Senate House, University of London
London WC1E 7HU

DESIGN, ACCESS & HERITAGE STATEMENT

FIRE ALARM UPGRADE

(Grade-II* Listed Building within the Bloomsbury Conservation Area)

May 2023

Prepared by:

Stephen Levrant Heritage Architecture. Ltd.
62 British Grove, Chiswick, London W4 2NL
T: 020 8748 5501 F: 020 8748 4492

Final Issued: MAY 2023

Prepared by: Doane Yu Tung
Reviewed by: Shantanu Subramaniam, Nicola Storey & Francesca Cipolla

Heritage Architecture Ltd is Registered in England No. 3053944 • VAT GB656883581.
Registered office: 5 Technology Park, Colindeep Lane, Colindale, NW9 6BX
Correspondence to be addressed to: 62 British Grove, London, W4 2NL

Contents

1 INTRODUCTION

1.1 Background

The subject building- Senate House is situated on Malet Street, Bloomsbury, within the London Borough of Camden. It comprises a central tower flanked by two courtyard ranges, which are currently known as the North Block and the South Block. The building is Grade-II* listed and located within the Bloomsbury Conservation Area. It was built between 1932 and 1938 by Charles Holden with the funding from the Rockefeller Foundation. It was a purpose designed and built for the University of London as an educational facility that incorporates halls, administrative offices, libraries, and lecture rooms.

The scope of this application is for the University of London, who are located in the Central Tower, South Block and levels 4-6 of the North Block. The basement level to level 3 of the North Block is currently under a different demise (SOAS) and therefore, falls out of the scope of this application. References made to the Senate House in the proposals, assessment of significance and impact do not include the basement level to level 3 of the North Block.

1.2 Aim of this report

Heritage Architecture Ltd (SLHA) has prepared this Design, Access, and Heritage Statement to support a Listed Building Consent for new fire alarm system to be installed on all floors (interior only) of the Central Tower, South Block and levels 4-6 of the North Block of the Grade-II* listed Senate House. The proposed installation is restricted to the building's interior, with the exception of some areas that are currently under a different demise.

This report provides an overview of the design principles for the new fire alarm system, as well as understanding the significance of the building. The appraisal of the property's historic background and development has a focus on the development of the mechanical and electrical services (M&Es). This report assesses:

1. The context and significance of the building,
2. The design & access of the proposal, and
3. The impact of the proposed development on the subject building

1.3 Proposals (summary)

The proposed development involves upgrading the current fire alarm system and associated works.

The proposed Fire Alarm System classification is L2. The system will be designed, installed, tested and commissioned in accordance with the following standards:

- BS5839-1 2017,
- BS5839-6:2013,
- BS5839-8:2013,
- BS7629-1:2008 and
- LP51014: Issue 5 requirements for Certified Fire Detection and Alarm Systems.

Full detailed information regarding the proposal is outlined in the submitted drawings (nos. 300-320), which have been prepared by SLHA and TAP consultancy.

1.4 Authorship

This heritage statement has been prepared by Stephen Levrant Heritage Architecture Ltd, which specialises in the historic cultural environment. The following team members contributed to the report:

- Stephen Levrant [RIBA, AA Dip, IHBC, Dip Cons (AA), FRSA] – Principal Architect
- Francesca Cipolla [RIBA SCA, MSc (Heritage Planning), Dottore dell`Architettura] – Practice Director
- Nicola Storey [BA (Hons), MA, MSc, IHBC] – Senior Consultant / Historic Building Surveyor
- Doane Yu Tung [B.A., M.A., M.A. (York;dist)]- Historic Building Assistant

1.5 Methodology Statement

This statement has been produced based on the following methods:

Literature and Documentary Research Review

The documentary research was based upon primary and secondary sources of local history and architecture, including maps, drawings and reports. Attention was given to the London Metropolitan Archives, RIBA Library and Camden Local Studies Library and Archives. A number of web resources such as National Library of Scotland have been used for tracing the development of the urban area from the mid-18th century to the present day.

Dates of elements and construction periods have been identified using documentary sources and visual evidence based upon experience gained from similar building types and construction sites.

Building Surveying

Several visits to the site have been undertaken in September 2022 followed by a room-by-room survey of the Central Tower, South Block and levels 4-6 of the North Block to inform the significance assessment in October 2022.

1.6 Planning Policy Guidance and Legislation

The assessment of the buildings in a conservation area has been prepared taking into account the information contained in:

- *Planning (Listed Buildings and Conservation Areas) Act 1990*
- *National Planning Policy Framework* (NPPF), February 2021
- *London Plan 2021* (*Greater London Authority)*
- *Camden Local Plan (Camden Council),* adopted on 3rd July 2017
- *Historic England, GPA 2 - Managing Significance in Decision-Taking in the Historic Environment (March 2015);*
- *Historic England, HEAN 2: Making Changes to Heritage Assets (February 2016)*
- *Historic England, HEAN 12: Statements of Heritage Significance (October 2019))*
- *Historic England, HEAN 16: Listed Building Consent (June 2021*
- *Conservation principles, policies and guidance for the sustainable management of the historic environment*, English Heritage, April 2008
- *Bloomsbury Conservation Area Appraisal and Management Strategy* (Camden Council, April 2011)

1.7 Executive summary

- The scope of this application is for the University of London, who are located in the Central Tower, South Block and levels 4-6 of the North Block. The basement level to level 3 of the North Block is currently under a different demise (SOAS), and therefore does not form part of this application.
- Senate House is a Grade-II* listed building within the Bloomsbury Conservation Area in the London borough of Camden. It was designed and built by Charles Holden between 1932 and 1938.
- The construction of the Senate House began in 1932 when the preliminary excavation was carried out. As the depth of the foundation was confirmed, King George V and Queen Marry laid the foundation stone for the building in 1933. Construction was completed in 1937, and the central tower became the tallest building in London (apart from St Paul's Cathedral).
- The building incorporates M&E services within the original design and detailing and is reflected by the riser shafts, the floor voids for M&E routes, and concealed electric conduits in various locations. These works echo the design from the inter-war years, which carefully assimilated modern services within buildings and could allow for flexible alterations of the M&E services.
- The earliest fire alarm system was installed in two phases, with one by 1938 for the basement to the sixth-floor levels as part of the original design and the other for the above eighth floor in the tower proposed by Charles Holden in 1948. The existing fire alarm system was the result of two upgrades of pre-existing fire alarm system, one in 1995 and the other in between 2009 and 2015. However, the most recent LBC applications do not show fire alarm system. Based on the University's internal records, the existing fire alarm system was installed in four separate stages, the most recent of which was signed off in 2015, without obtaining the necessary permission. Despite the absence of Listed Building Consent, the system was installed with a sympathetic design that adheres to the original blueprint of Charles Holden.
- A significance assessment has been carried out in accordance with the latest guidance from Historic England (2019), which defines three interests of heritage assets, including 'Archaeological interest', 'Architectural and artistic interest' and 'Historic interest'. Overall, the Architectural and artistic and Historical interest of the subject building are of high whereas the Archaeological interest is of low.
  - The Archaeological interest of the site is of low as it does not lie within any of the archaeological priority areas; furthermore, the eventuality of discovering pre-historic finds has been severely interrupted by the modern developments since the late 18th century.
  - The Historic interest of the subject building is high. It was an essential example of an Art Deco building in British architecture history. It was designed and built by the architect representing this style, Charles Holden, who was one of the most important English architects in c.1920-1930s. When the construction commenced, King George V and Queen Mary attended its ceremony and laid foundation stones. Upon completion, the building was the second tallest building in London and has been widely celebrated as a landmark of Bloomsbury. As the main building and library of the University, it has been associated with countless alumni and researchers worldwide, including several political leaders and established artists. During the 1950s, the building was unique in its modern appearance within a one-hour drive from Pinewood Studios, reminiscent of contemporary structures in the United States. Consequently, it has established a close association with film productions, a legacy that endures to this day.
  - The overall Architectural and artistic interest of the subject building is high. It features a 19-storey tower flanked by two lower courtyard ranges to the south and the north, forming a bold and unique geometric shape that represents Art Deco's ethos. The exterior is of high-quality materials with reductive detailing. The courtyard ranges are similar in massing, style, and design, providing a repetitive rhythm and pattern. In terms of the structure, the building is supported by a piled foundation, solid weight-bearing walls, specially designed floors, and flat roofs. Internally, the subject building preserves most of its historic fabric with little alterations. The principal places, including the library and public halls, have better-quality material finishes with several ornaments designed by the architect's team, which have been retained and have not been greatly changed over the years. Alterations have mainly been undertaken in classrooms and other utilitarian spaces, such as the roof areas or the basement. The building also integrated heating, electricals, and other building services within specially designed risers and voids, which

are well-conceived with interior finishes. Such a design also provides future users greater flexibility in altering the M&E services.

- Considering the content of the proposed works, an appraisal to the architectural significance of individual rooms has been provided in Appendix 3. However, it should be noted that the northern block has not been assessed on a room-by-room basis as it is part of SOAS and therefore outside the scope of this application.

- Due to the obsolescence of the existing wireless system, the fire alarm and disabled refuge systems are experiencing a higher frequency of failures and faults, resulting in increased demand for remedial works to maintain system reliability and serviceability. The proposed new fire alarm system will provide enhanced protection and coverage using updated wireless technology, with existing detection devices removed and replaced with new ones that comply with L2 standard according to British Standards 5839-1 and EN54-25. The wired system on the lower floors will be completely removed and replaced with wireless devices, while the wired system in the library tower will be updated with a new wired system. Before commencing any work, the specialist contractor will agree with the architect the location of each new fire alarm device on site. Drawings of the proposal have been completed by SLHA based on the information provided by TAP in March 2023.
- The proposed scheme has been carefully considered, the majority of the devices will utilise the existing locations, therefore requiring minimal fabric intervention. There will be no devices installed on travertine marble or decorated walls, which contribute to the architectural interest of the building. Any existing redundant wires that are embedded into the walls, will not be disturbed and be left in situ. Thereby minimising intervention with building fabric.
- **Impact assessment:** The proposal is considered to have no impact on the historic and architectural special interest of the heritage asset. The proposed system will use a combination of wireless and wired technology for the historically sensitive and utilitarian areas of the building, respectively. The existing detection devices will be replaced with superior ones that are less visually invasive, and the contractor will ensure adherence to preservation standards. The installation of galvanised conduits for radio signal transmission may cause some loss of historic fabric, but this will be minimised and mitigated by situating them in carefully chosen locations. The indicative details (drawing nos.401-419) demonstrate this. The enhanced protection is required by building regulations. Any fabric intervention has been minimised, the majority of the scheme will utilise existing routes and fixings.
- An impact assessment of the proposed fire alarm system shows that whilst the proposed scheme is required by building regulations and it aims to provide better protection and coverage without affecting the building's historic fabric, significance, and aesthetics. There will be no impact on the building's special architectural and historic interest, in line with Section 16 of the Planning (Listed Buildings and Conservation Areas) Act 1990 and Chapter 16 of the National Planning Policy Framework.

2 HISTORY AND DEVELOPMENT OF THE SITE AND AREA

Due to the nature of the proposals that will affect the internals only, this section is focused to the development of the building, with reference to the M&E services.

2.1 Location

Senate House is located within the Bloomsbury Conservation Area, being immediately to the north of the British Museum and the west of Russell Square (Figure 2), within the London Borough of Camden. It is well connected by several tube stations, including Russell Square Station to the east, Holborn Station to the southeast, Tottenham Court Road to the southwest, and Goodge Street to the west. With a significant height and characteristic appearance, the building forms part of the central London skyline and has been viewed as a landmark in this area.

Figure 1: Map of the London Borough of Camden showing Bloomsbury highlighted. Source: Camden Council.

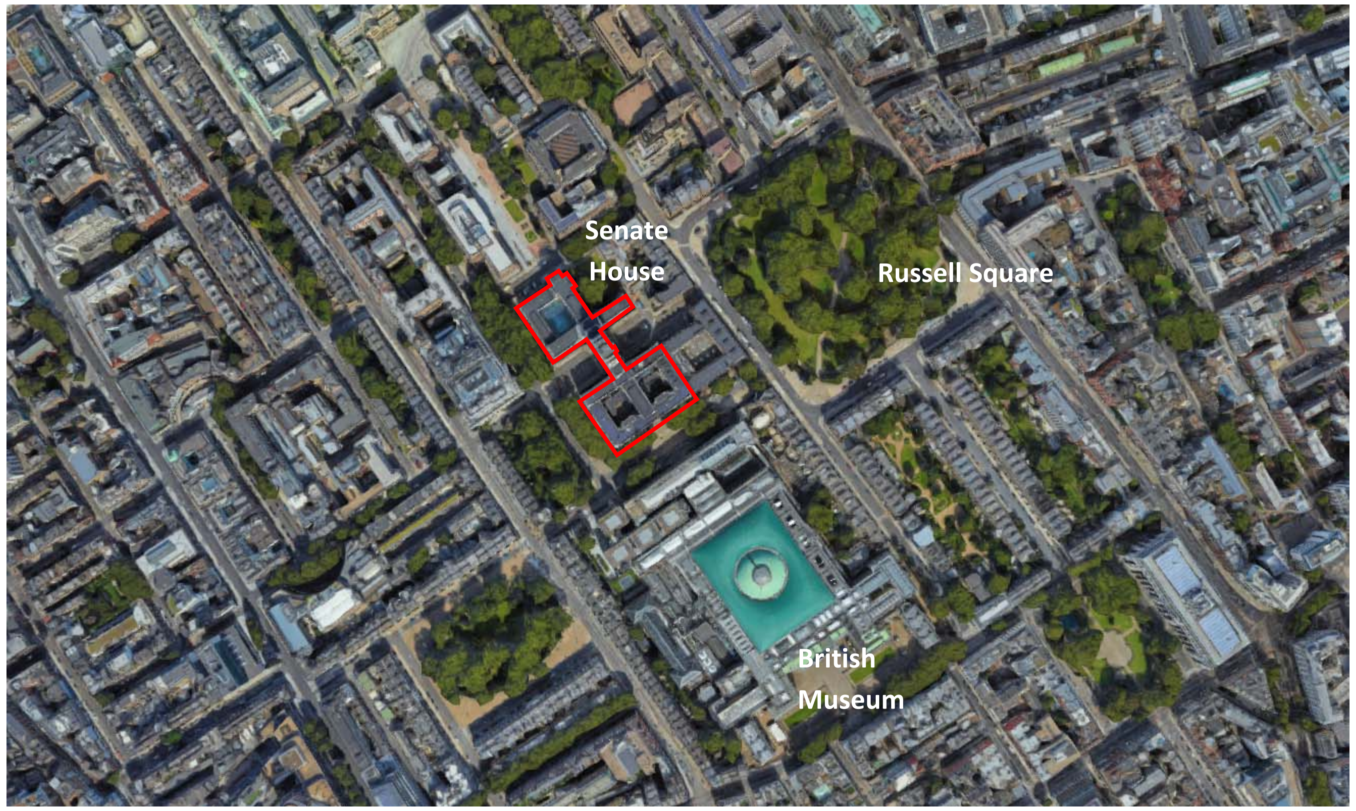

Figure 2: A snapshot of Google Earth showing the location of the subject site (highlighted in red) with Russell Square to the east and the British Museum to the southeast. Source: Google.

Figure 3: Bird's eye view showing the Senate House to the left with the British Museum to the right. Source: Google.

2.2 History of the Senate House

Senate House was designed and built for the University of London, which was previously based at the Imperial Institute in Kensington. With funding of £400,000 from the Rockefeller Foundation, the University acquired the land of the subject site in 1927. Before the construction of the University, the subject site was occupied by several terraces dating from the early 19th century, as the 1828 Map illustrates (Figure 4). Many of the former terraces, however, were no longer visible in the aerial images of the late 1920s (Figure 5 & Figure 6).

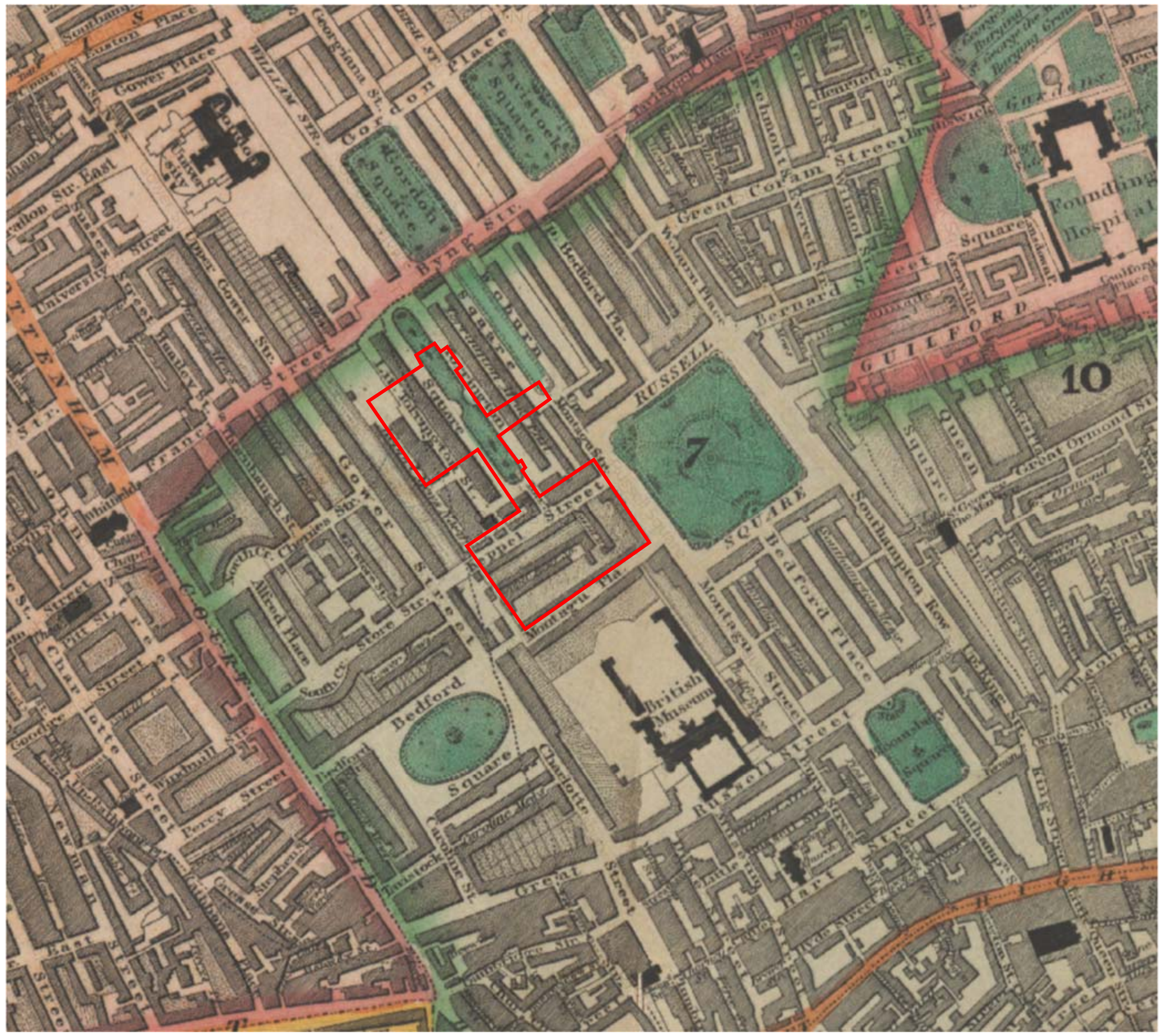

Figure 4 The 1828 C. & J. Greenwood Map showing the developments to the north of Montagu Place. The approximate location of the subject building is highlighted in red. Source: Layer of London.

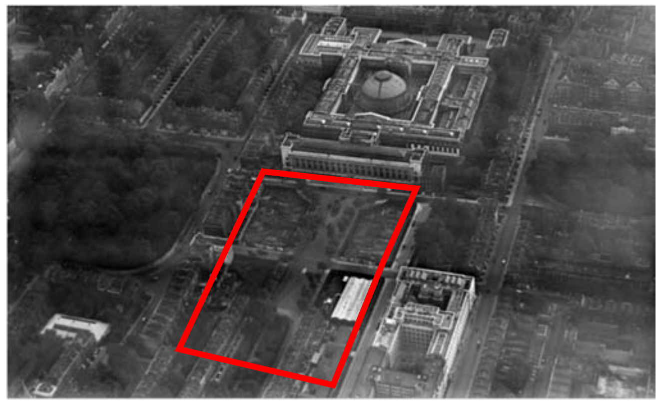

Figure 5 An aerial image of 1928 showing the previous terraces have been demolished by this time already. Source: Britain from Above.

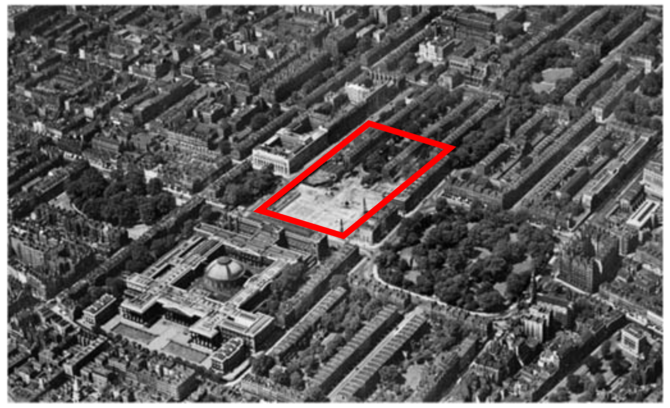

Figure 6 An aerial image of 1934 showing the construction of the subject building was commenced. Source: Britain from Above.

The subject building was designed and built by Charles Holden (1875-1960, Figure 7), who was known for designing several London Underground stations and the Underground Electric Railways Company of London's headquarters at 55 Broadway (Figure 8). He has been recognised as 'the first of the Moderns'[1] and one of the most influential architects in the 1920s and 1930s in Britain[2]. In the early 20th century, he established a partnership with Henry Percy Adams (1865-1930) and Lionel Godfrey Pearson (1879-1953) to form the Adams Holden & Pearson, which has later become one of the major British practices in the country.

Figure 7 Charles Holden (1946). Source: Wikimedia Commons.

Figure 8 The previous headquarter of Underground Electric Railways Company, who sold the building to a hotel entrepreneur in 2020. Currently undergoing planning application. Source: Wikimedia Commons.

[1] Karol, E., Allibone, F. (1988). Charles Holden Architect 1887-1960. (n.p.): RIBA.

[2] Saler, M. T. (1999). The avant-garde in interwar England : medieval modernism and the London underground. United Kingdom: Oxford University Press.

Charles Holden's original design for the University was to build a single structure that covered the ground between Montagu Place and Torrington Square (Figure 9). However, due to a shortage of funds and the onset of the Second World War, the scheme was amended with the northern parts substantially diminished (Figure 10 & Figure 11). The design approach employed bore resemblance to modern master-planning methods, which considered the development of an entire area as a cohesive whole.

The construction of the building started in 1932 when four trial holes were made as a preliminary to the excavation for the foundations of the subject building. According to the University's record[3], the piles were taken down at a depth of 25 to 30 feet below the basement level. On 26th June 1933, King George V and Queen Mary attended the commencement ceremony to lay the foundation stone for the building, with 3000 people witnessing this ceremonial process. As part of the ceremony, the King also packed and buried a casket containing newspapers of the day and a commemorative 1933 penny, one of only about 8 that were minted.

The construction was eventually finished in 1937, and the central tower became one of the tallest buildings in London. The massing resulted in some critical comments. Nicolaus Pevsner, for example, noted the building was 'of a strangely semi-traditional, undecided modernism.' He also criticised the design noting that it 'certainly does not possess the vigour and directness of Charles Holden's smaller underground station.'[4]

Since the construction was completed, the building has been used by the University of London as its major campus. Whilst the area has been further altered and developed since the 1950s, the building stands as a significant landmark in the area of Bloomsbury, as well as on the skyline of London.

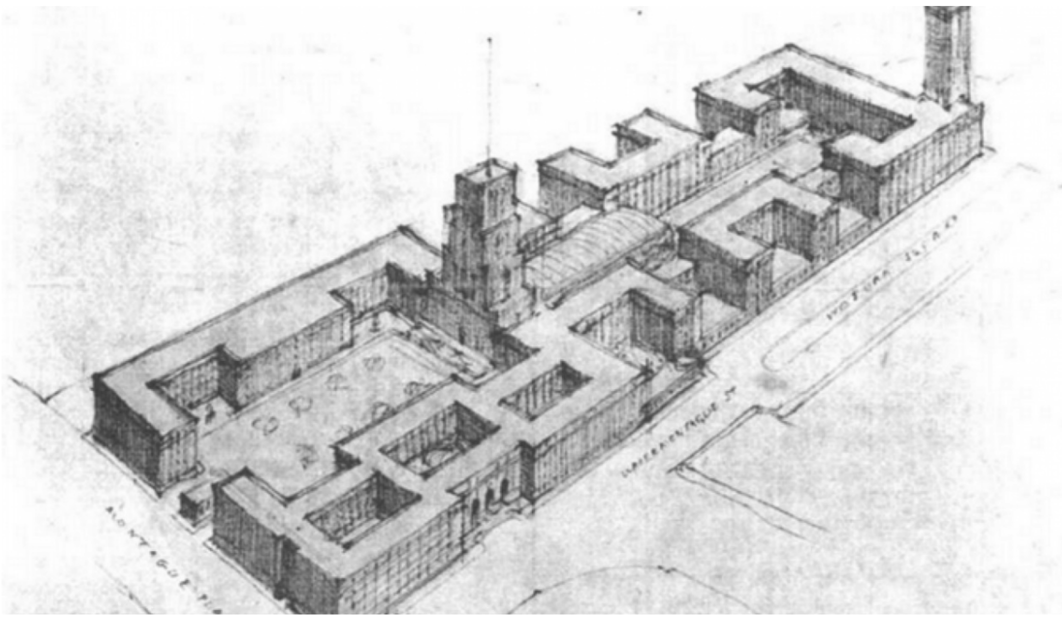

Figure 9 An illustration of the original design of the Senate House. Source: RIBA Journal (May 1938).

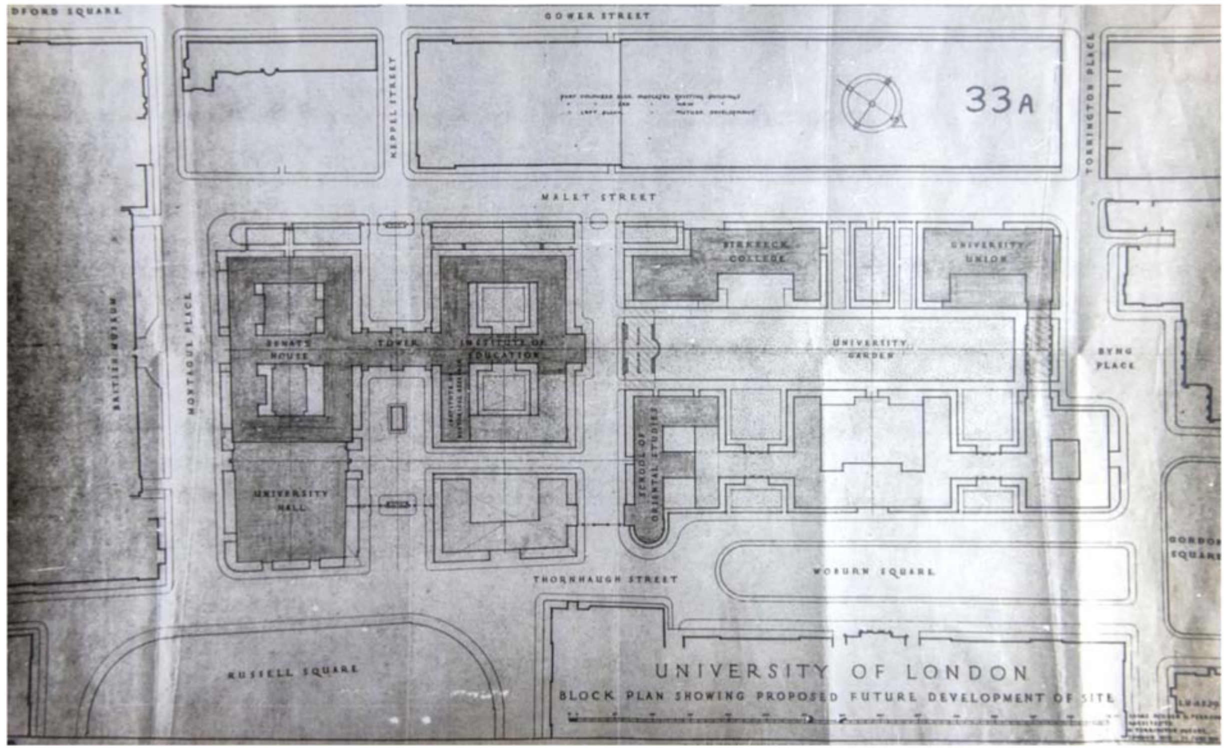

Figure 10 A plan showing the finalised design of the Senate House. Source: Camden Local Studies and Archives Centre.

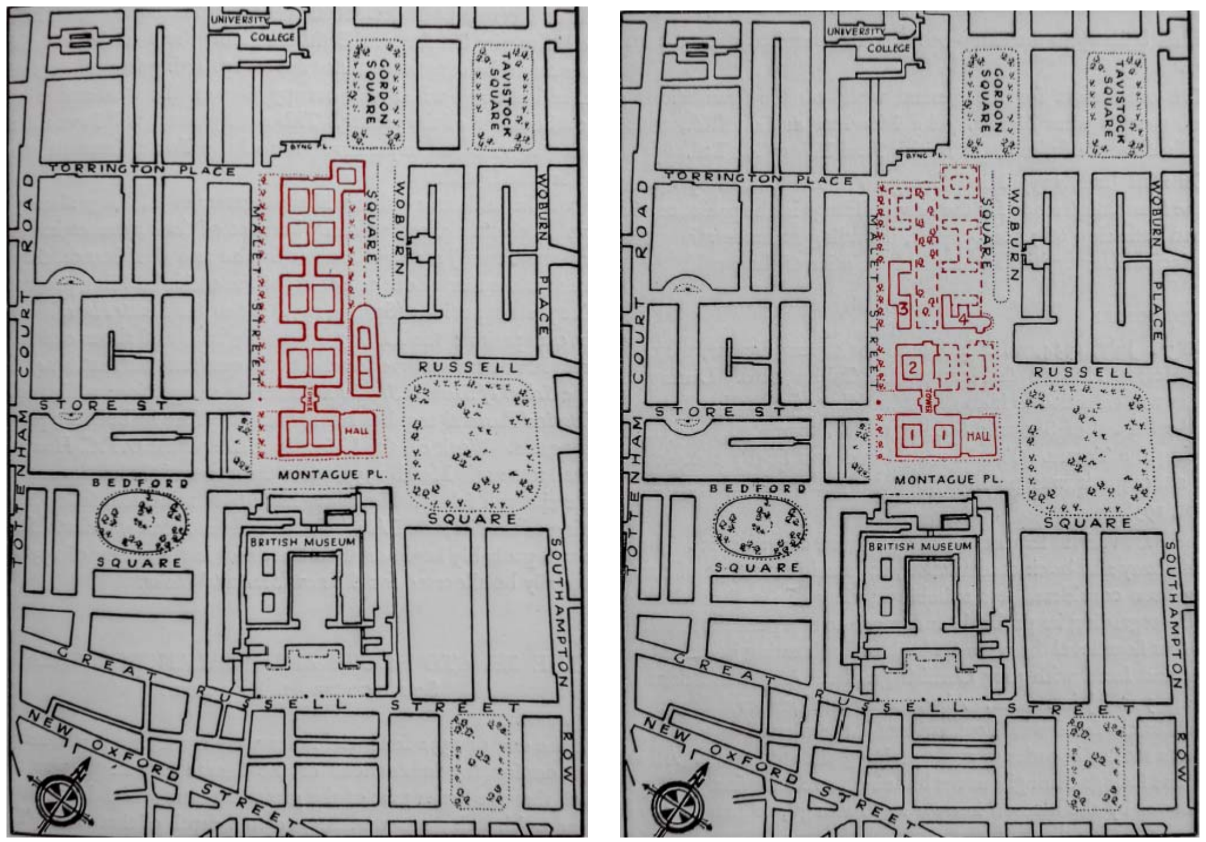

Figure 11 Two plans showing the original (left) and revised layout (right) of the site. Source: RIBA Library.

[3] University of London, (1938), The Senate House and Library. London: University of London.

[4] Pevsner, N. 1952. The Buildings of England: London (except the Cities of London and Westminster). London: Penguin. P.211

Figure 12 A photo of 1937 showing the construction of the tower of the Senate House. Source: Historic England.

2.3 A review of the planning history of M&E services

As an architect of modern times, Charles Holden designed the Senate House as a building that took modern M&E services into account[5]. He installed an electric heating system throughout the building with the panels placed in recesses beneath windows and the cables concealed behind marble panels in the window frames and lintels (Figure 13 & Figure 14). Conditioned air is also supplied to the small hall, the conference and dining rooms and the Senate room. Holden designed and built the teak floorboards laid on joists and bearers, which create intervening spaces for cables and conduits like a modern day raised access floor (Figure 15 & Figure 16). Furthermore, he also designed several riser shafts throughout the building to allow for dispensing vital M&E services across the structure (Figure 17). Whilst the amount of cabling required has increased beyond Holden's anticipation, his design has allowed for greater flexibility for contemporary alterations to the M&E services and possibility for these to be run within historic routes.

The planning history of the subject site is included in Appendix 2. Generally, the planning history of M&E services could be understood in two phases. The first phase includes the time from the 1980s to 2007. Most of the proposals in this phase were for piecemeal alterations. These include the installation of a trunking and cabling network on the second and third floors in 1988 (ref no. 8870067); refurbishments in Beveridge Hall, Chancellors Hall, Court Room, and Senate Rooms (LS9904605); alterations to the speakers and light fitting in Beveridge Hall (LSX004262); installations of two air-cooled chiller units (PS9905189); adjustments on CCTV camera units (PSX0004855); and lift refurbishments (LSX0304190; 2004/3698/L). A great number these works in this phase have been altered/superseded by the more recent works.

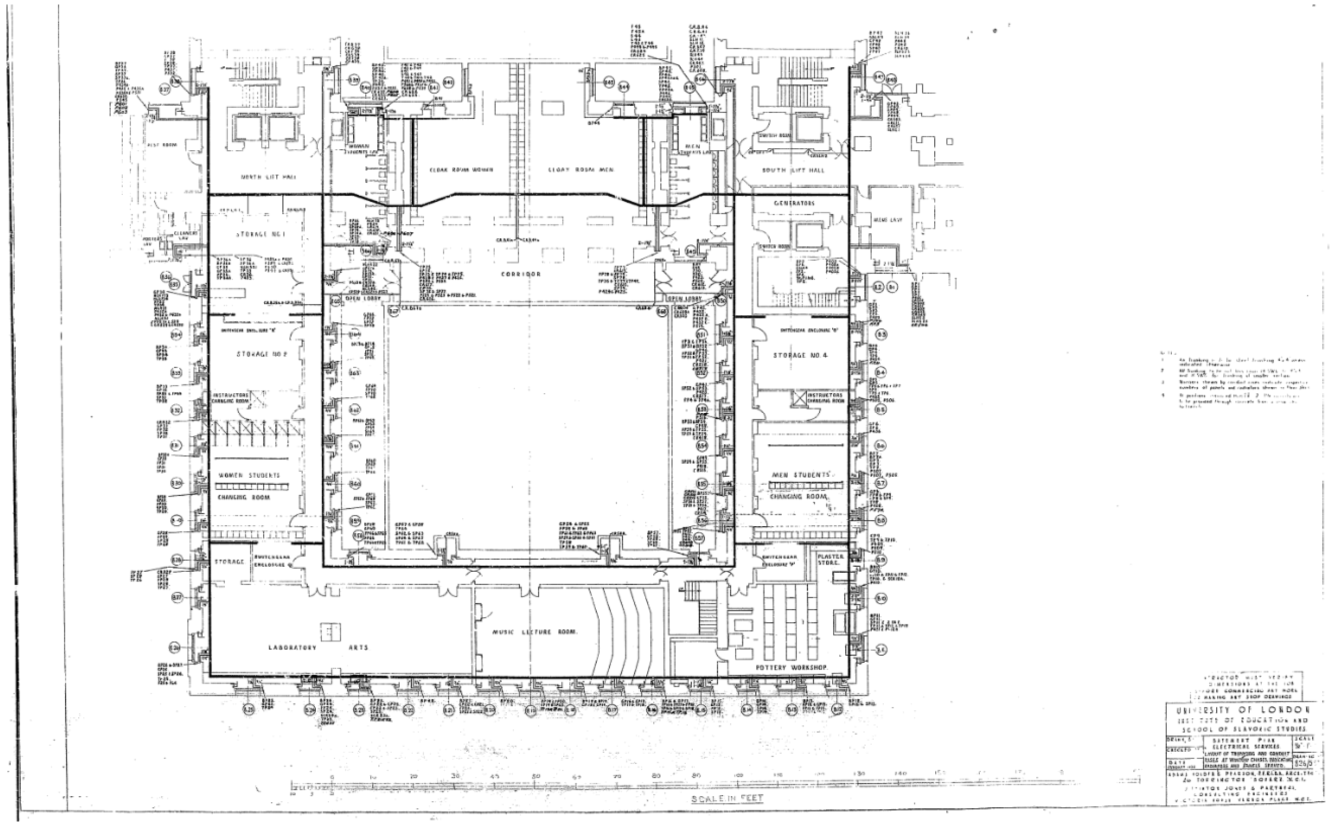

Figure 13 A drawings of 1938 showing the layout of trunking and conduit rises at window chases. Source: University of London.

[5] SENATE HOUSE, UNIVERSITY OF LONDON. (1936). The Architects' Journal (Archive: 1929-2005), 84(2186), 803-811. Retrieved from https://www.proquest.com/trade-journals/senate-house-university-london/docview/1617821843/se-2

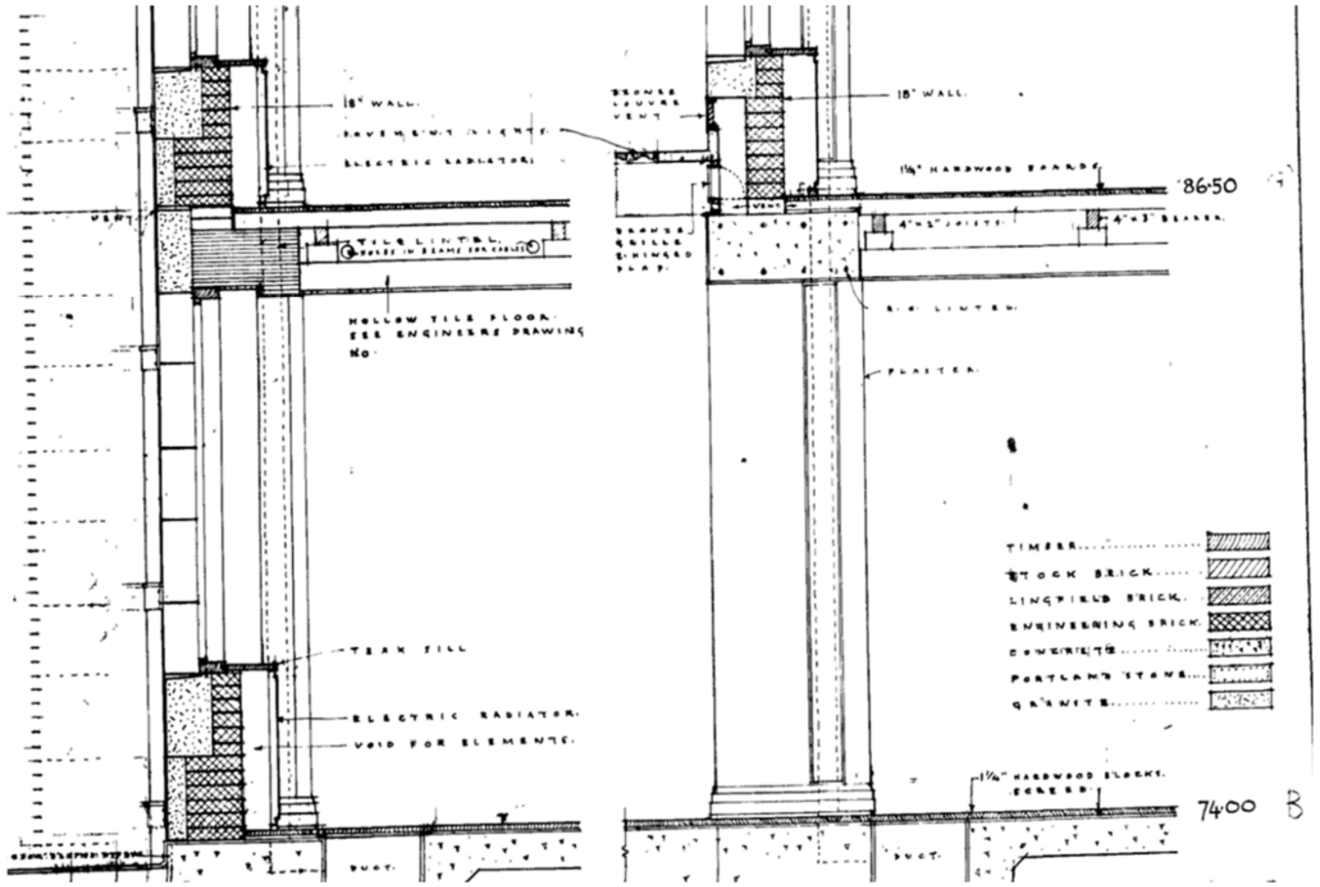

Figure 14 A section drawing showing the design of the duct and voids running beneath floor and along the window frames. Source: University of London.

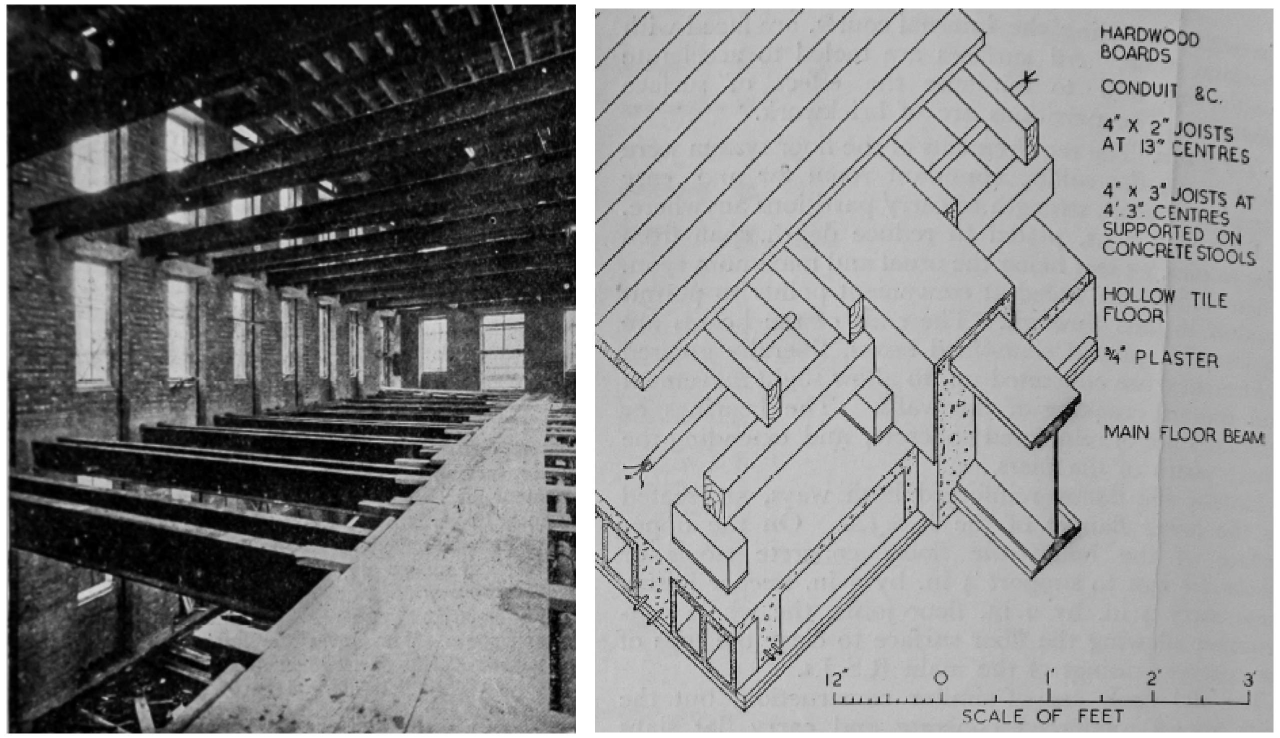

Figure 15 A picture (left) and a drawing (right) showing the design of the floor construction. Source: RIBA Journal.

Figure 16 Two pictures showing the teak floors are potentially able to be opened.

Figure 17 Two pictures showing one of the riser shafts in the Library Reading Room on the third floor.

The second phase started in 2007 when the University undertook a substantial upgrade of M&E services throughout the subject building. The most significant proposal (LBC REF: 2007/0153/L), aimed to alter the location and style of luminaries and upgrade the entire M&E services accordingly. This included the alterations to the pre-existing cables and installations of new electrical conduits to the ceilings, walls, and floors. Application drawings have revealed the location of the pre-existing and proposed cables (Figure 18) and the detail of electrical conduits hidden beneath the teak floor finishes (Figure 19).

Overall, most of the recent works of M&E services have been carried out in line with the original design of Charles Holden. Several alterations have been proposed and consented in 2007 to incorporate more cables and electric conduits beneath the teak floors and/or inside the ceilings. Since the 2007 upgrade, the electric supply and cabling works have not been significantly changed. Notable proposals after 2007 include the installation of a diesel engine generator (2008/2910/P), installations of air condensing units (2011/3137/L; 2011/3141/P; 2011/4885/P; 2012/1797/P; 2012/1992/L), and the refurbishment of the basement and the courtyards on the ground floor (2016/1636/L). Most of these later proposed works were installed on the basement level and the rooftop areas where the architectural significance is relatively low.

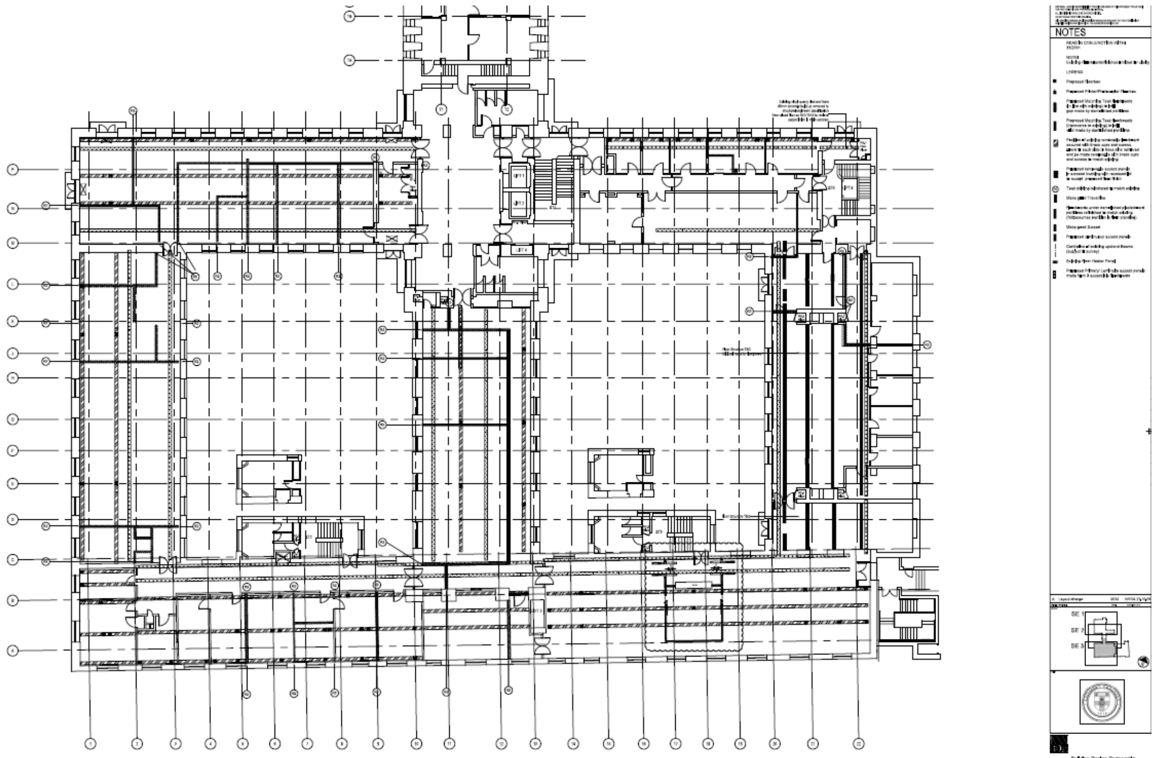

Figure 18 A drawing of the 2007 application (2007/0153/L) showing the proposed 'sub-floor' plan on the third floor. Source: Camden Planning Portal.

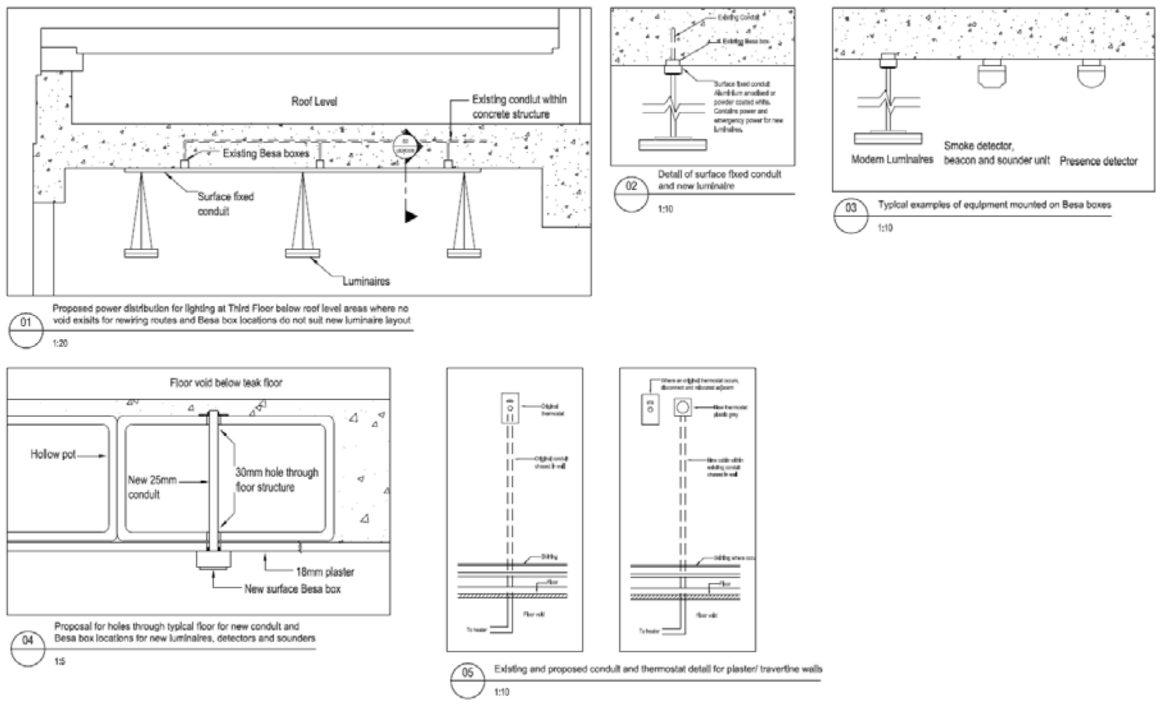

Figure 19 A drawing of the 2007 application (2007/0153/L) showing the existing and proposed electrical conduit in the ceiling of the third floor. Source: Camden Planning Portal.

The fire alarm system

The earliest information on the fire alarm system of the subject building could be traced back to 1938 when the construction was finished. As Figure 20 illustrates, Adams, Holden & Pearson did provide a fire alarm system from the basement to the seventh floor. According to the drawing, the fire alarm system was wired with the other electrical services, but the exact location of each detector remained unknown. The upper floors of the tower, namely the seventh floor and above, didn't have a fire alarm system prior to 1948 when Adams, Holden & Pearson proposed to install a new one in the central tower (Figure 21), and it is likely that the system was installed in the succeeding years.

The existing fire alarm system was the result of two upgrades of pre-existing fire alarm system. The first upgrade appears to have been finished in 1995. According to the archived web page of BBC Fire Protection Ltd (Figure 22)[6], the University's previous fire consultant, a fire alarm system was 'installed' in the subject building in 1995, which was also the time when the university proposed for alterations to the fire escape (9300146) and fire doors (9370020). However, there is no record showing the detail of the works in the stage.

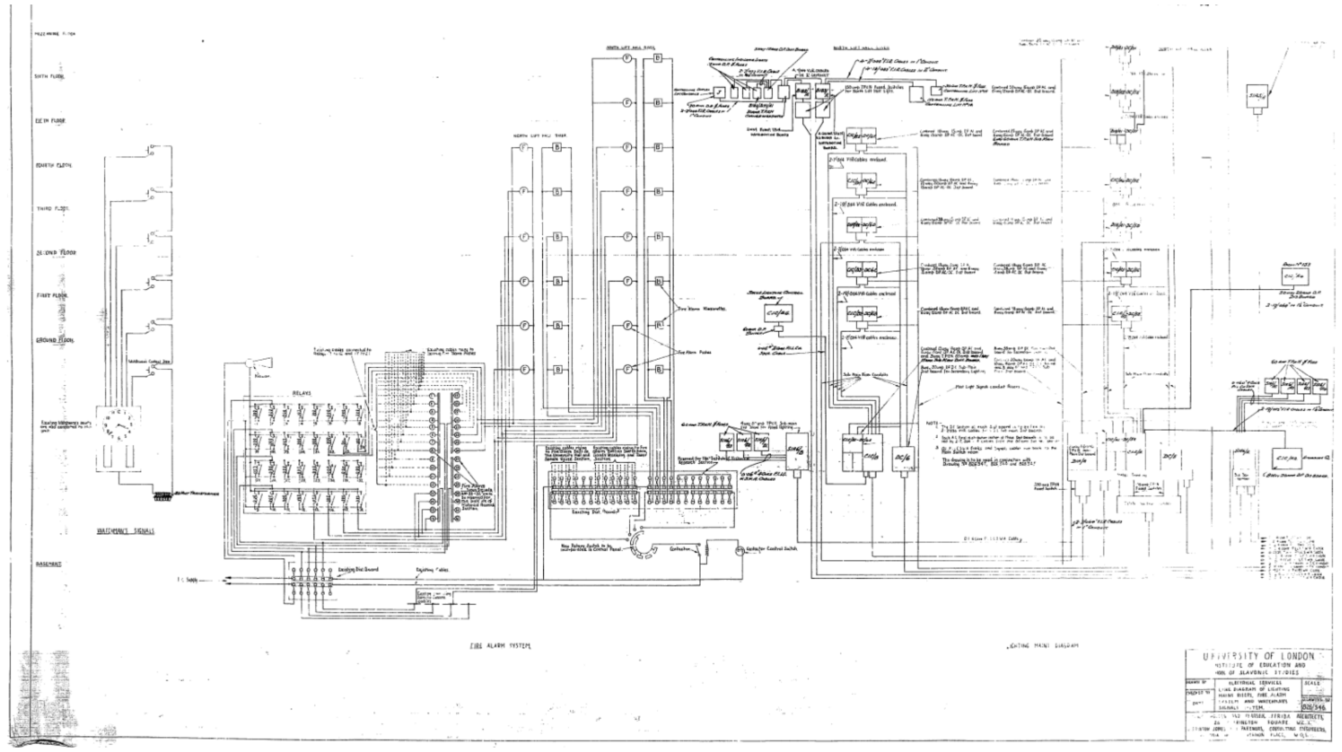

Figure 20 A drawing of 1938 showing the electrical services and fire alarm system in the building. Source: University of London.

[6] The original web page has been removed because BBC Fire has officially rebranded to Marlowe Fire & Security.

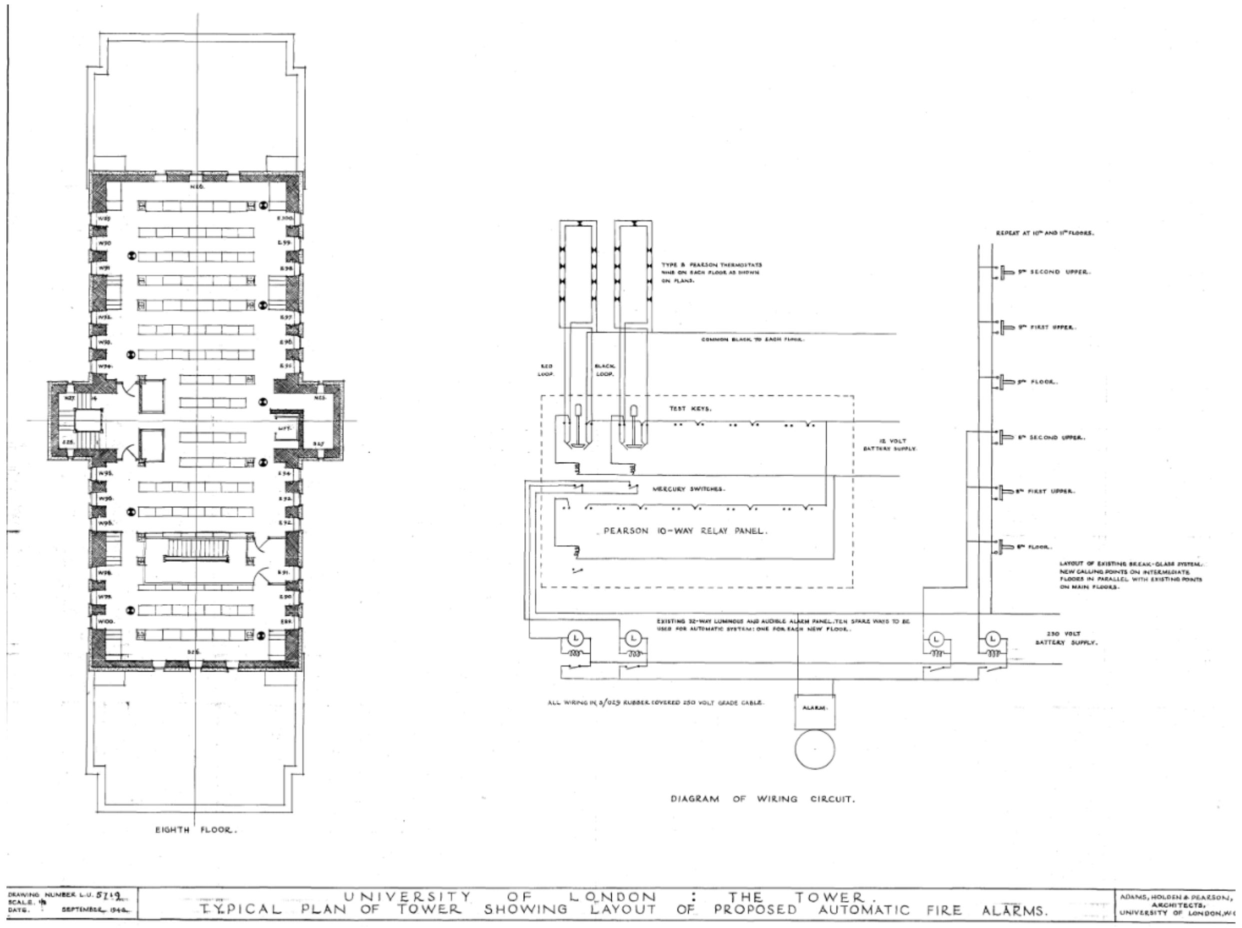

Figure 21 A drawing from the University's internal record showing the proposed fire alarm system in 1948, proposed by Adams, Holden & Pearson. Source: University of London.

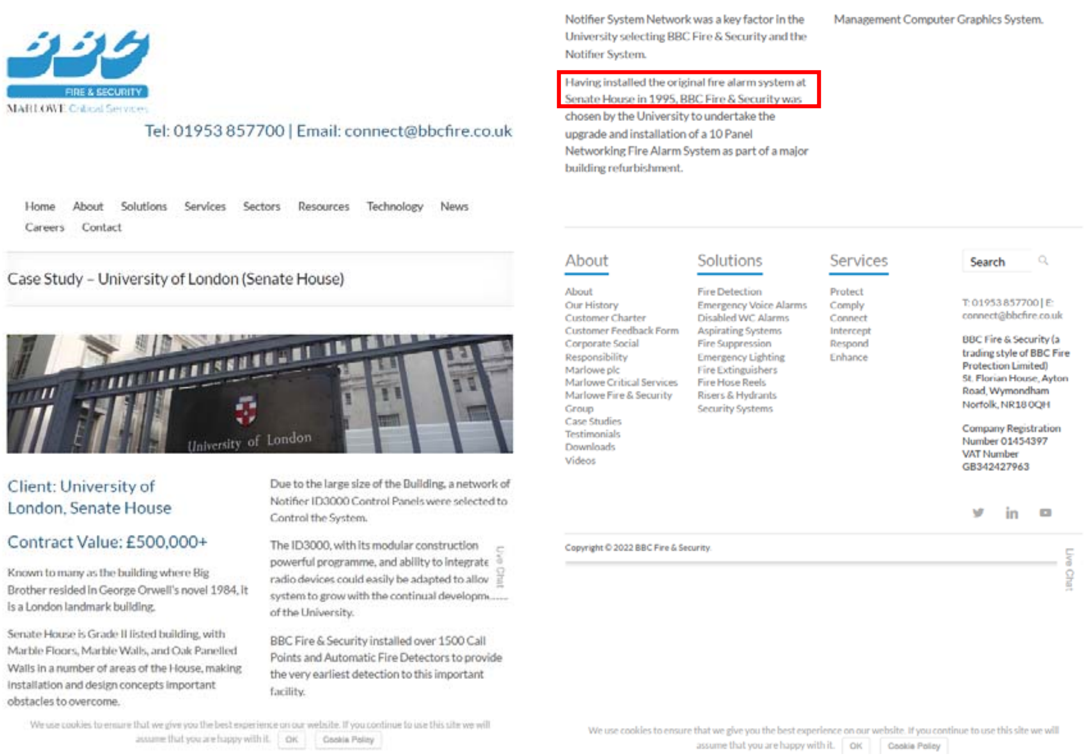

Figure 22 The historic web page of previous BBC Fire & Security, which states that the fire alarm system was installed in 1995 (highlighted in red). Source: Web page archived.

The second upgrade of the fire alarm system was carried out between 2008 and 2015 following the 2007 consented scheme (2007/0153/L). According to the Design and Access Statement accompanying the 2007 application, the fire system was part of the proposed works; however, there were no drawings relating to the fire alarms at the application stage.

The detail of the works on the fire alarm system could be found in the University's internal records, which show that the upgrading works were executed in three different phases, namely phase A, B, and C. Phase A includes the installation of a new control panel (Notifier ID3000) on the ground floor (room G50), wired with a series of smoke and heat detectors, and both wired and wireless sounders from the basement to the sixth-floor level. According to the 2009 Operation and Maintenance Manual, the new system's cables were 'generally located in the floor voids and risers' and were 'secured with proprietary metal fixing clips.'

Following the completion of Phase A, Phase B and C were implemented simultaneously between 2010 and 2014. The works of these two phases aimed to upgrade the detectors and sounders from the seventh floor to the top floor as well as the areas that were refurbished on a more recent date, mainly in the basement level, the infilled courtyards, and the lobby areas to the main lifts on the lower floors. A couple of new control panels, a wireless detection system, and a Refuge Alarm Communication system have been added. According to the 2015 'Operating & Maintenance Manual for the Fire Detection Alarm System,' wireless detection (Figure 23) was chosen to minimise the 'impact on the structure of the (listed) building.' Meanwhile, in the general office areas, where a wired system is still in use, cables have been installed 'under floor plenum with cables dropping via window mullions to above the newly formed raft ceilings' to ensure the works are protected and hidden. The majority of the equipment is white coloured to match the ceiling boards, except in a small number of areas where the ceiling is painted in a different colour.

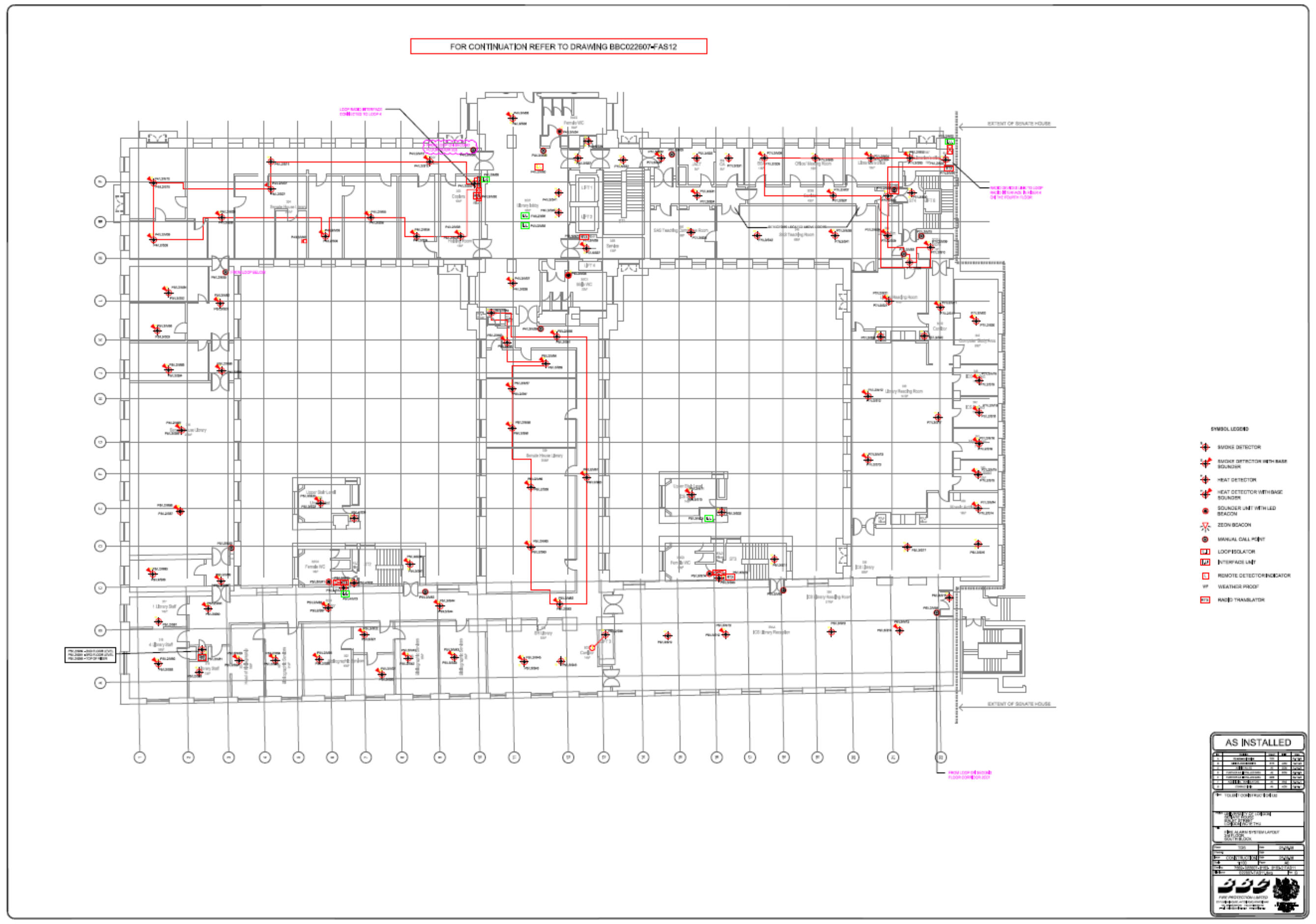

Figure 23 A drawing showing the fire alarm system as installed on the 3rd floor where both wired and wireless system have been incorporated. Source: University of London.

2.4 Summary

Senate House was designed and constructed by Charles Holden as a modern building that incorporated modern M&E services appropriately, as reflected by the riser shafts, the floor with intervening space, and hidden electric conduits in various locations. Although Holden did not foresee the increasing amount of required cabling works, his design has provided contemporary users with a greater flexibility to incorporate modern M&E services within the historic routes.

In regard to the fire alarm system, the building was built with a fire alarm system, but only on the lower floors (sixth floor and below). Almost ten years later, Charles Holden proposed to install another system on the upper floors (eighth and above) in 1948, though the date of installation unknown. The system may have been upgraded in 1995, but there is little information relating to this. In 2007, a LBC application was submitted to upgrade the M&E services within the building. No drawings on the location and details of the fire alarm system were submitted, however there are internal records by the university existing. Please refer to Table 1 for the development of the fire alarm system.

Table 1 A timeline of the fire alarm system of the Senate House

Year	Description	Location
1938	An original fire alarm system was installed with the construction of the building.	From the Basement to the sixth floor
1948	Another system was proposed by Adams, Holden & Pearson	From eighth floor to the top
1995	BBC Fire & Security claimed to install a new system within the building	Unknown
2008	Phase A of the existing fire alarm system was finished	South Block (Basement to the sixth floor)
2015	Phase B and Phase C of the existing fire alarm system were finished	Tower and part of the North Block

The existing fire alarm system has been installed with a sympathetic design that generally follows the original blueprint of Charles Holden. It is a hybrid system of both wired and wireless devices, and the cabling has been installed in the floor voids (consented in 2007) and pre-existing risers, which ensure the cables and wires are hidden from view. Wireless detection has been incorporated into the wired system to minimise the loss of the historic fabric in the building. Also, most surface-mounted devices are white to match the ceiling boards in most areas. Whilst without consent, the system has caused a limited impact on the historic fabric of the building.

3 ASSESSMENT OF HERITAGE SIGNIFICANCE

A summary of the subject site's significance is assessed in this section, in accordance with the latest Historic England Guidance 'Statements of Heritage Significance: Analysing Significance in Heritage Assets' (October 2019). The three interests defined by the guidance are 'Archaeological interest', 'Architectural and artistic interest' and 'Historic interest'.

3.1 Archaeological Interest

The subject site is not located in an archaeological priority area. According to Historic England's Archaeological Priority Areas Appraisal (2018), the subject site might have been occupied by the previous course of the River Thames and some settlements that resided along the riverbanks in prehistoric times. Whilst prehistoric finds have been excavated and discovered in this area, the early development (18^{th} & early 19^{th} century) of London across Holborn and Bloomsbury has removed and disturbed the traces of prehistoric sites, leaving the overall archaeological information merely available. A desk-based assessment of the Museum of London Archaeology (MOLA, 2013) has also concluded that the site has a low potential for prehistoric, Roman, medieval, and truncated post-medieval remains due to the continuous development since the 18^{th} century in the area. It is likely that the deep foundations required under the existing basement area would have effectively erased archaeological evidence in areas occupied by the building footprint.

Therefore, the archaeological interest of the site, i.e., its potential to yield evidence of past human activity is **low**. In any case, the proposed works relate to M&E refurbishment of the building, specifically the replacement of existing fire alarm systems; and no excavation works are proposed.

3.2 Historic Interest

Senate House is closely associated with the 20^{th} century landscape of Bloomsbury and London. The design process of the building was formed by a master planning approach, which planned and assessed the development of the area as a whole. Such an approach was particularly challenging in central London at its time. Eventually, the Senate House became a significant landmark of the purpose-built campus of the University of London. Its construction was recognised by King George V and Queen Mary, who attended the commencement ceremony and laid foundation stones with 3000 people witnessing the event. Once the second tallest building in London, this structure has become a prominent landmark visible from numerous vantage points in the surrounding area, particularly the British Museum.

The Senate House is an important example of an Art Deco building in British architectural history. Originating in the 1910s in France, the style of Art Deco gradually became popular across Europe and the United States of America during the interwar period. Completed in the late 1930s, the Senate House represents not only the design and construction of its time, but also the mature development of the Art Deco movement just before the style went out of fashion. The architect, Charles Holden, was an established English architect during c.1920-1930s, and the Senate House is thought to be one of his most representative works.

As the main building of the University of London, a national and international leader in humanity and social scientific research, the building has been associated with numerous faculty members, students, and around 2 million alumni across the world. The notable alumni range from political leaders around the world and significant artists, including John F. Kennedy (the 35^{th} president of the United States), Nelson Mandela (the first president of South Africa), Tsai Ing-wen (the current president of Taiwan), Carrie Fisher (American actress and writer), Christopher Nolan (British-American filmmaker), Steve McQueen (British director), and several royal members of different countries. The Senate House Library also holds a wealthy collection of primary resources focussing on the humanities and social sciences and is considered to be an important resource in London.

Due to the building's imposing modern structure, the Senate House has been used as the backdrops of several famous film productions since the 1950s[7]. Recent notable films that have featured the Senate House include: The Theory of Everything (2014 film), Batman Begins (2005 film), The Dark Knight Rises (2012 film), Christopher Robin (2018 film), Black Mirror (2011 TV series), and The Antiques Roadshow (BBC TV series).

In addition to a functioning space for teaching, research, and administration, the subject building also has an active relationship with the public. It has hosted some of London's renowned events, including the Bloomsbury Art Festival and London Fashion Week.

Therefore, the historic interest of the site is of **high significance**.

3.3 Architectural and Artistic Interest

Like most Art Deco buildings, the Senate House is characterised by a bold and clean geometric shape with bright colours on the elevations. The building comprises a 19-storey tower flanked by two lower courtyard ranges to the south and the north. It was originally intended to be symmetrical, but the north block was never completed. The tower was built in recessed stages with a large buttress in the centre on the east and west sides, and the exterior is designed with high-quality materials with reductive detailing, which enhances the unique geometry of the building. The first floor of the tower has four square-headed, elongated windows with metal frames. On the second floor and above, most windows are small and vertically set in groups of three. The difference in the window sizes forms a pattern of fenestration. All the windows are recessed and are similar in size and style, which altogether provides the elevations with a repetitive rhythm and pattern. As for the flanking courtyard ranges,

[7] Keal, G.. (1992). In search of a little piece of New York. Sunday Life, 29 March 1992.

they are similar to each other in massing, style, and design. Metal balconies with painted wrought iron balustrades run through the first floor on the southern elevation fronting Montagu Place and on the turning corners where the ranges adjoin the central tower.

The structure of the building consists of a piled foundation, brick walls, single-spanning floors, and flat roofs. The building has a pile foundation with a concrete cap. The walls of the lower floors (basement, ground floor, and first-floor level) are of engineering bricks set in cement mortar and faced with Cornish granite. Above the first-floor level, walls are built of wire-cut bricks faced with Portland stone, which were cut with a method known as 'batting' to promote uniform weathering[8]. The tower has a separated steel frame structure, which was detached from the external walls and was exclusively designed to bear the heavy weight of shelves, books, and archived collections stored in the higher levels of the tower. This steel-framed 'cage' is supported by a raft foundation, which forms part of the concrete cap that connects the piles. The floors/ceilings of the building are single-spanning across the external walls, with the main slab flush beneath the beams. This design could allow the rooms to be partitioned freely and openly, creating voids in the floor where electrical conduits could be installed, concealed, and adjusted easily. The flat roofs share a similar design with the floors, except for the joists, which are of reinforced concrete rather than timber.

The architectural details, ironmongery, and light fittings were designed by the architect's team and are unique to the building. The principal places, mostly on the ground to the fourth floors, enjoy more architectural details and better-quality materials, such as travertine tiled walls and floors as well as plastered ceilings and/or timber-panelled walls. Many of these details represent an apogee of Art-Deco interiors and details in London. Contemporary alterations have mainly been undertaken in classrooms and other utilitarian spaces, due to changes in the use/ function of these individual rooms and ad-hoc/ piecemeal works that have been undertaken over the years.

As previously mentioned, the Senate House has a design that integrated heating, electricals and other building services within specially designed risers and voids and well-conceived with interior finishes, which provide later users the flexibility for adaptions and alterations. The heating system, known as Direct Electric system, is the first of its kind to be installed in Britain on such a large-scale building[9]. The system includes numerous electrical elements concealed behind Travertine marble panels, which serve the building as 'reservoirs of heat' because it could maintain the temperature even if the power is cut off. The electric services are controlled by a Switchroom, which could remotely control the heating and most of the M&E services, including the fire alarm system. These designs reflect the building technology of the inter-war years, which carefully assimilated modern services within buildings and could allow for flexible alterations of the M & E services.

[8] University of London, (1938), The Senate House and Library. London: University of London.

Overall, the architectural and artistic interest of the building is of **high significance**.

Considering the aim of this proposal is for the overall alterations of the existing fire alarm system, a significance assessment for each individual room has been conducted to inform the design process. As previously mentioned, the building contains several principal halls, libraries, administrative offices, and numerous classrooms. Generally, the principal halls (ceremonial and public areas) are provided with high-quality architectural detailing and finishes while the other spaces (teaching, back of house and utilitarian zones) are relatively less ornate or have been significantly altered throughout history. Please refer to <u>Appendix 3</u> for the assessment of significance mark-up plan.

3.4 Summary

The archaeological interest of the site is of low significance. It does not lie in an archaeological priority area; furthermore, the eventuality of discovering pre-historic finds is limited owing to the extent of modern development since the 18th century.

The historic interest of the subject building is high, due to its location, architect, style, and its close association with public events and film productions. The building has a landmark status, due to its location and structure. The building represents the design and philosophy of Charles Holden, one of the pioneers of the Art Deco movement in British architectural history. As the main building and library of the University, it has been associated with numerous alumni and researchers worldwide, including several political leaders and established artists. Considering its location and unique design, the subject has become a popular filming location since the 1950s and holds numerous public events.

The overall architectural and artistic interest of the subject building is of high significance. It is an important example of Art Deco architecture, as reflected by the bold and unique geometric shape with high-quality materials and reductive detailing. The building is of masonry and brick with a separate internal steel-framed 'cage,' which was designed to bear the load of bookshelves in the higher floors of the tower. The floors/ceilings also have a unique design, which not only allow the rooms to be partitioned freely but also creates intervening spaces in the floors for the installation of electrical conduits. The building also has an electric heating system, which was the first of its kind to be installed in Britain. Internally, the architectural details, ironmongery, and light fittings were designed by the architect's team and are unique to the building. Most of these elements have survived over the years. Contemporary alterations have mainly been made in utilitarian spaces, such as the roof areas and the basement. Overall, the site has a **high** significance.

[9] University of London, (1938), The Senate House and Library. London: University of London.

4 DESIGN AND PROPOSAL

4.1 Background

The University of London are located in the Central Tower, South Block and levels 4-6 of the North Block of the Senate House. Basement to level 3 of the North Block is under the demise of SOAS and therefore is out of scope of this application and proposal.

The Senate House currently has a hybrid fire alarm system consisting of both wire and wireless detectors installed by the BBC Fire Protection LTD, now known as Marlowe Fire & Security. This system met the requirements of BS5839-1 and was an approved product. However, several devices of the existing system are no longer manufactured and has resulted in frequent failures and faults that require costly remedial works. Additionally, the age of the fire alarm and disabled refuge systems raises concerns about their reliability and suitability. Therefore, as a large and active university building an upgrade to the system is necessary to improve the efficiency and reliability of the fire alarm and disabled refuge systems.

4.2 Proposals and Requirements

The requirement of the proposed fire alarm system is to meet current legislation, British Standards 5839 – 1 and the codes of practice the new fire alarm installation for Senate House, where the level of detection required all areas L2.

The design of the proposals has been carefully considered, with a focus on key design principles including compliance with the latest legal requirements set out in the British Standard 5839-1 (Category L2), as well as the conservation principles outlined in Historic England's guidance. The design of the fire alarm system layout was developed in collaboration with TAP consultancy and the University of London through a series of design meetings to ensure compliance and feasibility.

The proposed fire alarm system layout prioritises the safety, security and needs of all occupants. Additionally, the design has been developed with sensitivity to the building's historic and architectural interest, ensuring that the proposed fire alarm system layout does not impact its special interest and complements the building's decor. By balancing functionality with the building's historical character, the proposed development will meet the required standards of safety.

4.3 Design Option Analysis and Evolution

Three options have been considered for the proposal, including: a fully wired system, a fully-Wi-Fi system, and a hybrid system.

Hard Wired System

The fully wired system is the traditional approach that involves hardwiring all devices to the fire alarm panel and connecting them to the mains through the fire alarm cabling.

Advantages: This system offers the advantage of reduced overrun of fire alarm tests (sounders) and includes a battery backup for up to 3 hours in case of a power failure.

Disadvantages: The system has a number of disadvantages such as the risk of cable failure due to accidental damage and the need to remove floor coverings and floorboards for intrusive surveys and cabling installation. This can be a time-consuming and disruptive process that may need to be repeated across all floors. Additionally, the existing cable ways may have limited capacity to accommodate the proposed new fire alarm cabling, and so there would be a need for enabling works to facilitate new cable runs.

Wi-Fi System

The fully Wi-Fi system is a modern approach that involves hardwiring only the transporters or radio hubs and positioning them to provide clear and strong signal strength to the end devices such as smoke detectors, manual call points, sounders, and audio-visual devices.

Advantages: This system has the advantage of limited cable runs throughout the building, restricted to existing risers, cable routes, and a reduced requirement for access below the floors to run new cables. Devices such as smoke detectors, sounders, and break glasses are battery-powered and can be positioned with ease.

Disadvantages: the system has some disadvantages such as potential loss of signal or strength of signal due to changes in wall layouts, positioning of furniture, equipment, and shelving. Any future alterations and moving of furniture and shelving would require knowledge and consideration of the signals, which is difficult to control and maintain in an active university building. The system may also have limitations on the number of devices that can be connected to each transporter/radio hub, which would result in an increased number of devices during the installation stage.

Hybrid System

The hybrid system is a combination of the fully wired and fully Wi-Fi systems that offers the advantages of both systems.

Advantages: Wireless fire alarm devices do not require cables, which means that they can be installed without causing any damage to walls, floors, and ceilings. The hybrid system also provides a wireless backup for the hardwired devices, making the system more dependable. Additionally, when upgrading the fire alarm system, wireless devices can be used to speed up the process.

Disadvantages: the hybrid system has some disadvantages such as the need for a regime of battery changes for the wireless devices every three years. The system may also require the use of a third-party manufacturer for the hardwired part and main fire alarm panels, which can be a more expensive solution.

4.4 Summary of Proposals: New Hybrid Fire Alarm System

Existing

As previously mentioned, the existing system was installed between 2008 and 2015 following a series of internal alteration works as proposed in 2007 (application ref. 2007/0153/L). The Design and Access Statement accompanying the 2007 application indicated that the fire system was included within proposed works, but no drawings of the fire alarms were provided at the application stage; or that these have not been preserved in planning records or noted on the decision notice. Despite this, the existing system has been installed in a sympathetic way.

The subject building has had fire alarm systems installed since its inception and Holden's original drawings show a system as early as 1930s. The existing fire alarm system replaced (in a partial like for like manner) the previous system for the building dating from the 1990s.

The existing system comprises a central control panel (Notifier ID3000) and several devices cabled with Prysmian FP200, with cabling works generally located in floor voids and risers. Wireless alarm devices, including sounders, manual call points, and detectors, are positioned in locations that avoid the travertine marbles and the ceilings with decorative plaster. Wired devices are generally located closer to the risers to reduce the amount of cabling works.

Proposed

Based on an understanding of the existing system, the fire safety requirements, the option analysis of the differing systems and the significance of the building, a hybrid system has been considered the best option. The proposed new fire alarm system has been designed as a hybrid system incorporating wireless system at ground, first, second, third and south floors (which are most significant and sensitive to change), with a wired system at basement, fifth floor and above. The proposed new fire alarm system is expected to provide enhanced protection and coverage while minimising its impact on the building's historic fabric and the visual appearance of the building's interiors.

The types of devices and their requirements have been outlined below:

Types of devices	**Location**	**Requirements / Restrictions**
Fire Alarm Panels and call points (Wireless and hard wired)	Wall mounted	1.4 meters from the floor level Needs to be in a visible and accessible location
Sounder & Flashing Beacon (Wireless and hard wired)	Wall mounted	Above 2.1 meters Needs to be in a visible location
Sounders (Wireless and hard wired)	Wall mounted	Above 2.1 meters
Detectors (Wireless and hard wired)	Ceiling mounted	Ceiling
Sounder & Detector (Hard wired)	Ceiling mounted	Ceiling

The existing system will be removed and replaced with a new hybrid system. The wireless devices will require some cables to enable the connections, and these will reuse existing risers, with connector devices (loop-powered gateways) located as close to vertical risers/ ducts as possible, to minimise interventions into historic fabric. Meanwhile, the wired system in the library tower will be upgraded with a similar wired system. New detection devices will be installed in locations that either match the existing or suit the areas of coverage recommended by the manufacturer but sited in visually less intrusive locations The upper floors (fifth floor and above), including the tower block are architecturally less sensitive to change, as they are of more utilitarian design and function (please refer to Appendix 3 for the room-by-room significance appraisal).

The Anslow Partnership (TAP), the M&E consultants for the proposed fire alarm system, have advised that this measure will provide improved protection and coverage and meet the health and safety requirements. The proposed Fire Alarm System classification is L2. The system will be designed, installed, tested and commissioned in accordance with the following standards:

- BS5839-1 2017,
- BS5839-6:2013,
- BS5839-8:2013,

- BS7629-1:2008 and
- LP51014: Issue 5 requirements for Certified Fire Detection and Alarm Systems.

Outline Design, Drawings and Indicative Details

SLHA have worked together to TAP to ensure the proposed fire alarm system takes into account of the significance of the building. The location of devices has been carefully considered to ensure that they are placed in locations that have fabric invention with fabric of lesser significance and/or can be repaired more easily, for example to plasterwork rather than marble or timber detailing.

SLHA have completed drawings of the proposals based on the information provided by TAP in March 2023, as shown in the submitted drawings nos.300-320.

The proposed drawings provide information of the Outline Design and design intent, showing the proposed location of the devices. The locations have been chosen in collaboration with TAP and SLHA. However, the final locations of the proposed devices will be subject to the further assessments carried out by the specialist contractor, once listed building consent has been granted. Further information can be provided once the final assessments have been carried out, for example, confirming the existing risers are clear and adequate for the cable works. If the proposal materially differs from the outline design, a new LBC application will be submitted.

The proposed drawings should be cross-referenced with Appendix 4 Fire Alarms Product Specification and the other submitted drawings (nos.401-419), which provide indicative details of the devices and a series of photographs of certain locations where proposed works require fabric intervention.

Design Principles

The following principles have been considered to safeguard the historic fabric and special interest of the building:

- Existing routes and penetrations will be utilised wherever feasible.
- Where new routes/ penetrations are required, this will be in areas of least historic importance wherever possible.
- All wires, cables, trunking, cable trays, and other materials together with the new fire alarm accessories must be routed, positioned, and fixed, in such a way as to be of minimal visual impact and disruption of the building fabric or finishes.
- Combination devices will be utilised where possible to reduce the number of devices, including wireless beacon/sounder devices and hard-wired detector/sounder devices.
- All ancillary equipment including: junction boxes, terminal boxes, distribution boards are to be selected, located and fixed regarding the aesthetic and historic nature of the property.
- Making good after installation of new equipment and/or removal of existing must be to the highest standards on a like-for-like basis. This will include matching surface colours, textures and materials of existing finishes and materials.

These principles will be provided to the specialist contractor when the final assessments and designs are being carried out. The principles are also embedded in the Heritage Specification (Appendix 4), which will be issued to the contractor before any works are carried out.

5 ACCESS

The current entrances will remain the main access points to the building, and there are no proposed modifications to the existing entry doors. The circulation within the building will remain unaltered, and no changes are planned.

6 HERITAGE IMPACT ASSESSMENT

The impact assessment takes into account whether the proposals cause substantial harm, less than substantial harm or no impact to the heritage asset. In the context of the current proposals, which involve internal upgradation of existing fire alarm system only, the proposals would only impact the significance of the listed building.

6.1 Impact Assessment Criteria

For the purpose of assessing the effects likely to result from the proposed development, the established criteria have been employed. The impact of the proposal has been assessed against the Listed Building's historic fabrics and its special architectural and historic interest ranging from:

- **Substantial (high) adverse**: a fundamental change in the special architectural and historic interest of a building, as well as its historic context and setting, may occur due to the degradation of a nationally significant cultural heritage site or the demolition of any legally protected building.
- **Moderate (medium) adverse**: a change that makes an appreciable difference to the ability to understand the special architectural and historic interest of a building, resulting in extensive long-term change to the setting or structure of listed buildings.
- **Minor adverse**: effects that may negatively impact the special architectural and historic interest of a building can also yield certain benefits. Such effects may include minor encroachments upon the building's historic fabrics.
- **No impact**: the proposal will have no impact on the significance of the heritage asset and the special interest will be preserved.
- **Minor beneficial**: perceptible improvement in the setting of, or structural condition of listed buildings.
- **Moderate (medium) beneficial**: effects which help to explain the significance and history of the site and surrounding area; ensuring the long-term future of Listed Buildings and any other buildings of architectural significance, by providing viable and appropriate uses; resulting in the loss of less significant fabric in the Listed Buildings but enabling a viable long-term use for the buildings.
- **Substantial beneficial**: effects which ensure the long-term future of the most significant historic fabrics by providing viable and appropriate uses and, impacts which improve the setting of a Listed Building and, which repair and conserve the most significant fabric of the Listed Buildings.

6.2 Proposed Works and Impact Assessment Schedule

The table below provides a general discussion of the proposed works and addresses the impact of these works on the significance of the listed building.

Location	Proposed works	Mitigation strategy	Impact Assessment
Basement and Lower Ground Floor	Replacing the existing wired system from c.2008 with a new wired system; utilising similar locations for fire alarm installations	The existing fabric and finishes at LGF largely date from the recent (21st C) refurbishment work; and are of low significance. The proposed routes and locations for devices closely follows on existing routes and will utilise existing penetrations. These works will not have any adverse impact on fabric of significance. They are considered necessary to comply with BS 5839-1.	Replacing existing modern wired fire alarm system (devices and wiring) with a new wired system, using and following on similar routes, there will be no additional intervention with historic fabric. There will be no impact on the significance of the listed building.
Ground floor to Fifth floor	Replacing the existing hybrid (mostly wireless with partly wired) system in these principal floors of the building	The existing fire alarm system is dated technology and requires upgrading and enhancing. As the system is being upgraded from a hybrid to full wireless on these floors, existing conduits and wiring in areas where wired connections have been provided, will be replaced by a wireless system; and penetrations and routing undertaken in historic fabric will be repaired and made good. The locations of the wireless devices with utilise the positions of the existing devices where possible. In locations where there needs to be new penetrations, TAP and SLHA have collaborated to select positions that will require intervention with materials of lesser significance, for example in plasterwork. Any new penetrations for wireless wall mounted devices into marble or timber panelling has been minimised. It is proposed for the device to be fixed to a metal drop down fixing (painted white to match the ceiling). This allows for the wall mounted fixings to be made into the plaster ceiling, rather than the marble or panelling. Indicative detail Nos. 418 and 419 illustrate this and provide an indicative cross section of the proposed bracket. New routes and penetrations required for the LWG (Wireless Gateway) and DRRU (Disabled Refuge Unit) are in/ within fabric of lower significance and in areas where the visual impact on appearance will be minimal.	Any impact to the historic fabric has been minimised as far as possible through using existing routing. Intervention into higher significant materials and decorative details, such as marble and timber panelling has also been reduced.
Sixth floor and above	Replacing the existing wired system from c.2008 with a new wired system; utilising similar locations for fire alarm installations	The existing fabric and finishes at sixth and upper floors are utilitarian, without architectural mouldings or significant finishes/ details and are therefore of low significance. The proposed routes and locations for devices closely follows on existing routes and will utilise existing penetrations wherever possible.	Replacing existing modern wired fire alarm system (devices and wiring) with a new wired system, using and following on similar routes, there will be no additional intervention with historic fabric. There will be no impact on the significance of the listed building.

6.3 Summary

The proposed new fire alarm system for the Senate House aims to enhance protection and coverage while minimising impact on the historic fabric, significance, and special interest of the building. Although the existing system met the requirements of BS5839-1:2017 and was an approved product, concerns have arisen about its reliability, suitability and long-term operation. This is due to the age and frequent failures of its devices, particularly in the context of, and requirements associated with, being an active university building. Additionally, several devices of the existing system are no longer manufactured, resulting in faults that require continual and costly remedial works.

To address these issues, the new fire alarm system will use a hybrid of updated wireless technology in historically sensitive areas of the building and a wired system in less significant, utilitarian spaces/floors. The proposed replacement of existing detection devices with new ones that offer superior coverage and are less visually invasive (where possible) will also be implemented. Section 4.4 outlines the requirements and restrictions of the proposed devices. Once LBC is granted, the specialist contractor will work closely with the architect to ensure compliance with preservation standards and guidelines throughout the project.

Regarding the impact on the historic fabric, the new fire alarm system will utilise wireless technology on the lower floors (ground to fifth floors), replacing the existing hybrid system. In the tower, the wired system will be updated with a new wired one. The new detection devices will be installed in locations that match the existing ones or as shown on the drawings/ recommended by the manufacturer to provide adequate coverage. Furthermore, the fire alarm interfaces will be installed on non-historically/ architecturally significant surfaces and where their visual impact is minimal (where there are no requirements for the devices to be visible). While the removal of the existing system and installation of the new system may result in some loss of modern fabric in less significant areas, these necessary works will be carried out carefully to minimise potential impact on the historic fabric.

To allow for radio signal transmission, the installation of galvanised conduits is necessary in some areas and perforations are necessary to accommodate these conduits. However, these are only proposed in necessary locations and situated in fabric of relatively low significance, and in all areas will avoid travertine finishes or being cut through architectural mouldings of significance. While these works may result in some loss of historic fabric, the impact has been minimised and mitigated by situating these in carefully considered locations, away from historic or architecturally significant fabric. Based on the proposed outline design, the indicative details (drawing nos.401-419) show areas where new wiring and/or new device locations are required. The photographic markups demonstrate that these principles have been applied to ensure that intervention with historic fabric has been minimised. The specialist contractor will work closely with the architect to determine the optimal exact location for each new fire alarm device on-site before commencing work, in more sensitive areas.

Overall, the proposals are necessary for the fire safety and use of this building; and is expected to have **no impact** on the historic and architectural special interest and significance of the heritage asset.

7 CONCLUSION

This report has been prepared by Heritage Architecture Ltd on behalf of the University of London at Senate House, Bloomsbury, Camden, to accompany a listed building consent application for the proposed fire alarm system. The University of London are located in the Central Tower, South Block and levels 4-6 of the North Block of the Senate House. Basement to level 3 of the North Block is under the demise of SOAS and therefore is out of scope of this application.

The Senate House, located in the Bloomsbury Conservation Area in Camden, London, is a Grade-II* listed building designed by Charles Holden. The construction of the Senate House began with preliminary excavation in 1932. It was completed in 1937 and the central tower became one of the tallest buildings in London. The building's original design incorporated M&E services, including riser shafts, floor voids for M&E routes, and concealed electric conduits, as well as an early fire alarm system, in line with the inter-war years' architectural approach.

The fire alarm system in the Senate House was originally installed in two phases, with the first phase covering the basement to the sixth-floor levels as part of the original design, and the second phase covering the above eighth floor in the tower, proposed by Charles Holden in 1948. The existing fire alarm system underwent two upgrades in 1995 and between 2009 and 2015, and it appears that the existing system was installed in a piecemeal manner, to replace the existing 1995 fire alarm system without consent. Despite this, the existing system has been installed sympathetically, and generally followed Charles Holden's original plans for these essential building services.

A significance assessment carried out in accordance with Historic England's HEAN 12 (2019) indicates that the Archaeological interest of the site is low, while the Architectural and artistic and Historical interest of the building are high. The building represents a good example of Art Deco architecture, designed and built by Charles Holden, an important English architect in the c.1920-1930s. The Senate House is recognised as a landmark feature in Bloomsbury and has been associated with a large number of alumni and researchers worldwide, as well as several political leaders and established artists.

The proposed new fire alarm system for the Senate House will use updated wireless technology and comply with the L2 standard according to BS5839-1:2017 and EN54-25. The system will be designed, installed, tested and commissioned in accordance with the following standards:

- BS5839-1 2017,
- BS5839-6:2013,
- BS5839-8:2013,
- BS7629-1:2008, and
- LP51014: Issue 5 requirements for Certified Fire Detection and Alarm Systems.

Existing detection devices will be replaced with new ones, and the wired-wireless hybrid system on the lower floors (ground to fifth floors of relatively higher significance) will be replaced with wireless devices. The wired system in the library tower will be updated with a new wired system. The proposed locations for the fire alarm devices and routing have been devised to avoid significant finishes such as travertine marble finishes, architectural detailing or other fabric of significance.

An impact assessment of the proposed new fire alarm system for the Senate House shows that it will have no impact on the building's historic and architectural special interest. The proposed system has been selected after an option analysis to utilise a hybrid of wireless technology and wired systems to provide enhanced protection and coverage, while minimising impact on the building's fabric. The installation of galvanised conduits will be necessary in some areas to allow for radio signal transmission, but these will be situated in carefully considered locations away from historic or architecturally significant fabric. In general, the proposals are essential to ensure the safety of all occupants and the long-term maintenance and use of the fire alarm systems and building.