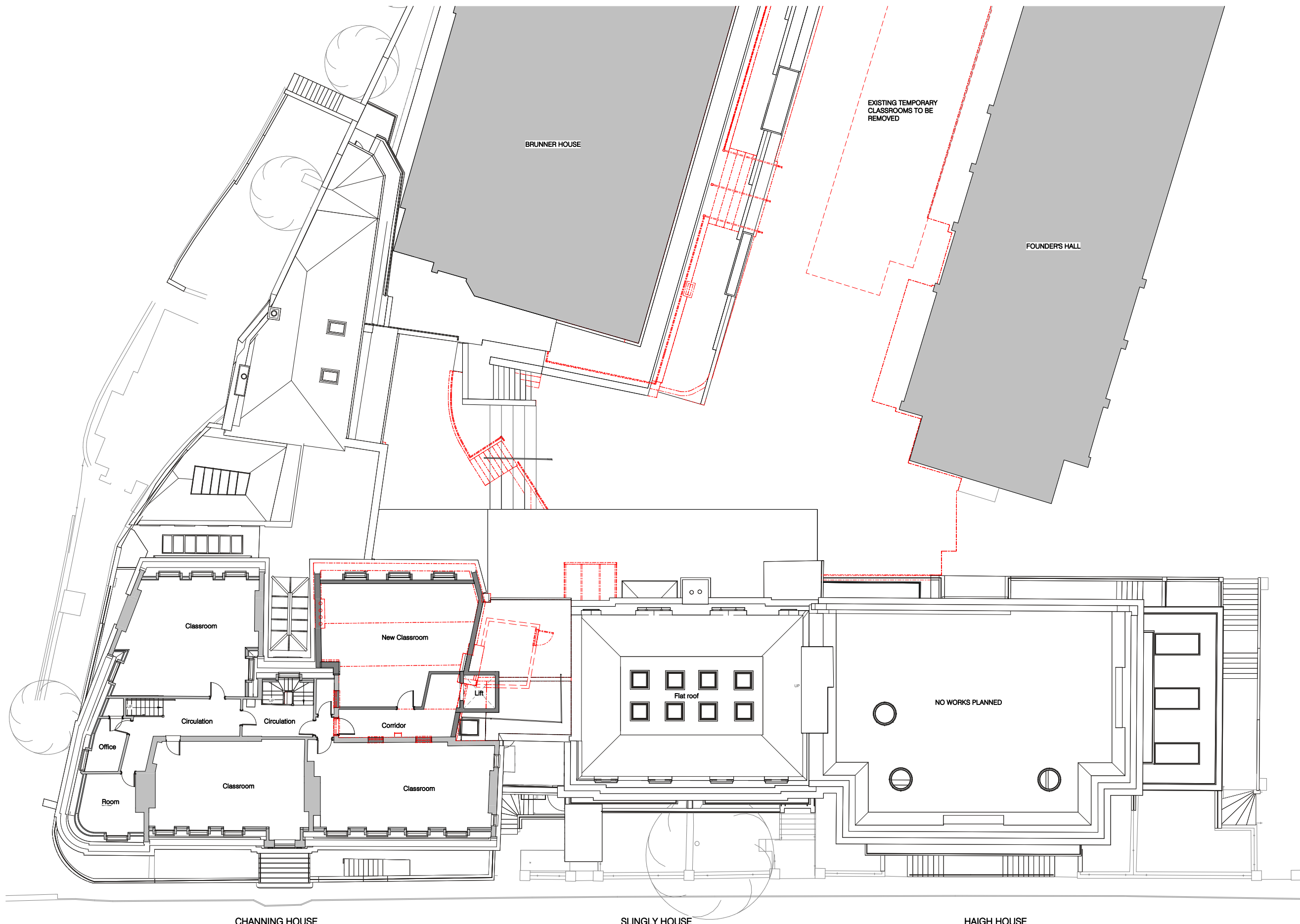
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Key

- Existing walls
- Proposed walls
- Demolitions



P02 Issued for Pre-Application Advice
Rev. Description Date 08/11/2023

Client & Project
NVB Architects
Channing School For Girls

Document Title
Main School Building
Proposed Plan - Level 3.5

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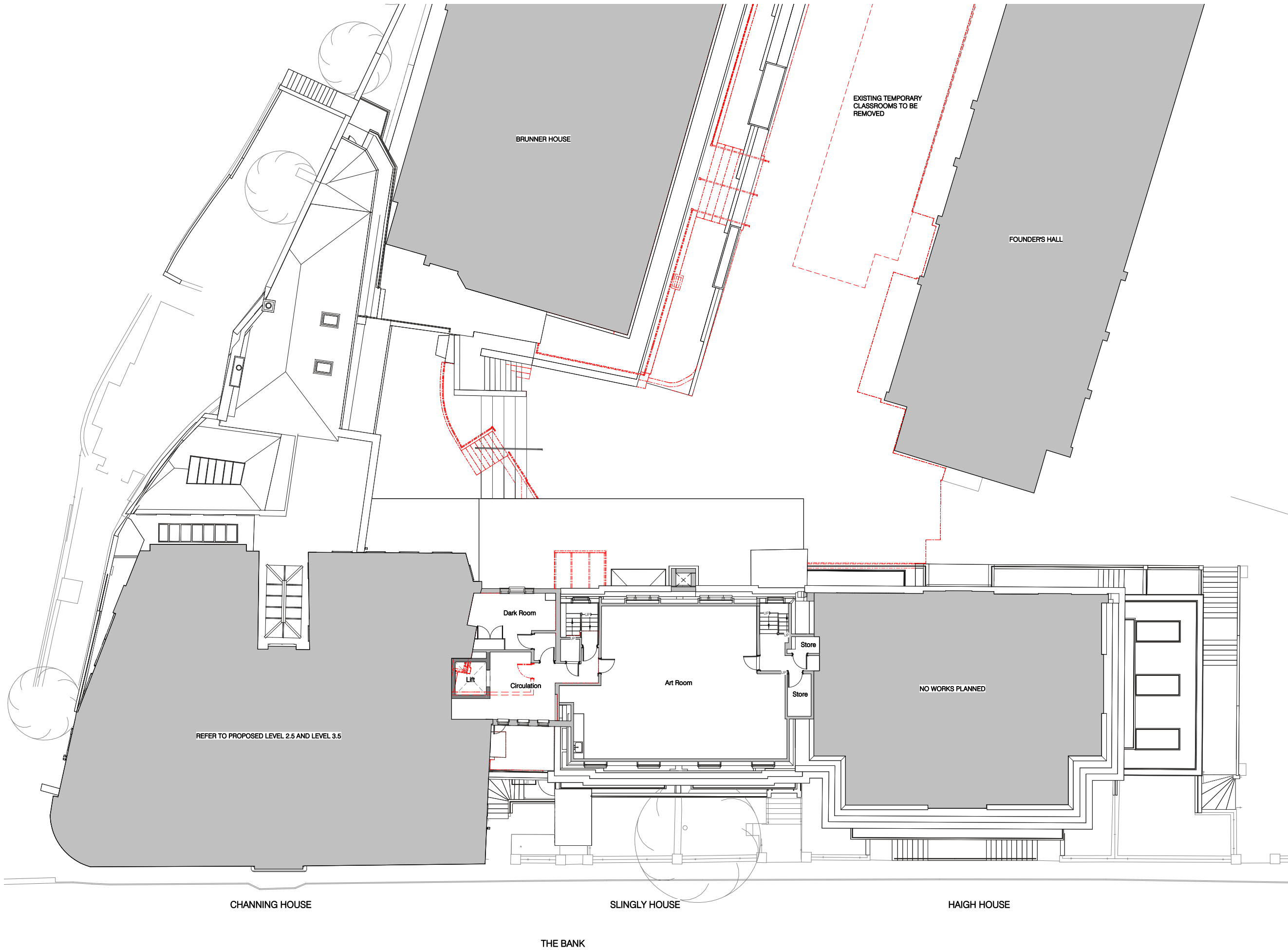
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Key

- Existing walls
- Proposed walls
- Demolitions



P02 Issued for Pre-Application Advice
Rev. Description Date 08/11/2023

Client & Project
NVB Architects
Channing School For Girls

Document Title
Main School Building
Proposed Plan - Level 3

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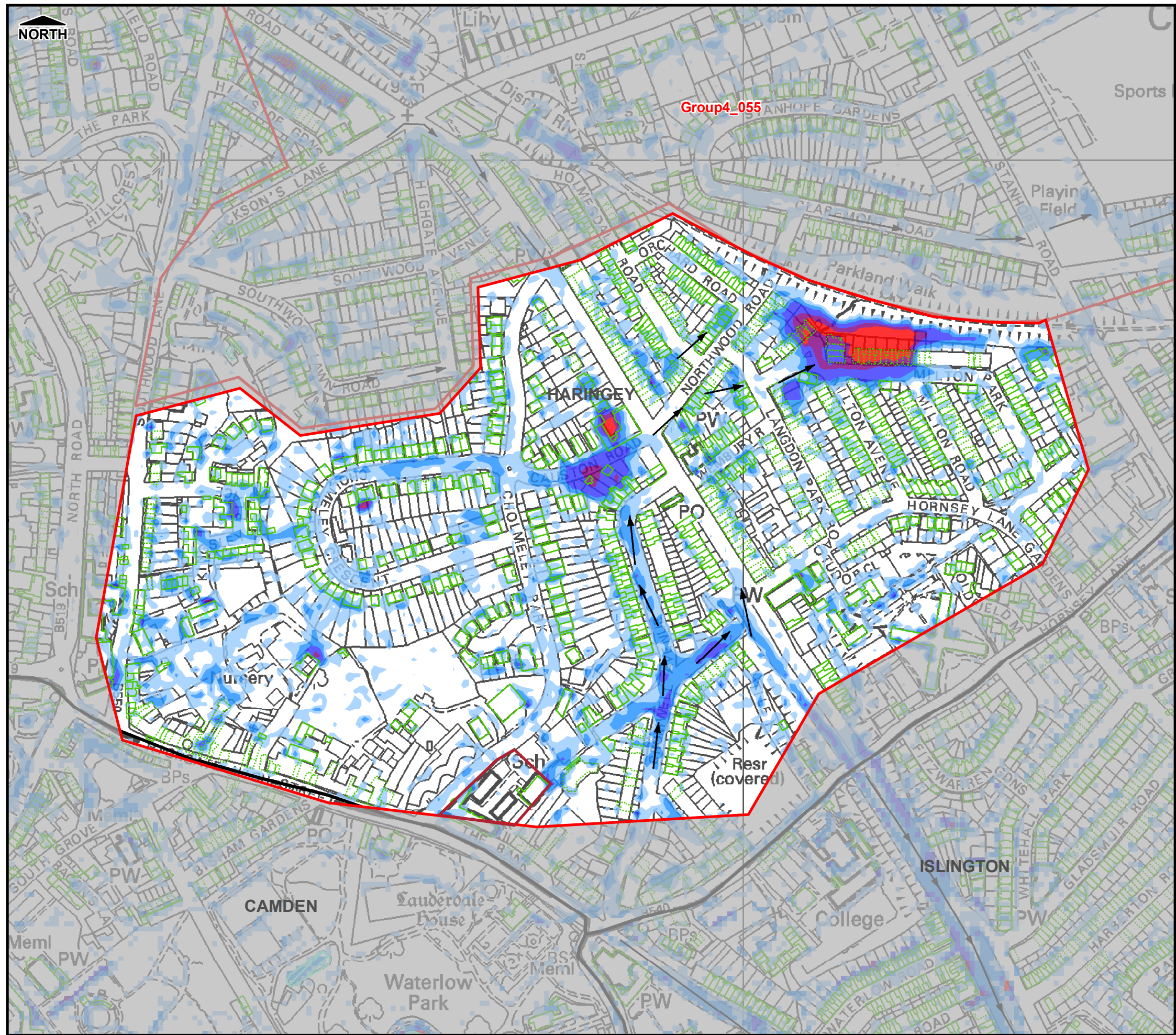
Appendix C

Topographical Survey

Appendix D

Flood Risk Maps

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THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

Legend

Borough Administrative Boundary

Main River

Ordinary Watercourse

Culverted Watercourse (Main River)

Flow Direction

Permanent Water Bodies

Critical Drainage Area

Flooded Building (With Basement)

Flooded Building (Without Basement)

Flood Depth (m)

< 0.1m

0.1m - 0.25m

0.25m - 0.5m

0.5m - 1.0m

1.0m - 1.5m

> 1.5m

Notes

1. This map only shows the predicted likelihood of surface water flooding (this includes flooding from sewers, drains, small watercourses and ditches that occurs in heavy rainfall) for defined areas, and due to the coarse nature of the source data used, are not detailed enough to account for precise addresses.

2. Users of this map should refer to section 3.2 of the Surface Water Management Plan for a complete description of limitations and accuracy of the flood/hazard extents shown.

London Borough of Haringey

Haringey Council

Surface Water Management Plan

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Scale at A3

1:4,000

Date

06/05/2011

Drawn by

D.HUGHES

Approved by

S.IP

Critical Drainage Area 062

Surface Water Depth (m)

1 in 100 Chance of rainfall event occurring in any given year (1% AEP)

Consultants

CAPITA SYMONDS

Capita Symonds

Flood Risk Management

Capita Symonds Level Seven, 52 Grosvenor Gardens, Belgravia, London SW1W 0AU

Drain London Programme Board Members

Environment Agency

Thames Water

LONDON COUNCILS

GREATER LONDON AUTHORITY

FIGURE 23