



Design & Access Statement

Replacement of Existing Air Handling Unit

To

Carr Saunders Hall, Fitzrovia

On behalf of

London School of Economics

Houghton Street

London

WC2A 2AE

Prepared by: Rund Partnership Limited

14 Buckingham Street

London

WC2N 6DF

Prepared by: Tino Kavhuru

Checked by: Janet Connell

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Design & Access Statement

1.0 Introduction

This Design & Access Statement has been prepared by Rund Partnership Limited on behalf of London School of Economics (LSE) in support of a planning application at the Carr Saunders Hall for the removal of the existing air handling unit (AHU) and the water proofing enclosure that covers it and its replacement with a new AHU and associated ducting.

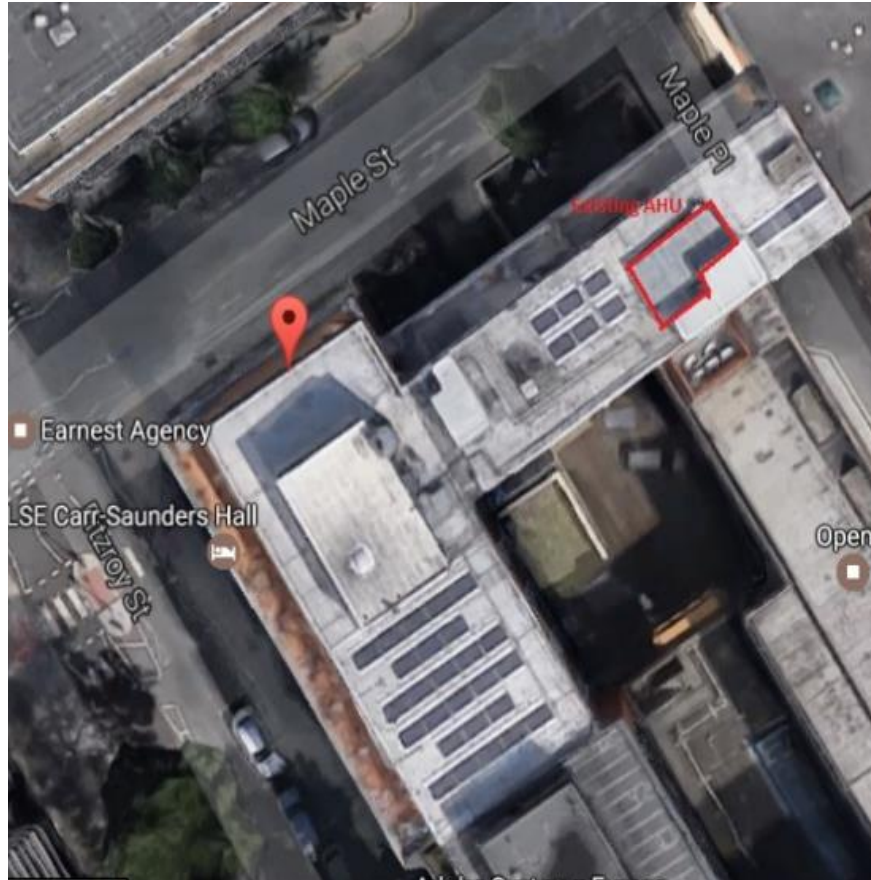
The showers and bathroom areas are currently supplied with fresh air from a roof-mounted air handling unit that is positioned within a poorly waterproofed and inaccessible structure. The internal surface area of extract ventilation ductwork is almost completely blocked with dust and lint from the wet areas. This has reduced the useful filter area considerably, which has increased resistance and reduced air flow rates. The condition of the extract ventilation ductwork is extremely poor and does not comply with current desirable ventilation hygiene standards.

The proposed replacement of the AHU will provide the bathroom and shower areas with considerably better air flow and make it comply with hygiene ventilation standards. The new external arrangement of the plant equipment will allow future maintenance to be completed safely and effectively.

The design team for this application include; **London School of Economics** (Client), **Rund Partnership Limited** (Building Surveyor and Employer’s Agent), **MKP Consultants** (Mechanical & Electrical Engineer).

Carr Saunders Hall Location Plan





Location of proposed works on Carr Saunders' roof.

2.0 Site Strategy

2.1 Site Description

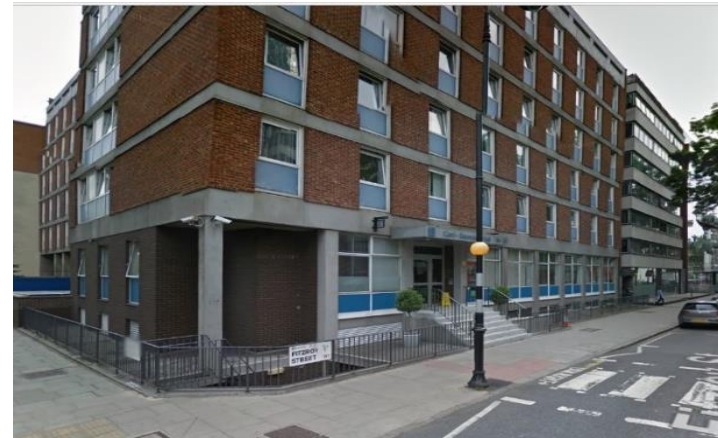
Carr Saunders Hall is located at 18-24 Fitzroy Street, London, W1T 4BN, just off Tottenham Court Road. It accommodates up to 160 students in:

- 10 twin rooms with shared bathrooms;
- 4 twin en-suite rooms;
- 132 single rooms.

The building is 'L' shaped in plan and comprises six floors, a flat roof and double glazed UPVc windows. The site is in close proximity to business offices, retail and residential accommodation.

The proposed works are located on the roof of the main north wing of the building, adjacent to Maple Street.

Main access to the building is via the reception which is located on the west elevation of the building on Fitzroy Street. The site also comprises a small car park and service yard area to the rear which can be accessed via Maple street.



View of Carr Saunders' main entrance from Fitzroy Street, west elevation.



View of Carr Saunders' service yard entrance off Maple Street, north elevation.

2.2 Site Context and Precedent

The Carr Saunders Hall site is set within a commercial area of Fitzrovia. Opposite Carr Saunders Hall on Maple street is a student accommodation building surrounded by similar buildings.



Image showing surrounding buildings.



Image showing surrounding buildings.

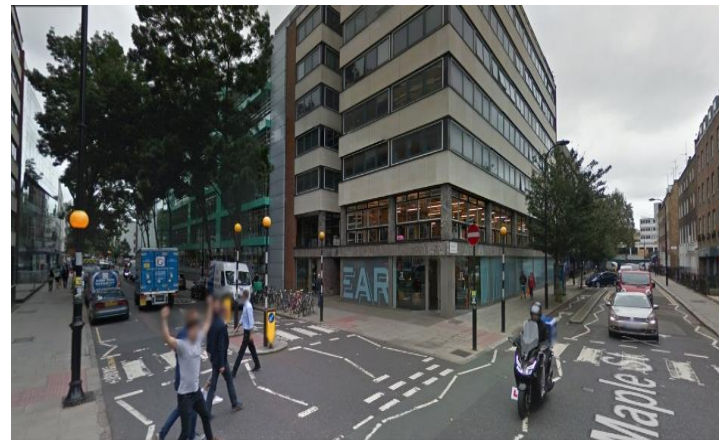


Image showing surrounding buildings.

2.3 The Works

The works to Carr Saunders Hall will improve the building's ventilation performance by replacing the existing Air Handling Unit, which is in poor condition, and reinstating a new and efficient air handling unit. In addition to this, the works will rectify ongoing water penetration issues through the poorly waterproofed area.

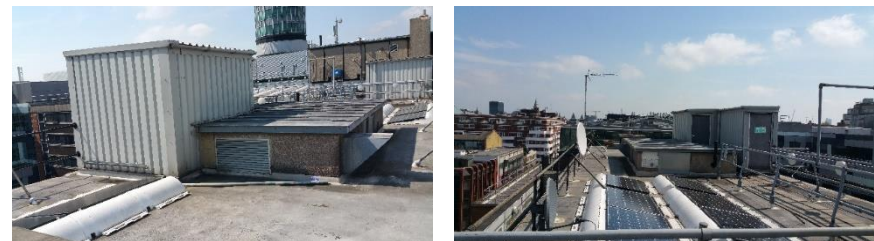
The existing waterproofing and plant are to be deconstructed. Following the removal of the existing waterproof structure and AHU the exposed area will be re-waterproofed using the Wecryl waterproof system from WestWood. We have recommended this system as it is a seamless, crack-bridging and joint-bridging system that is able to withstand mechanical stresses. It contains a highly flexible and fleece-reinforced waterproofing layer as well as abrasion-resistant system layers for vehicle and foot traffic. The waterproofing system's liquid application and high bonding strength on almost any substrate also allow breakthroughs and upstands to be integrated securely and seamlessly. These properties make the system a cost-effective solution for flat roof areas such as the Carr Saunders Hall particularly as it is highly efficient when used on refurbishment projects. The Wecryl system comes with a 25-year insurance-backed guarantee for the extent of the works in which their system covers.

The new unit will be a CAIRplus SX 096.064AVBV unit Manufactured by Denco Happel. It is 3680mm long, 2160mm wide and the total combined weight of the unit, roof support system, ductwork and pipework is 1450kg.

It will be installed incorporating the necessary filtration, heat exchangers and LTHW heater battery. The AHU will be insulated and be suitable for an external environment and as such an external lightweight enclosure will not be required.

The AHU will be positioned on the roof to ensure that sufficient maintenance access is provided to the supply and extract units in accordance with current Health and Safety requirements. The AHU will be supported on a "Roof -Pro type" system (as shown in cross section under Item 3.3 of this report), which will allow future resurfacing and maintenance works to be done to the roof with the new plant in-situ. The existing heating pipework will require rerouting and reinsulating with lagging suitable for an external environment. The pipework insulation will also require electric trace heating. Necessary changes to the BMS controls will need to be determined during the detailed design stage.

The unit will be lifted into position by crane. A tower crane specialist is currently being consulted to provide a comprehensive lift report to include method statement, risk assessment, Insurance, supervision, slinger-signaller, road closure, traffic management and diversion route signage.

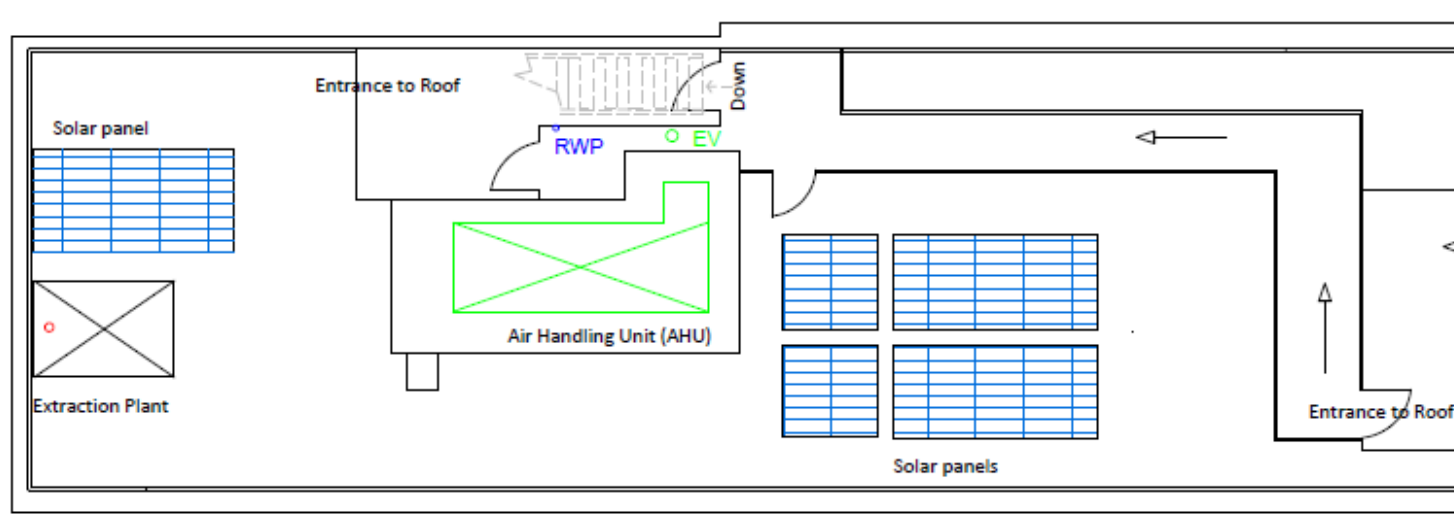


Images showing existing Carr Saunders' roof and AHU enclosure.

3.0 Layout

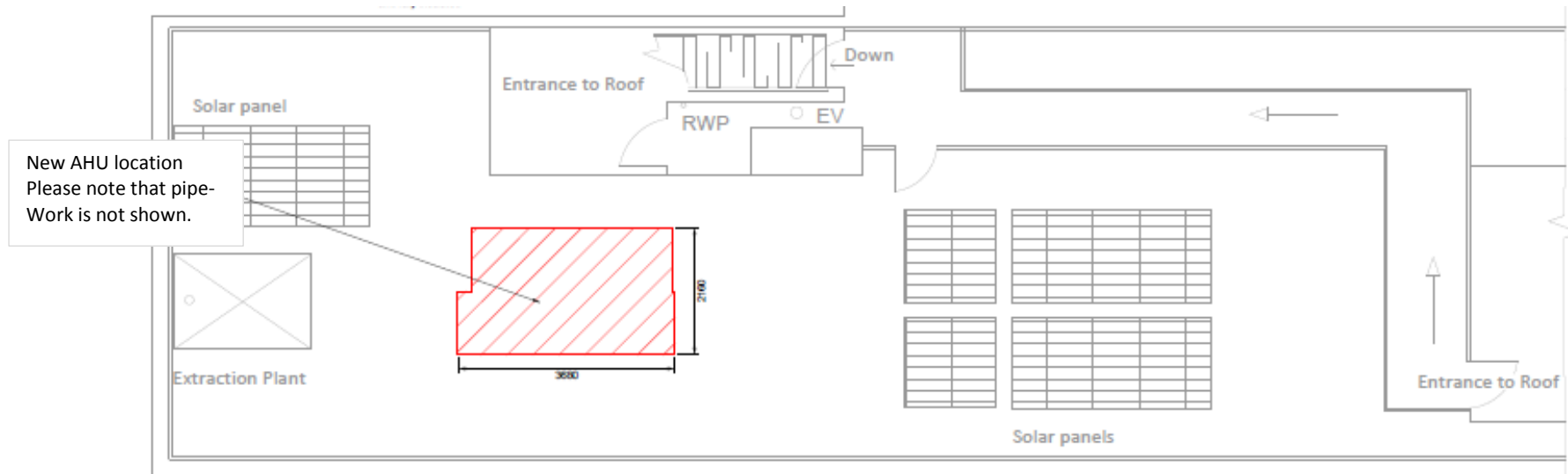
Please see attached sketch drawing for the proposed position of the new unit. The detail of the proposed unit will be progressed during the design stage as the project develops

3.1 Roof Plan - Existing

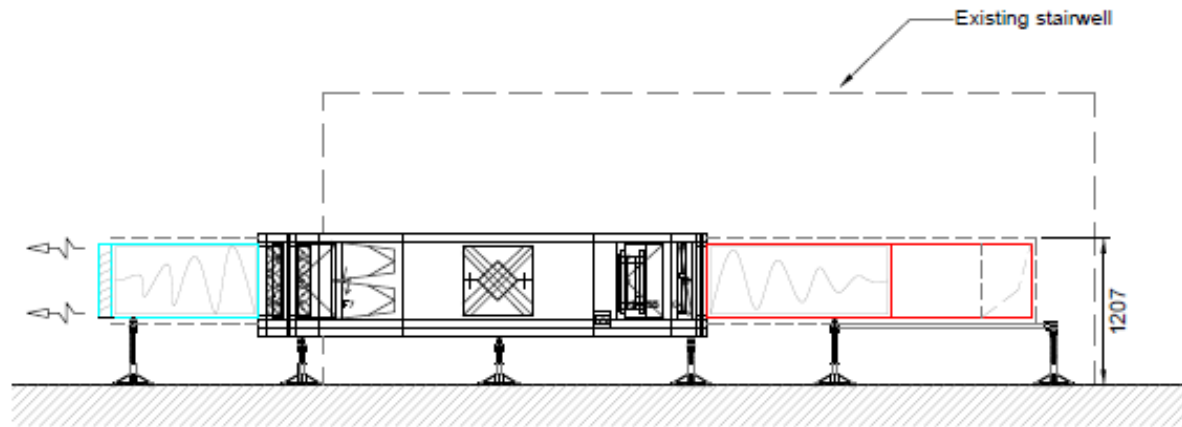


ROOF PLAN - Existing
1:100 @ A3

3.2 Roof Plan – Recommended Positioning of New AHU



3.3 Proposed AHU - Elevation



Elevation 'A'
Scale 1:50

4.0 Appearance

4.1 Building Materials

The proposed air handling unit is to be located on the roof of the existing 6-storey building and will not be visible from ground level. The new AHU will be manufactured by Denco Happel. The surface of the unit is galvanised polyester coated sheet metal, similar colour to the aluminium cladding used to cover the ducting.

4.2 Ductwork

The new external ducting will be insulated with rigid Phenolic foam sections. Aluminium, metal / galvanised cladding will also be added to contain the insulation to give it a rigid and protective finish. All internal ductwork will be retained and cleaned up.

4.3 Pipework

All copper galvanised pipework is to be trace heated for frost protection and will be thermally insulated with Rockwool type insulation of a minimum 40mm thickness.

4.4 Roofing material

The new roofing material covering the space of the AHU will be of similar colour to blend in with the rest of existing roof water proofing. A Wecryl waterproof system from WestWood will be used. It provides a seamless, crack-bridging and joint-bridging waterproofing that is able to withstand mechanical stresses.

5.0 Access

6.1 Crane

As mentioned previously, during the construction phase, a mobile crane will be required for a one-off lift of the new AHU onto the roof. The whole operation, which includes the set-up of the crane, removal of existing unit, hoisting of the new unit into position and the crane removal will take around 2 hours.

The site can be accessed either by Fitzroy Street or Maple Street. The proposal is to site the crane on Maple Street, subject to satisfactory site survey and feasibility of this proposal. These works will only be subject to weekend working hours.

6.2 Roof access

To gain roof access to the site there are 2nr lifts located on the ground floor main reception area, as well as 2 sets of fire escape stairs which both lead up to the roof. Workers to the site will be able to use the lifts and stairs as mentioned above, but will need to provide a method statement and programme of works to ensure the operations do not affect the running of the Carr Saunders Hall of residence.

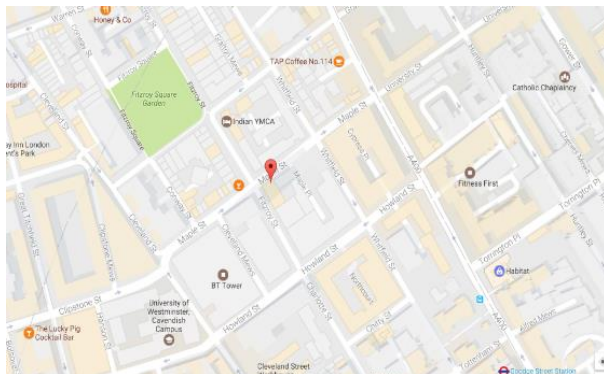




View of Maple Street, proposed location of crane lined in red.

6.3 Proposed access to the site

Parking around the site will be restricted as will site compound facilities. A full method statement and traffic management plan will need to be finalised prior to works commencing on site.



Location of Carr Saunders Hall and nearby streets.

7.0 Summary

In summary, following a review of the Local Authority guidance, the proposed replacement of the Air Handling Unit on top of Carr Saunders Hall will not only greatly benefit the residents of the building but will also reduce overall running costs, improve maintenance accessibility and improve the commercial value of the building.

In addition to this, the proposals do not have any detrimental effect on the general appearance of the building nor to the surrounding area.