

2884 - Brunner House, Channing School Planning Report 23 Feb 2024



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## 1. Introduction

Heyne Tillett Steel have been appointed by Channing School, as consulting civil and structural engineers for the proposed extension and development of the existing main school building.

The views and opinions expressed in this report are based on visual site inspections, ongoing investigations in critical areas and archive drawings.

For the purposes of orientation, we are considering the length of the building to run from east to west with descriptive north perpendicular to The Bank.

We are experts in the refurbishment and re-use of existing buildings and complex structural works on difficult, sensitive sites and have substantial experience working with historic and listed buildings. We undertake a rigorous process of fully researching buildings and have undertaken site investigations to understand the opportunities presented by the retained structure of the buildings on the site to ensure all modifications are able to be undertaken as sensitively as possible.



Image 1 - Post war photograph of Channing School taken from Highgate Hill Road

# 2. The Site and Existing Building

The school site is located on the corner of Cholmeley Park Road and The Bank. The main school building comprises three individual buildings: Channing House to the west, Slingley House / West View House in the centre, and Haigh House in the eastern end. The building was first opened in 1885 and has since been built in several stages, the most recent addition being Haigh House which was rebuilt in the mid-1950s after bomb damage forced the demolition of the surrounding buildings. The collection of buildings sits to the south of the site directly adjacent to The Bank and consists of ground plus three storeys and a single storey basement.

The wall that separates The Bank and Highgate Hill, and the older part of the building are Grade II Listed. The older end is traditional load bearing masonry construction, while the newer end of the building is shown in the archive drawings to be predominantly load bearing masonry construction with precast concrete floor slabs. The load bearing walls along the centre of the building are supported on reinforced concrete columns in the basement.

- 1 Existing vaults to be demolished
- 2 Chimney stack to be demolished

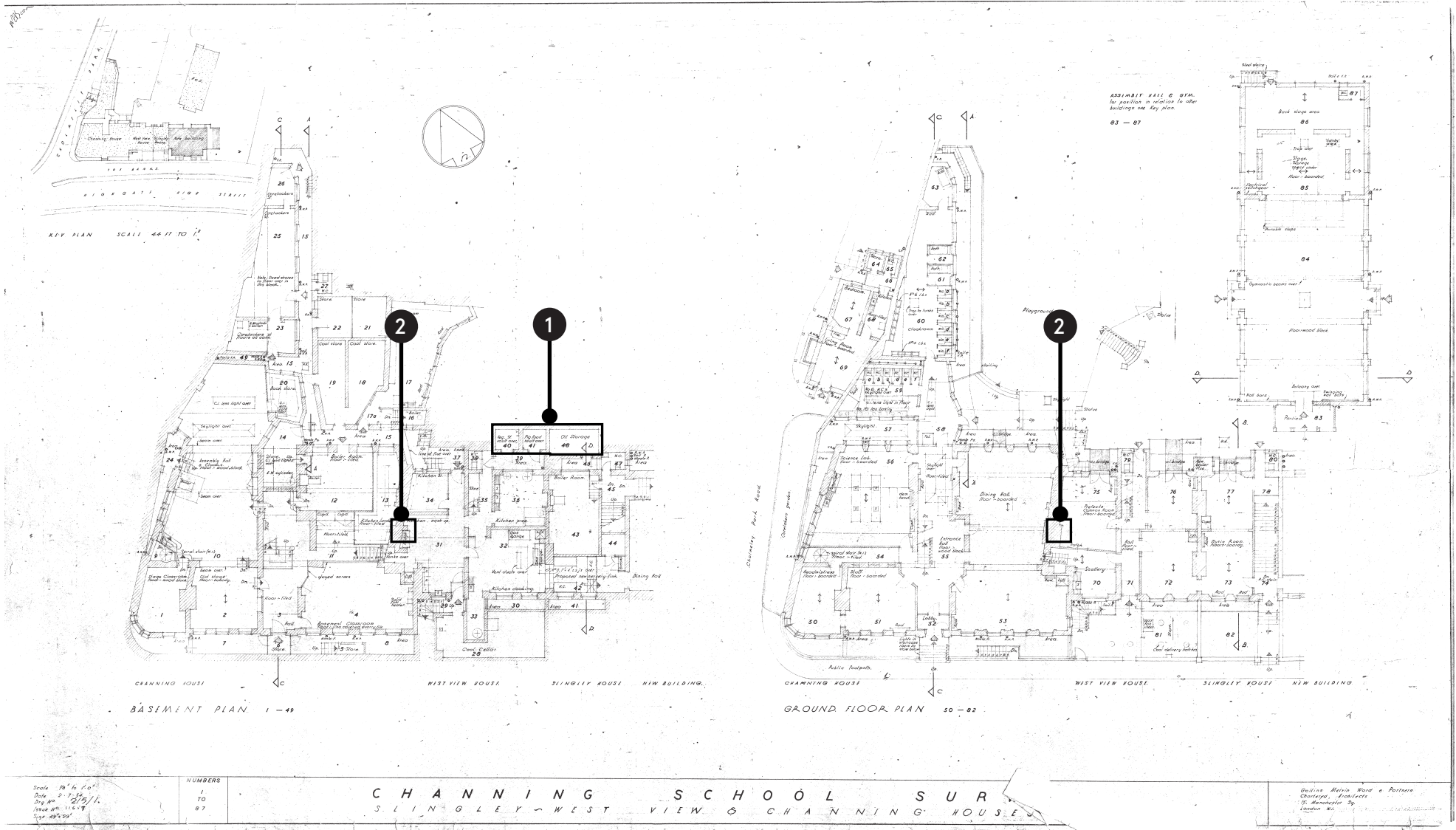


Image 2 - Archive plan drawings of the basement (left) and ground (right) floors for Channing House and Slingley House

### 3. Demolition and Temporary Works

The entire chimney stack between Channing House and Slingley House is to be demolished along with partial removal of the adjacent floorplates to accommodate the new lift shaft. The top of the roof structure is to be removed to achieve the correct floor level of the proposed rooftop extension. The basement to the north side of Slingley House will also be extended, however the extent is yet to be fully determined after site investigations have been undertaken.

Temporary works will be required to facilitate the demolition as required following the condition survey. This will generally consist of propping the surrounding structure in the temporary case until the new structure is installed. Temporary propping of the basement may be required during excavation to ensure the stability of the existing structure while it is in use.

- 1 Chimney stack to be demolished
- 2 Roof structure to be removed
- 3 Floor slabs to be cut back and re-supported
- 4 Lift pit to be excavated

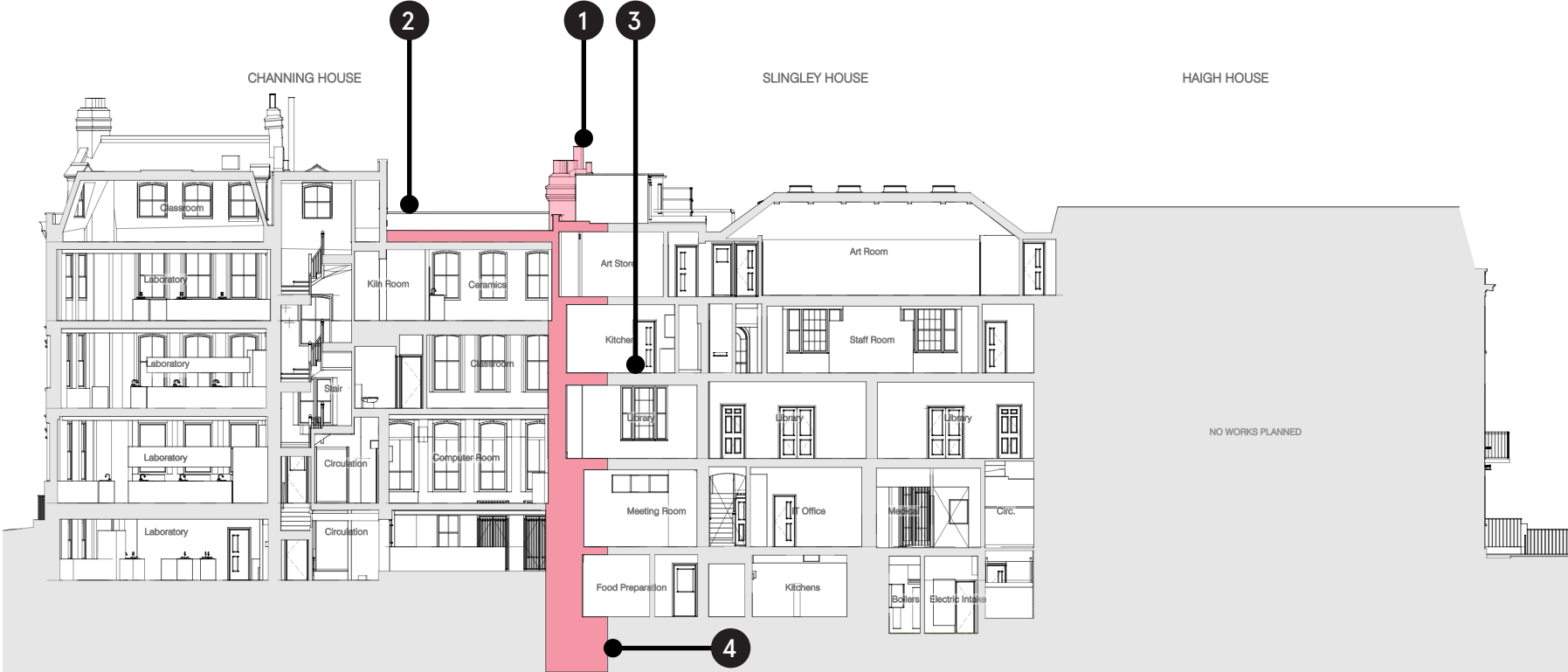


Image 3 - Existing section of main school

## 4. Proposed Structure

A lift pit will be required to accommodate the new lift shaft. The method of construction will be determined after coordination with the architect and contractor upon further investigation of the ground conditions and extent of the existing basement slab.

The lift shaft will likely be steel framed with blockwork infill supported off the new lift pit to reduce the change in load paths in the existing structure. The existing floor joists which were previously supported on the chimney stack, subject to site investigation, will be re-supported on the proposed lift shaft.

At all floors, the existing classroom spaces will be turned into circulation space to access the lift, which will result in a minor increase in anticipated live load in those areas. The existing floor structure will need to be investigated to confirm the change in occupational use without structural intervention.

An additional classroom is proposed on the rooftop. The proposed structure will be of timber construction with timber floor and roof joists to minimise additional loading on the existing structure and match the existing structural form. Similarly, as with the floors below, the change in use of the existing flat roof may require strengthening of the floor joists to allow for the additional live loads of the classroom. The rooftop extension does not increase the total number of storeys of Channing house, therefore it does not change the disproportionate class of the building. Structural ties between the proposed timber roof joists and existing masonry wall will be provided via straps.

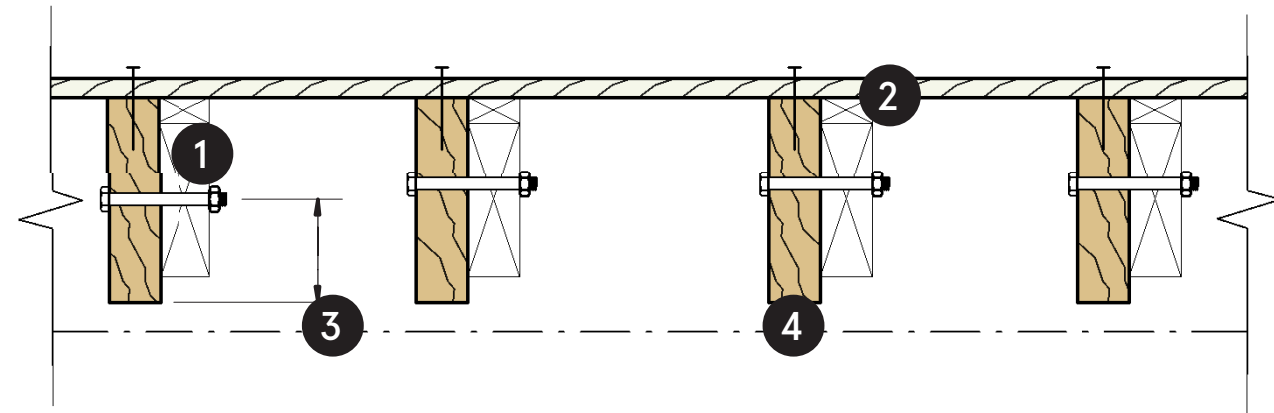


Image 4 - Typical floor strengthening detail

- 1 New timber joists aligned to lowest level of existing joist with packers/ firing pieces to underside of existing flooring. Refer to architect's details for levels required, and allow for survey on site to finalise details
- 2 Existing flooring re-fixed to top of new and existing joists. Where flooring needs to be replaced due to damage, use like for like as per architect's details.
- 3 Centreline of existing joist
- 4 Existing timber joists strengthened using new timber joists bolted to existing with M12 bolts @ 600c/c along length.

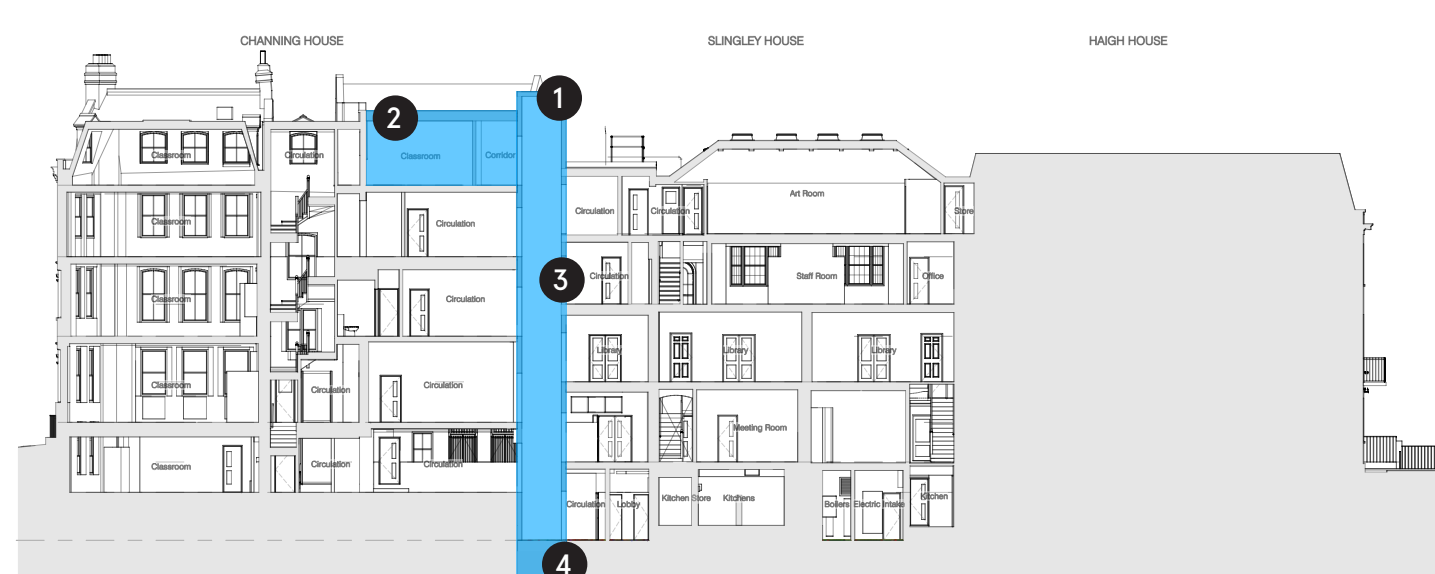


Image 5 - Proposed section of the main school

- 1 New lift shaft
- 2 New roof extension
- 3 Re-supported floor joists
- 4 New lift pit

The proposed extension to the north side of Slingley House will provide a new covered circulation space which connects the dining hall to the central stairwell. The superstructure of the extension at ground floor level will be timber construction to minimise the impact of the new structure bearing onto the existing masonry walls. The level of the proposed roof and floor levels will align with that of the existing floor levels of the main school to avoid the need for local strengthening of the external wall.

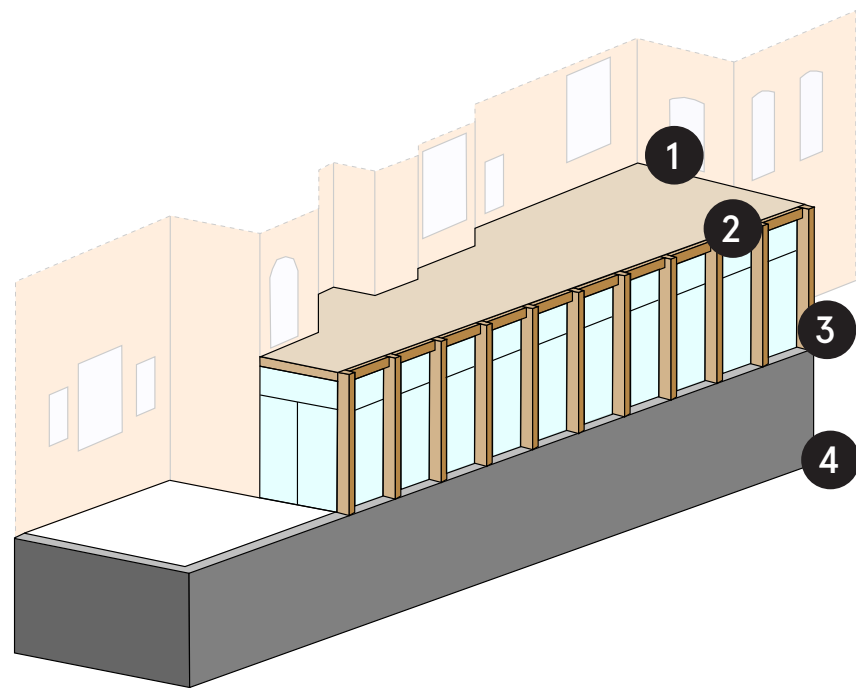


Image 6 - Perspective view of proposed extension to the north of Slingley House

- 1 Timber rafters supporting flat roof
- 2 Timber trimmer beams
- 3 Glulam blade columns
- 4 Contiguous piled wall

Existing load bearing masonry wallThe proposed basement extension is to be constructed using contiguous piled wall and designed to be cantilevered to avoid any lateral propping force going back into existing building. The proposed lightweight ground floor and roof structure is to be supported on the proposed basement wall and existing wall.

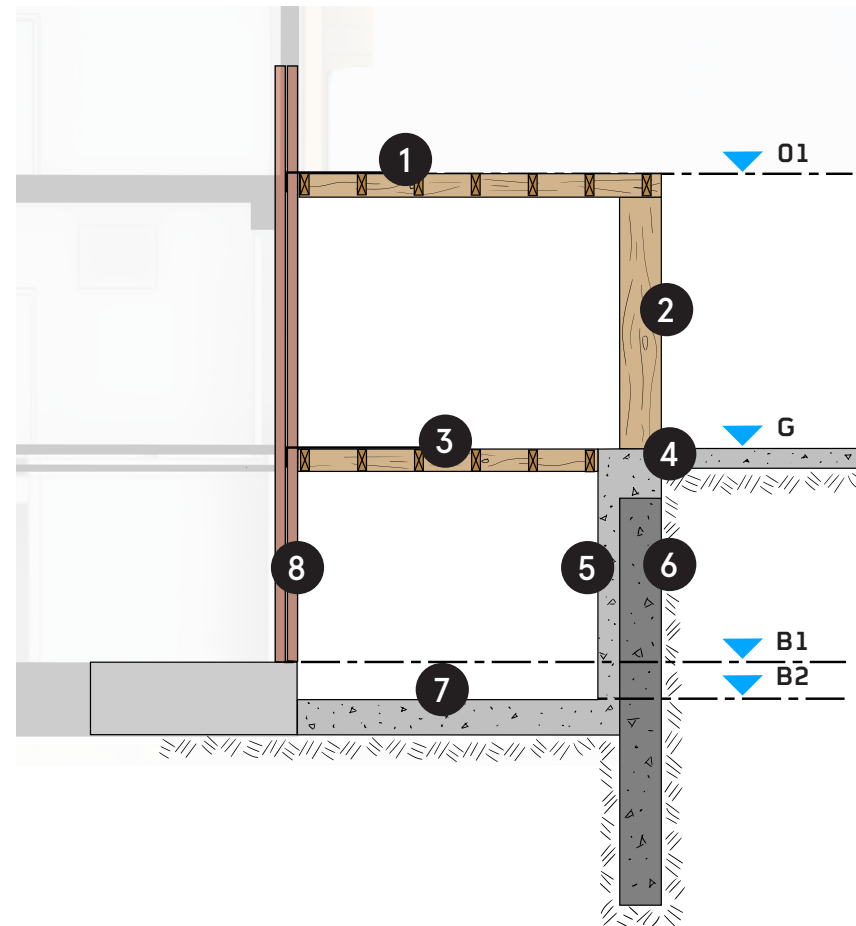


Image 7 - Section through the proposed extension to the north of Slingley House

- 1 Lightweight timber flat roof
- 2 Glulam blade columns
- 3 Lightweight timber floor
- 4 Concrete pile cap
- 5 Concrete liner wall
- 6 Contiguous piled wall
- 7 Ground bearing concrete slab
- 8 Existing load bearing masonry

# Appendix A

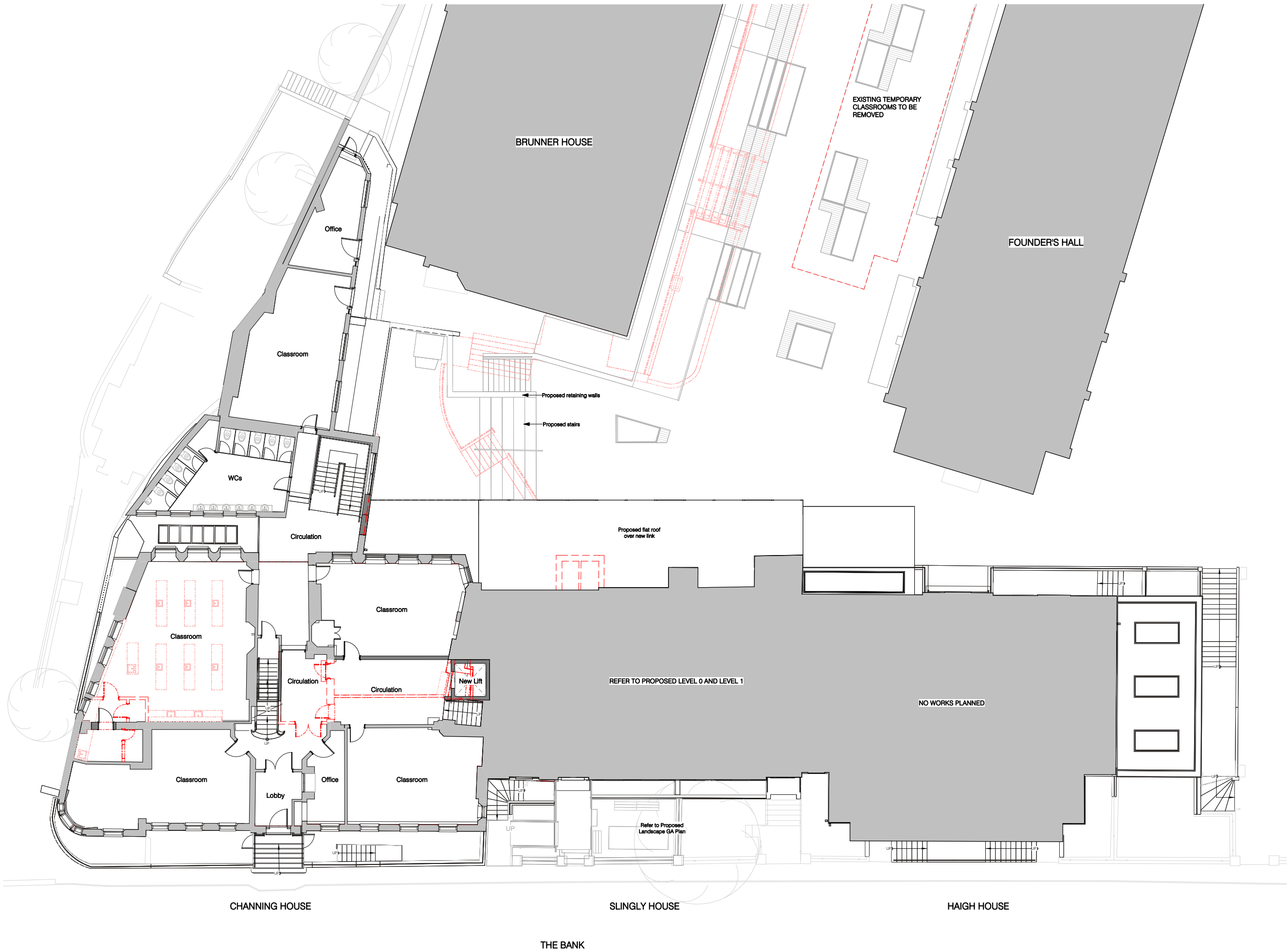
## Architects Demo Plans



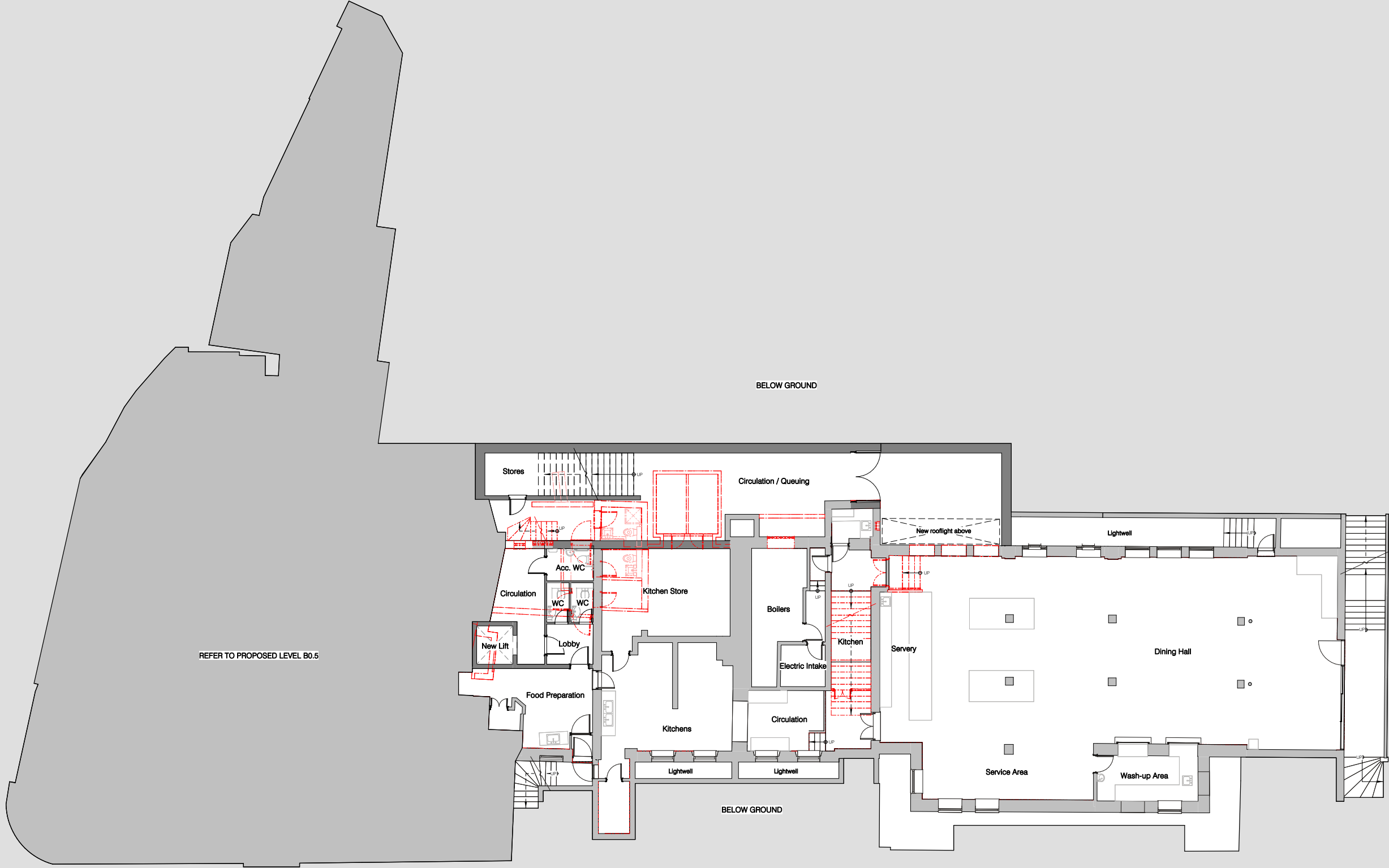
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Key

- Existing walls
- Proposed walls
- Demolitions



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CHANNING HOUSE

SLINGLY HOUSE

HAIGH HOUSE

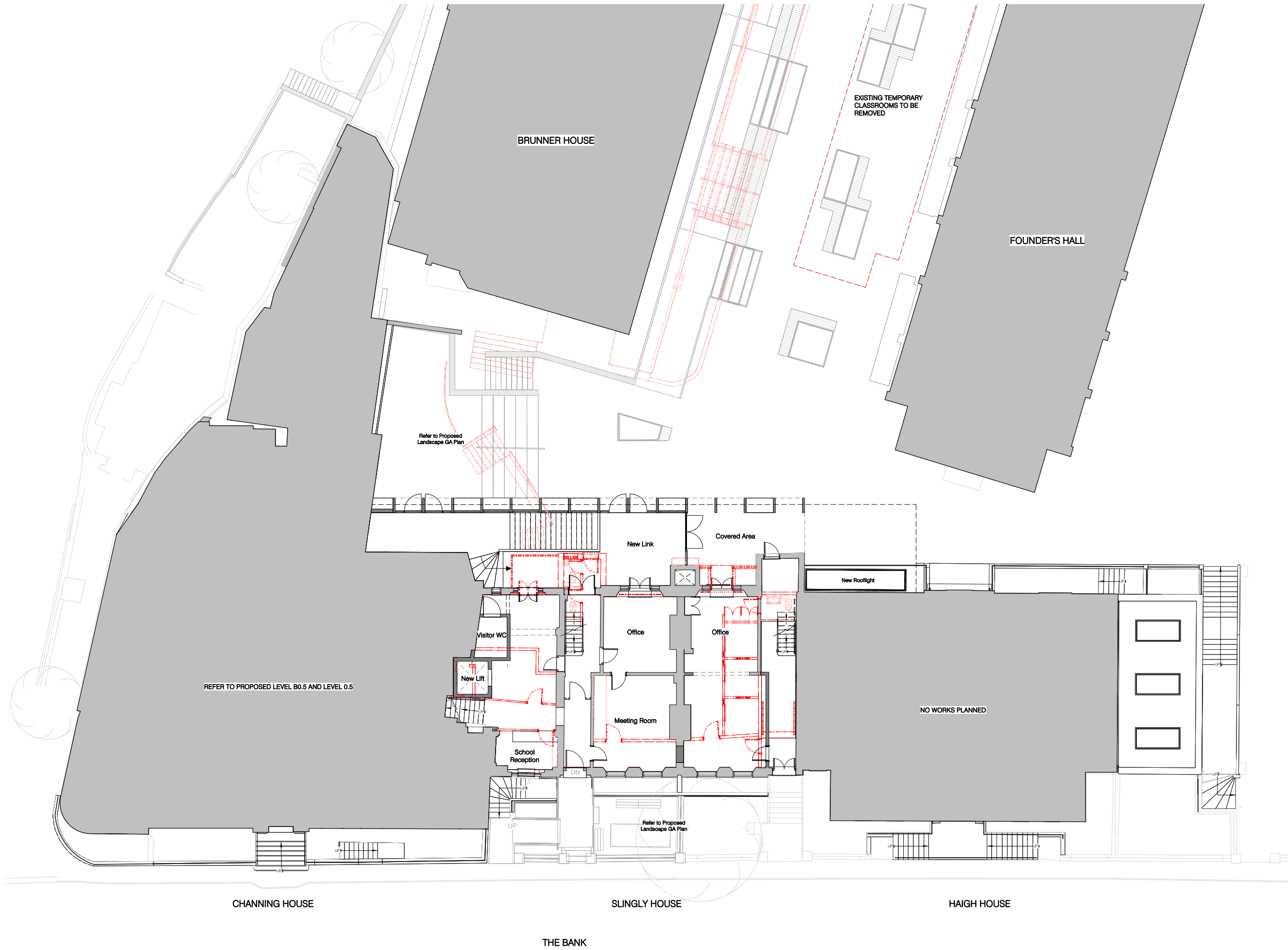
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Key

- Existing walls
- Proposed walls
- Demolitions



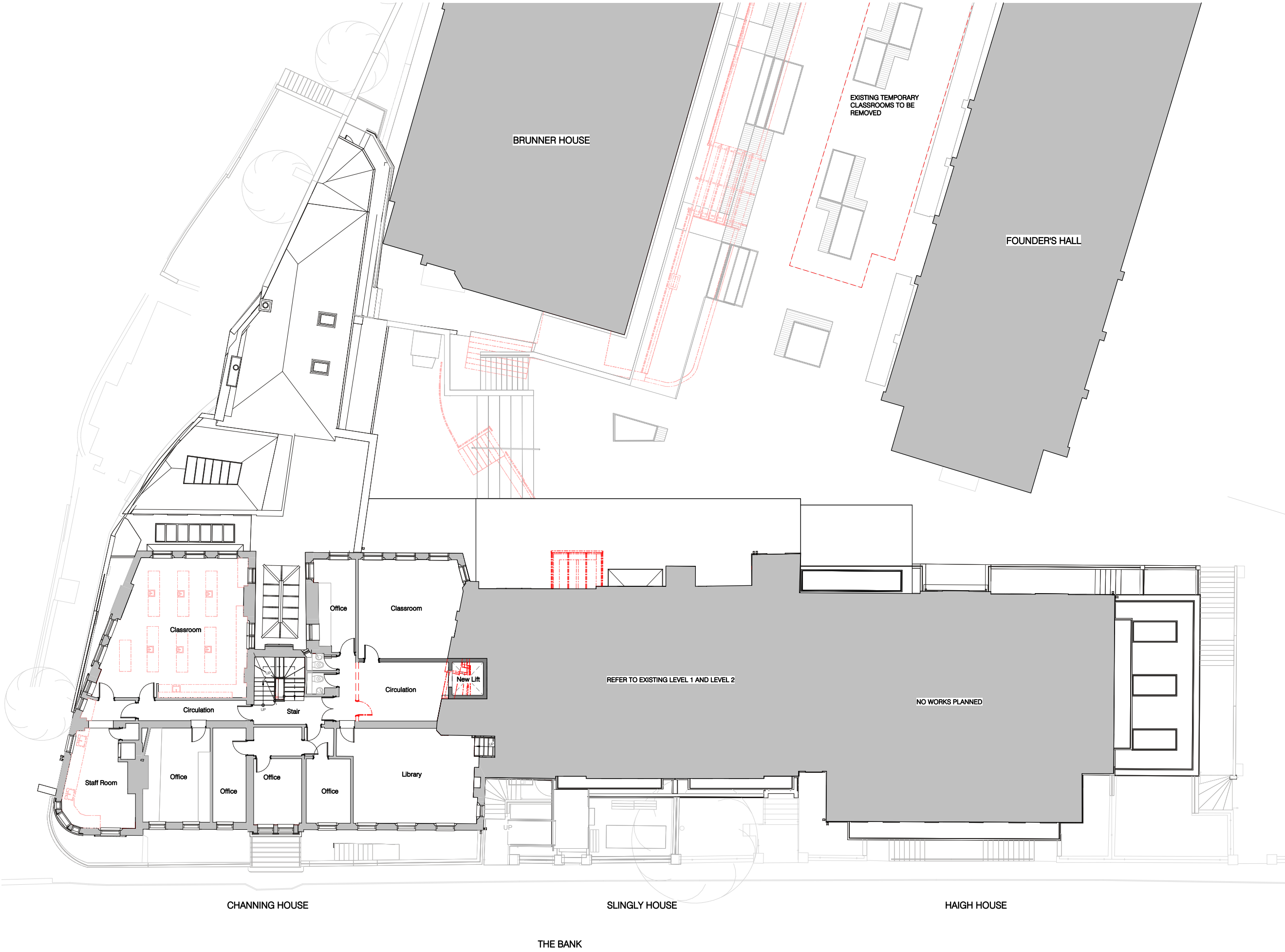
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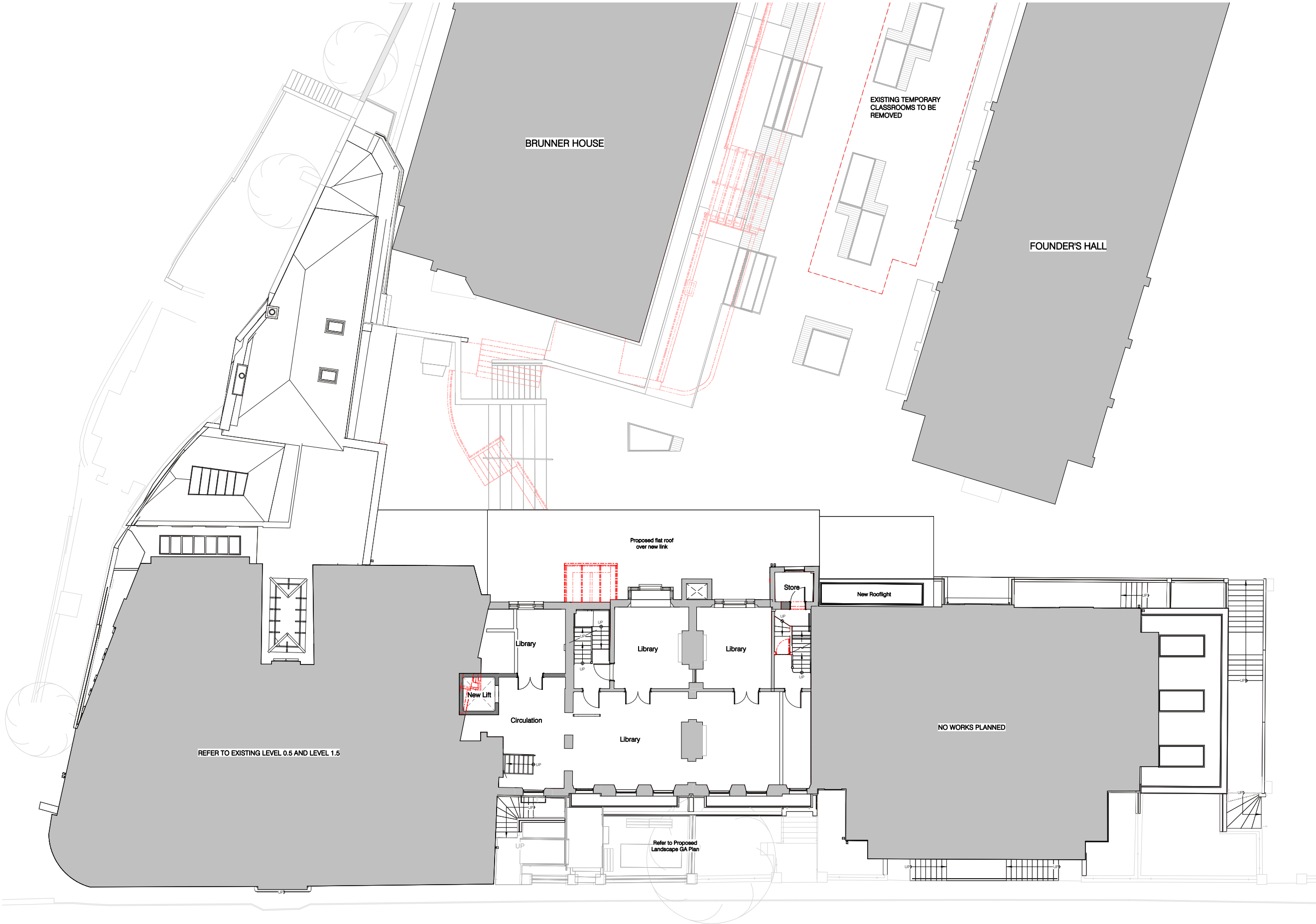
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Key

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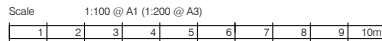
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**Key**

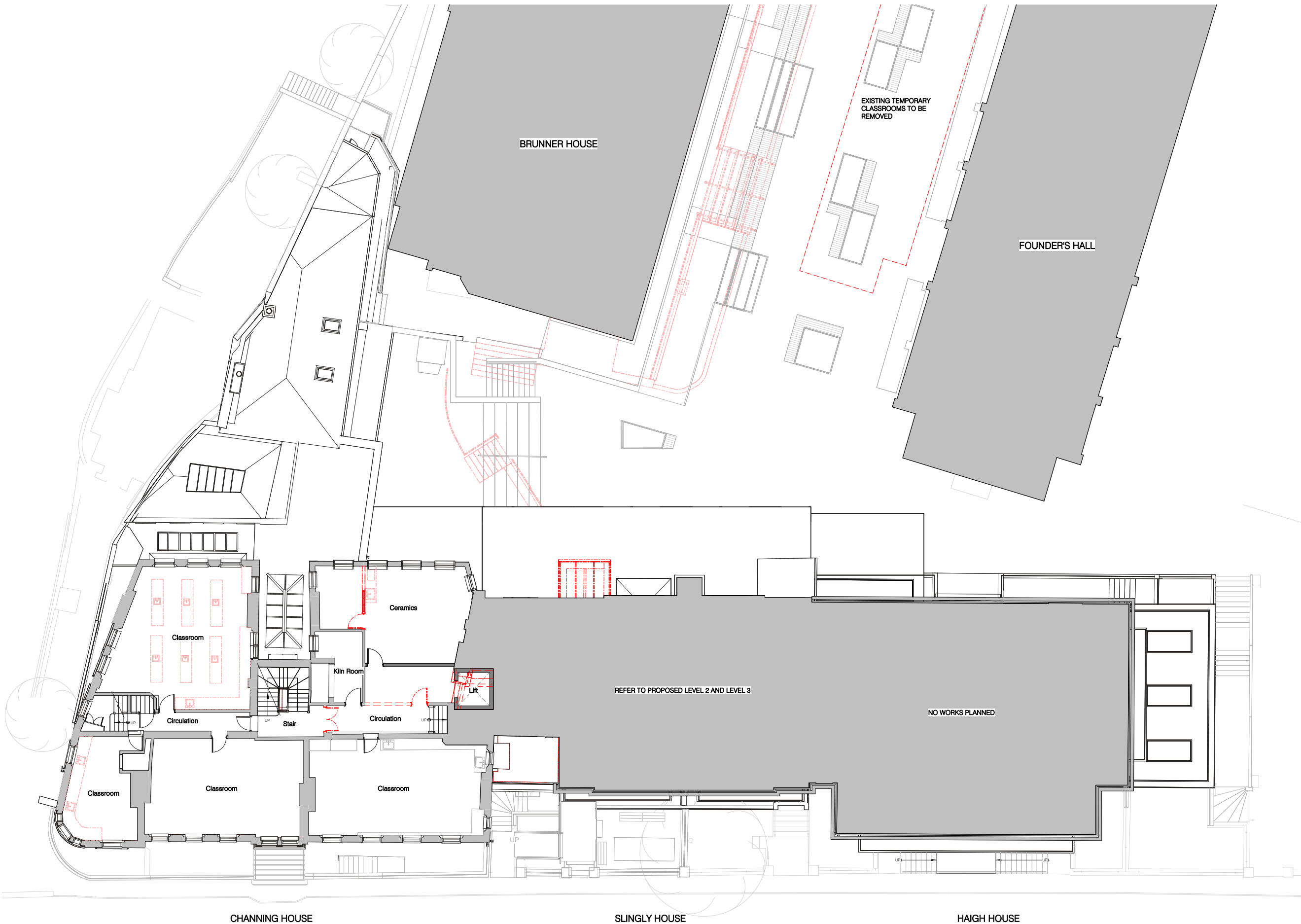
- Existing walls
- Proposed walls
- Demolitions

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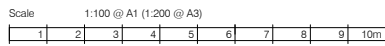
Key

- Existing walls
- Proposed walls
- Demolitions



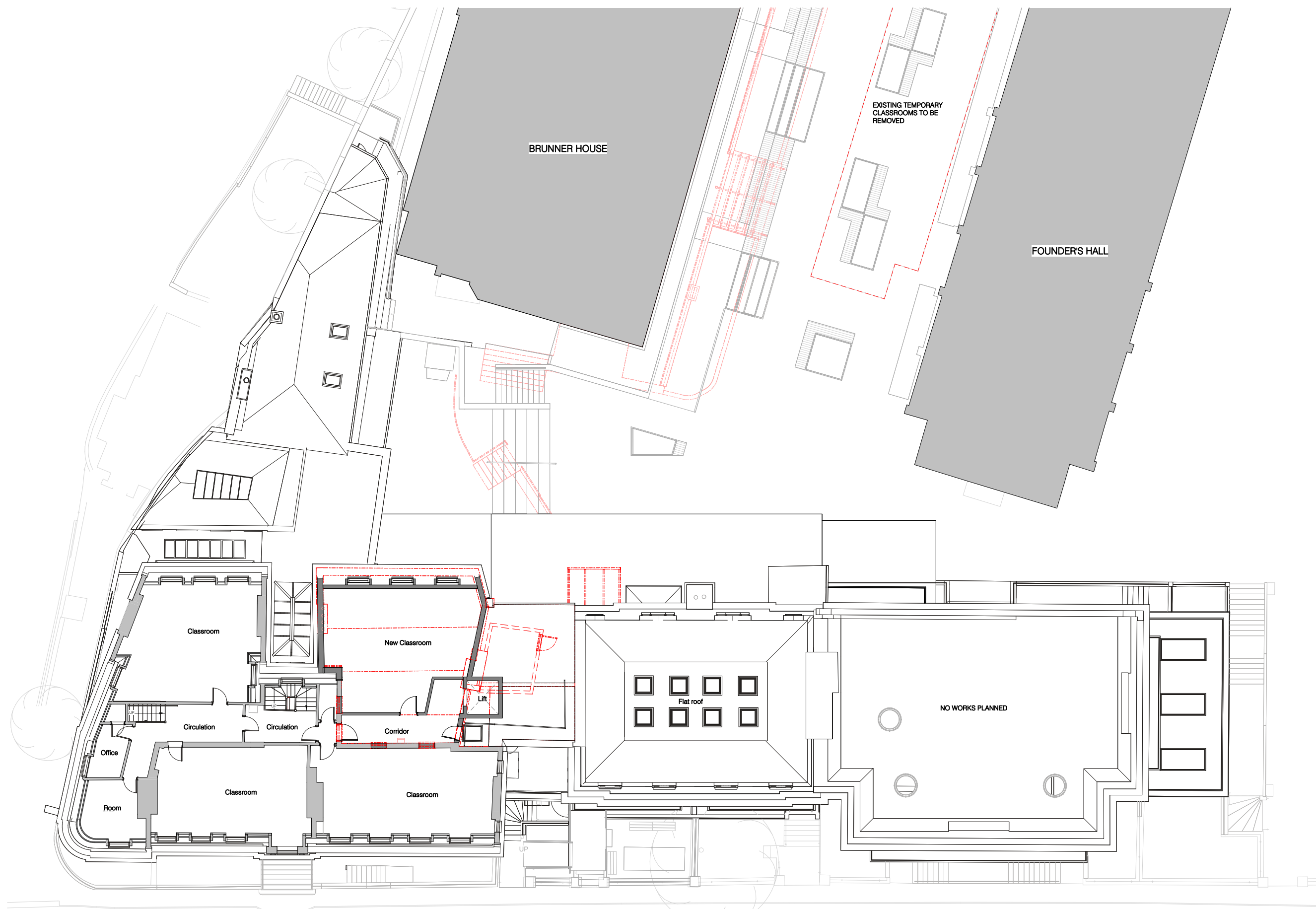
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Key

- Existing walls
- Proposed walls
- Demolitions



|                |               |             |
|----------------|---------------|-------------|
| CHANNING HOUSE | SLINGLY HOUSE | HAIGH HOUSE |
| THE BANK       |               |             |

|                             |                        |                 |
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