Proposal: Refurbishment, Alteration and Upgrading works to 18 Greville Place

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North West / street elevation to Greville Place

South East / rear garden side elevation

Introduction

This design report has been prepared by Noel Wright Architects to support an application for planning and listed building consent at 18 Greville Place, London NW6 5JH. It should be read in conjunction with the other documentation submitted.

The Building

18 Greville Place dates from 1819 to 24 and formed part of a semi detached pair with number 20. The house is grade II listed and situated in the St John's Wood conservation area.

The property consists of the main house at ground, first and 2nd floor level and a self-contained basement flat.

Description of proposals:

- Reconstruction of the second floor 'mansard' wall and flat roof so as to achieve improved structural integrity combined with raised ceiling height, altered room planning with ensuite bathrooms, and associated new windows which will maintain access to the existing flat roof terrace
- Provide safety railings to the existing flat roof terrace
- Upgrading of the thermal efficiency of the building to include roof, wall, and floor insulation
- Refurbishment and repair works to the external building fabric to include renewal of roof coverings
- Refurbishment works including renewal of heating, plumbing and electrical services including the introduction of underfloor heating.
- Refit of bathrooms and kitchens
- Incorporate renewable energy provisions by means of solar PV set to flat roof top and the installation of an Air Source Heat Pump
- Damp proofing works and renewal of concrete floors at basement level.
- Alterations to below ground drainage to suit bathroom / WC proposals
- The replacement of missing driveway gates and the renewal of the pedestrian gate
- Alterations to hard landscape and exterior steps associated with access between ground, basement level, and the rear garden

Access and Accessibility

The proposals will make no effect on the accessibility qualities of the house or the flat.

Site Location Plan

THE MANSARD: EXISTING CONDITION

this mansard style roof top accommodation is in a poor and dilapidated condition and requires a complete overhaul. In particular the roof and the south-west facing mansard wall (timber framed with slate facing) are regarded as very unsatisfactory. The accommodation has no thermal insulation.

The mansard (SW) wall is timber framed with its outer face slate hung. Windows are timber single glazed sash type. The roof is boarded on top with an asphalt waterproof covering. All these aspects of the building fabric are in poor condition.

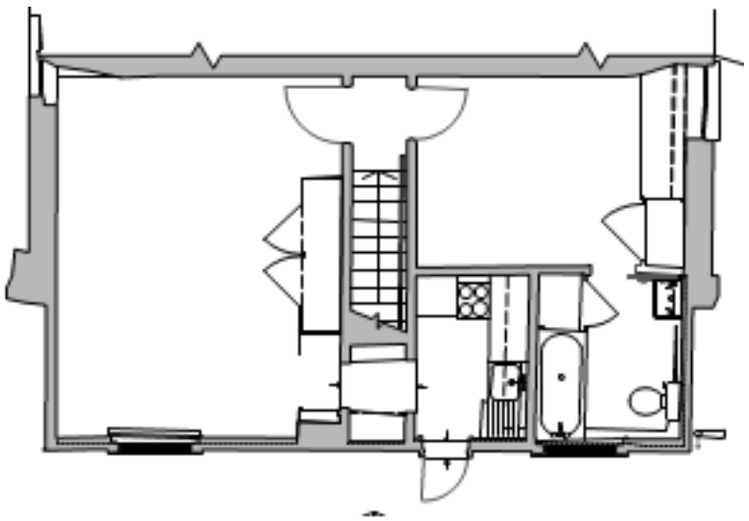
The flat roof joists are only 150 mm deep. This is below general structural expectations which would require a deeper joist for the same span. This modest joist size can be associated with excessive deflection and limited structural ability to accept improved insulation etc.

There is an unattractive tank housing set above the roof. This visually detracts from the building overall and is visible from the street.

The accommodation within is rendered poor by consequence of the low ceiling height. This ranges from 2080 as a maximum, sloping to 1920 adjacent to the eaves. This low ceiling height further limits the opportunity for adding thermal insulation. The ceilings are plasterboarded.

Floor condition includes a bad dip (possibly exacerbated by the loadings imposed by the roof top water tank) and examination of the joisting suggests that strengthening of this floor should be carried out where feasible in conjunction with the proposed ensuite bathroom partitioning.

The current plan layout is somewhat ad hoc and not suited to current requirements. The associated fenestration on the 'mansard' wall does not suit the proposed replanning, i.e. to ensuite bathrooms.



The second floor plan as existing

The mansard / second floor accommodation with the pitched roof and flat roof terrace area in the foreground. The large tank housing is central to the flat roof of the mansard.

THE MANSARD: PROPOSALS

The reconstruction of this top floor structure in a manner which suits the proposed adjusted room planning and provides improved ceiling height in conjunction with good environmental performance (i.e. insulation standards). It is considered that there is scope to do this in a manner consistent with the appearance of the building and its heritage qualities. The masonry walls facing street and garden, and incorporating the pediment elevational character shared with the adjoining house, will be retained.

The mansard (SW) elevation remade to suit this increased roof height and altered fenestration proposals. The timber salvaged from the previous flat roof structure is suitable for reuse in the framing of this mansard elevation.

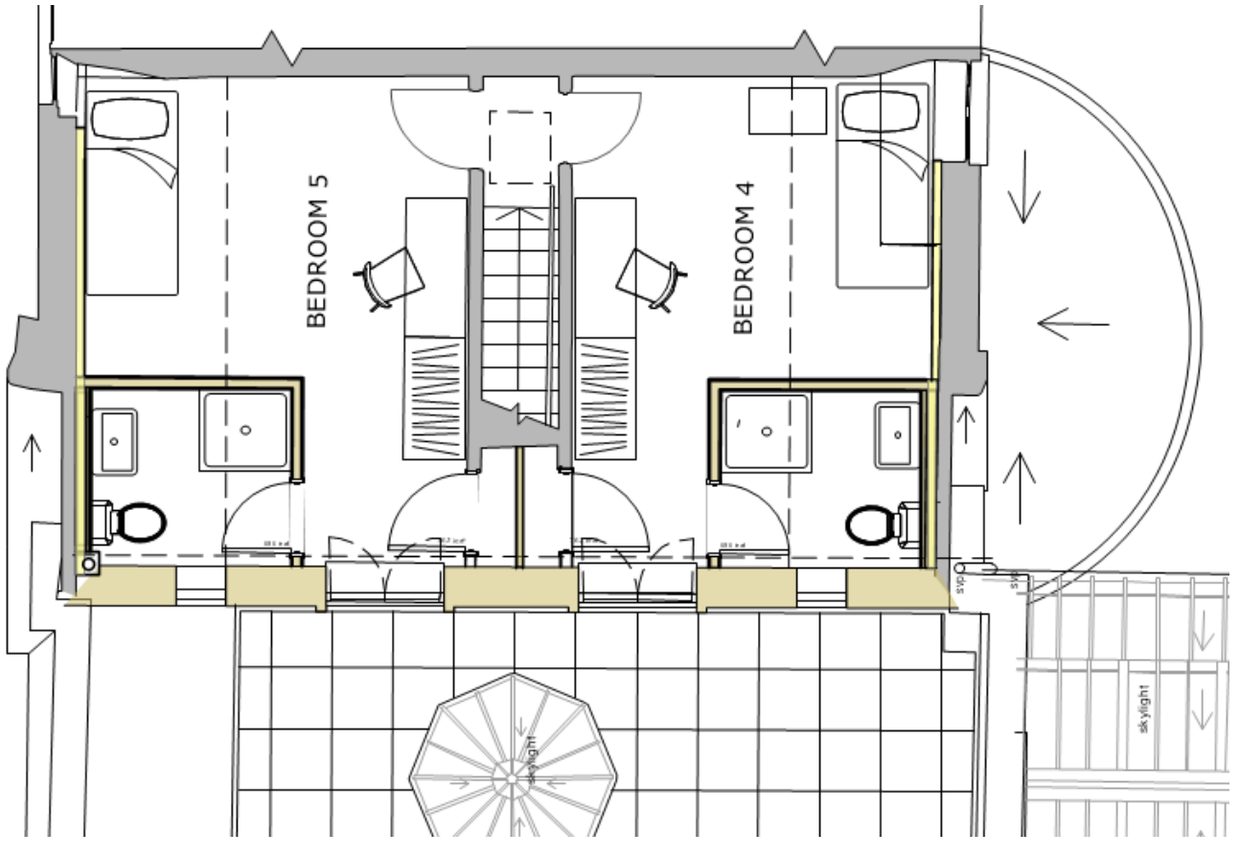
The roof top water tank to be dispensed with and the new plumbing services within the house will utilise a mains pressurised format that does not require a tank.

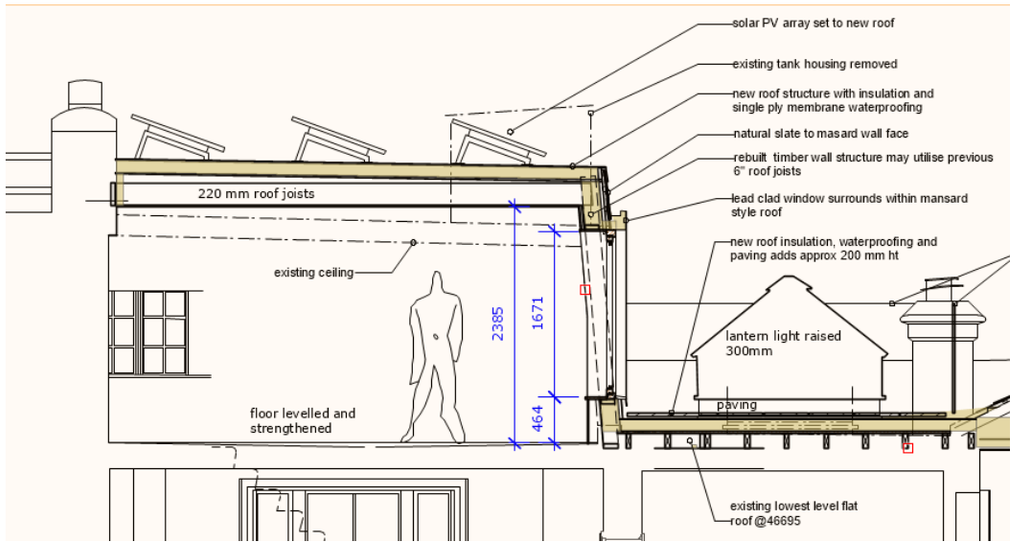
The flat roof remade with a deeper structural joist set at a raised height.

New windows suited to the altered plan.

Strengthening and levelling of the floors.

(note drawing 109 indicating the height limitations that have been respected in the design, based on compatibility with the 'paired' building adjacent- no.20 Greville Place)





Drawing extracts illustrate the proposed rebuilt mansard in plan, section, and elevation

SAFETY ASPECTS: EXISTING CONDITION

the main roof includes an accessible area of flat roof that is utilised for amenity purposes and reached from the 2nd floor accommodation.

The protection from falling from this flat roof comprises the parapet walls. These present a height of 550 / 750 (front elevation / rear elevation) above the current flat roof. This is regarded as inadequate, especially in respect of children.

A further hazard is the adjacent slated roof area, which is not physically separated. Persons may thus also potentially fall onto this – it is not designed to support people, who also may cause damage to the slating.

The proposed flat roof renewal (see environmental section of this report) will cause an increase in the level of the flat roof as a result of the introduction of thermal insulation. This will result in a diminished degree of protection provided by the parapet walls, the effective height reducing to approximately 450 / 550 (front elevation / rear elevation). This is clearly inadequate to provide a reasonable level of safety.

SAFETY ASPECTS: PROPOSALS

It is proposed to add a balustrade, which will enclose the accessible area of the flat roof on 3 sides. Building regulations set 1100 mm as an appropriate minimum height, with limitations on the size of apertures in the guarding.

In order to avoid a visual impact on the street elevation of the building, this side will be set back from that elevation.

The balustrade to be purpose made in galvanised steel, painted.

Rear / South East Elevation illustrating the impact of the safety balustrade

The current condition of the basement accommodation , including the plant room

THE BASEMENT: EXISTING CONDITION

this accommodation is affected by damp, resulting from its proximity to the surrounding ground levels and the lack of effective waterproof qualities. The accommodation is regarded as unsuitable for continued habitation in this damp state.

The basement accommodation has a simple plain character with few architectural features. This is befitting the traditional status of the accommodation at this level.

Past works have included replacement of floors which are relatively modern concrete. Records indicate that extensive underpinning has taken place beneath the external walls. The floors may have been replaced at the same time.

The floors and walls are not thermally insulated. The floors are of modern construction and do not contribute to heritage value.

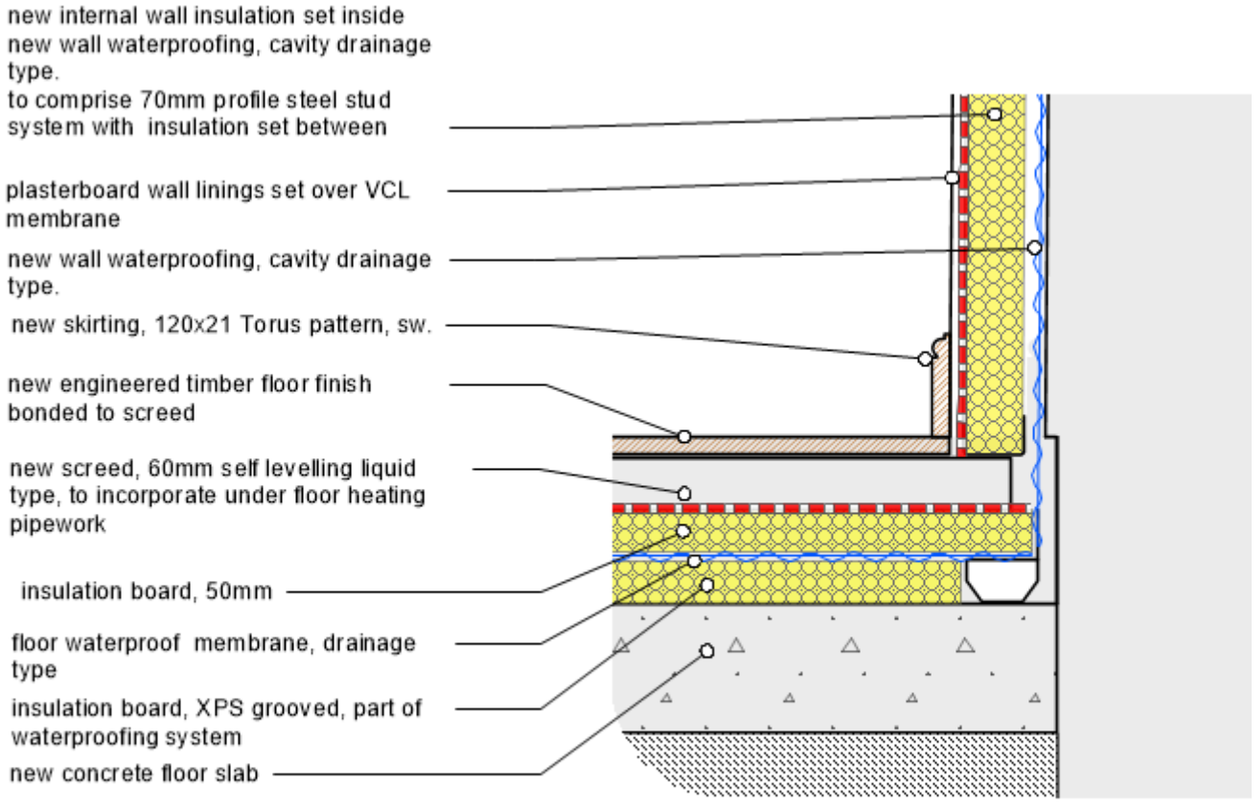
The quality of the spaces has been marred by past service installations and pipe boxings, all of which requires updating. (Pipe boxings have now been removed as a part of asbestos removal works)

The kitchen/rear main room is subdivided so as to form a plant room, currently containing the boiler and hot water cylinder. This plant room is considered unsatisfactory in relation to proposals for modern building services. The remainder of the room may be described as awkward as a result of the geometry of the intrusion. This room also includes several beams at ceiling level, which it is assumed to have been inserted so as to provide additional support to the floor above.

There is evidence of previous work, especially the removal of a partition wall subdividing the front main room (bedroom). This partition wall, which probably was not original, will have provided additional support to the floor above, as experienced in the kitchen adjacent.

The ceilings have been plasterboarded. Within the hallway a further lowered ceiling has been installed, the reason for this is not clear however this is likely to have been useful to disguise services and previous alteration work.

Above- example of the installation of a cavity drainage membrane to floor and walls.



BASEMENT EXTERNAL WALLS, AND NEW SOLID FLOORS WITH UNDERFLOOR HEATING AND ENGINEERED TIMBER FINISH

THE BASEMENT: PROPOSALS

A specialist company has been consulted in relation to the damp issues and has put forward a scheme of works to address this issue. (refer Appendix B- Wing Waterproofing). This scheme is for a cavity drainage type membrane system to the walls and floor, the scope of this covers all walls external, party wall and internal. This type of system avoids creating water pressure build up (unlike a 'tanking' membrane) and thus avoids creating altered and perhaps detrimental conditions in the existing structure.

The implementation of that approach will bring about the renewal of all will wall finishes. The existing internal / room doors will be reinstalled. Other woodwork – skirtings and architraves, will be renewed utilising a simple Torus pattern (as exists currently)

Floors. These are of no historic value and is prepared to break up and replace. This allows the current floor levels to be maintained which will suit the ceiling height and doors. Replacing the floors brings the opportunity to introduce thermal insulation and underfloor heating, as well as introduce drainage alterations.

Provide insulation to external walls, this being an opportunity compatible with the damp proofing works and in line with the environmental objectives described elsewhere in this document.

Basement Floors

The remaking of these floors will accommodate a deeper buildup which includes 100 mm of PU and XPS insulation. Above this a floating style screed will incorporate underfloor heating. This is an ideal formula here and is compatible with the heat pump based heating system with its lower operating temperatures than would apply to a boiler system.

A high standard of insulation will be achieved, compatible with current building regulations.

THE STEPS FROM BASEMENT UP TO GARDEN.

Rendered masonry with concrete steps. The render is flaking badly and there are signs of significant movement in the associated retaining wall aspects. The condition is poor. Whilst having a characterful format, symmetrical either side of the conservatory wing, these steps are steep and are limited by short goings and tall rises.

Proposals. The steps and patio-well to be rebuilt, to a format similar to the existing but with more generous steps plus a mid-level planting bed opposite the doors. This should provide a more attractive visual transition between the room inside, the patio-well area and the garden beyond.

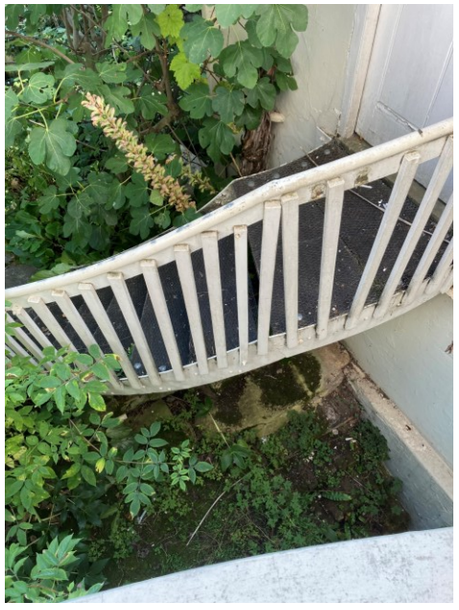
EXTERNAL GROUND IMMEDIATELY OUTSIDE THE BASEMENT KITCHEN.

Proposals: Create a lowered ground well area so as to overcome the issues associated with a high external ground level, ie damp. It is speculated that this sort of feature may have existed here in the past but has been infilled, perhaps at the time that underpinning work was carried out in this locality.

THE STEPS FROM CONSERVATORY TO GARDEN

Steel Stringers with timber treads, which have deteriorated. Not of heritage value. The whole stair conveys a sense of unwanted movement and deflection, and the stairs are considered to be steep. The safety aspect is questionable. The top landing area is very limited in size.

Proposals: to remake to a new format, in galvanised steel, painted.

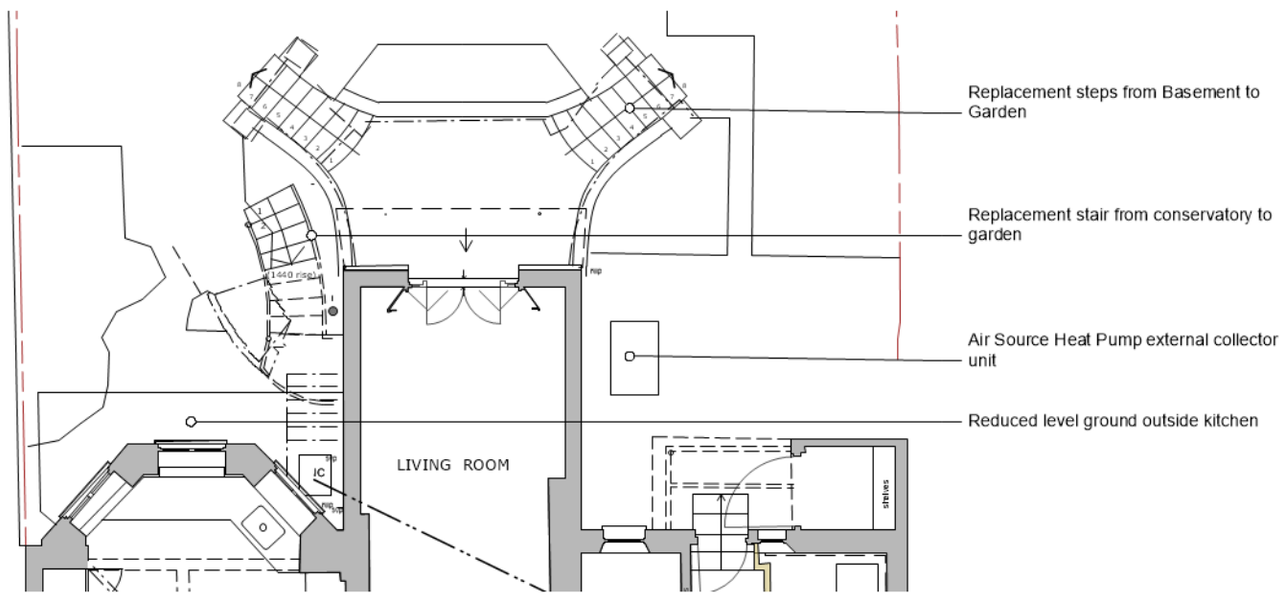


Above- the steps from the conservatory to the garden

Above- the steps from the basement to the garden

EXTERNAL UNIT FOR AIR SOURCE HEAT PUMP

Proposal: New addition- the building currently served by a gas boiler located wholly internally. The proposal for a heat pump is supported here under the Environmental section of this report. The location is of the associated external collector unit is illustrated at the rear of the building.



ENTRANCE STEPS TO FRONT DOOR MAIN ENTRANCE.

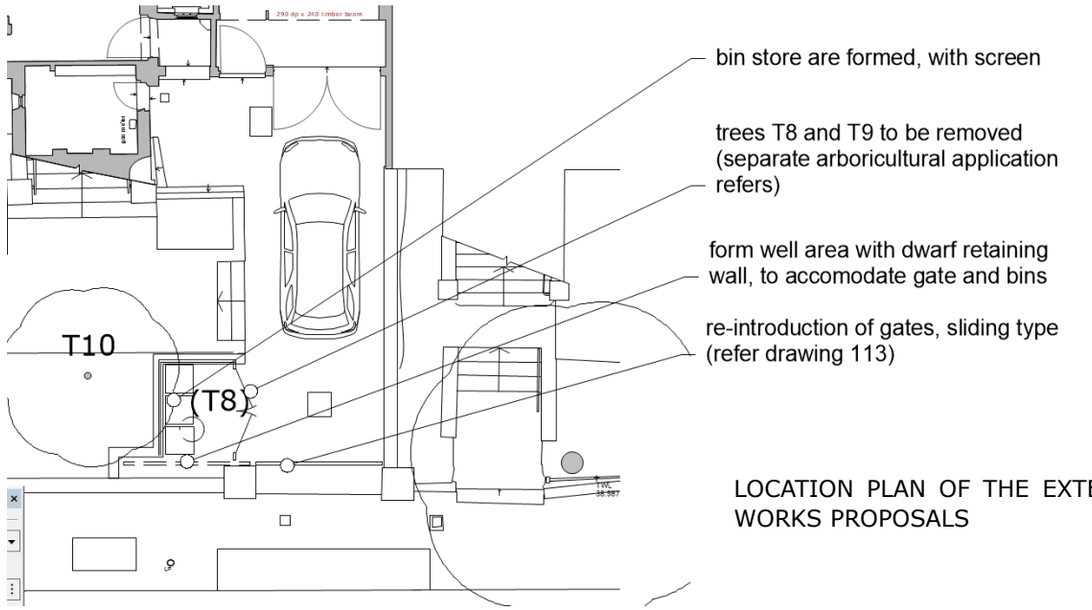
These have been reconstructed in the past in concrete. The overall appearance detracts from the building.

Proposal: Face the top surfaces in stone or tile

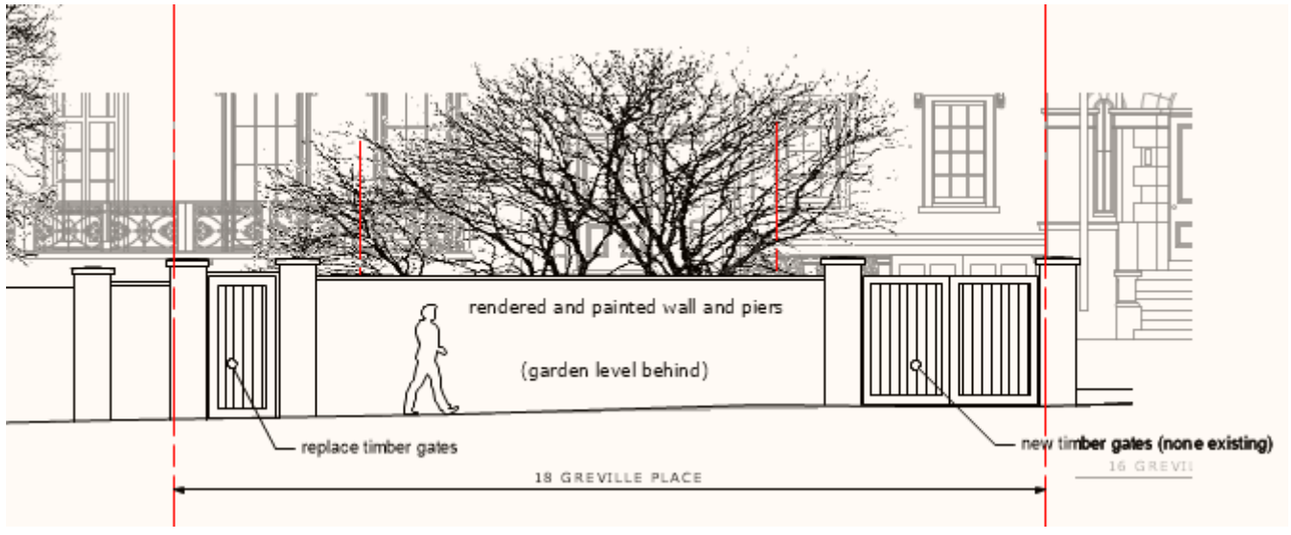
BIN STORE AND WASTE STORAGE.

No specific provision exists. The resulting situation of arbitrary wheelie bins and waste containers detracts from the building.

Proposal: Create a specific bin storage area, convenient to the building but with screening. The concurrent proposal for the removal of tree TR8 combined with the lowered ground area for the sliding gate, provides a good opportunity and location.



LOCATION PLAN OF THE EXTERNAL WORKS PROPOSALS



GATES ON BOUNDARY WALL TO GREVILLE PLACE / PUBLIC ROAD

Vehicular entrance: no gates exist, although the presence of hinge pins indicates that gates previously existed, in a conventional hinged format.

Proposal: Provide a new powered sliding gate having steel frame and timber facing. The choice of a sliding gate overcomes the obstacle created by conventional hinged gates when open and thus creates more convenience and space. This may be why the previous hinged gates have been dispensed with. To accommodate a sliding gate it is necessary to alter the ground levels behind the wall. This work becomes feasible with the concurrent proposal for the removal of tree T8.

Pedestrian gate, timber, condition deteriorated.

Proposal: A replacement, in timber, to the same pattern as the existing gate.

PLAN ADJUSTMENTS

The proposals include minor plan alterations considered to be improvements suiting modern requirements and compatible with preserving or enhancing the heritage qualities of the building.

SECOND FLOOR. There is evidence that this floor has previously been organised as an informal independent unit comprising bedroom, living room, bathroom and kitchenette. The proposal is simply for two bedrooms, each with an ensuite shower rooms , ie one for each bedroom. Refer to 'The Mansard' section of this report.

FIRST FLOOR. The proposed bath / shower room arrangements are aided by varying the arrangement of rooms doors. In the case of the family bathroom, this is to be achieved by boarding off one of the room doors rendering it hidden and unusable. In the case of the main bedroom and associated ensuite , it is proposed to form an alternative room door by utilisation of the adjacent built in cupboard and breaking through to the room beyond. (evidence exists of a former opening here). The existing room door to be boarded off on the bathroom side and rendered unusable. In both instances the alteration made to the existing room doors is to be regarded as reversible if so desired in the future, and the woodwork and doors concerned retained in situ.

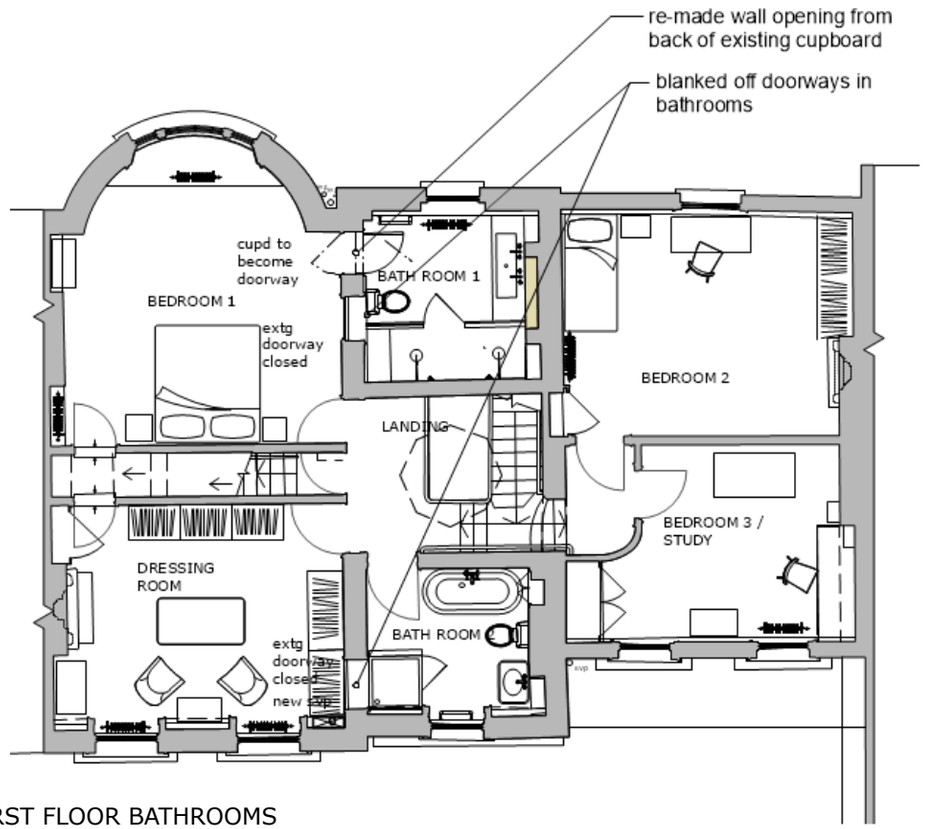
GROUND FLOOR. From the dining room, the existing door, currently boarded off on the room side, is be re-utilised and made effective again.

BASEMENT. Plant room relocated to the garage, with increased functionality and size

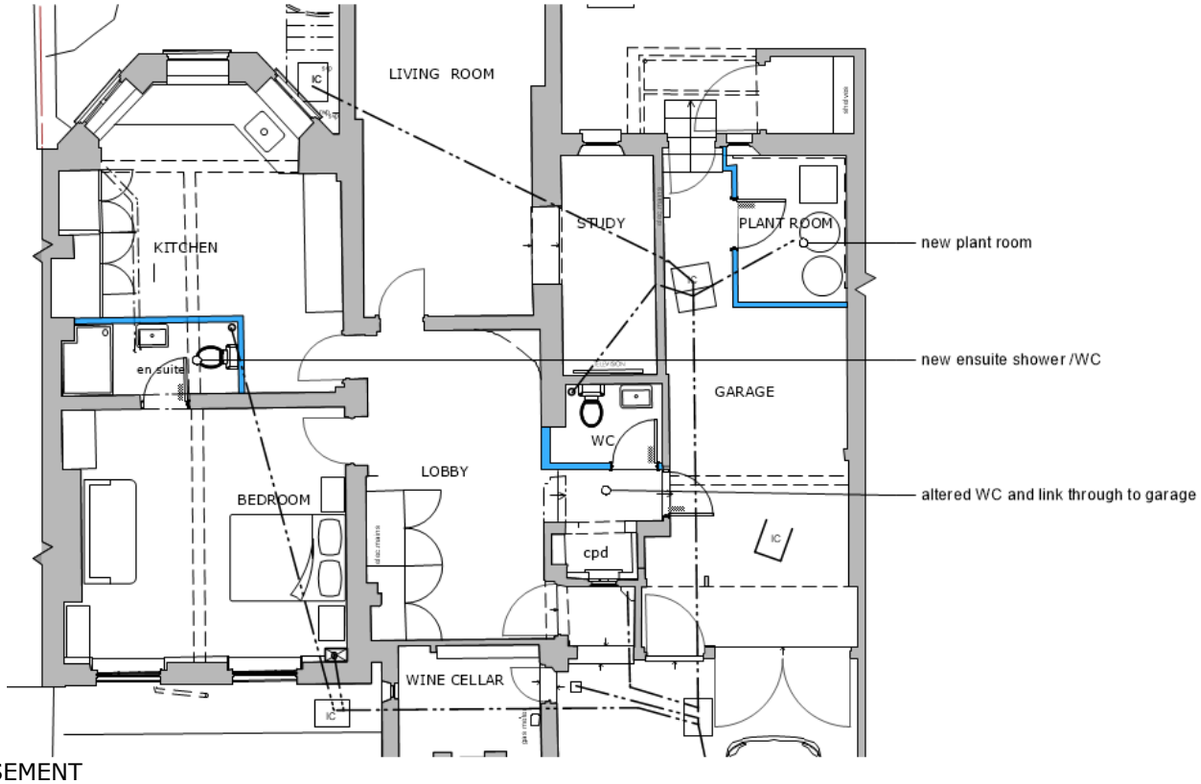
Open up previous door opening between front and rear rooms and introduce an ensuite shower-room

Create internal link passage to the garage

The first floor family bathroom (2) condition as existing



FIRST FLOOR BATHROOMS



BASEMENT

Noel Wright Architects Ltd

Title : PLANNING, DESIGN, AND ACCESS STATEMENT
Project : 18 Greville Place London NW6 5JH
For : T Munte and E Bashan
Date : Dec 2023

Proposed Adjustments to Internal Planning

ENVIORONMENTAL - BACKGROUND AND EXISTING CONDITION

the building presents an unimproved state. Walls, floor and roof are wholly uninsulated. Hall glazing is single glazed within traditional windows and doors. The windows have no draught stripping. It may reasonably be said that in its existing state this building will require a very large and inefficient degree of energy for heating if it is to be made comfortable.

The house has a heating system installed, with heat delivered from a gas boiler located in the basement to radiators. The overall impression is that this heating system does not provide sufficient output provision (radiators) to create adequate comfort conditions. Plumbing and heating installations generally possess a limited lifespan (e.g. 30 years) and this building is clearly due for a renewal of these services installations

FEASIBILITY STUDY

A specialist feasibility study (refer Appendix A) has been commissioned from MESH ENERGY, an independent energy and building services consultancy specialising in renewable energy options. The object of this feasibility study is to determine whether a low carbon heating/plumbing and building services approach is suitable for this building, thus equipping the building in a manner compatible with current drive to address climate change and national 'net zero' objectives.

The feasibility study (provided here as a separate document) utilises as methodology a dynamic thermal model of the building together with local climate data.

The study identifies that the key to achieving a low carbon approach at Greville Place comprises

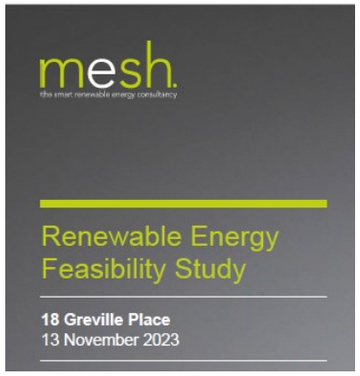
- improving the thermal qualities of the building, i.e. insulation
- utilisation of electricity as an energy source to harness renewable energy (i.e. via a heat pump) rather than a gas boiler.

The feasibility study puts forward the Air Source Heat Pump solution as a first choice recommendation, representing a saving of 11.3 tons of CO2 emitted to the atmosphere per year, by comparison to the gas boiler option. This comparison relates to a thermally improved (i.e. insulated) building.

By implication, it can be seen that the case for making significant improvement to the environmental qualities of the building is compelling.

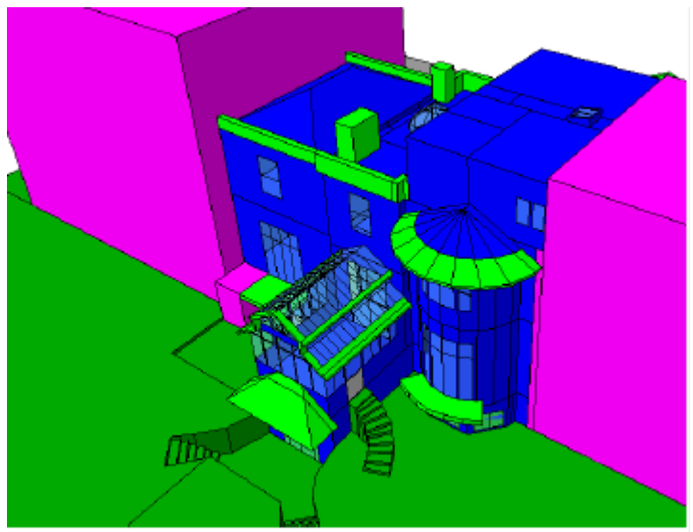
As is being widely experienced by others in the current drive to adopt heat pumps, an essential requirement for a suitable and successful heat pump installation is to make the building ready via (a) greater thermal efficiency, and (b) heat emitters (radiators, and underfloor heating) which can provide adequate output to rooms at the lower operating temperatures associated with the use of Heat Pumps. The MESH ENERGY study includes a detailed assessment of heat requirements to rooms and concludes that at Greville Place both radiators and underfloor heating will be required.

The following pages comprise a summary of the proposals made to achieve these environmental objectives and create comfortable living conditions at 18 Greville Place in a low carbon manner.



Extracts from the Feasibility Study prepared by Mesh Energy (refer Appendix A)

Technology	Feasible	Recommended
Gas	✓	✗
ASHP, 21.23kW	✓	✓
ASHP7kW /Gas 21.23kW Hybrid	✓	✗
Solar PV array 2.96kWp (8 x 370W)	✓	✓
Solar thermal	✓	✗
Under floor heating	✓	✓



IES dynamic thermal model of the property

RECONSTRUCTION OF THE TOP FLOOR MANSARD STRUCTURE

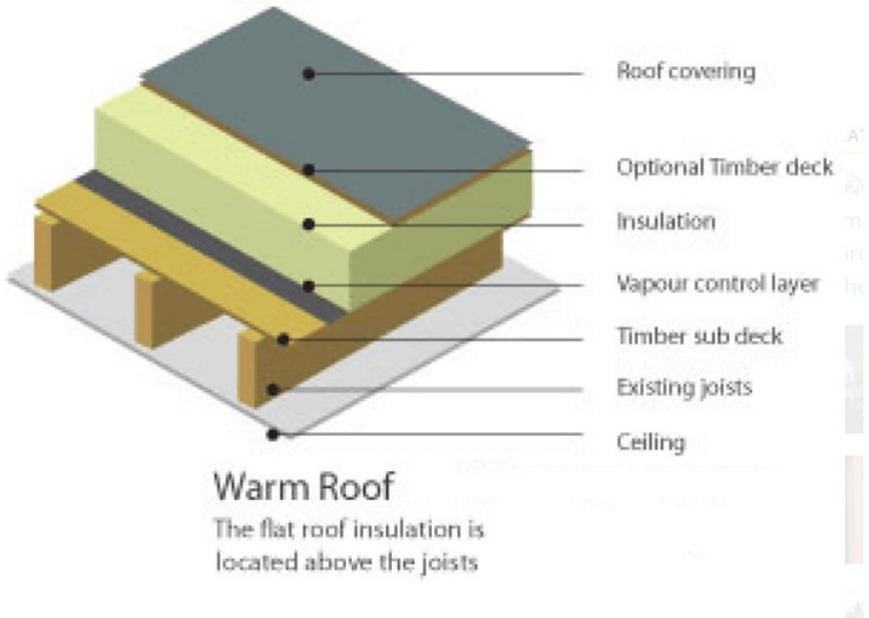
The reasoning behind the proposal for reconstruction of this part of the building is described in a separate part of this report.

This reconstruction provides the opportunity to form the outer (Southwest) mansard wall, the flat roof above, and the windows to the higher standards required by current building regulations.

The windows are to be double glazed with sealed unit glazing set in timber frames. These windows are visible only from the adjacent flat roof terrace area and do not affect the wider visibility of the building.

The existing flank walls to the mansard (i.e. facing Street and garden) are to be retained but to incorporate internal wall insulation as described here under 'External Walls'

the reconstruction of the mansard accommodation therefore is able to provide a good contribution to the overall environmental improvement of the building.



Example illustration of a Warm Roof construction make up for a flat roof

MAIN ROOF- PITCHED AND FLAT AREAS

These roofs are relatively straightforward to insulate well. The current roof coverings are at the end of their lives and require renewal so as to maintain water and weatherproof integrity, providing an ideal opportunity for upgrade.

For the pitched/ slated roof, loft style insulation needs to be incorporated. Re-slating, thus involving opening up the roof from above, creates greater opportunity to carry out this work effectively. A natural insulation such as sheep's wool provides a good quality choice, durable and compatible with the heritage qualities of the building. A high

standard of insulation will be achieved compatible with current building regulations .

For the flat roof areas (currently asphalted) the proposal is to affect a modern day 'warm roof' buildup above the existing roof joists. The roof will be finished with a single ply membrane (usually PVC based), with added paving where subject to pedestrian use. This is a formula often relied upon for quality and longevity. Creating a warm roof – rather than adding insulation between the roof joists – is regarded as a much more effective solution, in particular as it provides a reliable way to avoid condensation occurring within the insulation zone. However this also creates a deeper buildup above the joists – and thus a raised finished level due to the insulation (120 mm of PU foam type insulation material, or similar). This will be wholly concealed from view by the parapet walls. There are implications for adjacent areas, e.g. the door and window thresholds from the 2nd floor rooms- part of the works proposed for that area. Again, a high standard of insulation will be achieved.

A similar warm roof insulation solution is proposed for the adjacent rebuilt 'mansard' structure

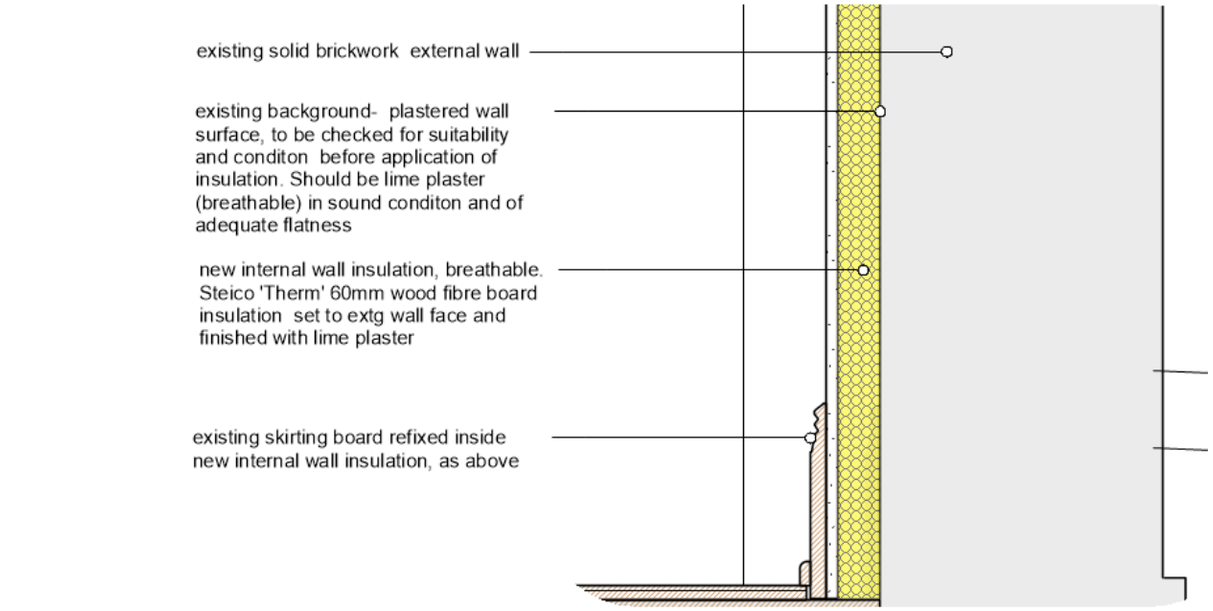
THE EXTERNAL WALLS

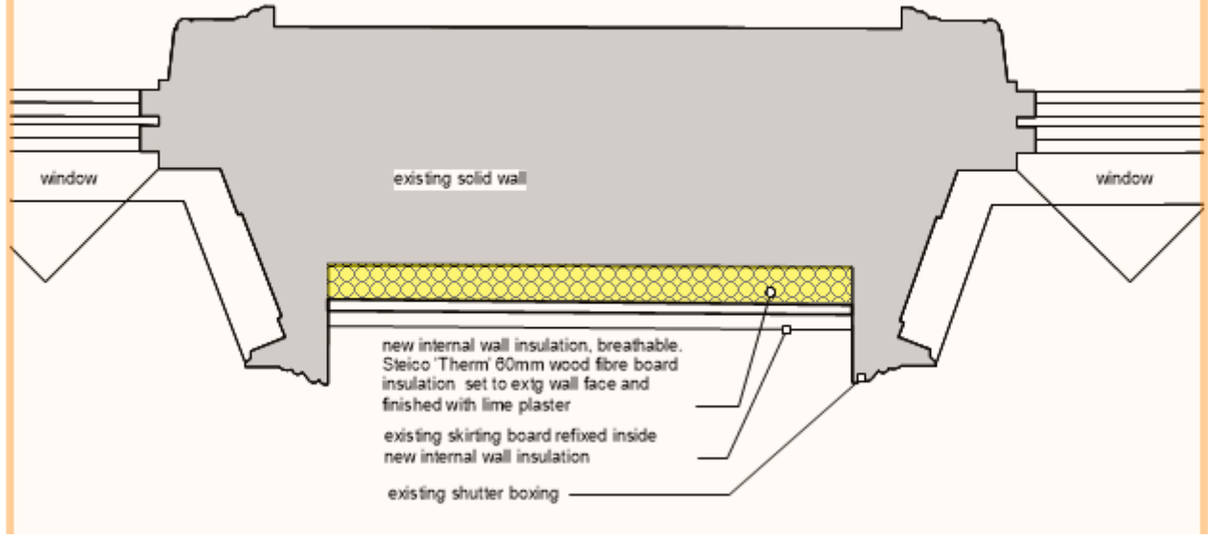
in common with most buildings of this era the existing external walls are of solid construction, in this case brickwork finished with stucco/render externally, and plastered internally. Most of these walls at Greville Place are a brick-and-a-half thick – around 350 mm plus render and plaster. This reduces to a single brick (around 225 mm) for bedrooms 3 and 4, indicative of their slightly later construction. The combination of this solid construction, and the large exposed area, results in the walls making a considerable contribution to the heat loss overall from the building. Selecting appropriate ways of improving thermal performance, taking account of both heritage qualities and building physics (e.g. moisture control) is often challenging.

Strategy

- apply insulation internally, i.e. on the room side of external walls.
- Except that this internal wall insulation will affect only partial coverage of the overall external wall area (roughly 60%) so avoiding the most problematic areas
- take advantage of the recess areas formed by the shutter boxings the principal rooms – these bays allow insulation to be introduced without negative efforts on the important architectural woodwork such as windows skirtings and shutter boxes, and make a significant difference to the available space within the room
- utilise breathable materials that allow moisture transfer through them thus maintain the overall qualities of the solid wall in terms of building physics. The proposed proposals generally adopt wood fibreboard as he insulation material, to receive a directly applied lime plaster internal finish
- Accept a proposal providing only a limited level of insulation (less than current building regulations). This helps avoid too much change to the temperature of the wall leading to altered conditions which, for example, give added support to increased moisture in the wall, potentially leading to the decay of embedded timbers such as joist ends.

These proposals, although limited, create a useful contribution to the overall thermal qualities of the building, aiding carbon reduction, internal comfort, as well as forming a part of an overall package of measures making the building suitable for the proposed low carbon heating system.





Extracts from drawings 114 and 115

WINDOWS AND GLAZING

At 18 Greville Place the windows provide an important aspect of the heritage qualities of the building. They are also responsible for a large component of the overall heat loss from the building. These windows are single glazed and without draught stripping.

In building conservation practice, this scenario is often difficult to greatly improve upon without unacceptable loss of character to the building. Secondary glazing provides one approach, however its application here is limited in many instances by the proximity of the shutter boxes, making it unsuitable. Doors are also problematic. Whilst it is able to maintain the external appearance of the building, generally it is to the detriment of the internal qualities, and makes the use of the windows for ventilation purposes inconvenient.

Alternatives: Thin sealed double glazing units such as 'Slimlite' have been promoted as a means to upgrade existing windows. Making reference to Historic England published advice 'Traditional Windows, the Care, Repair and Upgrading' (2014, revised 2017) the use of such glazing may still not be suited to the modest glazing rebates available, and in practice it has also has been shown to lead to a lack of character in many instances. The use of this type of double glazing has also offered a limited lifespan where the perimeter seal of the double glazed units is degraded following as a result of the limited protection offered by putty type setting methods into modestly sized window frame rebates. The result is 'fogged' windows.

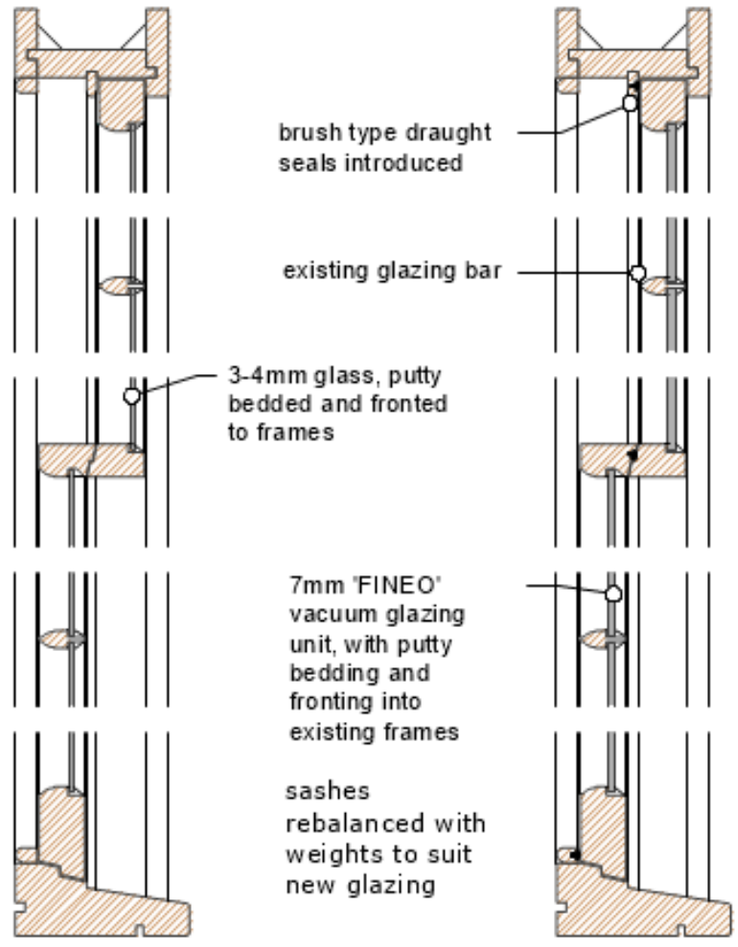
The proposal for 18 Greville Place is to make use of vacuum sealed glazing. With only a very small gap between two leaves of glass (less than a millimetre), but maintaining a vacuum sealed condition between, such glazing is capable of exceptional insulation qualities, said to be more comparable to modern triple glazing, but with better light transmission. Reflective qualities are also close to the appearance of single glazing. Good sound reduction qualities are an added benefit. Whilst the science of this is not new , it is only quite recently that such an approach has become a practical and more affordable option, with a Belgian company manufacturing the units under the trade name 'Fineo'. These glazing units are just 7.7 mm thick in their standard format, making them suitable for inclusion within existing window frames. The Fineo units have a form of glass fused seal to their perimeters and it is assumed that this is responsible for the much greater guarantee offered by comparison to conventional sealed double glazing units (20 years rather than 5 years).

Glass. A count on the windows at 18 Greville Place establishes that nearly all the windows are glazed with plain modern float glass. Just 9 panes of older glass were counted out of a total of 175 panes- 5%. Perhaps the building suffered glazing breakage as a result of a nearby war time bombing? Historic glass quality is therefore not an appreciable component of the heritage character of the building. The loss of the current glass, and its replacement with 'Fineo' will not therefore result in a loss of such character/

Given the merits of this availability of this reglazing approach, it has as therefore been adopted as a component of the proposals, offering a means to provide a significant contribution to the environmental improvement of the building, and making the building ready to accept a low carbon heating system. Much improved comfort conditions should be a further benefit.

The proposed extent of reglazing is illustrated by drawing 115.

As the conservatory is to remain an unheated space , it is not included in the reglazing proposal

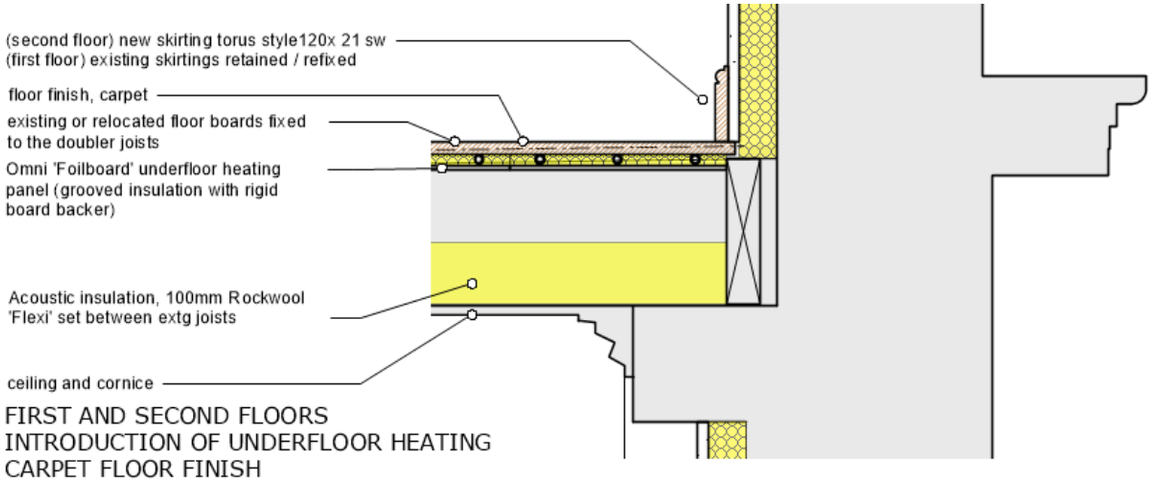


TYPICAL SASH WINDOW UPGRADE : SECTION

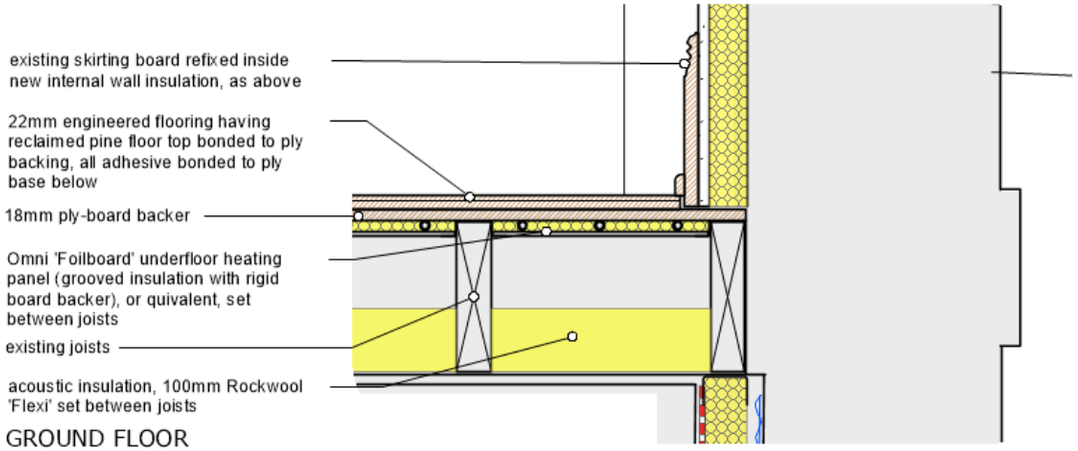
UPPER FLOORS

the inclusion of the floors within the Environmental section of this report relates to the need for the proposed low carbon heating system (heat pump) to be paired with a compatible means of providing the output needed in the rooms of the building. By means of the analysis within the feasibility study carried out by Mesh Energy, it is been demonstrated that there is a need for both underfloor heating and radiators in order to meet the heat demands in a manner compatible with the lower running temperature associated with a heat pump. Attempts within the study to meet the heat demand solely with cast-iron radiators proved impractical and led back to a conventional gas boiler solution instead.

There is added visual benefit in installing underfloor heating as the rooms will require much a reduced provision of radiators, which may be considered intrusive and detracting from the quality and functionality of the spaces.



FIRST AND SECOND FLOORS
INTRODUCTION OF UNDERFLOOR HEATING
CARPET FLOOR FINISH



GROUND FLOOR
INTRODUCTION OF UNDERFLOOR HEATING
ENGINEERED / RECLAIMED FLOOR FINISH

Example- FF bedroom 4, existing floor boards degraded by a application of levelling compounds, not suitable for refixing

Example- FF Dressing Room, existing floor boards with attractive qualities and suitable for refixing

UPPER FLOORS : PROPOSALS

The proposals include a mix of new floorboards (engineered type with reclaimed surface bonded to ply backing) at ground floor and refixed floor boards at the upper floors. The benefits from this approach are:

- Ground floor- a 'character' traditional floorboard finished appearance
- Upper floors; floor boards salvaged from the ground floor may replace the degraded floor boards (see illustration) and make up quantities due to damage and cutting