DESIGN & ACCESS STATEMENT

For

5 & 6 NEW SQUARE, LONDON, WC2A 3TL

PREPARED BY:

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1.0 INTRODUCTION

This Design and Access Statement has been prepared by The Honourable Society of Lincoln's Inn. It accompanies an application for full Planning Permission and Listed Building Consent for various roof works to 5 & 6 New Square, Lincoln's Inn, London, WC2A 3TL. It is to be read in conjunction with the drawings and ancillary documents submitted to Camden Council as part of a request for approval of the proposed works.

This report responds to the requirements of the Town and Country Planning (General Development Procedure) (England) Order 2015 (the GDPO) for planning applications to be accompanied by a Design and Access Statement.

2.0 SITE HISTORY

The site itself is dominated by historic and listed buildings. Similarly, the gardens, trees and general open space surrounding the buildings are historically important and provide a wider public amenity.

The buildings within New Square are arranged as a continuous terrace around three sides of a square, open to the north where the rest of Lincoln's Inn is situated. 1 & 2 New Square are on the east side, 4 to 6 New Square are along the south and 8 to 11 New Square are to the west.

Image 1: New Square

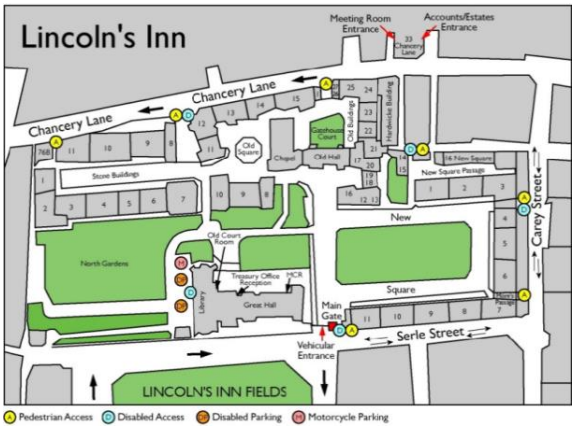

Image 2: Lincoln's Inn Location Plan

The buildings were constructed between c1691 and 1697 as chambers to be let to Barristers. The nine double-fronted buildings were built on three floors above a basement, arranged around a central staircase. From the 1720s onwards, the 2nd floor tenants began to colonise the roof space, adding dormer windows to provide light to the new rooms. Later in this century, the facades were extended upwards and new roofs were constructed, allowing third floor rooms to match the extent of the floors below.

In 1999, fourth floor rooms were added to many of the buildings within the newer roofs, particularly where the buildings were extensively refurbished at 4, 5 (West), 6 & 8 New Square.

3.0 THE SITE

5 & 6 New Square are Grade II* listed buildings traditionally constructed from brick. They house legal chambers and are located within the Lincoln's Inn Estate, situated in Bloomsbury

Conservation Area. The buildings are maintained by The Honourable Society of Lincoln's Inn (HSLI).

3.1 5 New Square East

5 New Square is split into two sections: 5 New Square east and west. 5 New Square east comprises of 5 storeys: basement to third floor. The roof over 5 New Square east is uniquely the original 1693/7 roof which has been much adapted when rooms and dormers were inserted in 1720. The roof construction differs from the other buildings within New Square in that it comprises of a flat lead section of roof to the front of the building, with three slated pitches forming a butterfly roof to the centre and a steep slated pitch to the rear of the building with 2no. dormers.

Image 3: 5 & 6 New Square Roofs

3.2 5 New Square West

5 New Square west comprises of 6 storeys: basement to fourth floor. The roof is of a mansard construction with felt roof covering to the flat section of roof, and slated pitches to the front and rear. There are 4no. dormers to the front and 3no. dormers to the rear.

3.3 6 New Square

Similarly, to 5 New Square, the third floors to 6 New Square were built in timber frame construction bearing on the ceiling joists of the second floor. The party walls and chimney flues were extended in brickwork.

Before the 1999 extensive refurbishment works, the roof of 6 New Square comprised three pitched gable roofs running in parallel east to west. The northern most roof visible from the Square had the lowest pitch and when uncovered during the refurbishment it appeared to be the original roof of 1693 which had been reassembled at the higher level when the third floor was built in 1720. The other two pitched roofs were of 18th and 19th century construction.

The rear two thirds of 6 New Square roof were rebuilt in 1999 to provide south facing rooms. Consent could not be obtained to extend into the north gable roof as this is an original part of the 1693/7 roof, albeit at a higher level.

Refer to (2101 – Existing Roof Plan 5 & 6 New Square) for the existing roof plans and the photographic schedule for existing photos of 5 & 6 New Square roofs.

4.0 PROPOSAL

To be read in conjunction with the drawings and photographic schedule noted within the Planning Application.

The aim of the proposed work is to reduce the long-term deterioration of the roof structures over 5 & 6 New Square and other areas of the buildings which have been affected by continued water ingress from the roofs over the years. The works will involve retaining as much of the existing roof coverings and timber elements as possible. This to ensure changes are kept to a minimum in line with Historic England and NPPF guidance. The works will improve water tightness, thermal performance, and access for future maintenance of the roofs.

The works will be carried out in accordance with the Historic England Practical Building Conservation guidance and the following Energy Efficiency & Historic Buildings guidance:

- *Application of Part L of the Building Regulations to Historic and Traditionally Constructed Buildings*
- *Insulating Dormer Windows*
- *Insulating Flat Roofs*
- *Insulating Pitched Roofs*

4.1 Welsh Penrhyn Slates

A large quantity of the existing Welsh Penrhyn slates over 5 & 6 New Square roof are in good condition and an initial inspection would suggest that many of them can be retained and re-used however, this will become clear once they are removed and carefully inspected. There are several slates which are being held in position by tingles (see Figures 7, 11, 28, 39 in the photographic schedule). There are also numerous slates which have slipped due to nail sickness, allowing water into the building (see Figures 6, 17, 23, 39 in the photographic schedule). Further defects include delamination and splitting of the slates and build-up of lichen (see Figures 6, 7, 17, 18, 23 in the photographic schedule). Where slates have been replaced rather than re-fixed, non-matching slates appear to have been used.

Investigations were carried out to identify the existing construction of the roofs. Slates were lifted to the pitched roof sections over 5 & 6 New Square and the findings were as follows:

4.1.1 5 New Square East

The existing slates to the pitched roof sections at the front and rear are fixed onto battens which are fixed directly onto close boarding. There are no counter battens or sarking felt present (See Image 4 below and Figure 6 of the Photographic Schedule).

Image 4: 5 New Square East Pitched Roof Section

4.1.2 5 New Square West

The existing slates to the pitched sections of the mansard roof are fixed onto battens and there is a waterproof membrane present. It is not known what is beneath the waterproof membrane as this area was inaccessible at the time of the survey. Further investigation will be carried out when safe access can be obtained via a scaffold. See Image 5 below:

Image 5: Existing Roof Construction

4.1.3 6 New Square East & West

The existing slates to the front and rear pitched sections of 6 New Square mansard roof comprise of slates fixed onto battens with 2 layers of felt beneath and counter battens to the underside of the felt (See Images 6 & 7 below).

Image 6: 6 New Square Front Pitched Section

Image 7: 6 New Square Rear Pitched Section

It is understood that the front shallow pitched section of roof to 6 New Square is the original 1693 roof. To clarify, there will be no changes to the existing roof construction. The proposed works will involve carrying out further inspections of the existing secret gutter installation within this area to determine the source of water ingress into an office located directly below. If necessary, the existing secret guttering will be re-designed to ensure correct falls are achieved to prevent further water ingress into the building (see Figure 37 in the Photographic Schedule showing ponding water in the secret gutter outlet due to shallowness of falls of the existing installation).

The proposed works will involve carefully removing the existing Welsh Penrhyn slates from the roofs. Each slate will then be examined, graded, and sorted to determine its suitability for re-use. The works will involve re-instating all suitable slates for re-use to those areas visible from ground level. Any new slates required will be sourced from the Penrhyn quarry in Wales and installed to areas of the roof which are not visible from ground level to maintain the existing appearance of the roof.

Prior to reinstating any slates, any areas where breathable waterproof membranes are non-existing will have Tyvek breathable waterproof membranes installed with new pressure impregnated counter battens to which the slates will be nailed into.

4.2 Lead Work

A large portion of the existing leadwork on the roofs of 5 & 6 New Square is in poor condition. Temporary repairs have been carried out to the parapet gutters and lead bays using Acrypol and Flashband. Figure 4 in the photographic schedule shows how these repairs have failed over time. The falls to the parapet gutters are incorrect and do not direct rainwater towards the outlets, causing rainwater ponding, leading to water ingress (see Figure 29 in the photographic schedule).

4.2.1 5 New Square East

The existing flashings are in poor condition (see Figure 5 of the Photographic Schedule and Image 8 below) and Flashband repairs have been carried out to prevent water ingress into the building.

Image 8: Flashband Repair to Flashing

Image 9: Failed rendered plinth detail

Image 10: Rucking of Lead Bay

Where the pitched sections of roof meet the party walls of the adjoining buildings, a rendered plinth detail has been formed to divert water away from the buildings. As shown in image 9 above, the render has failed, and extensive cracking has occurred, creating a pathway for water to enter the building. The proposed works will involve replacing the defective lead flashings and failed rendered detail with new Code 4 lead flashings to create a watertight roof.

Image 10 above shows rucking of lead which has been caused due to the absence of a lead step detail in the bay. The existing lead sheet is too long and has not been installed in line with the Lead Sheet Association guidelines therefore fails to achieve the required falls to divert rainwater away from the building. The proposed works will involve removing the existing lead bay and installing two sheets of new lead with 600mm centres and a step detail to prevent splitting of the lead.

Existing leadwork which is in satisfactory condition will be retained and protected throughout the works (see Figure 8 & 10 in the Photographic Schedule.)

4.2.2 5 New Square West

The existing leadwork to 5 New Square West will be largely replaced. This will involve replacing the existing leadwork to the parapet gutters at the front and rear to allow for correct formation of falls. Defective lead over brick copings, flashings and to dormers at the front and rear will also be replaced (see Figures 17 & 27 on the Photographic Schedule).

4.2.3 6 New Square East & West

The existing leadwork to the parapet gutters on 6 New Square roof will be replaced to the front and rear of the building (see Figures 29 and 36 of existing parapet gutters). The lead welts holding cables into position at the front of the building will be re-fixed as some are loose. The leadwork to the rear dormers is in good condition and will be retained and protected throughout the works (see Figure 40).

To achieve the correct falls to the parapet gutters on both buildings, new sole boards will be laid (where existing cannot be re-used) to form new falls to divert rainwater into the existing outlets on the roof. All works will be carried out in accordance with current Lead Sheet Association guidelines to ensure appropriately sized lead is used in each area. Each area will be measured, and the correct code of lead will be used.

4.3 Asphalt Roof

The existing felt roof coverings over 5 New Square west and 6 New Square can be seen in Figures 22, 31 & 42 of the Photographic Schedule. The roofs were originally covered with asphalt. It is not known when the felt roof covering was installed. Some areas of the flat roofs are experiencing movement which suggests that there are likely to be issues with the existing substrate.

The proposed works will involve stripping off the existing felt and asphalt coverings and inspecting the substrate beneath to ensure there is no rotten or defective timber present. Any identified rotten and defective timber will be replaced with new to match the existing in all respects. New falls will be formed using new sole boards where existing are defective.

4.4 Masonry Repairs

Masonry repairs at roof level will involve removing loose and defective pointing and repointing using lime mortar. The works will also involve removing any loose/ hollow render and re-rendering using a lime-based render which will be painted using external masonry paint to match the existing colour. Defective/ hollow chimney flaunching will be carefully removed and replaced with new to match that of the existing. Mortar and bedding samples will be sent off for analysis prior to carrying out any masonry works to ensure repairs are carried out using the same mix as the existing.

4.5 Overhauling Windows and Doors & Timber Care Repairs

The windows and doors at roof level will be overhauled and timber care repairs carried out where necessary, prior to redecorating with external wood paint. New ironmongery will be installed to windows and doors where necessary to ensure proper operation.

4.6 Roof Access Equipment

The works will involve removing the existing condemned access ladders and stainless-steel guardrails as they do not conform to any regulations or British Standards. The existing installations fail to provide safe access to regularly maintain the roofs and clear out gutters and outlets of pollen build up generated from the London Plane trees which shed pollen all year round.

The existing anchor points located on the roofs of 5 & 6 New Square will be carefully removed during the strip out stage of the works and reinstated. Pull tests will be carried out to ensure they provide the required loadings in accordance with current British Standards for fall protection.

The proposed ladders are designed as far as reasonably practicable in accordance with BS 4211-2005+A1-2008 and BS EN ISO 14122-3-2016. Due to the nature of the building and its listed status the designs have been much adapted to best comply with current regulations while ensuring the new installations do not negatively impact the aesthetics of the buildings. They will provide safe access onto various areas of the roofs to carry out cleaning of the gutters, outlets, maintenance of mechanical roof equipment, inspections, and surveys for the foreseeable future. The new ladders will comprise of aluminium 6082 stile sections 103 x 27mm and aluminium 6082 ribbed rungs with 32mm diameters. They will be fixed into the roof structure using A2 stainless steel brackets. The ladders will be in a black powder coated finish.

A comparison of the existing and proposed ladders is detailed below:

Existing ladders:

- Designed to no existing standard
- Are poorly installed with sections not fixed to the roof
- Insufficient toe room when climbing some of the ladders
- Trip hazard when walking down areas with low pitch
- Inadequately fixed to the structure of the roof
- Provide no adequate landing platforms
- Are not designed for with any inherent fall protection measures

New ladders:

- Designed as far as reasonably practicable to current standards with limitation of Grade Listing of the building
- Will be correctly installed and secured to the roof to agreed designs
- Will provide sufficient toe room
- Will provide stepped walkways with handrails where applicable
- Will have engineered brackets back to the structure
- Have landing platforms where required
- Are designed to accommodate fall arrest loadings within the constraints of the listed status of the buildings.

The proposed guard rails will span the same width as the existing. They will be constructed of galvanised cast iron in accordance with BS EN ISO 1461 and will be in a black powder coated finish. Similarly to the ladders, due to the listed status of the buildings the new guard rail designs will be adapted to best conform to current British Standards, The Regulatory Reform (Fire Safety) Order 2005– emergency routes and exits and Building Regulations K K2 Section 3. They will be fixed into the brickwork of the building using Kee Klamp type fixings.

A comparison of the existing and proposed guard rails is detailed below:

Existing guardrails:

- Not designed to any clear standard or specification
- Have no top rail or intermediate rail
- There is no proven loading for the upstand posts
- The area is a designated fire escape for the building with no designate guardrail system
- Stair access between levels is poorly design
- Section of the parapet have no guardrail at all in place and have a fall arrest system installed into the parapet that has been failed and is not fit for purpose

New guardrails:

- Will be designed as far as reasonably practicable to standards confirmed
- Guardrail will have top and intermediate rails along for length of escape route
- Designed loads will be confirmed and guardrail fixings will be proved by calculation
- There will be full guardrail along the full elevation of the building on Carey Street elevation
- Stair access between levels will be improved
- Existing failed systems will be removed

The Inn will appoint a Structural Engineer to review and provide calculations for all proposed installations to ensure current loading requirements and fixing details are achieved in accordance with current standards.

The following demolition drawings illustrate the ladder and guardrails to be removed:

- BSS-13446-001-02-Demolition Rear Elevation Plan - Roof Access Equipment
- BSS-13446-002-01-Demolition Front Elevation Plan - Roof Access Equipment
- BSS-13446-003-01-Demolition Plan Roof Access Equipment

The following proposed elevation and plan drawings illustrate the new ladders and guardrails to be installed:

- BSS-13446-001-02-Proposed Rear Elevation - Roof Access Equipment
- BSS-13446-002-01-Proposed Front Elevation - Roof Access Equipment
- BSS-13446-003-01-Proposed Roof Plan - Roof Access Equipment
- BSS-13446-004-00-Proposed Rear Elevation Guard Rail Installation
- BSS-13446-005-00-Proposed Ladder NS-L003
- BSS-13446-006-00-Proposed Ladder NS-L003A & L004

- BSS-13446-007-00-Proposed Ladder NS-L005
- BSS-13446-008-00-Proposed Ladder NS-L006A
- BSS-13446-009-00-Proposed Ladder NS-L017
- BSS-13446-010-00-Proposed Ladder NS-L006

5.0 ACCESS

Access to 5 & 6 New Square is via a set of steps which lead from street level within Lincoln's Inn to the ground floor entrance door of each building. Lincoln's Inn can be accessed via the main gatehouse located on Serle Street. There are also two alternative entrances from Carey Street, one of which is through 7 New Square and the other is located between 3 & 4 New Square.