



DR WILLIAMS'S LIBRARY - 14-15 Gordon Square, London DESIGN & ACCESS STATEMENT | SEPTEMBER 2021 8555-CPM- ZZ-ZZ-RP-A-10003_P04

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1.0 Introduction

1.01 The report

This report has been commissioned by the Trustee's of Dr Williams's Library. The document describes proposals for the refurbishment and re-ordering of University Hall, now known as Dr Williams's Library. The Library occupies number 14-15 Gordon Square, and is regarded as the pre-eminent library for the study of English Protestant Dissent. For further information on the listed asset as well as the Library and its legacy, refer to the Statement of Significance.

As a heritage asset, the Library can be viewed on three major levels. The Library as the repository of the history, literature, and ideals of Religious Dissent which had fundamental influences upon the modern development of Britain and the English-speaking world; the collections it owns; and the Grade II building itself, from which the Library operates.

The overall objectives of the Trust is to secure the building and its important collections for the foreseeable future. The opportunity is also being taken to provide improved access to the collections for the public and to widen the teaching commitment of the Trust through improved reader and teaching facilities.

1.02 The Design Team

This has been prepared by the design team in conjunction with the Dr Williams's Trust. The principal contributors are as listed below:

Client:	Trustees of Dr Williams's Trust
Lead Designer	CPMG Architects
Structural Engineers:	CTP Consulting Engineers
Building Services Engineer:	Green Building Design Consultants
Cost Consultants	G E Sharpe and Company

1.03 The Brief

There are two main elements of work:

- 1. External repairs and refurbishment to the external envelope including facade cleaning and below ground drainage.
- 2. Essential repairs/replacement to the listed asset, covering:
 - Essential upgrades to mechanical and electrical services
 - Reconfiguration and refurbishments of internal spaces •
 - Refurbishment of commercially lettable office spaces and function rooms •

Significant and urgent repair work is necessary to the roof, as well as internal repairs following issues with water ingress. The library was closed to the public in 2018, it is hoped to reopen the doors in 2022.

All proposed internal works have been assessed based on the ICOMOS and Heritage England conservation design principles to avoid loss or harm to the historic fabric.

Access is a key design principle for the proposed scheme.

SITE: Aerial view of Dr Williams's ibrary & courtyard



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2.0 The Site

2.01 Site Context

Building address: Dr Williams's Library, 14-15 Gordon Square, Bloomsbury, London WC1H OAR

The site is formed by both the existing building and rear courtyard. The existing building, a symmetrical structure built between 1848-1849 in the Victorian Gothic style.

It is located in the heart of Camden Borough, within the Bloomsbury conservation area. The building is joined on the North and the South by two further Grade II listed buildings.

The Trust owns the building directly behind Dr Williams's Library, referred to as the Morley Building, previously known as The Annex, this is currently leased to UCL for academic purposes.

To the front of the building lies Gordon Square a large, predominantly grassed area of public land. Access into the park can be found directly in front of the main entrance to Dr Williams's Library as well as at three other points within the park.

The rear courtyard is currently considered unused, with areas of overgrown shrubbery. The area is predominantly finished in gravel and hardstanding and there have been issues with homelessness and anti-social behaviour. Staff from the building, and adjoining properties often utilise Gordon Square for recreational purposes.

Levels within the courtyard are generally flat.

2.02 Site Constraints and Opportunities

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The courtyard is considered a back land area, strategically of limited value due to accessibility and overlooking issues. In this instance the courtyard has limited development potential for residential, educational or office use.

No tree preservation orders (TPO) are recorded for any of the tree's contained within the courtyard. The site does however fall within the Bloomsbury Conservation Area, as such this application requests the removal of three tree's and areas of shrubs.



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2.0 The Site

2.02 Site Constraints and Opportunities (cont.)

An arboriculture schedule and associated plan have been produced in support of this application.

There is one tree within the courtyard area identified as high value, this tree shall be retained and hoardings will be placed to ensure the root protection area (RPA) is identified and not encroached.

The Trust wish to better utilise this rear area by the creation of defined seating areas and replacement biodiversity through planting of specific trees and shrubs suitable for the area.

New pathways and hardstanding from the fire escape doors in the North and South wings will connect to the existing Morley Building access path.



SITE AND CONTEXT: 01 Rear Courtyard- South wing 02 Rear Courtyard- North Wing 03 Frontage-South External Stair 04 Frontage- North External Stair

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3.0 Landscape Design

3.01 Site Security

The requirements for security are high with insurance requirements in excess of Secure by Design recommendations. As a consequence important components of scheme will include –

- Entry monitoring and access control
- CCTV
- Intruder alarm
- External lighting

3.03 Ecology

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As part of the works more tree's and shrubs will be added back into the scheme compared to taken out. The tree's proposed will be suitable in scale and potential root systems.

The only protected species which may be present within the courtyard are nesting birds. No other suitable habitat was identified for protected species.

The birds most likely to be within the area are identified as feral pigeon, house sparrow, starling and blackbird. Appendix B sets out the method statement for works being carried out during breeding season. The appointed contractor to the project will be tied into implementing the recommendations of the Ecology report if works are to be carried out during breeding season (March-September).

Where clearance and construction works are targeted outside of the breeding season, which is between March to September inclusive, then clearance can proceed without survey or further constraint.

Where clearance works are to be conducted during March to September inclusive, a nesting bird survey would be carried out by a qualified Ecologist prior to clearance. If no active nests are identified within the work area, then clearance of the vegetation would be conducted on the day of the survey, by hand and under the supervision of the Ecologist, to render the area unsuitable for nesting birds.

If active nests are located they would be left undisturbed until the young have fledged and the parent birds had abandoned the nest. Fencing or barrier tape set out or dictated by the Ecologist would be erected around the nest sites, with a suitable buffer zone to ensure that works would not encroach on the nests and cause disturbance. Works would not proceed in the nesting areas until the Ecologist confirms that the chicks have fledged, or the nest has otherwise become inactive, and that works can proceed without causing disturbance to nesting birds.



3.0 Landscape Design

3.04 Proposed Pedestrian, Cycle and Vehicular Movement

The main point of access for staff and the public is from the front elevation facing Gordon Square. Access to the rear of the courtyard can be achieved by walking down UCL owned land using the Morley building pathway.

There are no designated parking spots for the library, public transport is recommended for people travelling to the library with Euston Square tube Station just 5 minutes' walk away. The site also benefits from very good bus connections, with Gower St/ Torrington PI bus station at less than 5 minutes walking, as well as Euston Station, Euston Bus Station and Tavistock Square, amongst others. Refer to appendix

The Trust wish to retain their current, single, parking permit for the caretaker who is housed within the building for security purposes. This has been agreed with the Planning Officer.

Staff in the future will continue to utilise public transport, but the new works will also provide a small provision of bicycle storage (x20 spaces) within the rear courtyard.

Delivery access, refuse collection and emergency access will remain the same.

3.05 Boundary Treatment

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The front elevation facing Gordon square will see no new boundary treatment. To the rear of the courtyard no new boundary treatment is proposed. The building is enclosed on two sides with the Morley building behind.



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4.01 Maintenance Strategy

In accordance with the requirements of CDM legislation, due regard to the ongoing maintenance of the building has been made during the design process. This ensures that a simple and pragmatic approach is incorporated for continuing routine maintenance. Strategic decisions have been made as follows:

Plant Provision-

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The plant rooms identified at Level 1, house all principal plant and incoming services. There is direct access from external hard standing areas to these rooms.

No new plant is to be placed on the existing building roof. Access to gutters for maintenance to the front and rear elevation has been made better by allowing for new access roof lights and increasing numbers. A new man safe system is to be allowed for.

The design and layout of services, where possible, has been undertaken to allow effective and safe access for maintenance and future plant replacement. The layout and selection of equipment is consistent with industry best practice manufacturer recommendations for access and clearance space. The design will include strategies for all major plant replacement as well as more frequent maintenance access strategy requirements for consumable items, cleaning and inspection valves will be grouped together as far as practical to improve access requirements.

All distributed service risers in the building are easily accessed with associated assess hatches.

Building Fabric Cleaning and Maintenance-

External window cleaning to the existing building is currently via roped access, this strategy will remain as is, as the proposals make this no worse. To the rear of the building new areas of hardstanding will be allowed for within the landscape design to accommodate appropriate maintenance activities. Such as cleaning windows via long pole-handled brushes, which are suitable for use up to 20m.

Construction Access-

There is no vehicular access to the rear courtyard, and the adjacent buildings fronting Gordon Square are partly occupied for residential use. All deliveries will be scheduled during restricted delivery hours. There will be a foreman responsible for deliveries at all times and travel routes will be dictated for all supply chain deliveries.

Further information on this will be supplied by the contractor once appointed, within the project Construction and Management Plan.

Underground Services-

Appropriate surveys have been undertaken at this stage to establish the approximate locations of underground services; gas, water, electricity and communications cabling. These can be supplied on request.



MAINTENANCE STRATEGY: 01 Long Reach Pole 02 Vertical Access Platform 03 Roof Access Hatch

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4.02 Sanitary Provisions

The Health & Safety Executive- Welfare at Work, Guidance for employers on welfare, provides guidance on sanitary provision. The design information is based on this document and on a maximum building occupancy figure of 319 people.

Based on the mixed use facilities, Table 1 of The Health & Safety Executive- Welfare at Work Provision, a minimum of 14 toilets will be required. Based on these figures the provision allowed for is suitable for the building use and in line with Approved Document Part G and the Health and Safety Executive guidance.

No facilities for pregnant and nursing mothers will be required due to the nature of the building. Allowing for such facilities is not reasonably practicable within the existing listed building.

Disabled toilets in conformity with the requirements set out in Approved Document (AD) Part M will be provided with alternate handing allowing for left and right transfer. Due to the nature of the listed building, the new toilet provision deviates from AD M section 5.9, as other occupants will be encouraged to use all toilet provisions. Disabled access toilets will not be for the sole use of people requiring the specialist facilities. Travel distances to DWC toilets are within the forty metre combined horizontal distance.

Ambulant disabled toilets have been provided within the male and female toilets on the second floor.

Four new shower facilities are proposed as part of the refurbishment works. These will not be suitable for wheelchair users as they are supplied for staff and office workers using cycles to travel to work. Due to the limitations of the building it is not feasible to provide a wheelchair accessible shower facility. The new shower facilities have been designed to meet guidance document BS 6465-2 2017.



BUILDING DESIGN : Utilities Survey

4.03 Drainage Philosophy- Surface Water Strategy

Site drainage utilises the existing combined system, which allows for water to drain to the existing combined public sewers. This strategy will remain unchanged for the existing building. Permeable hard landscaping has been used and existing non permeable areas of hard landscaping are not made worse.

4.04 Drainage Philosophy- Foul Water Strategy

The current foul water strategy is unchanged, the scheme will utilising the two existing combined drainage routes, pipework will be upgraded and replaced.

4.05 Sustainability

The Clean, Green and Seen. Lean, passive and active design measures have been included where possible, to achieve a reduction in CO2 emissions.

- Be Lean: The replacement of the roof will enable its void to be insulated with a target U Value of 0.16W/m2K.
- Be Clean: The building services plant and equipment that will be specified will be as efficient as possible to drive down energy consumption.
- Be Green: It is aimed to reduce the requirement for renewables technologies as far as possible by being 'Lean' and 'Clean'. Renewable technologies are not required to pass Building Regulations nor are they required to satisfy any local planning requirement.

Proposed Energy Strategy-

- Passive and active design measures
- Gas Fired heating and hot water provision

Passive design measures include-

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- Utilising low flow water fittings within the existing building, to minimise water consumption.
- Natural ventilation solutions will be utilised throughout

emissions.

4.06 Utilities

Gas-

There is currently an existing gas supply to the existing building. This will be retained. There is no requirement to increase the gas supply but an application has been made for a new gas meter

Main Electrical Supply-

The existing electrical supply is limited to 200 amp TP&N located in the basement switch room.

The existing electrical supply to the main building is beyond its useful working life and is not compliant with current electricity at work act, regulations and good practice. For this reason a new supply has been requested from UKPN, to be located in a more suitable location. The current supply is limited to 200 amp TP&N, this is considered sufficient for future needs and no increase in supply capacity is required.

New separately metered supplies shall be provided to serve split metered distribution boards at each floor level within lettable office zones.

4.07 External Lighting & Security **External Lighting**

Existing lights are to be retained and new lighting is proposed to the front elevation of the existing building above the North wing entrance door to Gordon Square.

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High efficiency lighting using LED fittings complete with local motion sensor switching shall be included throughout the archive spaces. This allows electric lighting energy consumption to be reduced during daylight hours, reducing running costs and C02

4.07 External Lighting & Security (cont.)

External Lighting

New wayfinding lighting will be introduced within the landscaping to the rear courtyard within the hard surfacing.

All external lighting will be designed to reduce light spill and light pollution in accordance with planning conditions. External lighting will require appropriate snoods and shrouds to be fitted to control light spill.

CCTV-

An internal CCTV system will be allowed for within critical circulation areas connecting to Strong Rooms. An internal CCTV system will also be allowed for within circulation areas and public areas. For lettable offices, internal cameras will be installed by tenants as required.

New external CCTV will be provided to prevent, detect, deter and help investigate crime to the rear external courtyard area of the premises and the system will be suitable for identification and providing evidence in accordance with secured by design principles.

New Ethernet ICT infrastructure will be provided to support both future internal and new external cameras. The CCTV system to be suitable for offsite monitoring.

Intruder Alarms-

An intruder alarm system will be installed which comprises two distinct systems which create a "double knock" zoned to allow the out of hours use of the lecture hall and associated facilities, and for the strong rooms and library facilities.

Access Control-

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An access control system will be provided to selected areas within the building to manage and control entry and egress.

The strategy for restricting access into and through the building will be developed in conjunction with the overall security and operational strategies for the building during design development. Identifiable zones consist:

- Strona Rooms
- Library-Public Spaces
- Library-Staff Only
- Lettable Offices .
- Caretaker Apartment and Bedroom
- Lecture Hall and Associated Facilities

Entry into the building for visitors will be limited to the front elevation of the building from Gordon Square. These will be shared entrance spaces with segregation between library and lettable achieved internally.

- North Wing Entrance- wheelchair accessible
- people with mobility issues.

A new intercom system will be provided at each of the external entry doors at Level two.

All internal public circulation doors to corridors and staircases within library areas will be provided with powered hold opens with fire alarm interfaces. Key internal circulation doors will also be access controlled to allow for community use of the Lecture Hall. All lettable office circulation routes, Strong Room lobbies and Strong Rooms will have access control.

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Main Entrance- This door is accessed via stairs and therefore cannot be used by

5.01 Accessibility

Pedestrian access to the building is from Gordon Square. There are no designated drop off points or parking spaces available to the front of the building. There is no vehicle access to the rear of the building. There are no visitor entry points to the rear of the building; these are staff and emergency escape doors.

The re-ordering of the building will ensure compliance with the requirements of Part M of the Building Regulations wherever possible. This will include the provision of level thresholds and the provision of an additional lift (one lift currently serves the building). Wheelchair refuges with call points have been incorporated within the design. Disabled lavatory provision is discussed in section 4.02.

5.02 Fire Strategy

The fire strategy will be based on Building Regulations AD Part B- Building Other than Dwellings. Salus the Independent Approved Building Control Inspector has been working closely with the design team and consultation will be undertaken with the local Fire Officer. The purpose groups contained within the refurbishment scheme are-

Purpose Group: Group 3- Office Group 5- Assembly and Recreation Group 7(a)- Storage and Other Non- Residential

Automatic detection will be provided in accordance with BS 5839 part 1 to category L1 standard, with manual call points, automatic detectors and alarm/ flashing beacons. The alarm panel shall be located within the entrance lobbies of the North stairs and repeater panel within the main entrance.

There is no proposal to provide sprinklers to the building and they are not required for the purposes of satisfying the Building Regulations.

The occupancy figures have been calculated via AD Part B, Table D1 floor space factors.

These figures will be reviewed and possibly reduced once a full survey has been carried out considering; actual stair widths, number of escape routes and final exit clear openings.

A number of doors will be replaced, most of which are not original to the building to ensure the current fire standards in the building are increased. Existing doors of historic interest will be retained and upgrades agreed with the Approved Building Control Inspector and Fire Officer where required.

Disabled refuges have been allowed for within both the North and South stair, with the exception of level two where the North wing entrance allows for level access out of the building via internal and external ramps. The Trust will appoint a responsible person in respect of the 'Fire Safety Order' who will ensure that there is a suitable and sufficient risk assessment carried out, and measures put in place for disabled person's evacuation within the emergency action plan.

Means of escape will be based on simultaneous evacuation of the building. There are two protected stairs and travel distances within the existing building all meet the maximum travel distance of 18m in one direction.

5.03 Acoustic Strategy

There is no acoustic requirement or strategy set out within the existing building. New works will be designed to limit the noise transfer between offices where possible.

A full acoustic report was written by Sandy Brown, this report was developed looking at a larger scheme which included archive extensions. Within the report it notes that the plant required for the refurbishment of the existing building and the archive extensions would be below the acceptable threshold. As works are now for a small scheme with less plant a betterment will be achieved on the proposed figures set out in appendix F.

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6.0 Statutory Approvals

6.01 Planning

The design proposal has been assessed against National Planning Policy Framework and the Camden Local Plan- Design and Heritage and key guidance documentation. The proposal allows for a considered impact to the existing fabric of the listed asset, as discussed between the Planning Officer and Applicant. The extent of these works in regards to the portion of the listed building has been covered within the Heritage Statement, which should be reviewed in support of this document.

6.02 Building Control

Salus have been appointed by the Trust to undertake the role of Approved Inspector for the scheme. They are operating as an integral part of the design team to ensure that any legislative issues are highlighted and addressed quickly. Meetings have been held to review the proposal in detail, topics discussed to date have included:

- Firefighting
- Smoke extract
- Fire alarm systems
- Disable refuges
- Sanitary provisions
- Equalities act assessment

GA layouts have now been agreed in principal and the finer detail concerning fire safety will be reviewed more closely within the technical design stage.

Staff Kitchenette-

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The staff area will be compliant with Approved Building Document Part M- Refreshment Facilities. Part of the worktop will be permanently accessible to wheelchair users at a level of not more than 850mm above finished floor with a clear knee space of not less than 700mm above floor level. The worktop will be dual height with a higher section working area for people standing. Tea stations will utilise a single level approach set at 850mm above finished floor level.

Sleeping Accommodation-

Sleeping accommodation is provided within the building, this is designated for the caretaker. Due to the nature of their responsibilities as duty holders they must be able-bodied to carry out their role. On this basis sleeping and associated bathing arrangements have not be provided to accommodate a wheelchair user.

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Appendix A – Arboriculture Schedule and Plan

CPMG DR WILLIAMS'S LIBRARY DESIGN & ACCESS STATEMENT | SEPTEMBER 2021

SITE: Dr V	ITE: Dr Williams Library, Gordon Square, London BS 5837:2012 TREE SCHEDULE DATE: 05/04/2019											f£td		
TREE NUMBER	SPECIES	SCIENTIFIC NAME	AGE CLASS	STRUCTURAL CONDITION	PHYSIOLOGICAL CONDITION	COMMENTS (INCLUDING RECOMMENDATIONS AS APPROPRIATE)	CONTRIBUTING YEARS	VALUE CATEGORY	OVERALL HEIGHT (m)	CANOPY SPREAD (m)	GROUND - CANOPY (m)	D @ 1.5m	RPA (m²)	RPR (m)
1	Sycamore	Acer pseudoplatanus	Late Semi-Mature	Good	Good	Stem bifurcates at 2.5m from GL. Very minor deadwood in crown. Tree Tag: 01955.	40+	B1	19.7m	N7 E8.6 S9.5 W6.5	9m	0.59m	157.48m²	7.08m
2	Common holly	Ilex aquifolium	Semi-Mature	Good	Good	Growing within 0.5m of existing building, limited scope for long-term retention without frequent reduction works to crown to prevent nusience and damage to building fabric.	20+	C1	5.8m	N4 E1 S4.5 W3	GL	0.21m	19.95m²	2.52m
3	Cotoneaster tree	Cotoneaster frigidus	Late Semi-Mature	Moderate	Good	Multi-stemmed specimen from GL, with numerous crossing and rubbing branches. Root plate is growing directly under building foundation, no obvious evidence of subsidence to main building fabric, although adjoing wall has slightly subsided approximately 2m to the west of stem, potential for a number of other non-tree related factors which may have accounted for drop in wall line. Given its location, tree has very limited scope for long-term retention.	10+	υ	6.8m	N7 E6 S0 W5	1-2m	0.21m	19.95m²	2.52m
4	London plane	Platanus x hispanica	Late Mature	Good	Good	Prominent tall and fully mature tree with a full and dense crown network, appearing from GL to be in overall good condition. Tree Tag: 0920.	40+	A1	35m (est)	N8 E14.5 S11 W11	7-8m	1.33m	800.23m ²	15.96m
5	Laburnum	Laburnum sp.	Young	Good	Good	Stem bifurcates at 1m from GL. Tree in good overall condition however sub- dominant position under canopy of T4 provides reduced scope for useful long term retention.	10+	C1	7.5m	N3 E1.5 S3 W3	2m	0.12m	6.51m ²	1.44m





Appendix B – Contamination Map

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Appendix C – Planning Statement- Mechanical & Electrical

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Building Services Consulting Engineers

Dr. Williams Library 14 Gordon Square Bloomsbury London WC1H 0AR

Mechanical & Electrical Services Scheme Design Summary for the Refurbishment of Existing Building for inclusion in Design & Access Statement

August 2021

Project:	Dr. Williams Library 14 Gordon Square Bloomsbury London WC1H 0AR
Client:	The Trustees of Dr. Williams Library
Document:	Mechanical & Electrical Scheme Design Summary Report for The Refurbishment of the existing Building for inclusion in the Design & Access Statement

Date: August 2021

Revision Date		Description	Prepared	Checked	Approved
	25.08.2021	Support of planning	HD	RW	SG

Contents:

1.0 SUMMARY OF BUILDING SERVICES DESIGN

2.0 DESCRIPTION OF PROPOSED SERVICES

1.0 SUMMARY OF BUILDING SERVICES DESIGN

The building services design for the refurbishment of Dr. Williams Library at 14 Gordon Square, London, WC1H has been developed in conjunction with the architecture and existing structure with the aim of producing the clients ambition to deliver the highest quality working environment for the storage of historic books and manuscripts whilst maintaining the fabric of the existing building in accordance with the recommendations of BS EN 16893 2018 Conservation of Cultural Heritage – Specifications for the location, construction and modifications of buildings or rooms intended for storage or use of heritage collections.

The building was originally constructed circa 1849 and is grade II listed. The building and the building services installations have been modified several times during the life of the buildings and there appears to have been a significant intervention dating from the 1980's.

The electrical installations in the main appear to date from the 1980's are well beyond their recognised economic life of 20-25 years published in CIBSE guide M and are not capable of supporting the library in the long term.

Similarly, the heating plant dates from 1980's but two of the original boilers have recently been replaced. The central plant has an economic life expectancy of 15-20 years as published in CIBSE Guide M and is past its anticipated life and in a poor state of repair.

The current mechanical and electrical services installations have not been done sympathetically and have little regard for interventions into the building fabric. As is evident from the large number of heating and gas pipes running through the stair core and surface mounted pipework and electrical containment throughout the building.

The heating controls are very limited with minimal zone control (5 in total). The system operates at 80C flow and 70C return which is too high for the building of this type and the heat radiated from the pipework can cause damage to timber elements, surface finishes and the collection.

The limitations of the existing heating system lead us to conclude that it is not fit for the purpose of providing a facility compliant with BS EN 16893 2018.

All of the building services have been designed in accordance with current legislation and good practice guides including but not limited to:

- Local Planning Policy and Supplementary Planning Guide Lines
- Local Authority Regulations and Approvals
- Local Bye-laws and Regulations
- Building Regulations Parts E,F and L,
- BS EN 16893; 2018

The design has been developed to ensure that there is no detrimental impact on the existing utility infrastructure.

The site's drainage system shall include separate foul and surface water drainage which shall connect to the existing sewer connections that have the capacity to handle the discharge.

The Building is to be compliant with Building Regulations Part L2B 2017 and will include the following:

- High efficiency gas fire heating extended from the new heating system in the main building.
- Conservation Heating including Zone Control of heating areas
- Comfort Heating to lettable office spaces
- Energy efficient LED lighting
- Energy efficient fabric providing better than minimum building regulations standards where new elements to be constructed.
- Energy efficient Building Services solutions and plant selections compliant with Current Building regulations Part L 2A

2.0 DESCRIPTION OF PROPOSED SERVICES

2.1 Utility Services

Electrical Supplies

The existing electrical supply is limited to 200 amp TP&N located in the basement switch room.

The existing electrical supply to the main building is beyond its useful working life and is not compliant with the current electricity at work act, regulations and good practice. For this reason, a new supply has been requested from UKPN to be located in a more suitable location but it is not intended that an increase in supply capacity is required.

A new separately metered supply shall be provided to serve split metered distribution boards for both the Landlord and Tenant at each floor level.

Gas Supplies

The existing gas supply to the existing building shall remain and be reused. There is no requirement to increase the gas supply but an application has been made for a new gas meter.

Water Supplies

The existing water supplies shall be retained and reused to serve a new potable water storage tank and booster set located at basement level adjacent to the incoming main and a plant space has been allocated

Below Ground Foul Water Drainage

A CCTV survey of the existing underground sewer has been undertaken and generally, the installation is sound but some remedial works on displaced joints and scaling have been identified but it is anticipated that the sewers will need to be replaced rather than repaired. Reference should be made to the below ground drainage design drawing by Jeff Horwood, Drawing reference- 474 D02.

2.2 Heating and Cooling

No cooling is being provided.

Conservation heating will be provided throughout the building to control the temperature and humidity within the strong room and library spaces. Each space shall be a control zone provided with temperature and humidity sensors.

Comfort heating shall be provided to library office spaces, breakout spaces and lettable office spaces provided with local thermostatic control via Thermostatic Radiator Valves on each radiator.

The heating system shall incorporate high efficiency condensing boilers and shall operate at 60C flow and 40C return which would be more sympathetic to the building fabric.

All lettable office spaces shall be provided with an energy meter.

Several local gas fired boilers have been installed at various times whose flues discharge via the external elevation. These are to be removed and the openings made good.

2.3 Ventilation

The building will be naturally ventilated.

Toilet and shower rooms shall be provided with extract ventilation in accordance with Part F of the building regulations.

All ventilation equipment shall be design in accordance with the limiting sound power levels advised by Sandy Brown in their report on Noise Survey and Plant Noise Egress Limits, ref: 193220-R01-A dated 15th August 2019.

The relevant plant noise limits at the worst affected existing noise sensitive premises are *LAeq* 43 dB during the day, and *LAeq* 41 dB during the night.

2.4 Electrical Power

From the new meter supply power shall be taken to a new switch panel located at level 1. Each outgoing way shall be metered and this shall include supplies to the lifts and Motor Control Panels for mechanical plant.

From the switch panel new supplies shall be taken to each floor to serve new split metered panel boards so that metering for power and lighting can be measured. The design incorporates energy metering in accordance with the requirements of Part L

The investigation works undertaken by the structural engineer suggest that there is sufficient depth to accommodate recessed floor boxes.

2.5 Lighting and Emergency Lighting

High efficiency lighting using LED fittings complete with daylight dimming and local motion sensor switching shall be included throughout the Lettable Offices and Library offices and administration spaces.

There will be some feature lighting to the main entrance area and Library rooms.

Within cellular offices and meeting rooms local switching shall be provided and in addition scene setting or dimming shall be provided in meeting rooms.

External access routes at Roof levels and within Level 1 shall be provided with batten type LED fittings switched locally.

Emergency lighting shall be provided on all escape routes to comply with BS 5266

2.6 Fire Alarms

Fire alarms shall be provided through the building to comply with BS 5839 part 1 to category L1 standard.

The fire alarm panel shall be located within the main building entrance area.

2.7 Disabled Refuge Call Points

Disabled refuge facilities are to be provided throughout the building as indicated on the Architects drawings. These shall be provided with a call point to allow a person to contact the fire brigade and call for assistance in the event of a fire.

The panel shall be located within the main building entrance area.

2.8 Domestic Water Supplies

A new potable water standard water storage tank and booster set shall be provided at basement level and water shall be boosted to serve water fittings at each floor level. A pressure reducing valve shall be provided at each floor to regulate the pressure to 1.5 bar

Hot water shall be produced by instantaneous point of use electric water heaters.

2.9 Above Ground Foul Water Drainage

The existing above ground foul drainage generally runs external to the building and is in a poor condition.

A new internal above ground drainage system shall be provided to serve new WC's. Tea points and kitchens. The above ground drainage shall connect to the below ground drainage at level 1.

2.10 Data Containment

Data containment shall be provided via the 3 compartment trunking system and cable trays within the electrical riser to connect each floor box back to the proposed comms area.

Each desk floor box shall contain 2 power and 2 data outlets.

Appendix D – Planning Statement- Structures

CPMG DR WILLIAMS'S LIBRARY DESIGN & ACCESS STATEMENT | SEPTEMBER 2021

Dr Williams' Library

Conservation Engineering: Statement of Structural Impact

Prepared by James Miller MA CEng FICE FIStructE Conservation Accredited Engineer

Form of Construction

Dr Williams' Library is a fine seven-storey brick building constructed in the 1840s. This is an early date for such a tall institutional building.

The building floors are framed with timber, iron and stone. The principal north and south rooms are framed with substantial timber floor joists, trimmed by iron beams which span simply, front-to-back. In places these trimmers themselves are supported by other ironwork, laterally across the window heads. The north-south spine corridor is generally formed in stone, although the north and south ends are floored in timber.

The slated roof is framed in timber, supported on two intermediate purlin lines. The roof pitch has been altered in the past and iron structure introduced below the attic in the rear of the building, to support purlins, perhaps because of previously-inadequate framing.

The lower ground floor is a ground-bearing concrete screed. Inverted arches have been constructed in the façade walls under windows at low level and are visible in the brickwork, an occasionally-used device for spreading load onto foundations under larger ground-floor openings, but unusual for such small openings. The foundations are understood to be relatively shallow corbelled strips bearing onto the London Clay.

The two main circulation staircases are formed as pencheck (cantilever) stone structures, rising the full height of the building. The soffits of these stairs are inclined between Levels 2 and 4 but stepped at all other levels, indication perhaps a change in status of occupancy and use between floors.

Roller-racking: ground bearing slabs at Level 1, Lower Ground Floor

The library lacks good, accessible, environmentally controlled storage. Roller racking is an effective but heavy modern solution to storage. It is not suitable for installation on the upper timber floor levels without very substantial intervention, possibly resulting in the loss of the floor structure.

It is proposed to remove the existing concrete screed to floors in a number of lower ground floor rooms. These bear directly on to the ground. The formation level would be reduced by about 300mm to provide depth for stiffer build-up. A new mesh-reinforced concrete slabs would then be constructed on compacted granular fill, suitable to take the transient racking loads.

There would be no impact on the masonry walls around the edge of each room. Roller racking is not proposed for upper floor levels because of the impact it would have on the fabric.

The new lift shaft north of the building core, serving all levels

A new lift shaft is proposed for the building. The existing shaft will be retained. The location of the new shaft to the north of the core will mirror the location to the south.

The new shaft will require timber joists to be cut back at all levels and re-framed with a timber trimmer around the shaft opening. Two of the shaft walls will be the existing masonry and two would be constructed in new blockwork. Tolerance will need to be allowed for any lack of verticality. Construction of the lift pit will require careful local underpinning of the existing walls (*see Figure 1*), to a depth of about 1.7m below floor level; the lift requires an overrun at the top, the opening for which will be formed by cutting-back the ceiling joists in similar manner to the floors (*see Figure 2*)



Figure 1



Figure 2

Removal of one section of iron the cast iron gallery to the library above Level 4

The iron library gallery rising from Level 4 in the front of the building, together with the open spiral stairs, are a later insertion. Whilst of interest, they also mask some of the masonry features of the original envelope (see Photo 1)



Photo 1

In particular, the heads of the stone arched doors and dividing screen at Level 4 are hidden. It is proposed to remove the centre section of the lower level of this two-level gallery by very carefully and neatly cutting the two parallel wrought iron beams as they span across the largest arch head. The cast iron columns and integral cast seating plates would not be affected. The system remains stable without further work. The removed section for railing will be used to return the balustrade in.

Widening of the timber walkway to the library

It is proposed to widen the horseshoe-shaped timber walkway at Level 5 around the Library, which would permit study desks to be used, overlooking the library floor below.

The additional width required is only about 750mm. The additional gravity load for floor and occupants is minimal. The permanent, fixed bookcases sitting on Level 4 below are sturdy timber structures and it is proposed to sit the widened structure on the bookcases.

The timber balustrading will need to be removed and re-fixed in its new position, and because of this it will then need to comply with modern lateral-loading requirements. It will be necessary to insert small steel L-shaped flitch plates into the root (base) of the existing timber posts, to carry the bending moment around the knee and into the joists behind.

Removal of the iron grid floor, which is elevated about 1m above Level 7, and its replacement at Level 7

The iron grid floor is not original; its form and weight suggest it is a heavy structure introduced to take storage. The ironwork is perforate: there is neither fire nor acoustic separation between Levels 6 and 7. It is proposed to remove this floor and replace it with new permanent structure at Level 7 (not 1m or so above it).

It will be necessary to carefully and temporarily remove a window to allow the existing structure to be dismantled. The existing metalwork would be taken out and down to the rear of the building, and the new metalwork taken up by the same route.

The new structure would take bearing in the walls in the same way as the old, but at lower level. The steel new beams would be detailed with bolted-on stub ends, so that there would be no need to

over-lengthen the recesses in the walls (let alone break through from the outside) to thread the them in place. New floor joists would span between the steel beams – this would be a timber construction, not concrete.

Creation of services risers at ends of spine corridor and behind the lift shafts

Services risers will be formed at each end of the spine corridor and behind the two lift shafts. The north and south spine risers lie in locations of timber construction, not stone; these are formed simply by removing boards and two or three short joists, which we believe to be later infills as historic plans show these areas occupied with stairs and hoists. Those behind the new lift shaft will be formed at the same time as re-trimming the joists to the shaft. Those behind the existing shaft will be reframed in similar manner. (See Figure 3)





Re-detailing of the two external stairs, at north and south ends of the front light well

These stairs are embedded in the front façade wall and moisture has saturated the brickwork over many years. This is an inherent defect to both north and south steps.

Stonework must be isolated from the wall behind. One solution is to provide a steel spine centrally below the treads, supported on slender columns, each stone tread sitting on a bearing pad. This will barely be visible from street level and is the solution proposed. (See Figures 4 & 5). Others might involve more-visually intrusive structure, such as supporting walls or different materials, such as slender precast concrete with the appearance of reconstituted stone.







Roof Top Access

To facilitate external access to the roof for maintenance purposes, it is intended that two new access openings will be provided through the roof. The existing dormers will not require any unaltered rafters to be cut, the existing trimming out will be increased to suit the new structural opening of access rooflights. The roof is a traditional pitched timber cut roof, containing tiles on battens fixed to rafters. The rafters are supported on purlins spanning between load bearing walls, and also propped along their span to binders at 7th floor ceiling level.

The proposed new openings require conventional timber strengthening to existing rafters with new timbers and local trimming to single rafters where openings are required. Locations will avoid purlins and primary structure, and coordinate with the tile locations to minimise unnecessary disturbance. (see Figure 6)



Figure 6

The areas of infill will require the careful dismantling of redundant ventilation dormers and placement of 100x50 rafter infills to the voids created.

A new mansafe systems will need to be installed, it is recommended at parapet level with fixings to be designed by specialists back into the masonry versus through the roof finish.

Repairs

Repairs are proposed that include:

- Carefully indenting stonework to fill the holes left by pipework that has been removed from the internal access staircases.
- Cleaning, toothing-in masonry and inserting a bed joint reinforcement across the inclined cracking to the inclined, redundant chimney flues to the rear gable façade just above Level 7.
- Carefully removing cracked lime plasterwork in the south wing at levels 5 and 6 where the partitions have been damaged due to overloading of floors at level 7. As part of this work its proposed to lift floorboards to inspect the structure and repair the joists if necessary (a local failure).
- Chimney Stack Repair. The chimneys currently have some restraint from the existing roof construction and are showing no discernible signs of distress, but lean can be seen to some of the large gable stacks., to improve this restraint, additional strapping will be added (see Figure 7 & Figure 8), this is in place of the previously proposed invasive pipes and grouting solution.



Figure 7

Figure 8

Appendix E – Public Transport- PTAL Rating (6B)

CPMG DR WILLIAMS'S LIBRARY DESIGN & ACCESS STATEMENT | SEPTEMBER 2021





PTAL output for Base Year			N	lap key- PTAL		
00				0 (Worst)	1a	
WC1H 0AR				1b	2	
Gordon Square, London WC1H 0AR, UK				5	4	
Easting: 529721, Northing: 182212			L	6b (Best)	0a	
			1.1	()		
Grid Cell: 89391				lap layers		
Report generated: 26/08/2021				🕈 PTAL (cell size: 100m)		
		l				
Calculation Parameters						
Dayof Week	M-F					
Time Period	AM Peak					
Walk Speed	4.8 kph					
Bus Node Max. Walk Access Time (mins)	8					
Bus Reliability Factor	2.0					
LU Station Max. Walk Access Time (mins)	12					
LU ReliabilityFactor	0.75					
National Rail Station Max. Walk Access Time (mins)	12					
National Rail ReliabilityFactor	0.75					

Calcu	Calculation data									
Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	A
Bus	HYG & TROP MEDICINE SCHL	8	468.98	10	5.86	5	10.86	2.76	0.5	1.38
Bus	EUSTON SQUARE STATION	30	426.23	7.5	5.33	6	11.33	2.65	0.5	1.32
Bus	EUSTON SQUARE STATION	18	426.23	17	5.33	3.76	9.09	3.3	0.5	1.65
Bus	EUSTON SQUARE STATION	205	426.23	8	5.33	5.75	11.08	2.71	0.5	1.35
Bus	GOWER ST TORRINGTON PL	10	358.52	4.5	4.48	8.67	13.15	2.28	0.5	1.14
Bus	GOWER ST TORRINGTON PL	24	358.52	10	4.48	5	9.48	3.16	0.5	1.58
Bus	GOWER ST TORRINGTON PL	134	358.52	12	4.48	4.5	8.98	3.34	0.5	1.67
Bus	GOWER ST TORRINGTON PL	390	358.52	8	4.48	5.75	10.23	2.93	0.5	1.47
Bus	GOWER ST TORRINGTON PL	73	358.52	18	4.48	3.67	8.15	3.68	1	3.68
Bus	GOWER ST TORRINGTON PL	29	358.52	15	4.48	4	8.48	3.54	0.5	1.77
Bus	GOWER ST TORRINGTON PL	14	358.52	13	4.48	4.31	8.79	3.41	0.5	1.71
Bus	EUSTON BUS STATION	476	488.67	7.5	6.11	6	12.11	2.48	0.5	1.24
Bus	EUSTON BUS STATION	253	488.67	12	6.11	4.5	10.61	2.83	0.5	1.41
Bus	TAVISTOCK SQUARE	59	404.93	10	5.06	5	10.06	2.98	0.5	1.49
Bus	TAVISTOCK SQUARE	91	404.93	9	5.06	5.33	10.39	2.89	0.5	1.44
Bus	TAVISTOCK SQUARE	68	404.93	9	5.06	5.33	10.39	2.89	0.5	1.44
Bus		168	404.93	9	5.06	5.33	10.39	2.89	0.5	1.44
Bus	RUSSELL SQ NTH/WOBURN PL	98	596.74	g	7.46	5.33	12.79	2.35	0.5	1.17
Bus	RUSSELL SQ NTH/WOBURN PL	188	596.74	8	7.46	5.75	13.21	2.27	0.5	1.14
LUL	Warren Street	Brixton-Waitnamstow	670.36	15.67	8.38	2.00	11.04	2.12	0.5	1.30
LUL	Warren Street	Sevensisters-Brixton	670.36	11.07	0.30	3.32	11.7	2.50	0.5	1.28
	Goodge Street	Worden-Edgware	624.64	4.07	7.01	01.66	14.90	2	0.5	0.15
	Goodge Street	Koppington Edgupro '	624.64	0.33	7.01	91.00 2.70	99.47 10.6	0.3	1	0.15
	Goodge Street	'HighBarnet-Kenningt'	624.64	5 33	7.81	6.38	1/ 10	2.00	0.5	1.06
	Goodge Street	'MillHill-Morden'	624.64	1.67	7.81	18.71	26.52	1 13	0.5	0.57
	Goodae Street	'MillHillE-Kenningt'	624.64	1.67	7.81	18.71	26.52	1.13	0.5	0.57
	Euston Square	'Edoware-Hammersmith'	479 97	6	6	5.75	11.75	2.55	0.5	1.28
	Euston Square	'Hammersmith-Barking '	479.97	5	6	675	12.75	2.35	0.5	1.18
IUI	Euston Square	'Hammersmith-Plaistow'	479.97	1	6	30.75	36.75	0.82	0.5	0.41
IUI	Euston Square	'Aldgate-AmerFast'	479.97	1	6	30.75	36.75	0.82	0.5	0.41
LUL	Euston Square	'Ches-AldgateFast'	479.97	2	6	15.75	21.75	1.38	0.5	0.69
LUL	Euston Square	'Ald-UxbridgeSlow'	479.97	4.33	6	7.68	13.68	2.19	0.5	1.1
LUL	Euston Square	'Watford-AldSfast '	479.97	3.67	6	8.92	14.92	2.01	0.5	1.01
LUL	Euston Square	'Watford-AldgSlow'	479.97	1	6	30.75	36.75	0.82	0.5	0.41
LUL	Euston Square	'Ald-HarrowHill '	479.97	1.33	6	23.31	29.31	1.02	0.5	0.51
Rail	Euston	'BLTCHLY-EUSTON 2B04 '	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'WATFDJ-EUSTON 2J06'	767.55	0.67	9.59	45.53	55.12	0.54	0.5	0.27
Rail	Euston	'EUSTON-MKNSCEN 2K21'	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'EUSTON-TRING 2T11 '	767.55	0.67	9.59	45.53	55.12	0.54	0.5	0.27
Rail	Euston	'EUSTON-TRING 2T19'	767.55	1.33	9.59	23.31	32.9	0.91	0.5	0.46
Rail	Euston	'MKNSCEN-EUSTON 2W01'	767.55	0.67	9.59	45.53	55.12	0.54	0.5	0.27
Rail	Euston	'TRING-EUSTON 2W02'	767.55	1	9.59	30.75	40.34	0.74	0.5	0.37
Rail	Euston	'TRING-EUSTON 2W26'	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'BLTCHLY-EUSTON 2W57'	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'RUGBY-EUSTON 2W59'	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'TRING-EUSTON 2W63'	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'MKNSCEN-EUSTON 2W93'	767.55	0.33	9.59	91.66	101.25	0.3	0.5	0.15
Rail	Euston	'WATFJDC-EUSTON 2C06'	767.55	2.67	9.59	11.99	21.58	1.39	0.5	0.7
Rail	Euston	'EUSTON-WATFJDC 2D86'	767.55	3	9.59	10.75	20.34	1.47	1	1.47
LUL	Euston	'Edgware-Morden'	767.55	9	9.59	4.08	13.68	2.19	0.5	1.1
LUL	Euston	'HighBarnet-Morden'	767.55	7.66	9.59	4.67	14.26	2.1	0.5	1.05
LUL	Euston	'MillHillE-Morden'	767.55	1.33	9.59	23.31	32.9	0.91	0.5	0.46
LUL	Russel Square	'LHRT4-Cockfosters '	709.67	1	8.87	30.75	39.62	0.76	0.5	0.38
LUL	Russel Square	'RayLane-Cockfosters '	709.67	3.67	8.87	8.92	17.8	1.69	0.5	0.84
LUL	Russel Square	'LHRT4LT-ArnosGrove'	709.67	4.67	8.87	7.17	16.04	1.87	0.5	0.93
LUL	Russel Square	'ArnosGrove-RayLane'	709.67	0.33	8.87	91.66	100.53	0.3	0.5	0.15
LUL	Russel Square	'ArnosGrove-Nthfields'	709.67	3	8.87	10.75	19.62	1.53	0.5	0.76

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	A
LUL	Russel Square	'Oakwood-RayLane'	709.67	0.33	8.87	91.66	100.53	0.3	0.5	0.15
LUL	Russel Square	'Nthfields-Cockfoster'	709.67	1	8.87	30.75	39.62	0.76	0.5	0.38
LUL	Russel Square	'LHRT5-Cockfosters '	709.67	6	8.87	5.75	14.62	2.05	0.5	1.03
LUL	Russel Square	'Uxbridge-Cockfosters'	709.67	3.67	8.87	8.92	17.8	1.69	0.5	0.84
LUL	Russel Square	'Ruislip-Cockfosters'	709.67	2.33	8.87	13.63	22.5	1.33	0.5	0.67
LUL	Russel Square	'ArnosGrove-Uxbridge'	709.67	1	8.87	30.75	39.62	0.76	0.5	0.38
LUL	Russel Square	'Oakwood-Uxbridge'	709.67	0.33	8.87	91.66	100.53	0.3	0.5	0.15
LUL	Russel Square	'Oakwood-Ruislip'	709.67	0.33	8.87	91.66	100.53	0.3	0.5	0.15
									Total Grid Cell Al:	59.61

Appendix F – Acoustic Report

CPMG DR WILLIAMS'S LIBRARY DESIGN & ACCESS STATEMENT | SEPTEMBER 2021

Consultants in Acoustics, Noise & Vibration

193220-R01-A

15 August 2019

Dr Williams's Library, London

Noise survey and plant noise egress limits

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Consultants in Acoustics, Noise & Vibration

Version	Date	Comments	Author	Reviewer
А	15 Aug 19		Omar Faez	Philip Owen

Summary

Sandy Brown has been commissioned to provide acoustic advice in relation to the proposed extension at Dr Williams's Library, London.

An environmental noise survey has been carried out to determine the existing sound levels in the area. The noise survey was performed between 15:45 on 1 August 2019 and 11:45 on 9 August 2019.

The representative background sound levels measured during the survey were $L_{A90,15mins}$ 53 dB during the daytime and $L_{A90,15mins}$ 51 dB at night.

Based on the requirements of the Local Authority and on the results of the noise survey, all plant must be designed such that the cumulative noise level at 1 m from the worst affected windows of the nearby noise sensitive premises does not exceed L_{Aeq} 43 dB during the daytime, and L_{Aeq} 41 dB during the night. These limits are cumulative, and apply with all plant operating under normal conditions. If plant items contain tonal or attention catching features, then the plant noise limits will need to be 5 dB lower than those set out above.

Consultants in Acoustics, Noise & Vibration

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SANDY BROWN Consultants in Acoustics, Noise & Vibration

1 Introduction

Sandy Brown has been commissioned to provide acoustic advice in relation to the proposed extension at Dr Williams's Library.

As part of this, an environmental noise survey is required, the purpose of which is to establish the existing background sound levels in the vicinity of nearby noise sensitive premises and to set appropriate limits for noise egress from building services plant.

This report presents the survey method and results, and a discussion of acceptable limits for noise emissions from building services plant.

2 Site description

2.1 The site and its surrounding

Dr Williams's Library is situated in the London Borough of Camden

The building is adjacent to Gordon Square, approximalty 300 m south from Eustion Road.

Figure 1 highlights in red the location of the site.



Figure 1 Aerial view of site (courtesy of Google Earth Pro)

2.2 Adjacent premises

Dr Williams's Libaray is surrounded by University College London buildings. To the north and west. Immediately to the south is the Cloisters building, which includes residential use properties. To the east is Gordon Square.

3 Development proposals

The proposed development comprises of the refurbishment, repair and rear extension to Dr William's Library which will include improvments to MEP services that will be operating 24 hours.

4 Noise survey method

The survey included unattended measurements.

4.1 Unattended measurements

Unattended noise monitoring was, undertaken at the site over 8 days.

Details of the equipment used, and the noise indices measured are provided in Appendix A.

The unattended measurements were taken over 15-minute periods between 15:45 on 1 August 2019 and 10:45 on 9 August 2019. The equipment was installed by Omar Faez and collected by Omar Faez and Jason Setiadi.

The measurement position used during the survey is indicated in Figure 1, denoted by the letter 'L'. A photograph showing the measurement location is provided in Figure 2.

The microphone was position outside the window of the 4th floor staff office, with views of the courtyard. The microphone was approximately 1 m from the facade ie, facade level measurements where made.

This location was chosen to be reasonably representative of the background noise levels at the nearest noise sensitive receptors.

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Figure 2 Photograph of the logger location

4.2 Weather conditions

Weather conditions during the survey are described in Appendix A.

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5 Noise survey results

5.1 Observations

The dominant noise source observed during the survey was existing building services plant associated with the surrounding buildings.

Less significant noise sources included pedestrian activity in the courtyard.

5.2 Noise measurement results

5.2.1 Unattended measurement results

A graph showing the results of the unattended measurements is provided in Appendix B.

Day and night-time ambient noise levels measured during the unattended survey are presented in Table 1.

Measured minimum background sound levels are given in Table 2.

Table 1 Ambient noise levels measured during the unattended survey

Date	Daytime (07:00 – 23:00)	Night (23:00 – 07:00)
	L _{Aeq,16h} (dB)	L _{Aeq,8h} (dB)
1 August 2019	*	52
2 August 2019	54	53
3 August 2019	56	51
4 August 2019	54	52
5 August 2019	56	55
6 August 2019	55	51
Average	55	52

* Measurement not made over full period due to monitoring start and end time.

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Date	Daytime (07:00 – 23:00)	Night (23:00 – 07:00)
	L _{A90,15min} (dB)	L _{A90,15min} (dB)
1 August 2019	53*	50
2 August 2019	51	50
3 August 2019	50	50
4 August 2019	51	51
5 August 2019	52	50
6 August 2019	51	50
7 August 2019	51*	*

Table 2 Minimum background sound levels measured during the unattended survey

* Measurement not made over full period due to monitoring start and end time.

The lowest background sound levels measured during the survey were $L_{A90,15min}$ 50 dB during the daytime and $L_{A90,15min}$ 50 dB at night.

In line with BS 4142:2014, representative background sound levels have been determined using statistical analysis of the continuous measurements.

Daytime and night time statistical analysis of representative values for the site are given in Figure 3 and Figure 4.



Figure 3 Statistical analysis showing measured background noise levels at location L (07:00-23:00)

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Figure 4 Statistical analysis showing measured background noise levels at location L (23:00-07:00)

From this analysis the representative background sound levels measured during the survey were $L_{A90,15min}$ 53 dB during the daytime and $L_{A90,15min}$ 51 dB at night.

6 Building services noise egress limits

6.1 Standard guidance

BS 4142:2014 *Methods for rating and assessing industrial and commercial sound* provides a method for assessing noise from items such as building services plant against the existing background sound levels at nearby noise sensitive premises.

BS 4142 suggests that if the noise level is 10 dB or more higher than the existing background sound level, it is likely to be an indication of a significant adverse impact. If the level is 5 dB above the existing background sound level, it is likely to be an indication of an adverse impact. If the level does not exceed the background level, it is an indication of having a low impact.

If the noise contains 'attention catching features' such as tones, bangs etc, a penalty, based on the type and impact of those features, is applied.

6.2 Local Authority criteria

The London Borough of Camden's general policy on the control of building services plant is contained within Development Policy 28. The relevant extract from DP28 is included below.

'A relevant standard or guidance document should be referenced when determining values for LOAEL and SOAEL for non-anonymous noise. Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15 dB if tonal components are present) should be considered as the design criterion.'

6.3 Basic limits

Based on the above criteria and the measurement results, the cumulative noise level from the operation of all new plant should not exceed the limits set out in Table 3.

The limits apply at 1 m from the worst affected windows of the nearest noise sensitive premises and are presented as facade levels. In this case these limits would apply to all building facades within the courtyard.

Table 3 Plant noise limits at 1 m from the nearest noise sensitive premises

Time of day	Maximum sound pressure level at 1 m from noise sensitive premises, <i>L</i> _{Aeq,15min} (dB)	
Daytime (07:00-23:00)	43	
Night-time (23:00-07:00)	41	

The limits set out in Table 3 do not include any results with attention catching features associated. If the building services plant contain attention catching features then the limits would need to be 5 dB lower than those stated.

6.4 Assessment

All building services plant will be designed to achieve the noise limits set out above, including any corrections for attention catching features. At this stage, no information is available in relation to the proposed plant. This will need to be assessed as the design progresses.

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7 Conclusion

The representative background sound levels from the noise survey were $L_{A90,15min}$ 53 dB during the day, and $L_{A90,15min}$ 51 dB during the night.

Based on the requirements of the Local Authority, the relevant plant noise limits at the worst affected existing noise sensitive premises are L_{Aeq} 43 dB during the day, and L_{Aeq} 41 dB during the night.

These limits are cumulative, and apply with all plant operating under normal conditions. If plant items contain tonal or attention catching features, the limits will be more stringent than those set out above. If plant items contain tonal or attention catching features, then the plant noise limits will need to be 5 dB lower than those set out.

Appendix A

Survey details

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Equipment

The unattended and attended noise measurements were taken using a NL-52 sound level meter

Calibration details for the equipment used during the survey are provided in Table A1.

Table A1 Equipment calibration data

Equipment description	Type/serial number	Manufacturer	Calibration expiry	Calibration certification number
NL-52 F				
Sound level meter	NL- 52/00242702	Rion	30 Jan 21	TCRT19/1091
Microphone	UC-59/06185	Rion	30 Jan 21	TCRT19/1091
Pre-amp	NH-25/32730	Rion	30 Jan 21	TCRT19/1091
Calibrator	CAL200/4499	Larson Davis	30 Jan 21	TCRT19/1090

Calibration of the meters used for the measurements is traceable to national standards. Calibration certificates for the sound level meter used in this survey is available upon request.

Calibration checks were carried out on the meters and their measurement chains at the beginning and end of the survey. No significant calibration deviation occurred.

Noise indices

Noise indices recorded included the following:

- *L*_{Aeq,7} The A-weighted equivalent continuous sound pressure level over a period of time, T.
- $L_{AFmax,T}$ The A-weighted maximum sound pressure level that occurred during a given period, T, with a fast time weighting.
- $L_{ASmax,T}$ The A-weighted maximum sound pressure level that occurred during a given period, T, with a slow time weighting.
- $L_{A90,T}$ The A-weighted sound pressure level exceeded for 90% of the measurement period. Indicative of the background sound level.

Sound pressure level measurements are normally taken with an A-weighting (denoted by a subscript 'A', eg L_{A90}) to approximate the frequency response of the human ear.

A more detailed explanation of these quantities can be found in BS7445: Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures.*

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Weather conditions

During the attended noise measurements, the weather was generally clear however some rain occurred. Wind speeds were measured at each position and varied between 2.2 m/s and 3.1 m/s.

During the unattended noise measurements, weather reports for the area indicated that temperatures varied between 16-17°C at night and 17-28°C during the day, and the wind speed was less than 8 m/s.

These weather conditions are considered suitable for obtaining representative measurements.

Appendix B

Results of unattended measurements at Location L

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(db) level grusser pressure level (db)

cpmg

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