

University College London

Langton Close House

Wren Street

Installation of Photovoltaics on the roof

Report on the Loadings applied to the roof structure.



Job No. 5196

May 2018

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Revision: A.

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1. Introduction

It is proposed to install photovoltaic panels on an area of flat roof at Langton Close House.

Wilde Carter Clack were requested by Ciaran Jebb of UCL Environmental Sustainability to advise if the existing roof structure can safely carry the loads from the proposed new PV panels.

A visit was undertaken by P. Mills accompanied by UCL on 9th May 2018 to carry out an external visual inspection of the roof together with an internal duct inspection to verify the construction of the roof slab.

Only a basic layout drawing of the building's First floor was available. The flat roof area is indicated in blue on the plan.

2. General

Langton Close House is a residential block for students and is a 7-storey framed building with a brick façade. This includes a basement level. The building has a framed structure and is in concrete encased steelwork.

The main roof is flat and of concrete construction which was verified by inspection of the soffit from a riser cupboard.

The main roof has been re-waterproofed in 2015.

There is a lower area of duo-pitched roof to the North west side of the building.

Solstice Energy have provided information showing the proposed location of the PV's and advised that the total weight of each unit is 18.41 kg/m².

3. Visual inspection

The area is divided into 2 sections and all at one level where it is proposed to locate the PV's. There are several raised areas which are lift over-runs and possible rooflights.

There are numerous soil vent pipes which extend above the roof.

The roof has been fairly recently been re-covered

4. Conclusion

The loads from the PV's are relatively light for a structure of this type and is therefore capable of carrying the additional load.

The minimum existing design imposed roof loading will be generally 1.5kN/m².

The PV loads equate to 0.19 kN/m² which is not considered to be significant on this type of structure together with a snow load of 0.6kN/m² totals 0.79kN/m².

5. Recommendations.

Clearly the PV's will need to be securely fixed to the roof but it is important that the existing roof waterproofing is not damaged.

Where there existing concrete upstands, possible rooflights, secondary framing will be required to support the PV's across the peripheral upstands. See last photograph

Soil vent pipes which penetrate the roof will need to be avoided or reduced in height.

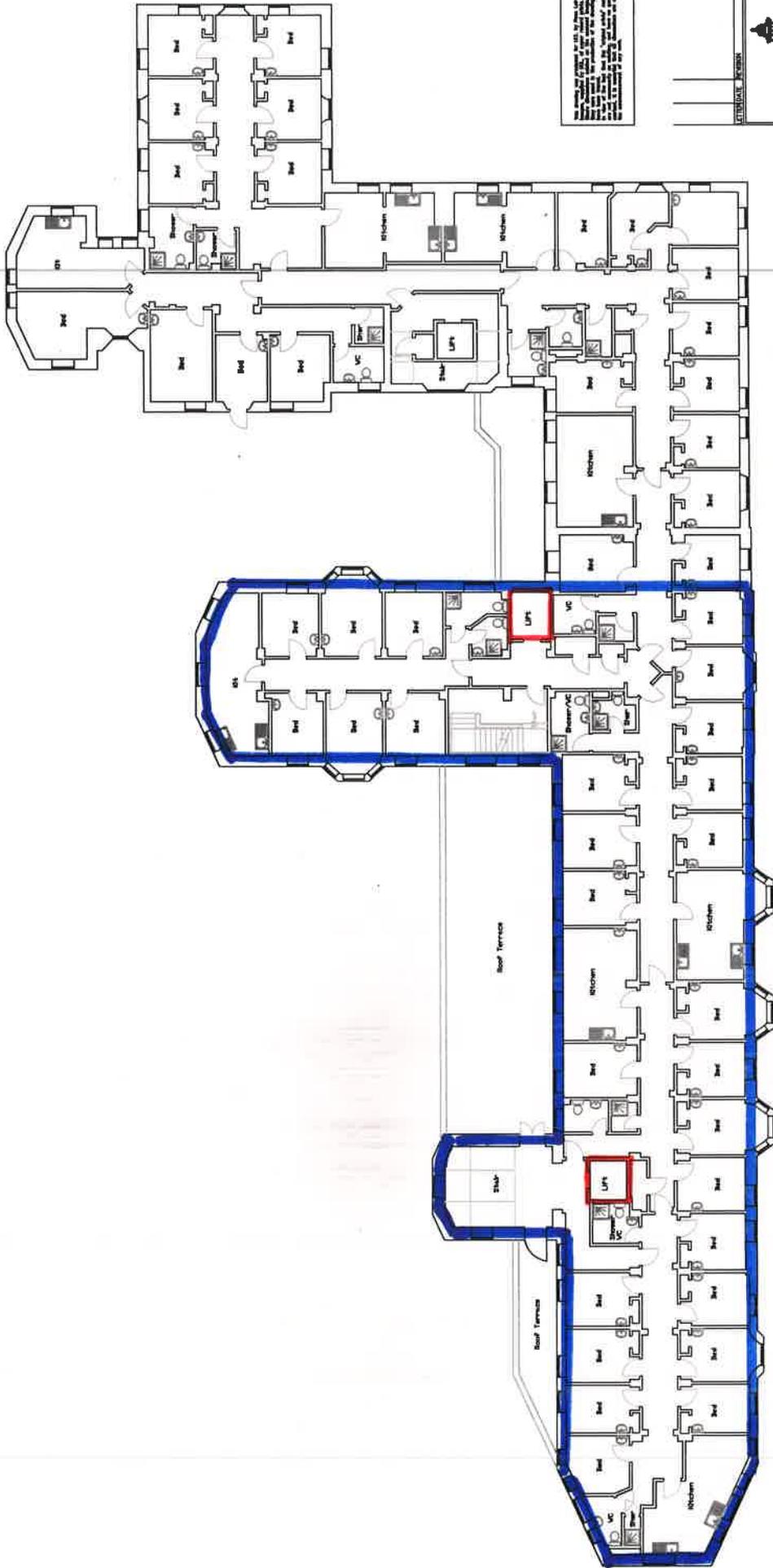
6. Scope of the Investigation.

We have to advise that the investigation work is limited to that set out in the report. We have not inspected those parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect. Latent defects may exist in the structure which can only be discovered by further more detailed investigation.

We have not investigated for asbestos or for the decay of woodwork, insect attack or toxic mould.

7. Photographs of roof area.





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ESTATES AND FACILITIES DIVISION 1000 PARK STREET, LONDON, W1C 7BT	
DATE: September 2003	SCALE: 1:100
DRAWN:	PROJECT:
Langton Close Wren St London WC1X 0ND	
First Floor Plan	
DRG. NO.	103 0634 73