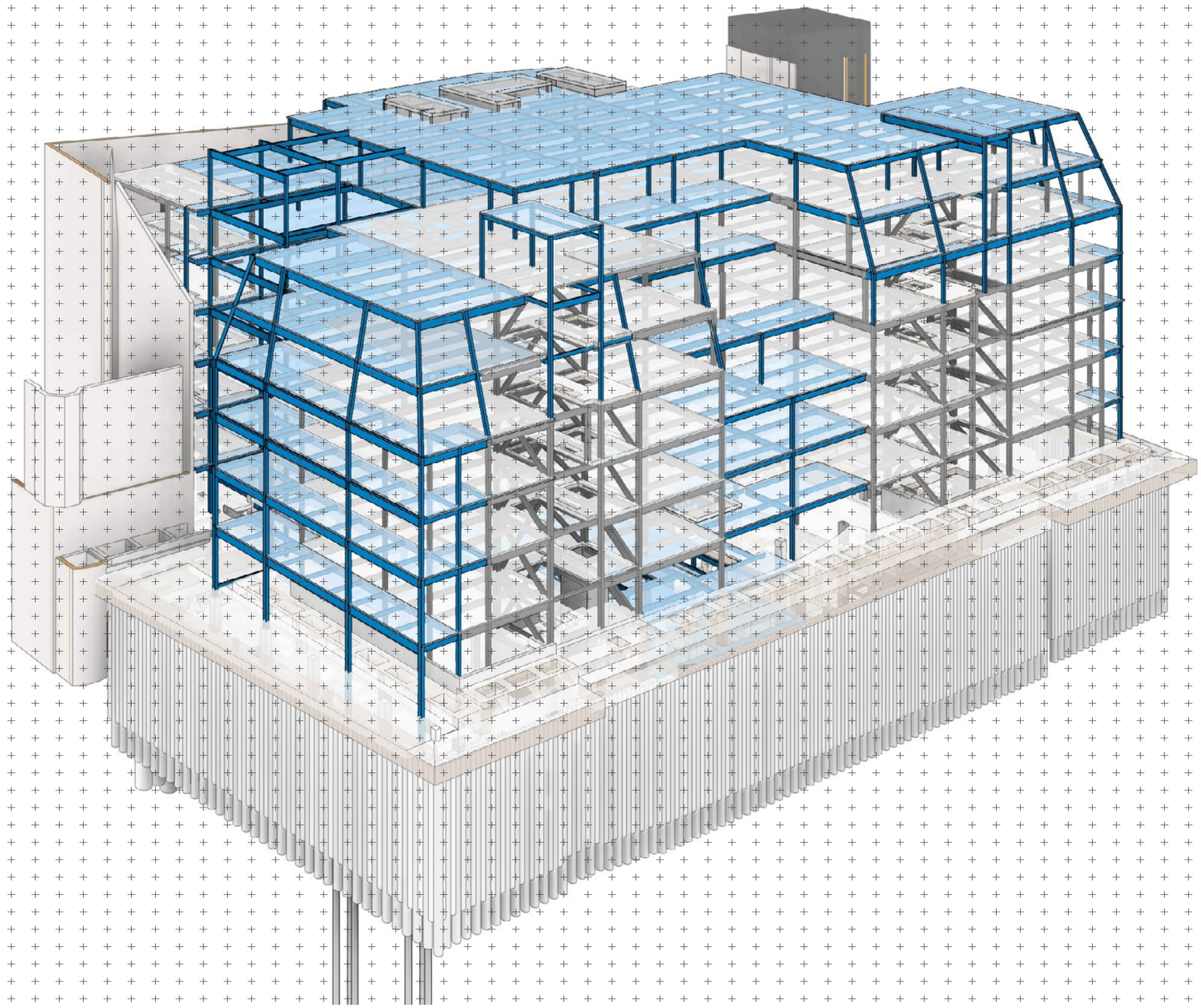
# **2601 - Waterhouse Square,** Planning Report



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## Appendices



**Status:** Planning
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**Revision:** 2
**Job no:** 2601
**Prepared by:** Wanyi Yang
**Approved by:** Susan Mantle

# 1. Introduction

Heyne Tillett Steel have been appointed by Prudential Assurance Company Limited as consulting structural engineers for the proposed alterations to Waterhouse Square, Building 2.

The proposals seek the refurbishment and extension of the existing building at 2 Waterhouse Square comprising the delivery of Class E (commercial) floorspace and a flexible commercial (Class E) and bar (sui generis) unit, external alterations, reconfiguration of entrances and servicing arrangements, new hard and soft landscaping, provision of cycle parking and other ancillary works.

We have significant experience in the refurbishment of historic and listed buildings. This typically involves complex structural works to adhere with the inherent constraints of existing buildings.

Our approach is to undertake a rigorous process of building research and site investigations. This allows us to fully understand the opportunities presented by the retained structure and to ensure that all modifications can be undertaken as sensitively as possible.

The views and opinions expressed in this report are based on visual site observations, archive drawings and our experience of working

on similar buildings.

## 2. The Existing Building

The main block of Waterhouse Square (along High Holborn) is Grade II* listed building and was built between 1876 – 1901 by Alfred and Paul Waterhouse.

The original building was then extensively extended in 1993, with the addition of Building 2 (our site) and Building 3.

### 2.1 The Heritage Area

The existing heritage area of building 2 has seen intervention over the time and is generally in good condition. Further investigation into the structure is to be undertaken in the next stage of design to verify the scope of work.

### 2.2 The Main Building

The main building of building 2 was constructed in 1993. It is six storeys in height with lower ground and basement levels. Its superstructure consists of Holorib metal deck slabs working compositely with a steel frame. The 4 No. steel braced cores form the lift, staircases and services cores. Its substructure consists of a single storey RC basement and a partial mezzanine level at lower ground floor.

The basement box is formed using secant piled retaining walls propped by a 1200mm thk RC raft at basement level and 600mm RC slab at ground floor. The RC columns support the RC slab at mezzanine level and ground floor, as well as the loads from the superstructural steel columns above. A lighter weight concrete encased steel frame supports the metal deck slab at lower ground mezzanine level.  The RC raft provides a foundation for the building.

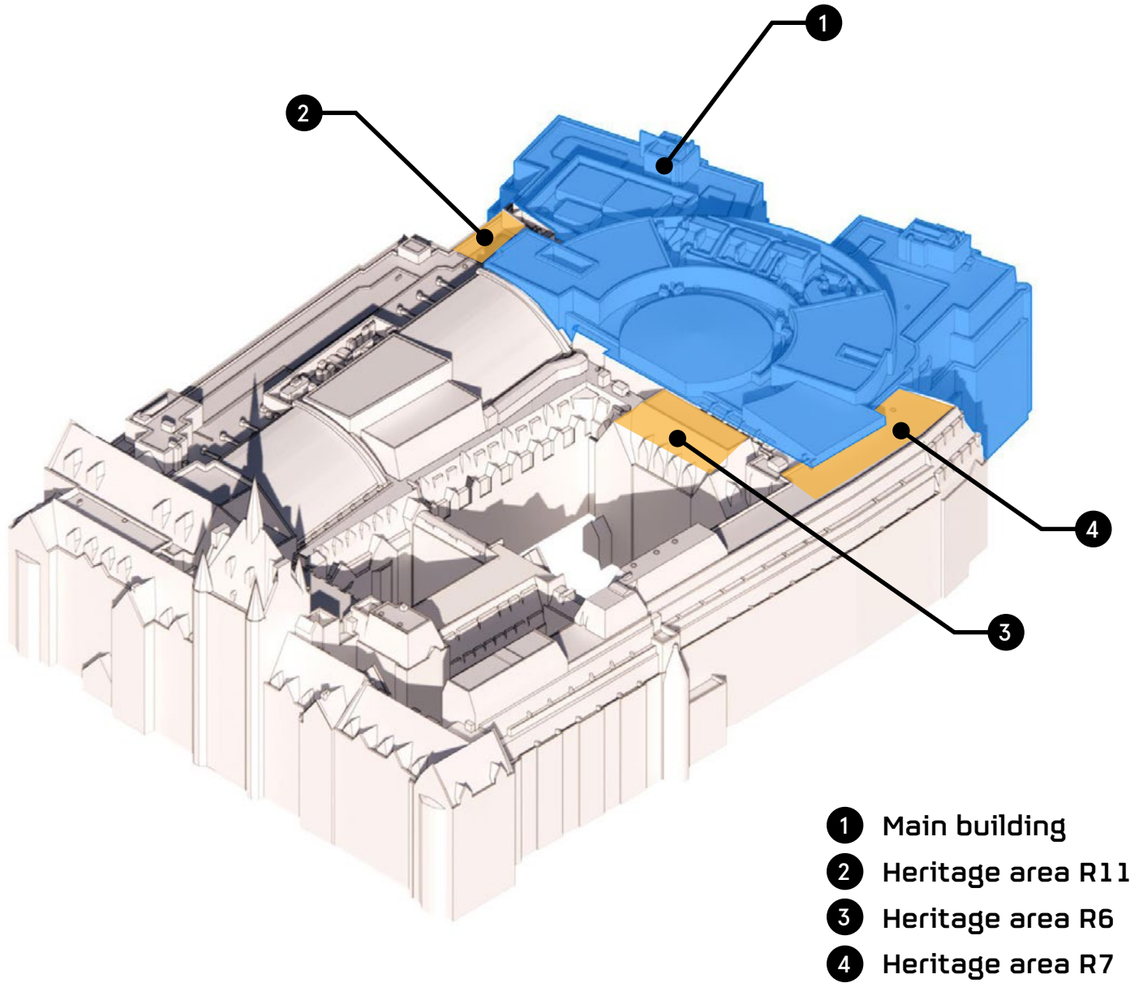



Image 1 - Main Building and Heritage Area

Stability is provided by Steel braced cores.

## 3. Proposed Structural Works

Most of the proposed work is to be carried out on the main building structure. The existing atrium to the south of building 2 is to be demolished. A proposed new RC core is to be constructed in this area to support the new floors and as the replacement of the demolished steel braced cores to provide stability. An additional storey is to be constructed within the main building footprint. New steel frame and metal deck slab is proposed to provide the additional massing to the north and west elevation of the building and in the additional storey.

The existing basement, retaining walls and raft foundation are to be retained. The piled foundation is proposed to support the new RC core and columns which removes any possible ground movement impact of the new construction on the heritage area.

Proposed structural works to the historic part of building 2 are proposed to be very limited, with most of the building being retained without alteration. Areas of proposed structural intervention are as follows:

### 3.1 R11 Stair Infill

Building R11 has an existing staircase void at ground floor that is to be infilled. This is highlighted in sketch SK-040.

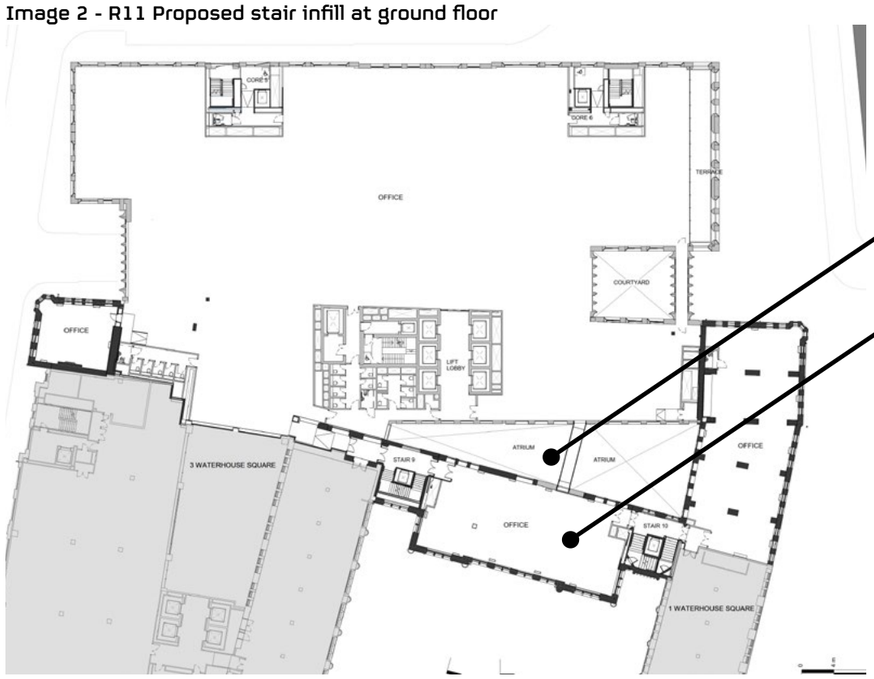
### 3.2 Link Bridge

The link bridge in the proposed atrium at level 2, 3 and 4 is to be supported by the proposed structure and the wall at the interface


1 R11 Heritage area

2 Location of stair infill at ground floor

Image 2 - R11 Proposed stair infill at ground floor




1 R6 Heritage area

2 Link bridge supported on wall interfacing between R6 and main building

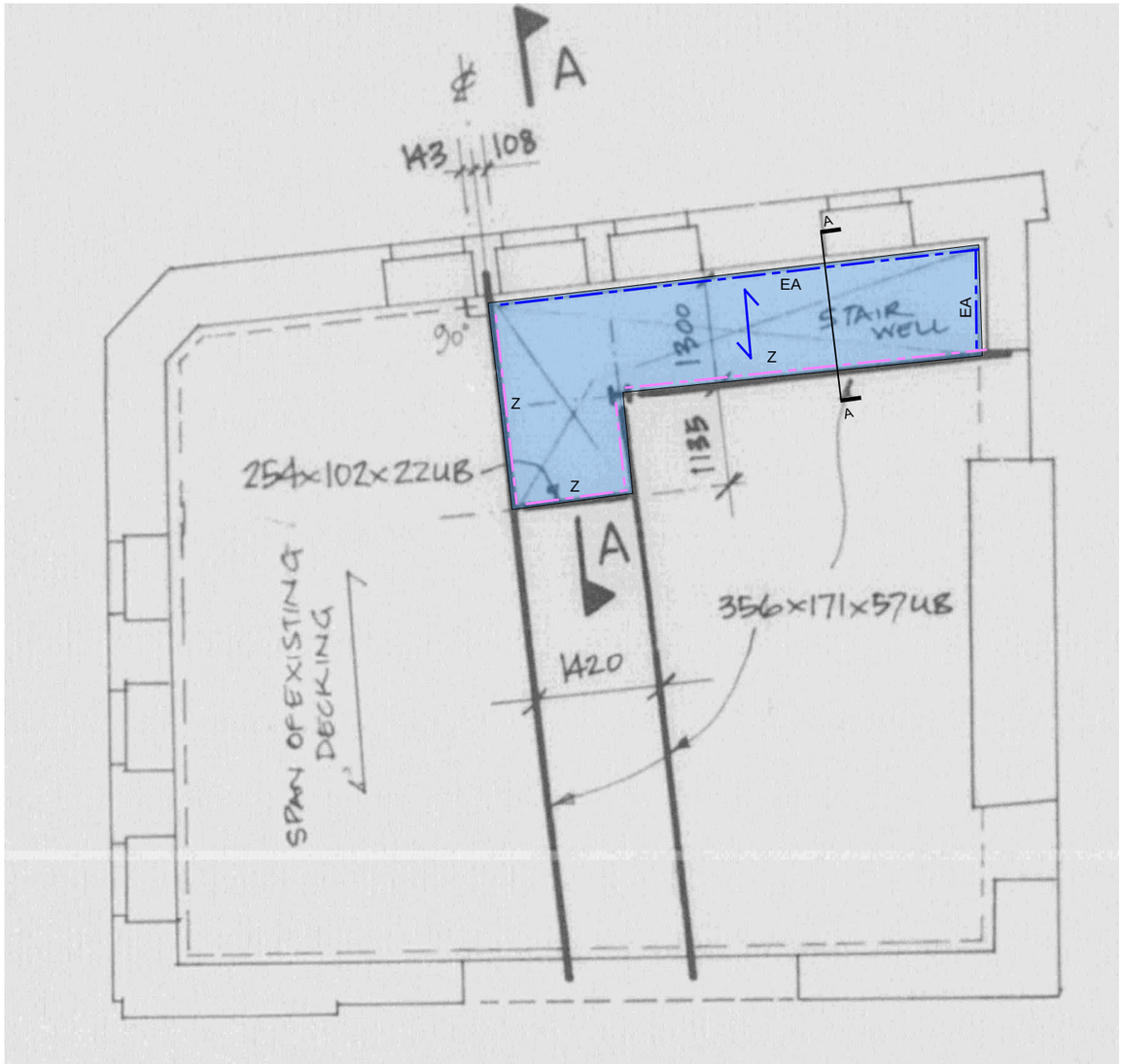
Structure at the interface to be further investigated in the next stage of design

Image 3 - Link bridge at Lvl 2, 3, and 4

# Appendix A

## R11 Stair infill sketch

## R11 Staircase infill



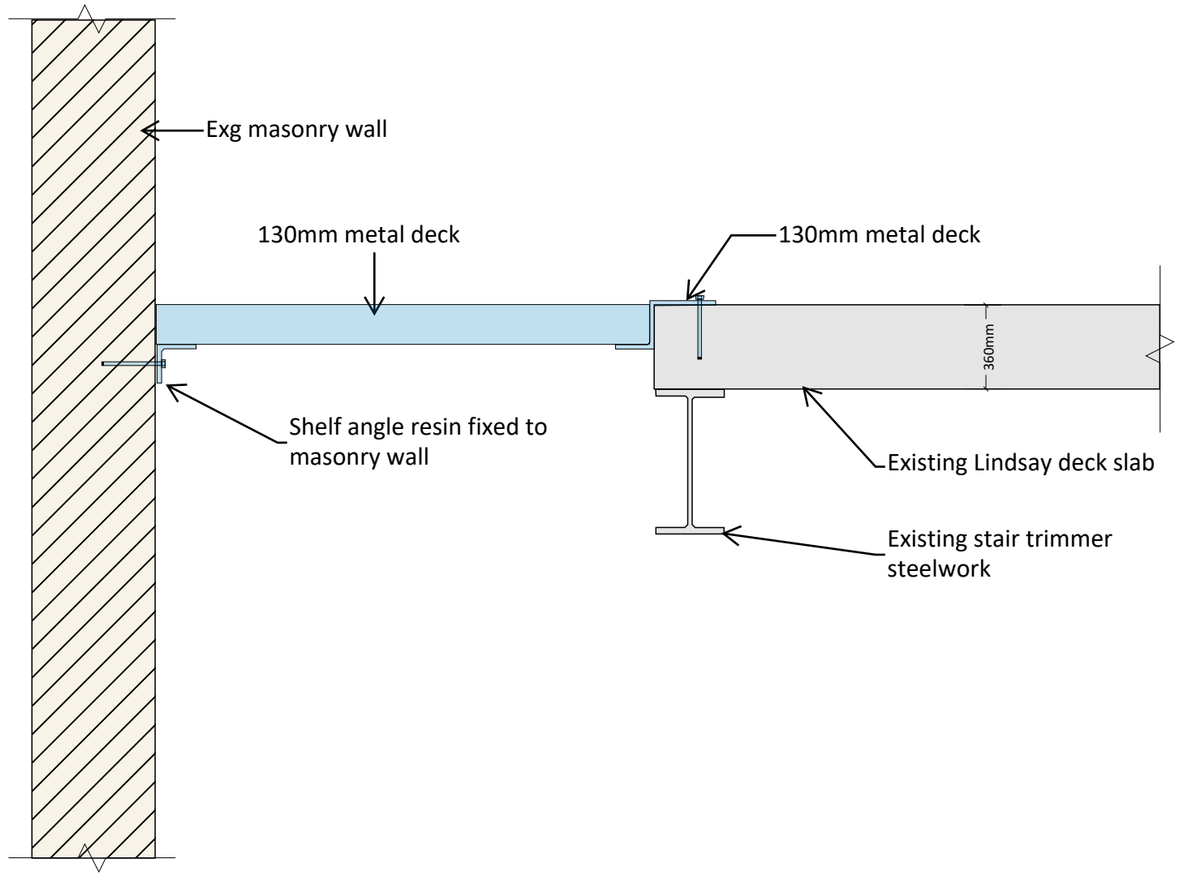

**Ground floor plan - proposal for infill**

Legend

130mm metal deck

Z bracket (see section)

Shelf angle resin fixed to existing masonry

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|---|---|---|---|
| Job | Waterhouse Square | Date | 21/03/23 |
| Title | R11 staircase infill | Eng. | CB |
| Job No. | 2601 Sheet SK040 | Rev. | P1 |



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