REPORT ON THE

ENGINEERING SERVICES FOR THE

REDEVELOPMENT AND EXTENSION

OF THE

LODGE,

AT

UNIVERSITY COLLEGE SCHOOL,

FROGNAL, LONDON.

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1.0 INTRODUCTION

It is proposed to refurbish the existing Caretaker's Lodge and provide it with an extension.

The Lodge was formerly used as residential accommodation for the Caretaker and the new use for the Lodge and extension will be as Office accommodation for support staff at the school.

The Lodge is a Grade 2 listed building and much work has been undertaken by the Architect to deliver a design for the extension that is sympathetic with the adjoining existing historic building.

It is intended to bring the existing Lodge up to current standards as far as reasonably possible without detriment to the buildings historic value.

The existing Buildings fabric does not attain the thermal requirements of new buildings and it is not intended to bring the building fabric up to current day standards. It is considered that a high degree of loft insulation together with secondary glazed windows will give a better thermal performance and retain the buildings historic features.

The extension will benefit from a very good level of thermal performance and this is contained in the Energy Statement within this report.

It is intended to comply with Camden's Sustainability and policies for renewable energy.

2.0 MECHANICAL SERVICES INSTALLATIONS

2.1. PROPOSED DESIGN CRITERIA

2.1.1. Design Temperature

External Conditions

The internal conditions indicated below shall be maintained when following external ambient conditions prevail:

Winter : -4ºC dry bulb
Summer : 30ºC dry bulb, 21ºC wet bulb

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Internal Conditions

Unless otherwise stated, all internal design temperatures will be maintained within the range ± 1.5ºC of the figure stated.

	Winter	Summer
Offices	21ºC	Ambient (No control)
Meeting Rooms	21ºC	Ambient (No control)
Entrance Area	21ºC	Ambient (No control)
Stair/Lobby	18ºC	Ambient (No control)
Hall/Corridors	18ºC	Ambient (No control)
Stores	10ºC	Ambient (No control)
Toilet, Disabled	18ºC	Ambient (No control)
Plant Areas	Frost Protection	Ambient (No control)

2.1.2 Ventilation

This shall be provided in accordance with Building Regulations.

Toilets. 8 air changes per hour intermittent

Plant Areas In accordance with Gas Authority, HSE and COSHH Regulations

2.1.3. Noise Criteria

External noise level

To environmental Health Office Standards.

This equates to providing 5 dB below the current appertaining noise level

Internal noise levels

Offices	NR35
Meeting Rooms	NR35
Entrance Area	NR40
Stair/Lobby	NR40
Hall/Corridors	NR40
Stores	NR45
Toilet	NR45
Plant Areas	in accordance with HSE recommendations

2.2. PROPOSED MECHANICAL SERVICES DESCRIPTIONS

2.2.1 Incoming Gas Services.

The existing gas service rises out of the ground near the existing kitchen and serves a small external wall mounted meter housing outside the existing kitchen.

This service shall be stripped out and a new service shall be run to the new plantroom to serve the new meter.

A new gas service shall be run to serve the new boiler provision.

2.2.2 Incoming Water Services.

The existing mains service rises out of the ground near the existing kitchen and runs to serve the kitchen and loft tank. From the loft tank the existing tank water service runs to serve the hot water storage tank and various fittings throughout the Lodge.

There are no plans to upgrade this service only strip out the existing service back to the entry point to the Lodge and run a new service to serve the new toilets and new Prep/kitchen/tea point facilities.

2.2.3 Heating.

The existing heating plant and pipework shall be stripped out in its entirety.

The Energy Statement enclosed with this report details the use of Photovoltaic panels along with a gas fired boiler system to reduce the Development's level of carbon emissions and to meet the requirements of London Borough of Camden CPG3 Sustainability Guide.

A new low pressure heating system is proposed utilising gas fired boiler plant. The new boiler flue shall discharge its flue gases on the east side of the building. The noise from the boiler flue shall be sufficiently low to meet with the Local Authority's noise requirements.

Heat shall be generated by the gas fired boiler plant into a pumped heating distribution system which shall convey heat to the heat emitters located around the development. Underfloor heating shall be considered for some of the rooms.

Thermostatic controls shall be provided to add to the heating efficiency throughout the development.

2.2.4 Domestic Water Service.

The existing domestic water plant and pipework shall be stripped out in its entirety.

New domestic water pipework shall be run to the various fittings throughout the building mainly the prep/kitchen/tea point and the W.C.

Hot water shall be provided by local electric water heaters.

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2.2.5 Ventilation Installations

The existing ventilation plant shall be stripped out in its entirety.

Ventilation shall be generally, afforded to the building by natural means, that is by opening windows.

The ventilation installations shall be provided in full accordance with the Building Regulations.

Individual intermittent extract fan systems shall be provided to the toilets. The systems shall comprise a fan to discharge the vitiated air to atmosphere.

An Individual intermittent extract fan system shall be provided to the prep/kitchen/tea point. The system shall comprise a fan and ductwork if necessary to discharge the extracted air to atmosphere.

Plantrooms shall be locally ventilated to suit regulations.

2.2.6 Above Ground Drainage Installations

The existing above ground drainage pipework shall be stripped out in its entirety

All new above-ground drainage services shall be provided in accordance with BS 5572: 1994 and the relevant sections of the Building Regulations and any Local Authority requirements.

A modified single stack sanitary pipework system shall be employed conveying all waste from the new sanitary fittings to the below ground foul drainage system.

Upon completion of the new installations the above ground drainage services shall be pressure tested.

The entire installation shall be designed in accordance with BS 8301 to provide a fully maintainable system of foul drainage.

3.2. PROPOSED ELECTRICAL SERVICES DESCRIPTIONS

3.2.1 Main Distribution Services

The existing single phase incoming service is not sufficient for the new building and a new three phase 70KVA service shall be provided sourced from the main school electricity distribution network.

All existing electrical distribution in the building shall be stripped out to provide a new service throughout.

New Distribution Boards shall be Eaton-MEM Memshield 3 type with a minimum of 25% spare ways.

3.2.3. Lighting Installations

New Lighting Installations shall be provided throughout.

Luminaires shall either be recessed or Surface mounted depending on the ceiling types.

All new Luminaires shall be LED types giving optimum energy efficiency & longevity between lamp changes and a minimum of 65 lumens/watt to meet the Building Regulations.

Luminaires shall have neutral white 4000K lamps.

All luminaires shall have high frequency ballasts.

All lighting Circuits shall be protected by RCBO devices for safety.

Lighting shall be controlled automatically for optimum energy efficiency by applicable application of Presence / Absence automatic detection, automatic daylight compensating dimming, photocell control and late night supply isolation.

Emergency lighting shall be provided throughout in accordance with BS5266.

External lighting shall be provided, mounted on the building to provide a safe route around the immediate walkways in the building perimeter.

Lighting shall have no more than 2% uplighting component to reduce glare.

As applicable external lighting shall be controlled by time clock, presence and photocell to automatically switch on the lights at dusk and where applicable presence and off at 11pm, and switch them on at 7am and off when sufficient daylight is available.

All external lights shall have an efficacy greater than 65 lumens per watt.

3.2.4. Small Power Installations

Small power sockets and fused connection units (spurs) shall be provided throughout as required.

Where possible all small power installations shall be flush within the building fabric.

All supplies to small power outlets shall be protected by RCBO devices with the exception of data hubs, security and life safety equipment.

3.2.5. Fire Alarm Installation

The existing Fire Alarm installation is a site wide analogue addressable system by ADT comprising a series of networked panels interconnect to form a single system.

A new single loop analogue addressable ADT panel shall be provided in the building linked into the site network.

ADT will be employed to supply the equipment & commission the new works.

3.2.6. Data Installations

A new data hub shall be provided in the building, linked to the existing site data network.

From this hub structured cabling points shall be run to various points in the offices and meeting rooms.

3.2.8 Security Systems

There is an existing intruder alarm system operated by ADT covering the entire site.

A new system shall be provided in the lodge, with setting keypad, linked into the site-wide distribution system.

No existing CCTV provisions are present and none shall be provided.

No fob operated door access systems shall be provided.

4.0 ENERGY STATEMENT

The Energy Statement is provided as a separate Document.