APPLICATION FOR LISTED BUILDING CONSENT 2023/2434

5, THE MOUNT SQUARE, LONDON NW3 6SY

DESIGN NOTE 2

12th October, 2023

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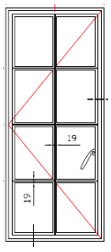
INTRODUCTION

1. This Design Note supports application 2023/2324 for the renewal of two mid-20th Century, bathroom windows set in the rear elevation of 5, The Mount Square, London NW3 6SY, a Grade II listed building.

2. The above application for listed building consent was submitted on 20th June, 2023 and supporting drawings were submitted on 5th July, 2023.

3. Both windows are side-hung, single-glazed steel casement windows with a multi-pane design employing glazing bars as shown opposite and it is proposed to replace them with double-glazed windows of the same design.



4. Both windows are in very poor condition, having broken panes of glass, corroded frames and external paint that has not been renewed for over 30 years. This poor level of repair results from the fact that they open onto a small, inaccessible, light well at the rear of the building, where external access cannot easily be achieved.

5. The key objectives of the application are as follows:

   5.1. to achieve maximum thermal insulation, as close as possible to the U value of **1.4** W/m²K as set out in the Part L Building Regulations (noting that the Regulations allow some latitude in the case of listed buildings)[1];

   5.2. to replace the existing windows with new windows whose design and appearance reflect the period of construction of the elevation in which they are set and does not detract from the significance of the building, its setting or the Hampstead Conservation Area;

   5.3. to employ light-weight metal designs whose visual impact, when viewed internally is appropriate for the small rooms they serve and does not detract from an appreciation of the building;

   5.4. to employ clear glass casement windows that can be opened fully after use (as is the case with the current windows) as the two bathrooms are very small and do not benefit from any form of mechanical ventilation;

   5.5. to minimise loss of light to the two bathrooms resulting from renewal, as the light level reaching both windows is very poor;

   5.6. to use windows that require exceptionally low maintenance, enabling all glass and components to be replaced from inside, given the significant problems with external access (described separately in this document); and

   5.7. to install windows with a design lifespan of at least 40 years.

[1] Part L Building Regulations 2021 (Conservation of Fuel and Power), table 4.2 and paragraph 0.8)

6. Between July and August 2023, Camden officers raised two concerns regarding the proposal and made some useful suggestions as to alternative design approaches that they felt were preferable.

7. The two issues raised by Camden's conservation officers related to the **proposed construction material** (aluminium in preference to steel) and the use of **applied glazing bars** rather than integral welded bars to divide the eight panes. Through discussion of these issues two design alternatives emerged, one suggested by the applicant, and one by Camden officers:

Date	Alternative	Description	Proposed by
5th July 2023	As proposed	• Heritage Aluminium windows • Double-glazed units of 24mm • Use of applied art deco style glazing bars	Applicant
2nd August 2023	**Design Alternative 1**	• Steel windows in place of aluminium • Double-glazed units reduced to 18mm • Use of applied glazing bars that closely mimic the original glazing bars	Applicant
24th August 2023	**Design Alternative 2**	• Steel windows in place of aluminium • Double-glazed units reduced to 12mm • Integral welded glazing bars	Camden Officers

8. These design alternatives were then investigated in detail.

9. Conservation Officers also proposed two other approaches, which were assessed, but which were not considered to merit more detailed investigation:

   - Use of secondary glazing
   - Use of metal windows without glazing bars (single pane windows)

10. Further research took into account the following:

    - Historic England's listing entry for the building;
    - product specifications and technical calculations from manufacturers;
    - technical drawings and installation details from the respective installers;
    - material published by the Steel Window Manufacturers association;
    - designs and officer reports from previously approved planning applications; and
    - the Part L Building Regulations.

11. This document brings together all the evidence gathered into a single analysis, comparing the proposal against the two design alternatives and setting out conclusions that it is hoped will assist conservation and planning officers when determining the application.

12. It **replaces** the following documents previously submitted:

    - The Design and Heritage Statement submitted on 5th July;
    - Design Note 1 dated 20th July, 2023; and
    - Further Investigation on Glazing Bars & Alternative Design, dated 2nd August, 2023

13. The overall conclusion is that the design as proposed is the only option that meets the criteria set out in in paragraph 5. It appears well-suited to the specific circumstances of the building and offers significant conservation benefits that will contribute towards

its sustainability in the longer term. The proposed windows, set in a rear light well that was built in the 1930s and is not seen in any public view, are not considered to interfere in any material sense with an appreciation of the building's historic or architectural interest. Their art deco styling, whilst not essential, will nevertheless contribute to an understanding of the modern rear elevation in which they are formed.

MATTERS DEALT WITH IN THIS DESIGN NOTE

14. **First**, this Design Note deals with the building at 5 The Mount Square, the setting of the existing windows and their construction.

15. **Second**, it assesses the special significance of the two existing windows, using the approach set out by Historic England. Specifically it considers the weight that should be given to preserving their historic, evidential and aesthetic significance, having regard to the requirement of the Planning (Listed Buildings and Conservation Areas) Act 1990 ("the Act") to consider the desirability of preserving the building[2], its setting or any features of special or historic interest that it possesses. It offers conclusions regarding the relevance of the following three approaches:

    - **Retention** - retaining the existing windows;
    - **Scholarly replication** - replacing, whilst replicating the exact materials, technologies and designs used in their construction; and
    - **Sympathetic renewal** - replacing without replicating, but maintaining the style of the existing windows in a way that is sympathetic to their setting and does not detract from the building's interest.

16. **Third**, it assesses the merits of the proposal and the two design alternatives mentioned above, taking account of:

    - evidence of previous approvals for use in street-facing facades of listed buildings;
    - ease of maintenance;
    - thermal insulation properties; and
    - visual assessment when viewed externally and internally.

    A SUMMARY TABLE is provided setting out the three alternatives side-by-side.

17. **Finally**, other options are assessed.

THE BUILDING AND THE SETTING OF THE WINDOWS

The Location and External Setting

18. Pictures of Number 4, 5 and 7 The Mount Square as seen from the public road are reproduced at Figures 1a and 1b below. Numbers 4 and 5 The Mount Square back directly onto buildings behind, except that part of Number 5 benefits from a small, rear

[2] Planning (Listed Buildings and Conservation Areas) Act 1990, Section 16(2) as amended.

light well at the level of its first, second and third storeys, which opens onto a private courtyard belonging to Old Grove House, dealt with separately below.

Figure 1a – Front Elevation

Number 4, 5, and 7 The Mount Square with gates to private courtyard to right. Picture courtesy Google llc.

Figure 1b – Entrance to private courtyard

Gates to private courtyard belonging to Old Grove House.

The Rear Light Well

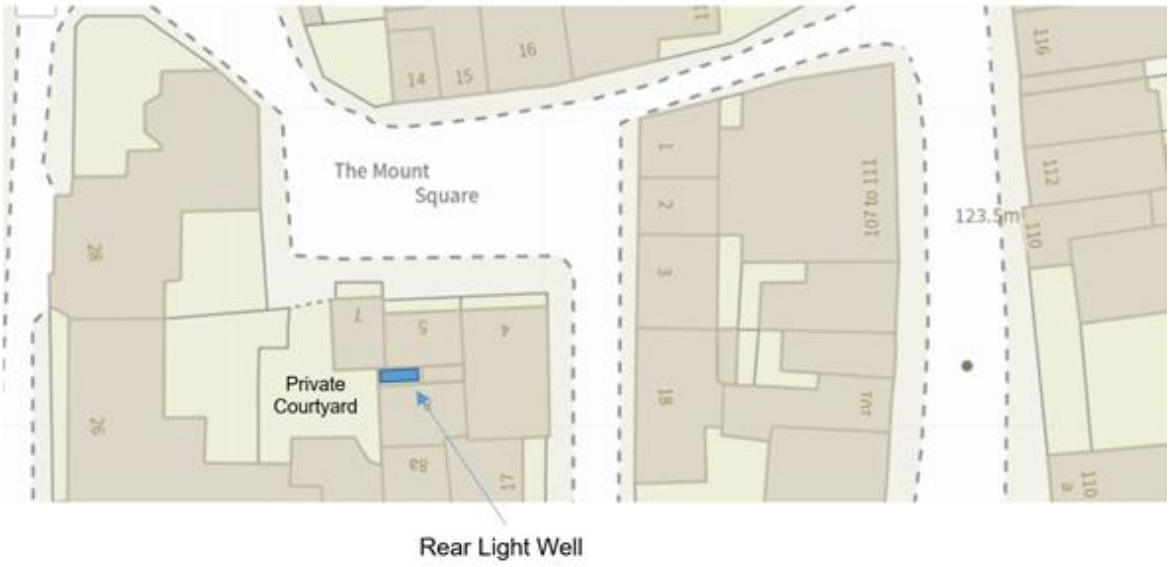
19. The two bathroom windows that are the subject of this application open onto a small light well at first and second floor level. The light well was constructed at the rear of the building, circa 1931. Details of these works can be found in APPENDIX 6 – 1931 MODERNISATION below.

20. The rear wall formed to create the light well is of 1930s construction in grey brick stock. In terms of fabric and style it reads as a functional modern intervention, with a variety of windows, both metal and wooden, which are unrelated to the front, historic part of the building.

21. The light well is narrow, only 4 metres in length and 1 metre in width and faces West onto the small private courtyard belonging to Old Grove House, which is dominated by three storey buildings on three sides. Levels of light reaching the two bathroom windows are poor.

22. Figure 2 below shows the setting of the light well and its narrow opening onto the private courtyard.

Figure 2 – Location Plan



23. Figure 3a shows the light well with the two bathroom windows **fully open**. Each window is formed of a side-opening casement, comprising eight, clear, single-glazed panes, divided by thin, flat, fixed glazing bars of 19mm width, which are welded into the casement's rails and stiles.

Figure 3a – Bathroom Light well

Light well viewed from private rear courtyard

Private rear courtyard viewed from Upper Landing Window

24. There are six windows opening onto the light well, all belonging to 5, The Mount Square as follows:

Window	Storey	Description
Lower Landing	Ground-First	Round timber window, painted white 20th century.
Corridor	First	Timber sash window, painted white 2001
Bathroom 2	First	Subject of current application
Upper Landing	First-Second	Timber framed feature window, painted white, 2001
Bathroom 1	Second	Subject of current application
Attic	Third	Steel Crittall Homelight SMW Window 1932, painted white

Internal Setting

25. As natural light in the light well is poor, each of the two bathroom windows is disproportionately large, compared with the confined space that it serves. Room and window sizes are shown below:

	Bathroom 1 (Second Floor) excluding shower cubicle	Bathroom 2 (First Floor)
Room size (net internal area) in metres^2	2.7	3.15
External wall in which each window is set (internal w x h) in metres	2.2 x 2.07	2.1 x 2.2
Window size (reveal w x h) in metres	**0.5 x 1.2**	**0.5 x 1.2**

26. It is important that the replacement windows are sensitive to the internal setting and maximise light entering each room, whilst not becoming overpowering.

The picture at Figure 3b, taken in Bathroom 1, shows the window size:

Figure 3b – Bathroom 1 showing the window size

The Windows

27. The existing windows are to a Crittall Homelight SMW design that was deployed in thousands of new homes during the 1930s and 1940s.
28. Figure 4a opposite shows the window to Bathroom 2 when viewed from the inside from 0.5 metres distance.
29. Further pictures are reproduced at APPENDIX 4 – EXISTING WINDOWS.
30. The overall frame depth (excluding casement) is 25.2mm.

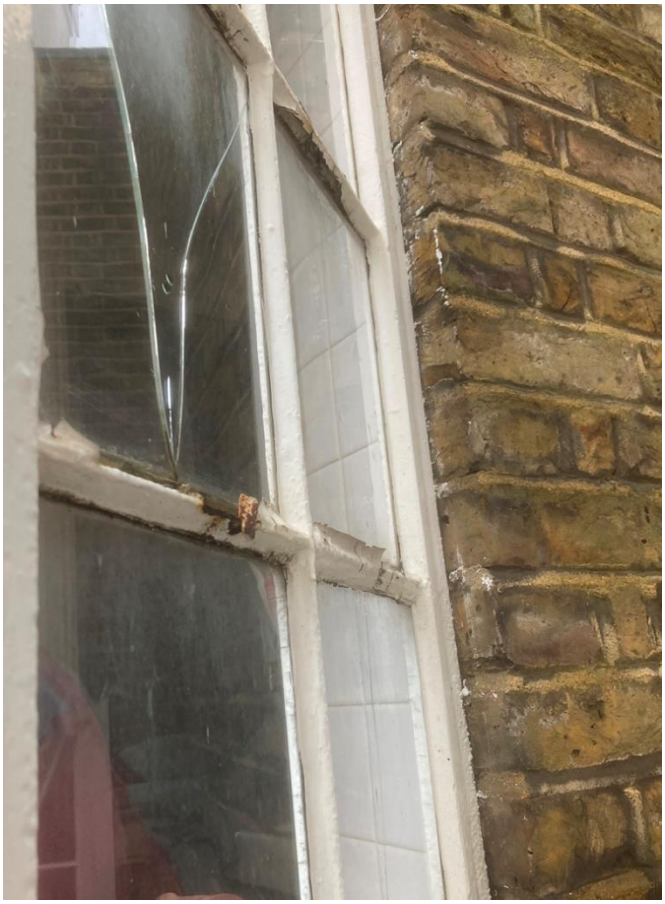
Figure 4a – Existing Window

Window Design and Glazing Bars

31. Use of narrow, thin glazing bars maximises the amount of light entering each bathroom, increasing the sense of internal space whilst providing sufficient decorative detail to soften the impact of the window's large size relative to the room it serves.
32. Glazing bars are 19mm in width and depth. Internally, they project only 4mm from the glass surface. Each glass pane is putty-glazed into the frame externally, but this is not visible internally. Figure 4b opposite shows the glazing bars when viewed internally. Figure 4c below shows the bars viewed externally.
33. The glazing bars are of a style common to many thousands of Crittall windows installed at the time. Further details on the style can be found in APPENDIX 4 – EXISTING WINDOWS.

Figure 4b – Glazing bars - Internal

Figure 4c – Glazing bars - external



Maintenance Access

34. A key issue cause by the setting of the existing windows is the lack of maintenance access. The light well measures only 1 metre by 4 metres and as shown in Figure 3a access is difficult. A kitchen lantern at ground floor level makes it impossible to access upper storeys by ladder meaning that the first and second floor windows can only be reached with the aid of specialist scaffolding.

35. Problems with access have contributed to poor maintenance of the existing windows over the past 80 years, with the result that the frames have been eaten away completely by rust in several places, cracked window panes have not been replaced and no external painting has taken place for over 30 years.

36. It is therefore an important conservation benefit that any replacement windows can be maintained internally and that glass can be replaced internally, without requiring scaffolding.

THE SPECIAL SIGNIFICANCE OF THE WINDOWS

Listing Entry

37. Number 4, 5 and 7 The Mount Square were listed with Grade II status on 14th May, 1974 in accordance with the Planning (Listed Buildings and Conservation Areas) Act 1990, under list entry number 1378999.

38. The official list entry provides the following description of 5, The Mount Square, its history and significance:

"Terrace of 3 houses. Late C18/early C19, altered. Multi-coloured stock brick, No.7 painted. Nos 4 & 5, slated hipped roofs….. No.5: 3 storeys 2 windows. C20 ground floor refronting with cornice above, sashes breaking forward to provide hood over panelled door with overlight. Cambered red brick arches to slightly recessed sashes with exposed boxing."

39. The full List Entry is reproduced at APPENDIX 1.

40. The building lies within the Hampstead Conservation Area.

41. The listing relates to the historic front of the building. By contrast, the rear light well, constructed circa 1931 is not mentioned and is not considered to have special architectural or historic interest on its own account. Nor does it connect with, nor contribute to an understanding of the front elevation of the building.

42. The light well is disconnected in materials and style and reads simply as the functional outcome of a 20th century intervention to support a bathroom installation

43. The building's internal fittings, walls and floors are largely of 20th century origin.

Application of Historic England Guidelines

44. Historic England recommend assessment of windows in four ways to understand their significance to an historic asset[3]. The criteria are set out in APPENDIX 2 - HISTORIC ENGLAND CRITERIA. This assessment is made below:

1. **Evidential Value** – a Crittall attic window in the rear façade at third floor level will remain and will continue to yield evidence relating to the 1930s works. The bricks, brick courses and reconstituted stone window cills will remain, clearly indicating the period during which the rear light well was constructed and its purpose to serve the bathrooms created at the back of the building. Documentary evidence also survives in the architect's drawings of the 1931 alterations. The rear light well contains no evidence relating to the purpose for which the building is listed and the 1930s steel windows are of a type employed in thousands of buildings of 1930s and 1940s origin. The evidential value specific to the two bathroom windows is not therefore high.

2. **Historic Value** – there is nothing unique in the purpose and design of the rear lightwell, nor the design of the windows that serve it. Whilst the existing bathroom windows illustrate the technology and architectural taste of the period from which they date, their fabric does not contribute to the historic significance of the building and the purpose for which it was listed.

3. **Aesthetic Value** – the existing windows are not integral to the design of the building, nor contribute to its visual interest. They do not match or complement any other original feature and are not part of any form of elevational composition. Other forms of window in this same location would have equal or greater aesthetic value. The light well in which the windows sit at the rear of the building where they cannot be seen publicly. They are poorly visible in one private view if fully opened.

4. **Communal Value** - the existing windows have no communal value

[3] Traditional Windows, their Care, Repair and Upgrading, Historic England 2014, page 4 (internal pagination)

Evidence of the Previous Appeal Decision (2002)

45. The rear elevation of the building was viewed by one of HM's planning inspectors shortly before issuing an appeal decision on 29th November 2002[4]. That decision related to the replacement of a Crittall landing window at the end of the light well with a new window of a different design. This window is marked "Upper Landing Window" in Figure 3a above.

46. The original Crittall window dealt with in that appeal decision was of the same style, materials and origin as the two bathroom windows that are the subject of this application. A picture of the original window and its replacement are shown in APPENDIX 3 – APPEAL DECISION X5210-E-02-1094937, where the appeal decision has also been reproduced.

47. Having viewed the light well, the inspector noted that a number of options existed for the replacement of this window given "*the position of the window opening and the absence of any obvious need to match an original feature or preserve any formal elevational composition*"[5]. Addressing the heritage significance of the Crittall window, he concluded:

    "It is not a feature that I consider is likely to have contributed to the special interest of the listed building. To the extent that it provided evidence of a previous phase of development, that evidence remains available in documentary form and might also be deduced from a study of the building's plan."

    "It is questionable whether any fabric contemporary with the 1930s alterations or otherwise important to the special interest of the listed building has been removed."

    "The appeal building makes a positive contribution to the character and appearance of the conservation area, but the appeal window is in a position where it is likely to be visible from only one or two other private dwellings nearby. In the circumstances, I do not consider that the works that have been undertaken can be said to have had any material effect on the character or appearance of the conservation area. "

48. The Crittall window that was removed in 2002 was larger and more prominent than the two bathroom windows, whose renewal is now proposed. The Historic England guidance that formed the basis of the inspector's decision has not been altered since this time in a way that would materially have affected his decision.

49. It is therefore reasonable to conclude that the inspector's findings in respect of the Crittall window serving the landing would also apply to two Crittall bathroom windows which are the subject of the current application, and indeed the other windows that open onto the same light well.

[4] Planning Appeal Decision Notice APP/X5210/E/02/1094937
[5] Decision Notice APP/ APP/X5216/E/02/1094937

Conclusion

50. Considering this evidence as a whole, there is no reason to conclude that the existing windows make a contribution to the overall significance of the building, or that their replacement would harm to its fabric and setting for the following reasons:

- The listing relates to the historic front of the building and not to its modern, rear elevation, which does not have special architectural or historic interest on its own account. It is not connected with, nor contributes to an understanding of the front elevation of the building that was the subject of the listing. The internal fittings, walls and floors within the building are largely of 20th century origin.
- The two existing bathroom windows are not integral to the composition of the rear elevation, which has other windows of different types, or to other parts of the building.
- The two windows are of an unremarkable type still found in thousands of factories, offices and homes built in the mid-20th century.
- The small, rear light well, in which the windows are set, lies between the building and the property behind and cannot be seen from the street, being visible to only one other property in a private view.
- The private view is from some distance and the two bathroom windows, being along the side of the light well at first and second floor level, rather than at the end, can only be seen with any clarity by that property when fully opened, and even then only from some distance away.

51. The three approaches to conservation referred to in paragraph 15 are therefore assessed as follows:

51.1. **Retention** - there is no compelling reason to retain the fabric or the existing windows on heritage or conservation grounds;

51.2. **Scholarly Replication** - there is no compelling reason to replicate the exact materials, technologies and designs used in their construction; and

51.3. **Sympathetic Renewal** - some flexibility is justified regarding the replacement of the two existing bathroom windows, provided that the replacement windows:

- help sustain the historic fabric of the building as a whole;
- are not intrusive or disruptive to their setting in the rear wall of the building; and
- do not detract from the building's visual interest.

THE PROPOSAL

The Application Proposal

52. Whilst the existing windows are not considered to contribute to the listed building, the proposed replacements have nevertheless been specified using a heritage design, incorporating lightweight frames and art deco styling typical of the 1930s.

53. It is proposed to replace the two existing steel windows with double-glazed aluminium casement windows to equivalent designs using “Alitherm Heritage 47”, manufactured by Smart Architectural Aluminium of Yatton, Bristol specifically to replace existing steel windows in heritage environments. The replacement windows will have eight, clear, double-glazed panes, matching the original windows, separated by slender, code W20165 flat applied glazing bars, similar in appearance to the existing fixed glazing bars.

54. The proposed glazing bars reflect the profile of the existing glazing bars in terms of thickness and width, ensuring that the loss of light is kept to a minimum and their impact is not unduly intrusive.

55. The replacement W20165 applied glazing bars proposed are 25mm in width and protrude 3.5mm from the glass surface internally, compared with values of 19mm and 4mm for the originals.

56. Externally, the bars are also 3.5mm x 25mm, compensating for the additional thickness resulting from the glass, to avoid the windows appearing unduly bulky.

57. Duplex spacer bars are used inside the double-glazed units to give the appearance of integral glazing bars.

58. Each replacement window will open in the same direction as the window it replaced. As a result, even though an exact design match is not considered a priority in heritage terms, the replacements will be virtually indistinguishable from the existing windows when viewed from the light well.

59. An example of an Alitherm Heritage window, reproduced from the Smart brochure is shown in Figure 5 opposite.

Figure 5 – Alitherm Heritage Window

Alitherm Heritage Window installed at Colston Street Bristol

Visual Style

60. The detailed design drawings that support the listed building application are reproduced at APPENDIX 8 – APPLICATION DRAWINGS.

61. Alitherm Heritage windows have been specifically designed to give a sense of light and space, achieved through the use of slim line glazing bars and the narrowest possible frame as follows:

    61.1. whilst the frame is able to accommodate modern 24mm double-glazed units, the replacement windows will be only 31mm thick at the glazing bars (from the external face of the inside bar to the external face of the outside bar) compared with 19mm for the current windows and 32mm for equivalent steel windows employing 18mm double-glazed units; and

    61.2. the width of the frame is 59mm compared with 46mm in the case of the existing windows and between 52mm and 56mm in the case of modern steel windows.

62. The replacement windows will be powder painted white and will present as metal windows to the same overall 8-pane design as the originals.

63. The windows will employ reconstituted stone cills as the existing windows and will be fitted into the same reveals.

64. Art deco style brass handles and bulb-end peg stays will be employed as shown at Figures 6a and 6b.

65. Clear window glass will be deployed, as for the existing windows.

Figure 6a – window handle

Figure 6b – window stay

Bulb-End Peg Stay

Thermal Insulation

66. Alitherm Heritage windows benefit from a polyamide thermal break, so that when combined with the use of 24mm argon-filled, double-glazed units, the windows are able to achieve very high levels of thermal resistance. Smart Architectural Aluminium have calculated the overall thermal transfer rate (U value) of each window as **1.9** W/m²K, with a centre-pane U value of 1.0. Their report is reproduced at Appendix 5.

Maintenance

67. Critically, the Alitherm Heritage windows offer much improved maintenance as it is possible to maintain the windows and replace broken or failed double-glazed units from the inside, meaning that scaffolding will not be required[6].

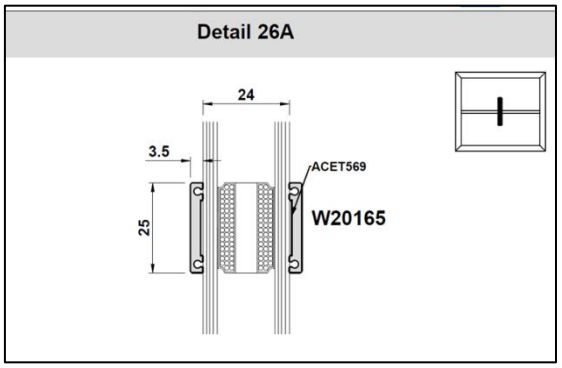
The Replacement Glazing Bars

68. The 25mm replacement applied glazing bars are 3.5mm in depth on each side, compensating for the additional thickness resulting from the glass, to avoid the windows appearing unduly bulky.

69. Duplex spacer bars are also used inside the double-glazed units to give the appearance of fixed glazing.

70. A cross-sectional drawing of the proposed applied glazing bars is shown in Figure 7 opposite.

Figure 7 – W20165 Applied Glazing Bars



71. This approach both improves the thermal resistance of the window and ensures that the glazing bars compensate for the thickness of the double-glazed units to maintain the light and spacious feel of the original windows.

72. The use of applied glazing bars enables the windows to support 24mm double-glazed units in place of 3mm single-glazed panes, but deliver a the total thickness at each glazing bar (from outside edge to outside edge) of only 31mm, compared with 19mm for the current single-glazed windows and 32mm for modern Crittall steel 18mm double-glazed windows without applied glazing bars.

[6] Email from Grove Windows, 5th August, 2023

Background Ventilation

73. It is not is proposed not to specify the replacement windows with trickle vents (background ventilation). The current Part F building regulations permit new windows without background ventilation to be installed in listed buildings or other buildings that are not adequately air tight[7]. In this case, the use of background ventilation is not considered necessary because the building already has high levels of air permeability:

    - the other windows in the property are comprised of original wooden sash windows, which due to their design provide ample background draught; and
    - large parts of the external walls are constructed of brick and wood with lime plaster and lime mortar externally, meaning they have high levels of vapour permeability.

74. Use of trickle vents would change the appearance of the windows, when viewed internally and require the use of plastic materials for their vents, which periodically break and detract from the elegance of the main window design.

75. The proposed windows will therefore follow a more traditional design, employing locking mechanisms that allow them to be locked in an 'ajar' position if required.

[7] Building Regulations for England, Part F, Ventilation, 2021 Edition, paragraph 0.5

Summary Assessment

76. The Proposal has been assessed against the seven criteria set out in paragraph 5 above as follows:

1. Thermal insulation	Smart Architectural Aluminium calculate the heat loss (U Value) of the two bathroom windows as installed as 1.9 W/m^2 K[8]. This is close to the target of 1.4 W/m^2 K set by the Part L Building Regulations for new windows in listed properties[9].	✓
2. External impact	The solution's design and appearance reflects the period of construction of the light well and would not detract from the significance of the building, its setting or the Hampstead Conservation Area.	✓
3. Internal impact	The windows would have a positive visual impact internally, which would not detract from an appreciation of the building.	✓
4. Opening	The windows could be opened fully, as with the existing windows.	✓
5. Light	Use of narrow, applied glazing bars of 25mm x 3.5mm would mean that the loss of light into the two rooms would be acceptable.	✓
6. Maintenance	The windows are designed to enable window glass to be replaced internally. Broken glass or the failure of a double glazed unit could be resolved without requiring the erection of scaffolding at the rear of the property.	✓
7. Lifespan	Smart Alitherm Heritage windows have a projected lifespan in excess of 40 years[10].	✓

[8] Smart Architectural Aluminium Report, 3th October 2023 reproduced at Appendix 5
[9] Part L Building Regulations 2021 (Conservation of Fuel and Power), table 4.2 and paragraph 0.8)
[10] Smart Architectural Aluminium, Alitherm Heritage Brochure, page 5

Conclusion

77. Overall, use of the aluminium windows specified is considered to offer an appropriate balance by delivering a high level of thermal insulation and much improved maintenance, whilst retaining the sense of space that metal windows can offer. The art deco styling, whilst not essential, will contribute to an understanding that the rear light well is a modern intervention with its origins in the 1930s.

78. This judgement is informed by the fact that two windows to be replaced are not in public view, do not match any original feature and do not form part of any elevational composition. Nor do they make a positive contribution towards the appearance of the Hampstead Conservation Area. In the circumstances, replacement with aluminium-framed heritage windows of the type proposed is not considered to interfere in any material sense with an appreciation of the special architectural and historic interest of the listed building.

Camden Conservation Concerns

79. Camden's Conservation Officers expressed two concerns with the current proposal:

    79.1. As a general rule, Camden Council do not support the use of applied glazing bars on metal replacement windows for listed buildings, particularly where buildings are in sensitive locations, although this policy is applied in a discriminating way, with each case considered on its merits[11]. Nevertheless, other than in exceptional circumstances, policy is to insist on the use of integral glazing bars that are part of the structure of the window.

    79.2. As a general rule, Camden Council do not support the use of aluminium windows to replace steel as authenticity is paramount[12].

[11] Camden policy confirmed in emails from Camden Councils' Conservation Officer dated 28th June and 6th July, 2023

[12] Policy confirmed by Camden Council's Conservation Officer 22nd August, 2023

EVIDENCE OF USE IN CONSERVATION AND HERITAGE SETTINGS

80. This section assesses the use of the Alitherm Heritage solution as propsed (including W20165 25mm glazing bars) in heritage and conservation settings. It gives examples of past planning and listed building consents where this solution has been used to replace steel windows in sensitive settings that share **all** the following characteristics:

- large numbers of windows in prominent, street-facing facades;
- requirement to conform with existing window styles, including art deco; and
- Grade II listed buildings, locally listed buildings or buildings in a Conservation Area identified by the local planning authority as important to the Area's setting.

81. The examples assessed have deliberately been selected to include decisions made under the provisions of the Planning (Listed Buildings and Conservation Areas) Act 1990 in situations where the sensitivity of the approved change was substantially greater than is the case at 5, The Mount Square.

Case Study 1 - Former West Herts College (Lanchester Free School)

Locally listed art deco building, Watford Borough Council

Planning Consent APP 13/01134/FUL)

82. This major heritage project involved the replacement of large numbers of Crittall windows at the former West Herts College, constructed in 1938, which is locally listed.

83. The Design and Heritage Statement points to the use of W20165 applied bars. Further details are set out at pages 10/11 of the Alitherm Heritage product specification.

84. An excerpt from the Case Officer's Report at page 17 noted *"the front elevation is dominated by the windows so a wholesale replacement programme requires careful consideration of the window type to be used"*[13]. Accordingly, the specification of the window designs was secured by condition and use of the Alitherm Heritage system in white, as proposed by this application, was approved by Watford Borough Council on 14th July, 2014.

85. Use of the W20165 applied bar was approved by Watford Borough Council through the reserved matters process and has since been confirmed by Smart Architectural Aluminium[14]. Use of W20165 glazing bars maintained a light and airy appearance typical of this type of art deco window.

[13] Officer Report, Planning Consent APP 13/01134/FUL, Watford Borough Council
[14] Email from Brian Collins, Technical Support Department, Smart Architectural Aluminium, 7th July, 2023

87. Pictures of the installation, provided by Smart Architectural Aluminium shown below.

Figure 8 – Windows at Lanchester Free School

Case Study 2 - Purifier House, Bristol

Grade II listed warehouse in conservation area), Bristol City Council,

Planning Consent 16/05330/LA and 19/00068/COND

93. This major project involved conversion of the Grade II listed West Purifier House and Engine House in Bristol's Harbourside quarter. The case officer's report noted that the buildings were *"a significant example of the robust and characterful industrial architecture of the late C19th period in Bristol, and closely comparable to other examples of "Bristol Byzantine" styled buildings around the city.*[15]*"*

94. Due the building's listed status, the specification of the doors and windows was a key element when determining the application, with a requirement to mirror the aesthetics of existing steel fenestration.

95. Use of the Alitherm Heritage system, with applied glazing bar W20165, to replace the existing steel windows maintained the distinctive appearance of the existing fenestration whilst delivering the improved maintainability and thermal insulation offered by a modern aluminium window system.

96. Use of the W20165 applied bar was approved by condition and has since been confirmed by Smart Architectural Aluminium[16].

[15] Officer Report, Planning Consent 16/05330/LA, Bristol City Council
[16] Email from Brian Collins, Technical Support Department, Smart Architectural Aluminium, 3rd October, 2023

97. Pictures of the installation, provided by Smart Architectural Aluminium shown below.

Figure 9 – Windows at Purifier House, Bristol

Case Study 3 – 33 Colston Street, Bristol

Prominent, locally listed art deco building in Conservation Area, Bristol City Council

Planning Consent 10/01351/F

98. This major project involved refurbishment of a 1930s locally listed art deco building in the St. Michael's Hill & Christmas Steps Conservation Area belonging to the University of Bristol to provide 121 study bedrooms. Work involved the replacement of the original art deco steel windows that had been a feature of the building's design.

99. The approved window design involved use of the Alitherm Heritage system, with applied glazing bar W20165.

Figure 10a – Design submitted for Purifier House, Bristol, prepared by Glazetek Ltd

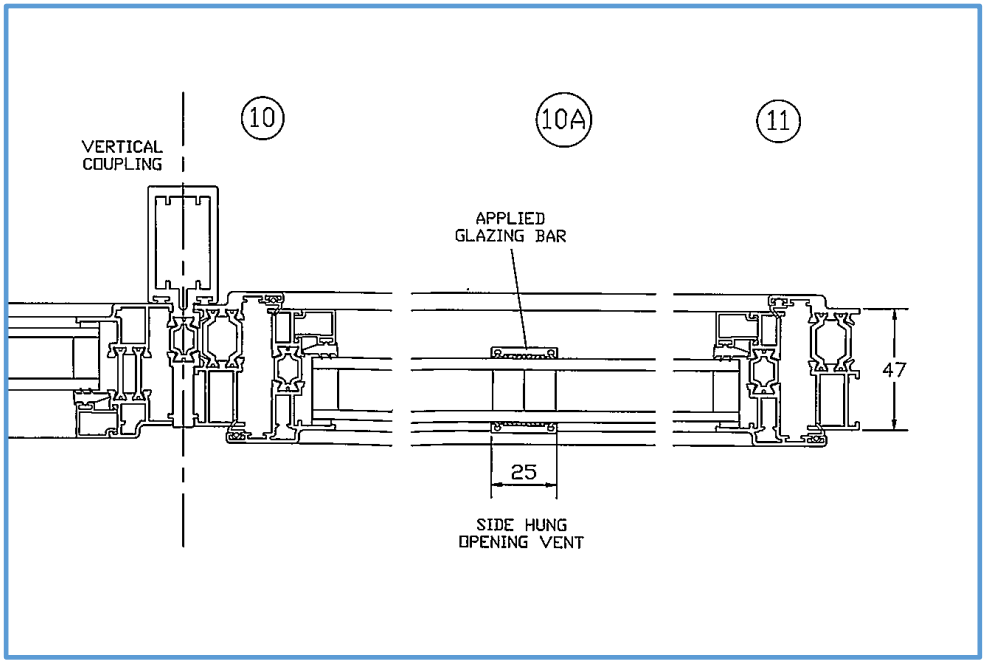


Figure 10a – Installed Alitherm Heritage Windows at Colston Street, Bristol (front elevation)

100. Pictures of the installation, provided by Smart Architectural Aluminium shown below.

Figure 10c – Installed Alitherm Heritage Windows at Colston Street, Bristol

(front elevation)

FURTHER INFORMATION ON THE USE OF INTEGRAL GLAZING BARS

101. In the light of comments received from Camden Council additional research was performed on the subject of glazing bars, informed by evidence from two sources:

- Crittall Windows Ltd., the maker of the existing steel windows
- The Steel Windows Association, the trade body that sets standards for the industry.

Use of fixed (integral) glazing bars with double-glazed units

102. The conclusion was that integral glazing bars, when used with double-glazed units, must be at least 32mm in width when viewed internally, making them unsuitable for installations where a narrow glazing bar width is required.

103. At 5, The Mount Square, the current glazing existing bar width when viewed internally is 19mm.

104. Whilst single glass panes do not have any edging, approximately 10mm around the edge of a double-glazed unit is occupied by the spacer and warm edge surround.

105. Where a multi-pane window is divided into multiple double-glazed panes, the border of each double glazed unit makes it necessary to employ a significantly wider glazing bar is required to cover the edging. This in turn creates a glazing treatment of much greater prominence than the slender glazing bars employed on the existing windows, giving glazing bars the appearance of solid transoms.

106. This issue is reflected in designs published by both the Steel Windows Association and Crittall Windows Ltd., which are summarised below.

Steel Windows Association

107. The Steel Windows Association recommend the use of "W30" profiles to replace single-glazed windows. They state:

"W30 hot rolled steel profiles are an evolution of the W20 profiles and were specifically designed so that windows could be manufactured in 'multilight' designs without the need for coupling bars that would thicken the profiles. This system was also designed so that it conformed with modern thermal requirements to Part L building regulations for domestic windows and so achieves 'BFRC' energy ratings. This system is particularly suited when replacing existing single glazed steel windows which may no longer warrant keeping.[17]*"*

[17] Steel Windows Association W30 Factsheet available online.

108. In place of fixed integral fixed glazing bars, the guidance therefore specifies applied bars. Excerpts from the W30 technical guide[18] are reproduced below:

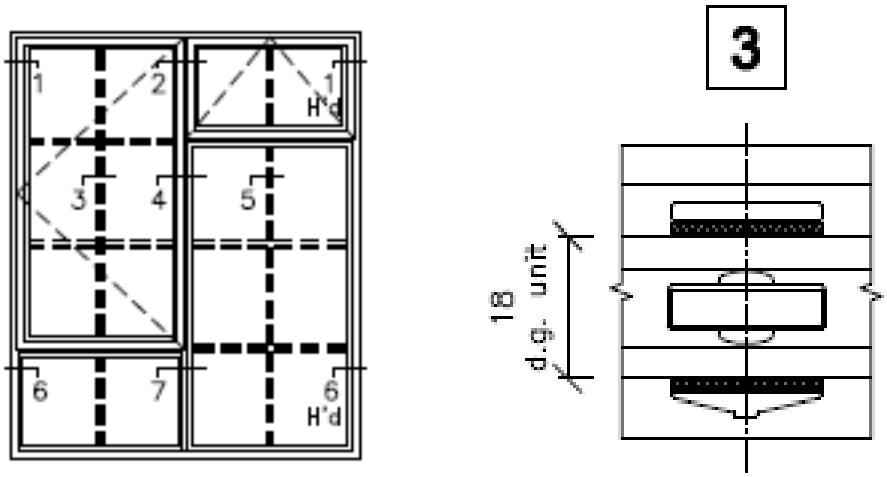


Figure 11 – Steel Windows Association W30 Technical Guide

Crittall Windows

109. Figure 12 showss 16mm double-glazed glazing units set into an integral Crittall fixed glazing bar, compared with the existing window glazing bars[19]:

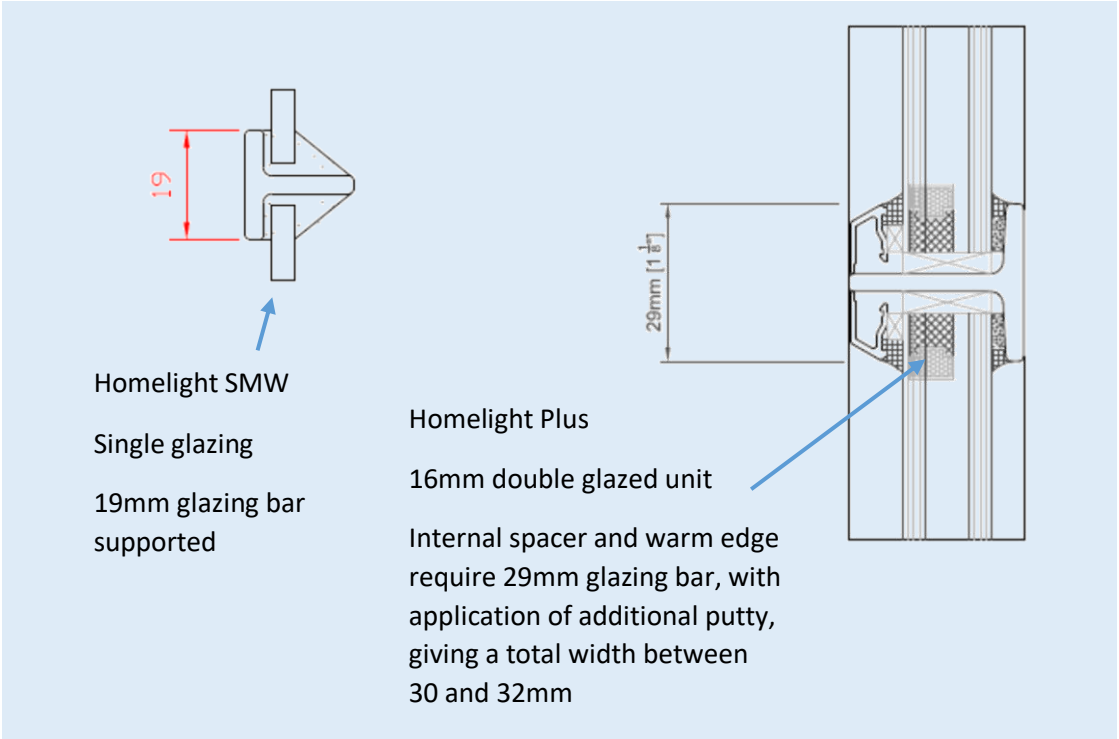


Figure 12 – Crittall Steel Windows, original glazing bar and modern integral glazing bar for 16mm double-glazed units

[18] Steel Windows Association W30 Profile and Technical Drawings, available online.
[19] Single glazed drawing supplied by Crittall installer and Crittall Homelight Plus Profile sheet.

110. The significantly increased width, combined with a glazing bar depth of 32mm would result in a window whose glazing bars are of significantly greater mass, giving them the appearance of transoms and creating a window which differed substantially from the existing windows.

111. An alternative Crittall profile of 29mm in width that supports only 12mm double glazed units is shown in Figure 13, but the requirement for additional putty to cover the double-glazed edging means that the overall width of the glazing bar is between 30 and 32mm[20]. It is described in more detail under DESIGN ALTERNATIVE 2 below.

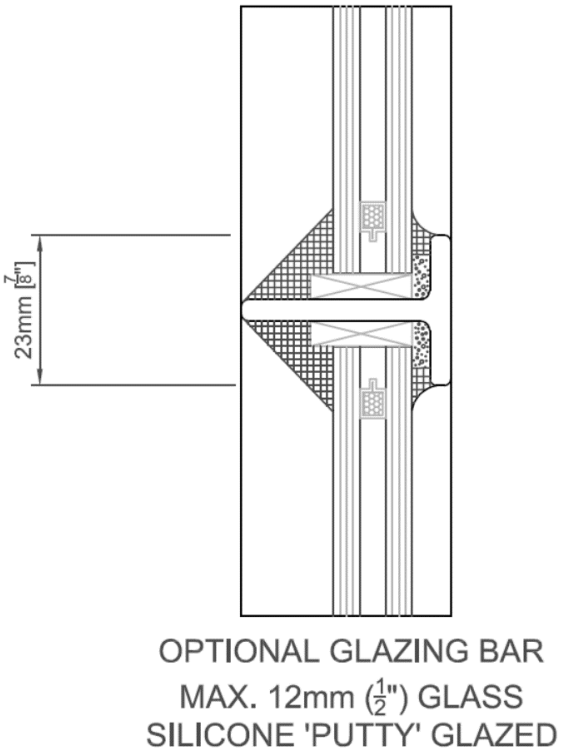


Figure 13 – Crittall Steel Windows, modern, putty-glazed integral glazing bars for 12mm double-glazed units

[20] Crittall Windows Ltd., Homelight Plus Profiles.

DESIGN ALTERNATIVE 1

Summary

112. This proposal was put forward by the applicant on 4th August, 2023 and Camden's Conservation Officers indicated on 23nd August that it would **not be supported**.

113. It addresses the first concern expressed by Camden's officers as it employs a steel rather than aluminium construction. It goes some way towards meeting the second concern, by using thinner profiles and applied glazing bars that mimic the existing windows more closely than other options, offering a very accurate visual match with their detail. Full details are set out in the *SUMMARY TABLE* below.

114. The solution is based on the Homelight Plus range of steel windows produced by Crittall Windows Ltd. This range is the direct successor to the original "Homelight SMW" product sold by Crittall in the 1930s and which was employed for the existing windows.

115. Whilst these steel windows offer greater rigidity (and are therefore not as deep as the aluminium windows proposed) they are not thermally broken, meaning that their thermal resistance is substantially below that of the aluminium windows proposed.

116. The window furniture and applied glazing bars provide the closest possible replica of the shape and appearance of the existing windows when viewed internally, employing the "fenestra" design as set out in Appendix 4.

Use in Conservation and Heritage Settings

117. A similar solution using applied glazing bars was approved for use in the replacement of multiple windows on the front façades of Dunbarton Court, Lambeth, an art deco, building constructed in 1939 in the Rush Common Brixton Hill Conservation Area[21]. The Officer Report approving the design stated: "*Designed in 1939 by Couch and Coupland Dumbarton Court encompasses nine part five and part six storeys blocks of*

Figure 14 - Dunbarton Court elevation (picture Crittall Windows)

[21] Lambeth Council, Planning Application 09/03928/RG3

flats, and is comprised of 230 flats in total., Dumbarton Court is one of the most impressive inter-war residential blocks in Lambeth. As the building exists it is largely unaltered and very much evocative of the architecture and styling of the 1930s and exhibits characteristic 1930s slender framed metal windows with horizontal 'streamlined' fenestration."

Visual Match

118. The key benefit of this solution is that it offers the closest visual match with the external and internal appearance of the existing windows.

119. Pictures of the external glazing, internal glazing and window furniture are shown below, with the existing window alongside:

Figure 15a – Design Alternative1 - External profiles

Figure 15b – Design Alternative1 – Internal profiles

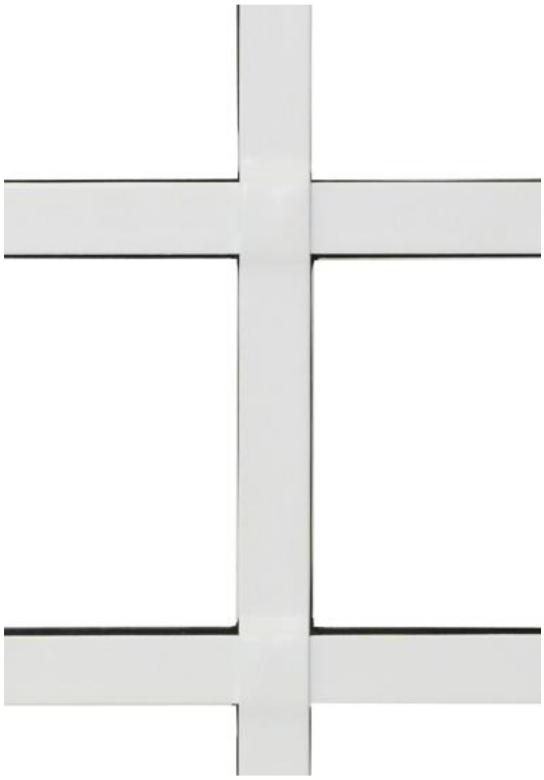


Figure 15c – Design Alternative 1 - Handles
(Homelight plus handle to left, existing handle to right)

Summary Assessment

120. Design Alternative 1 has been assessed against the seven criteria set out in paragraph 5 above as follows:

1. Thermal insulation	Crittall Windows were asked to calculate the exact rate of heat loss (U Value) of the two bathroom windows as installed, taking into account both the frame and the glass. Their calculation indicates that each window would have a U Value of **2.8** W/m2 K[22]. This is one third above the U Value of the proposed aluminium solution of 1.9 W/m2 K.	✘
2. External impact	The solution's design and appearance closely reflects the period of construction of the light well and would not detract from the significance of the building, its setting or the Hampstead Conservation Area.	✓
3. Internal impact	The windows would have a positive visual impact internally, which would be very close to the existing windows.	✓
4. Opening	The windows could be opened fully, as with the existing windows.	✓
5. Light	Use of narrow, applied glazing bars of 19mm width, the same as the existing glazing bars, would mean that the loss of light into the two rooms would be minimal, stemming from the increased frame size only.	✓
6. Maintenance	The windows are not designed to enable window glass to be replaced internally. As a result, broken glass or the failure of a double glazed unit would require erection of scaffolding at the rear of the property.	✘
7. Lifespan	Crittall steel windows have a projected lifespan in excess of 60 years[23].	✓

[22] Crittall Technical Support Department by email, 4th October 2023
[23] Crittall Windows "Why Steel Windows"

DESIGN ALTERNATIVE 2

Summary

121. This proposal was put forward by the Camden's Conservation Officers on 24th August[24] on the basis that it *"appears to be a good match to your existing windows whilst providing a higher level of thermal performance"* and with the comment that it should be considered due to officers' concern about the use of applied glazing bars.

122. It deals with both concerns voiced by Camden's officers as it employs a steel rather than aluminium construction and also employs integral (fixed) glazing bars, into which 8 x 12mm, krypton-filled double-glazed units are fitted and retained with silicone putty. Full details are set out in the *SUMMARY TABLE* below.

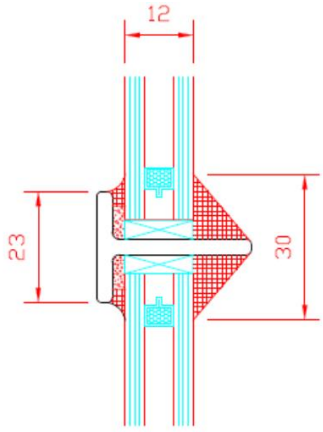
123. The solution is likewise based on the Homelight Plus range of steel windows produced by Crittall Windows Ltd. As for Alternative 1, these are not thermally broken. The solution can only support double-glazed units up to 12mm thickness.

124. The window furniture is the same as for Alternative 1.

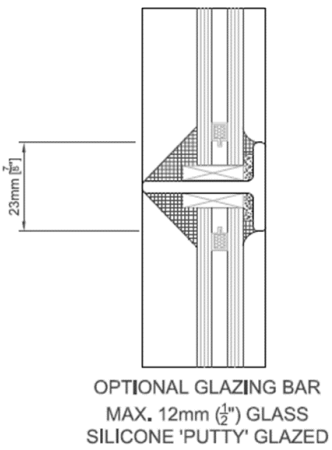
125. Wider integral glazing bars are employed of 23mm internal width. However, this is not sufficient to cover the spacer bars and warm edging that surround each double-glazed unit, meaning that an additional bead of silicone putty is required along the *inside* of each window as well as the outside. The combined width of the glazing bar and putty beading is between 30-32mm.

126. The diagrams below shows cross sections of an integral glazing bar of this type, provided by the installer and published by Crittall Windows[25]:

Figure 16 – Design Alternative 2 – Glazing Bar Profiles



Installer drawing



Crittall published profile

[24] Email from Camden Conservation Officer, 24th August.
[25] Crittall Windows Ltd., Homelight Plus Profiles

127. Use of full depth integral glazing bars, and reliance on narrow 12mm double-glazed units further increases heat loss through the window.

Use in Conservation and Heritage Settings

128. As Camden Council have indicated that this proposal would be favoured, no specific assessment of its previous use in conservation environments has been performed.

Visual Match

129. Use of hand-applied beads of silicone putty on the inside the window creates an irregular line around each window pane, which can appear incongruous and unsightly. The photograph below, supplied by the installer, shows a completed window with this type of glazing treatment as installed. Detail from an existing window is inset:

Figure 17a – Design Alternative 2 – Glazing Bar Pictures

130. The greater glazing bar width of approximately 30-32mm, resulting from the use of a wider bar and the application of silicone putty, results in a window whose visual appearance confuses and fails to echo the clean lines of the original metal window. Figure 17b shows a new window alongside an existing window:

Figure 17b – Design Alternative 2 – Glazing Bar Pictures

Thermal Performance

131. The absence of a thermal break in this type of steel window, and that employed for Design Alternative 1, was highlighted in a report by W. S. Atkins, which compared Alitherm Heritage aluminium and Crittall W20 steel windows for a major project involving the renewal of over 1,000 windows at the Joseph Black Building at the University of Glasgow, a Grade A art deco building constructed between 1948 and 1954[26].

132. Commenting on the Crittall design, the report remarked: *"An alternative approach has been explored in the form of 'Alitherm Heritage' by Smart Systems. This window system has been considered for its similarity to the Crittall W20 window system."*

133. "The Smart Systems window solution …. is based around a slender frame profile that resembles a Crittall style window. The Crittal windows now available can accommodate double glazed units they do not offer a thermally broken section which is essential to avoid the risk of internal condensation on the window frames. Furthermore, the current Crittal W20 windows are wider in section than their original design in order to accommodate double glazed units."

134. Crittall Windows have confirmed that like the W20 product, their Homelight Plus product is not thermally broken[27]. In the case of Design Alternative 2 the additional heat transfer that results from the lower thermal resistance of steel is magnified by the use of integral steel glazing bars to divide the eight panes that form the window.

135. To assess the impact, Crittall calculated the exact rate of heat loss (U Value) of the bathroom windows as installed with integral glazed bars, taking into account both the

[26] Interim Window Report, paragraphs 1.1 and 1.2, W. S. Atkins, Joseph Black Building, Glasgow, Planning Consent 16-03120-DC

[27] Email from Crittall Windows Ltd., Technical Support Department, 7th August, 2023

frame and the glass. Their calculation indicates that each window would have a U Value of **3.1** W/m2 K[28]. This is the highest of the three options assessed and is one third above the U Value of the proposed aluminium solution of 1.9 W/m2 K.

Summary Assessment

136. Design Alternative 2 has been assessed against the seven criteria set out in paragraph 5 above as follows:

1. Thermal insulation	Crittall Windows calculate the rate of heat loss (U Value) of the two bathroom windows as installed, as 3.1 W/m2 K[29] (the highest of the three options and one third above the U Value of the proposed aluminium solution of 1.9 W/m2 K).	✘
2. External impact	The solution's design and appearance broadly reflects the period of construction of the light well and would not detract from the significance of the building, its setting or the Conservation Area.	✓
3. Internal impact	The irregular lines of hand-applied silicone beading on the inside of the panes, and the wider glazing treatment of between 30-32mm needed to cover the double-glazed units, would appear incongruous internally, given the small room sizes and would detract from an appreciation of the building.	✘
4. Opening	The windows could be opened fully, as with the existing windows.	✓
5. Light	The wider glazing area of 30-32mm between each pane compared with 19mm at present, would result in a material loss of light into the two rooms.	✘
6. Maintenance	The windows are not designed to enable window glass to be replaced internally. Broken glass or the failure of a double glazed unit would require erection of scaffolding at the rear of the property.	✘
7. Lifespan	Crittall steel windows have a projected lifespan in excess of 60 years[30].	✓

[28] Crittall Technical Support Department by email, 4th October 2023
[29] Crittall Technical Support Department by email, 4th October 2023
[30] Crittall Windows "Why Steel Windows"

OTHER ALTERNATIVES CONSIDERED

Secondary Glazing

137. This option was considered following a suggestion from Camden Conservation Officers[31], but was not progressed for the following reasons:

- the small size of the two bathrooms means that secondary glazing could not follow the glazing pattern of the external windows and would be cumbersome to use;
- use of sash secondary glazing, necessary in the confined space, would obstruct ventilation of the bathrooms, as both casement windows need to be opened fully when showering in the absence of mechanical ventilation;
- negative visual impact of secondary glazing given the small room sizes; and
- window reveals are occupied by venetian blinds in both bathrooms.

Use of Single Pane in place of Multi-pane Windows

138. Camden Conservation Officers indicated they would support the use of single-pane steel windows (ie. without glazing bars)[32] in place of 8-pan multi-pane windows.

139. This approach would overcome objections raised by Camden conservation officers to the use of applied glazing bars, but was considered inappropriate for the following reasons:

- a single-paned metal window would present as a large sheet of glass of late 20th century style, offering no visual connection with the art deco origin of the light well in which the windows sit, or with the evolution of the building;
- large single-paned windows would not correlate with the style of surrounding windows at 5 The Mount Square or on other nearby buildings within the Hampstead Conservation Area; and
- a single large pane would make the windows oppressively dominant and unappealing given the small size of the bathrooms that they serve.

Repair

140. Repairing the existing Crittall windows would be a costly process, as they would need to be removed and taken off-site. Window glass would need to be removed and replaced to allow the frames to be sandblasted, welded, rust-treated, painted, and re-glazed off-site. The windows would then need to be reinstated some weeks after. Temporary openings would be required whilst the windows were off-site. Both removal and reinstatement would require the erection and removal of scaffolding.

141. Repairs would give a stay of execution only, because they would not deal with the underlying problem of poor access for maintenance or the continuing deterioration in

[31] Email from Camden Conservation Officer, 24th August, 2023
[32] Email from Camden Conservation Officer, 22nd August, 2023

the existing steel frames, which are not galvanised and therefore require regular maintenance and repainting.

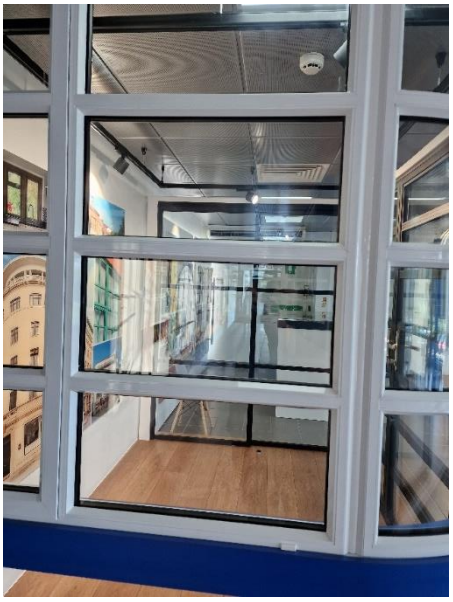
142. Repairs would not address the urgent need to improve the thermal resistance of the windows.

Use of Aluminium Windows with integral glazing bars

143. This option was investigated as, whilst it would not have addressed Officers' rejection of aluminium, it would have satisfied their first concern that integral glazing bars, rather than applied glazing bars were employed.

144. The option was rejected because of the significantly increased size of the alternative fixed glazing bars, whose bulk would have given the appearance of transoms, compared with the light and slender glazing bars of the original windows. Each fixed glazing bar would have occupied 48mm in width, compared with 19mm for the existing glazing bars. The depth of each glazing bar would have been 47mm.

Figure 8 – Alitherm Heritage Window with integral transoms



145. The entire effect would have been very different from the existing metal windows. Given the small size of the two bathrooms, the additional bulk resulting from the transoms would have been oppressively dominant and unsympathetic. They would also have blocked significantly more light from entering each room. Moreover the fixed glazing bars can only be employed on top hung windows, which would involve a further, unsympathetic departure from the style of the existing windows.

146. A summary of this investigation is set out in Appendix 7.

CONCLUSIONS

Benefits

147. Replacement of the existing metal casement windows with aluminium heritage casement windows, to the same multi-pane, clear glass design and powder painted to the same colour, would achieve the benefits set out in paragraph 5 above. Two badly corroded and unmaintainable windows would be replaced with new double-glazed windows offering modern standards of thermal insulation of 1.9 kW/M^2, per window, close to the target of 1.4 set in the Part L Building Regulations and with a lifespan of over 40 years. Crucially, both windows could be maintained, and their glass could be replaced, from the inside, overcoming the reason that prevented maintenance and re-painting of the existing windows, resulting in their accelerated deterioration.

148. These are substantial benefits that will contribute to the fabric and long-term sustainability of the building.

149. The windows employ a trusted heritage design from a reputable manufacturer that has been proven in conservation settings that involve much higher levels of sensitivity than the proposed location in this instance, which involves a private light well, constructed in the 1930s at the rear of the building.

150. The replacement windows will employ light-weight art-deco inspired designs, with slender glazing bars and art-deco style window furniture. Visually, they will be sympathetic to their setting and will have a positive impact on the two bathrooms that they serve. Both windows can be opened fully for ventilation when the bathrooms are in use and the use of slim-line applied glazing bars will ensure they will be read as successors for the existing 1930s windows. They will ensure that light levels in the two bathrooms, already compromised by the poor light conditions outside, are not unduly reduced.

Impact

151. The replacement metal windows will have a design and appearance that reflects the period of construction of the elevation in which the windows are set and which complements the one remaining original 1930s window that is set in the third floor attic. Their setting, at the rear of the property, overlooking a private light well constructed during the 1930s will not detract from the house, an appreciation of its significance, or its setting in the Hampstead Conservation Area.

152. The windows will not form part of any form of architectural composition that requires an exact match with the one remaining original metal window serving the third floor attic, whose retention will continue to provide evidence of the evolution of the rear light well.

153. The presence of Crittall windows in the light well was assessed at the time of the previous planning decision in 2002 and found not to be material for the purposes of Sections 16, 66 or Section 72 of the Act. The two bathroom windows, being set along

the side of the light well at first and second floor level, are even less visible than the window that was the subject of the previous planning decision and can only be seen with any clarity in one private view when fully opened and from a distance.

154. The available alternatives either fall short of the benefits of the proposed solution, or involve significant negative impacts.

155. In the circumstances, there do not seem to be over-riding conservation or heritage considerations that would justify a re-weighting of this balance and therefore the original solution is put forward for approval as set out above.

Prepared by Clyde Whittaker

12th October, 2023

SUMMARY TABLE

156. The summary below sets out the benefits and impact of each of the three proposals, with the following colour coding:

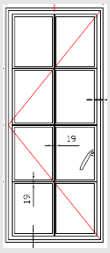
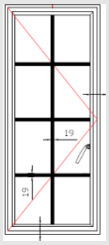
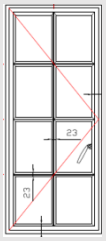
- Green – benefit
- Amber – moderate negative impact
- Red – substantial negative impact

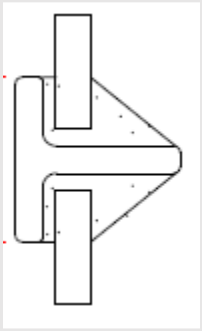
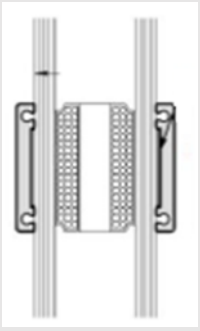
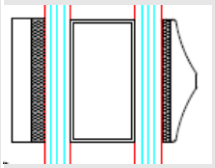
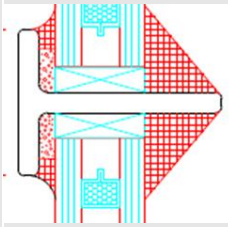
	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
1. Outline				
Proposal	Existing Window	Original application	Alternative 1 – not supported by Camden Conservation Officers.	Alternative 2 – proposed by Camden Conservation Officers
Originator	N/a	Applicant	Applicant	**Camden Council**
Relevant Document	N/a	Design & Heritage Statement and Design Note 1	"Further Investigation On Glazing Bars And Alternative Design"	Design Note 2
Document Date	N/a	5th July and 20th July 2023	2nd August, 2023	12th October, 2023
Supported by Camden	N/a	**No**	**No**	Yes
2. Approval for use in Listed/Locally Listed Buildings				
Approved for replacement of historic steel windows in listed or locally listed buildings.		Yes	Yes	Not investigated as this solution is supported by conservation officers.
Past planning consents (replacement of entire street-facing facades of steel windows in listed or locally listed buildings)		APPROVED- Lanchester Free School (locally listed art deco building), Watford Borough Council **13-01134-FUL**	APPROVED – Dunbarton Court, Lambeth (art deco block in Conservation Area, circa 1939) Lambeth Council **09/03928/RG3**	

	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
		APPROVED - Purifier House, Bristol (Grade II listed warehouse in conservation area) Bristol City Council **16/05330/LA**		
		APPROVED - 33 Colston Street, Bristol, (locally listed art deco block, conservation area). Bristol City Council **10/01351/F**		

3. Construction and Materials

Manufacturer	Crittall	Smart Architectural Aluminium, Yatton, Bristol	Crittall Windows, Witham, Essex	Crittall Windows, Witham, Essex
Product	Homelight SMW	Alitherm Heritage	Homelight Plus	Homelight Plus
Frame Materials	Steel	Aluminium	Steel and Aluminium	Steel and Aluminium
Multi-pane Glazing Bar	Steel welded	Aluminium applied	Aluminium applied	Steel welded
Style	Casement	Casement	Casement	Casement
Form	Single casement Side open Open out	Single casement Side open Open out	Single casement Side open Open out	Single casement Side open Open out
Glazing	Single glazed	Double Glazed	Double Glazed	Double Glazed
Glass Thickness	3mm	4mm	4mm	4mm
DGU Type	**N/a**	**24mm Argon**	**18mm Krypton**	**12mm Krypton**
Paint	Painted white	Powder painted white	Powder painted white (RAL9911)	Powder painted white (RAL9911

	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
4. Window Design				
Form	8 pane multi-pane divided by glazing bars	8 pane multi-pane divided by glazing bars	8 pane multi-pane divided by glazing bars	8 pane multi-pane divided by glazing bars
Design (from installer drawings)				
Frame Width (Frame and Casement) including putty beading	46mm	59mm	52-56mm	52-56mm
Frame Depth (excluding casement).	25.22mm	47mm	32mm	32mm
Area inside Frame (m^2)	.47	.43	.43	.43
5. Glazing Bars				
Form	Welded 'T' lattice with Fenestra profile to interior and putty applied to exterior.	Flat W20165 Smart Aluminium bars applied to window surfaces on both sides with internal spacer bar.	Aluminium profiled "Kensington" and "Fenestra" profiled bars manufactured by Crystal Windows applied to window surfaces with internal spacer bar, to mimic putty exterior and Fenestra interior profiles.	Welded 'T' lattice with Fenestra profile to interior and putty applied to exterior.

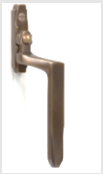
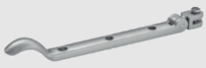
	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
Cross section				
Internal Profile	19mm Fenestra bar	25mm Flat bar	19mm Fenestra bar manufactured by Crystal Windows	23mm Fenestra bar within putty envelope (to conceal warm edge and spacer to double-glazed unit).
Bar Width (including putty and spacer visible either side)	**19mm**	**25mm**	**19mm**	**32mm**
% Window Area occupied by glazing bars	9.65%	13.37%	9.99%	16.83%
External Profile	Putty glazed bead.	Flat bar	Profiled “Kensington” bar mimicking putty profile	Silicone putty beading, built-up to conceal warm edge and spacer bar of double-glazed units
Depth (edge of glazing bar to edge of glazing bar)	19mm	31mm	28mm	32mm

6. Maintenance Access

Window Glass can be replaced from inside	No	Yes	No. External scaffolding required.	No. External scaffolding required.

	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
7. Thermal Insulation				
Frame thermally broken?	No	Yes	No Solution REJECTED for Joseph Black Building *"The Crittal windows now available can accommodate double glazed units (but) they do not offer a thermally broken section which is essential to avoid the risk of internal condensation on the window frames."*	No Solution REJECTED for Joseph Black Building *"The Crittal windows now available can accommodate double glazed units (but) they do not offer a thermally broken section which is essential to avoid the risk of internal condensation on the window frames."*
"U" Value of Installed Window ($W/m^2 K$)	N/a	1.9	2.8	3.1
Part L Building Regulations Maximum "U" Value for Existing Dwellings (table 4.2 2021) ***Note that some tolerance is provided in the case of listed buildings.***	1.4	1.4	1.4	1.4
8. Visual Assessment at typical viewing distance				
Visual Assessment – External at 8 metres ***Note – windows cannot be viewed from a distance closer than 4 metres)***	Presents as a 1930s metal window painted white.	Presents as a 1930s art deco style metal window painted white. Presence of wider 25mm flat glazing bars within multi-pane window might be	Presents as a 1930s style metal window painted white. Use of 19mm Kensington applied bars of same width as originals, mimicking the original puttied	Presents as a 1930s style metal window painted white. Effect of wider 32mm glazing bars, formed of steel bars with wider putty beading is **likely to be**

	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
		discernible at first floor level.	profile un-noticeable at first or second floor level.	**noticeable** at both first and second floor level, both in terms of the detail of the glazing bars and the overall effect of the wider profile on the window.
Visual Assessment – Internal at .5 metre	Presents as an original Crittall Homelight SMW window of 1930s origin	Window will present as a modern, double-glazed window, to an “art deco” design that echoes the appearance of the original, without being a direct copy.	Window will present as a modern, double-glazed window intended to mimic the original Crittall design to the maximum extent possible. Effect of 19mm Fenestra applied bars of same width as originals will closely mimic the original Fenestra bars.	Window will present as a modern, double-glazed window. 23mm bars will have strips of hand-applied putty beading approx. 4.5mm either side to hide the warm edge and spacer bars of the double-glazed units, giving a total bar width of 32mm. The overall effect will be of a contrived design in which use of putty on the inside of the window has been used to overcome design defects, resulting in an effect that differs substantially from the clean lines of the original windows.

	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
9. Ironmongery				
Handle Design				
Handle Specification	N/a	Alitherm Heritage Art Deco Window Handle Anodised Bronze	Crittall 158 Locking Handle Brushed Brass	Crittall 158 Locking Handle Brushed Brass
Stay Design				
Stay Specification	N/a	Alitherm Heritage Bulb End Peg Stay	Crittall 375 Curved Peg Stay	Crittall 375 Curved Peg Stay
10. Summary Assessment – Factors with Substantial Weighting				
Designs reflect the setting and the period of construction of the elevation in which the windows are set.	N/a	Yes	Yes	Yes
External visual impact does not detract the significance of the building, its setting or the Hampstead Conservation Area.	N/a	Pass. Windows are located in a private rear light-well constructed circa 1931, and is visible in a private view from one neighbouring property.	Pass. Windows are located in a private rear light-well constructed circa 1931, and is visible in a private view from one neighbouring property.	Pass. Windows are located in a private rear light-well constructed circa 1931, and is visible in a private view from one neighbouring property.
Internal Visual Impact does not detract from an appreciation of the building.	N/a	Pass. Present as modern windows in an art-deco style that reflects the	Present as modern, double-glazed windows intended to mimic the original Crittall	Present as a contrived design with wider glazing bars and exposed runs of silicone putty

	Existing Window	Proposal	Design Alternative 1	Design Alternative 2
		style of the originals.	design to the maximum extent possible.	inside the window, which will detract from an appreciation of the building.
Reflects metal construction of original window with 8 pane multi-pane design	N/a	Yes	Yes	Yes
Offers adequate standards of thermal insulation assuming 80-year lifespan.	No	Yes	No	No
Internal maintenance access (essential given poor external access)	No	Yes	No	No

11. Summary Assessment – Factors with moderate weighting

Construction materials exactly replicate the original windows.	N/a	Use of white powder-painted aluminium in place of steel.	White powder-painted steel.	White powder-painted steel.
Casement design exactly replicates the original windows	N/a	Yes	Yes	Yes
Frame thickness exactly replicates the original windows.	N/a	47mm frame thickness.	32mm frame thickness.	32mm frame thickness
Frame width exactly replicates the original windows.	N/a	59mm	56.38mm	56.38mm
Applied glazing bars exactly replicate the original windows.	N/a	25mm flat bars with spacers	19mm profiled bars to mimic external putty glazing and internal Fenestra styling	23mm bars with putty internally and externally extending to 32mm to cover edges of sealed units.

APPENDIX 1 – LIST ENTRY 1378999

4, 5 AND 7, THE MOUNT SQUARE

Official list entry

Heritage Category: Listed Building

Grade: II

List Entry Number: 1378999

Date first listed: 14-May-1974

List Entry Name: 4, 5 AND 7, THE MOUNT SQUARE

Statutory Address 1: 4, 5 AND 7, THE MOUNT SQUARE

County: Greater London Authority

District: Camden (London Borough)

Parish: Non Civil Parish

National Grid Reference: TQ 26331 86051

Details

CAMDEN TQ2686SW THE MOUNT SQUARE 798-1/16/1623 (South side) 14/05/74 Nos.4, 5 AND 7

GV II

Terrace of 3 houses. Late C18/early C19, altered. Multi-coloured stock brick, No.7 painted. Nos 4 & 5, slated hipped roofs.

No.4: 3 storeys 2 windows. C20 Georgian door case, radial patterned fanlight and panelled door. Cambered red brick arches to recessed sashes with shutters.

No.5: 3 storeys 2 windows. C20 ground floor refronting with cornice above sashes breaking forward to provide hood over panelled door with overlight. Cambered red brick arches to slightly recessed sashes with exposed boxing.

No.7: 2 storeys 1 window. Round-arched doorway with blocked fanlight and half-glazed door. Cambered brick arches to recessed sashes. Parapet. Right-hand return has square-headed entrance with enriched brackets; 6-panel door, top panels glazed. INTERIORS not inspected. HISTORICAL NOTE: No.7 was formerly the laundry of Old Grove House, Hampstead Grove (qv).

Listing NGR: TQ2633786045

Legacy

The contents of this record have been generated from a legacy data system.

Legacy System number:

478363

Legacy System: LBS

APPENDIX 2 - HISTORIC ENGLAND CRITERIA

The following Historic England guidance is set out in its publication "Traditional Windows – Their Care, Repair and Upgrading", 2014.

Determining significance

"The significance of a place embraces all the diverse and natural heritage values that people associate with it, or which prompt them to respond to it. These values tend to grow in strength and complexity over time, as understanding deepens and people's perceptions of a place evolve."

Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008) Principle 3.2

The values that give significance to heritage assets are wide-ranging and interrelated: buildings and places provide material evidence about the lives of past generations. For example, they may offer insights into developments in construction technology, reflecting the distribution of materials, skills, ideas, knowledge, money and power in particular localities and at particular points in time.

Evidential value

Evidential value reflects the potential of a building or its fabric to yield information about the past. Rarity adds to evidential value. If the fabric of the window is old it will probably have considerable evidential value. In contrast, a modern standard 'off the peg' window in the same opening will have no evidential value.

Historic value

Most historic windows will illustrate, in varying degrees, the materials and technology, the craftsmanship and the architectural taste of the period from which they date. A shop window in a domestic building may carry considerable historic value indicating the development of the function of the building.

Aesthetic value

Fenestration often forms an integral part of the design of the building and contributes to a building's visual interest. If later in date, its aesthetic qualities may add to or detract from the interest of a building. Replicas or recreations of fenestration of aesthetic quality will maintain this value. In contrast, much off-the-peg joinery and modern glazing does not replicate historic appearance and so can detract from the aesthetic value of the building.

Communal value

This value will not usually be affected by changes to windows unless they contain commemorative glazing, as sometimes found in public buildings and places of worship.

Significance

Significance is the sum total of heritage values.

APPENDIX 3 – APPEAL DECISION X5210-E-02-1094937

The pictures show the original landing window and the window that was approved as a replacement for it in 2002. The Decision Notice is reproduced in full below.

Original Crittall landing window.

Replacement landing window.

671

Appeal Decision

The Planning Inspectorate
4/09 Kite Wing
Temple Quay House
2 The Square
Temple Quay
Bristol BS1 6PN
☎ 0117 372 6372
e-mail: enquiries@planning-inspectorate.gsi.gov.uk

Site visit made on 18 November 2002

by Philip Wilson **Dip Arch DipTP RIBA MRTPI**

an Inspector appointed by the First Secretary of State

Date **29 NOV 2002**

Appeal Ref: APP/X5210/E/02/1094937
5 The Mount Square, Hampstead NW3

- The appeal is made under section 20 of the Planning (Listed Buildings and Conservation Areas) Act 1990 against a refusal to grant listed building consent.
- The appeal is made by Clyde Whittaker against a decision of the Camden London Borough Council.
- The application (Ref. LWX0103671) dated 30 July 2001 was refused by notice dated 15 January 2002.
- The works proposed are a rear window.

Summary of Decision: The appeal is allowed.

Procedural Matters

1. The appeal is concerned with a window already installed in a Grade II listed building. Authorisation is sought for its retention, as provided for by sections 7 and 8 of the Planning (Listed Buildings and Conservation Areas) Act 1990. My determination takes into account the duties imposed by sections 16(2) and 66(1) of the above Act. These require me to have special regard to the desirability of preserving a listed building or its setting, or any features of special architectural or historic interest which it possesses. The main issue in this appeal is the effect of the works undertaken on the special interest of the listed building.

2. Relevant planning policies are contained in the London Borough of Camden Unitary Development Plan 2000 (UDP). Policy EN38 reflects the wording of sections 16(2) and 66(1) of the 1990 Act, summarised above. Policy EN40 advises that the Council will seek the retention and repair of original features of a listed building.

Reasons

3. In determining this appeal, I have taken into consideration guidance on alterations to listed buildings contained in Planning Policy Guidance note 15 *Planning and the Historic Environment* (PPG15). PPG15 recognises that few listed buildings exist in their original form and that minor alterations of indifferent quality can cumulatively be destructive of a building's special interest.

4. Evidence that the wall in which the appeal window is set forms part of alterations to the building carried out in the early 1930s is supported by the presence of Crittal metal casements in what is now the south wall of the dwelling. The appeal window lights a stairwell and takes the place of a vertically proportioned metal window. That window is illustrated in photographs submitted with the appeal documents. It is not a feature that I consider is likely to have contributed to the special interest of the listed building. To the extent that it provided evidence of a previous phase of development, that evidence remains available in documentary form and might also be deduced from a study of the building's plan.

5. It is questionable whether any fabric contemporary with the 1930s alterations or otherwise important to the special interest of the listed building has been removed. The new window, of timber with a reconstituted stone surround, appears slightly smaller than the window that formerly occupied this position. It has been well made and I consider its shape and the pattern of its glazing to be more pleasing in appearance than the metal window it replaces.

6. With the above considerations in mind, I conclude that the window now installed does not interfere in any material sense with an appreciation of the special architectural or historic interest of the listed building. The works therefore preserve the special interest of the listed building. It may be, as the Council suggests, that the former window could have been replaced with a double hung sash. However, given the position of the window opening and the absence of any obvious need to match an original feature or preserve any formal elevational composition, I do not consider that was the only option available to the Appellant. I therefore find no conflict with the objectives of UDP policies EN38 and EN40.

7. The appeal building is situated in the Hampstead Conservation Area and section 72(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 imposes a duty to pay special attention to the desirability of preserving or enhancing the character or appearance of a conservation area when exercising planning powers. The Council does not object to the works on conservation area grounds but provides information on the Hampstead Conservation Area and conservation policies, together with guidance notes published by English Heritage.

8. The appeal building makes a positive contribution to the character and appearance of the conservation area, but the appeal window is in a position where it is likely to be visible from only one or two other private dwellings nearby. In the circumstances, I do not consider that the works that have been undertaken can be said to have had any material effect on the character or appearance of the conservation area. Accordingly, I conclude that the works that form the subject of this appeal preserve the special interest of the Hampstead Conservation Area.

9. The Council has suggested that any authorisation for retention of the appeal window should be conditional upon the window frames and surrounding stonework being painted black or an approved dark colour. I am aware that the sashes and glazing bars of some 18th century buildings were painted in subdued colours, but I can find no justification for insisting on that treatment in this case. As the window is in place and all works associated with its installation have been completed, I see no need for conditions to be imposed.

Conclusions

10. For the reasons given above and having regard to all other matters raised, I consider that the appeal should succeed.

Formal Decision

11. In exercise of the powers transferred to me, I allow the appeal and hereby authorise retention of a rear window at 5 The Mount Square, Hampstead in accordance with the application Ref. LWX0103671 dated 30 July 2001 and the plan submitted therewith.

INSPECTOR 

APPENDIX 4 – EXISTING WINDOWS

SPECIFICATION

Details of the two existing Crittall windows are provided in Figures 3 and 4 below. The key features noted are:

- steel frames and windows with eight clear-glass single-glazed panes, putty beading
- welded 18mm-20mm wide flat glazing bars
- brass handles
- brass stays
- all painted over in white
- overall frame depth – 28mm

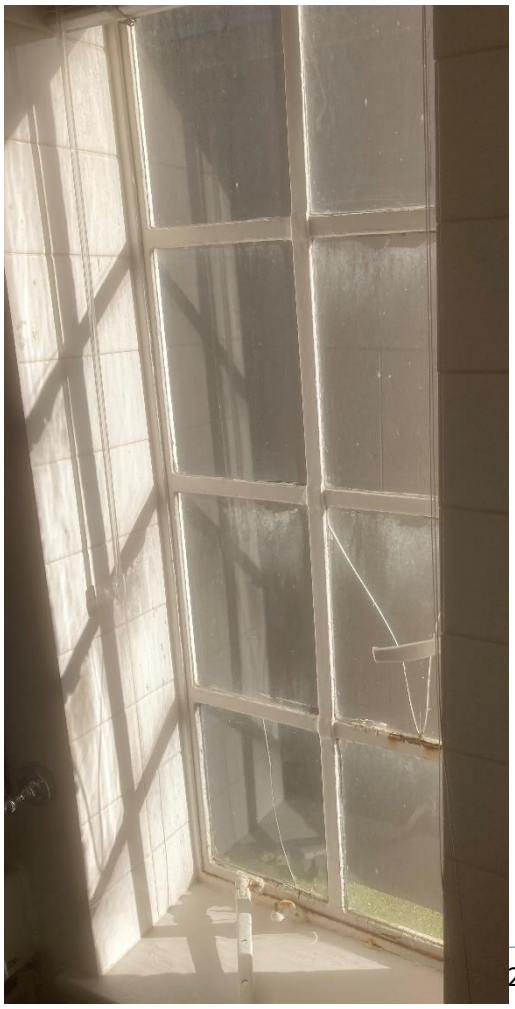
BATHROOM 1 (SECOND FLOOR)

External Dimensions (Reveal)

Height : 122.5 cm

Width : 51.3 cm

Pictures



Frame Fixing

BATHROOM 2 (FIRST FLOOR)

External Dimensions (Reveal)

Height : 122.5 cm

Width : 51.0 cm

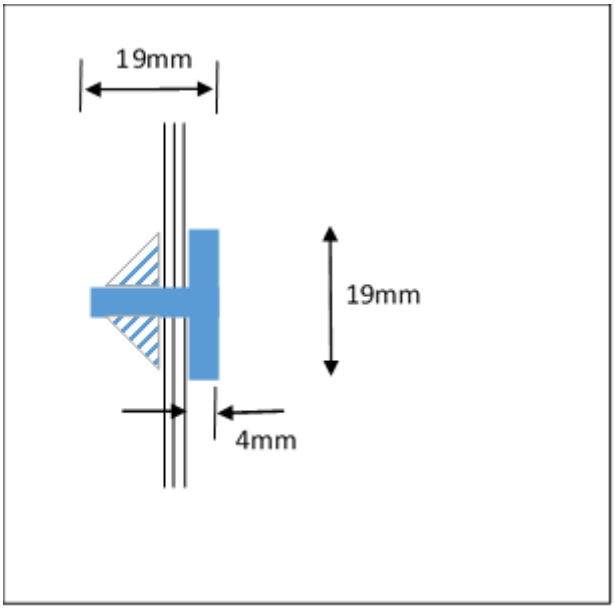
Pictures

THE EXISTING GLAZING BARS

157. Like the Crittall Homelight SMW windows fitted in many thousands of homes of the period, the glazing bars of the bathroom windows show a characteristic “fenestra” design employed by Crittall, in which flat metal bands over overlayed over one another to form a lattice. The picture opposite shows this design in close-up. Whilst it is thought to be unique to Crittall Windows it is not however unique to Crittall Homelight SMW windows and is employed by Crittall Windows in their modern range of Homelight Plus windows.

The existing glazing bars are formed of steel bars welded into the rails and stiles of each casement window to form a grid, into which eight glass panes are fitted. A cross sectional drawing of the glazing bar is shown in Figure 5 below. The total cross sectional depth is 19mm, with the glazing bars protruding 4mm on the inside and 12mm on the outside of each window, with 3mm glass.

Cross section of glazing bar - existing



APPENDIX 5 – REPLACEMENT WINDOWS – THERMAL TRANSFER (U VALUE)

U Value: Clyde Whittaker

Quote: 32

Infills	*Centre Pane W/m²K*	*Psi W/mK*
24MM GLAZING	1.000	0.035

Item	Qty	Description	Width	Height	U Value W/m²K	Area m²	Heat Loss W/K
1	1	Casement	503 X	1225 mm	1.9	0.6	1.2
				Totals		0.6	1.2
				U Value	1.9	W/m²K	

U Value calculation in accordance with BR 443, BS EN 10077-1 and BS EN 10077-2

APPENDIX 6 – 1931 MODERNISATION

Whilst much of the upper part of the front of Number 5, The Mount Square dates from the early 19th century, the listing entry notes that re-fronting at ground floor level took place during the 20th Century, pointing to major alterations to the building which took place in 1931/2 to combine Numbers 5 and 6 The Mount Square into a single dwelling, for which planning consent was granted on 14th September 1931.

The plans submitted in connection with this consent, reproduced below, show extensive structural work to support the creation of a light well at the rear of the building to serve a new rear bathroom at first floor level.

The new rear wall of the building resulting from creation of the light well is faced in grey brick stock and currently has three windows formed of concrete cills into which steel Crittall windows are fitted.

The concrete used appears to have been of relatively poor quality and two of the concrete cills have fractured, one being severely broken to the extent that it requires replacement.

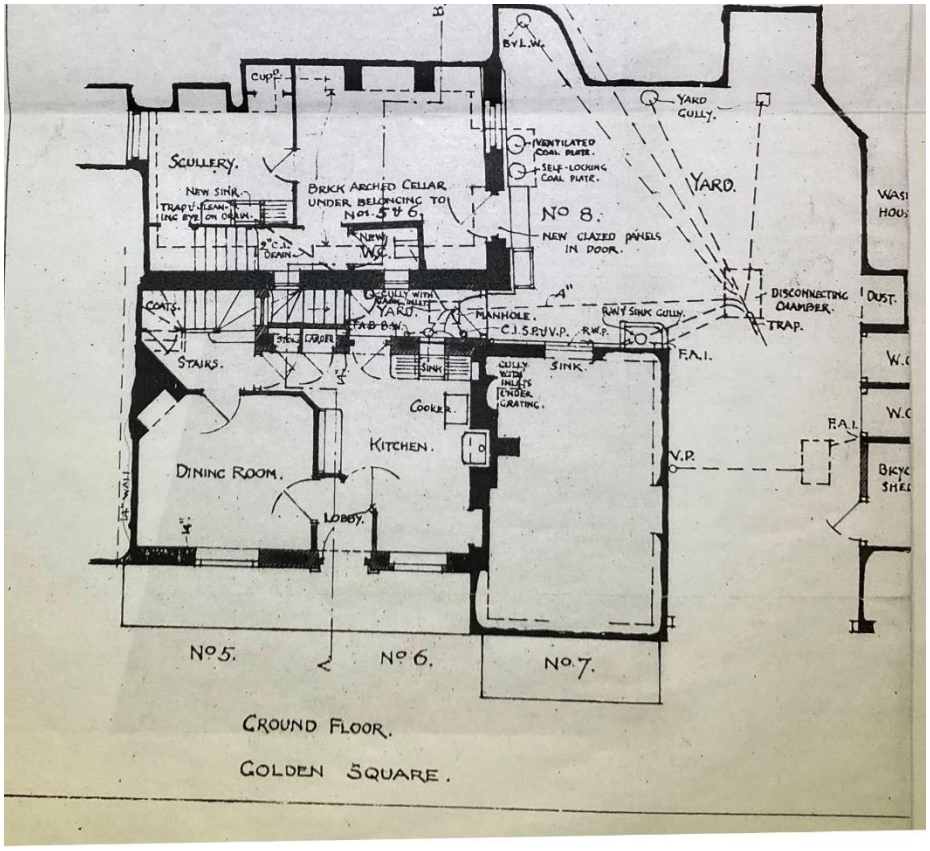
At a later date, an additional bathroom was added to the second floor and further remodelling took place internally. Alterations were made in February 1974 when the kitchen was extended at ground floor level to cover all of the former yard created by the 1931 works at the rear of the building.

In 2002/3 a further renovation was performed.

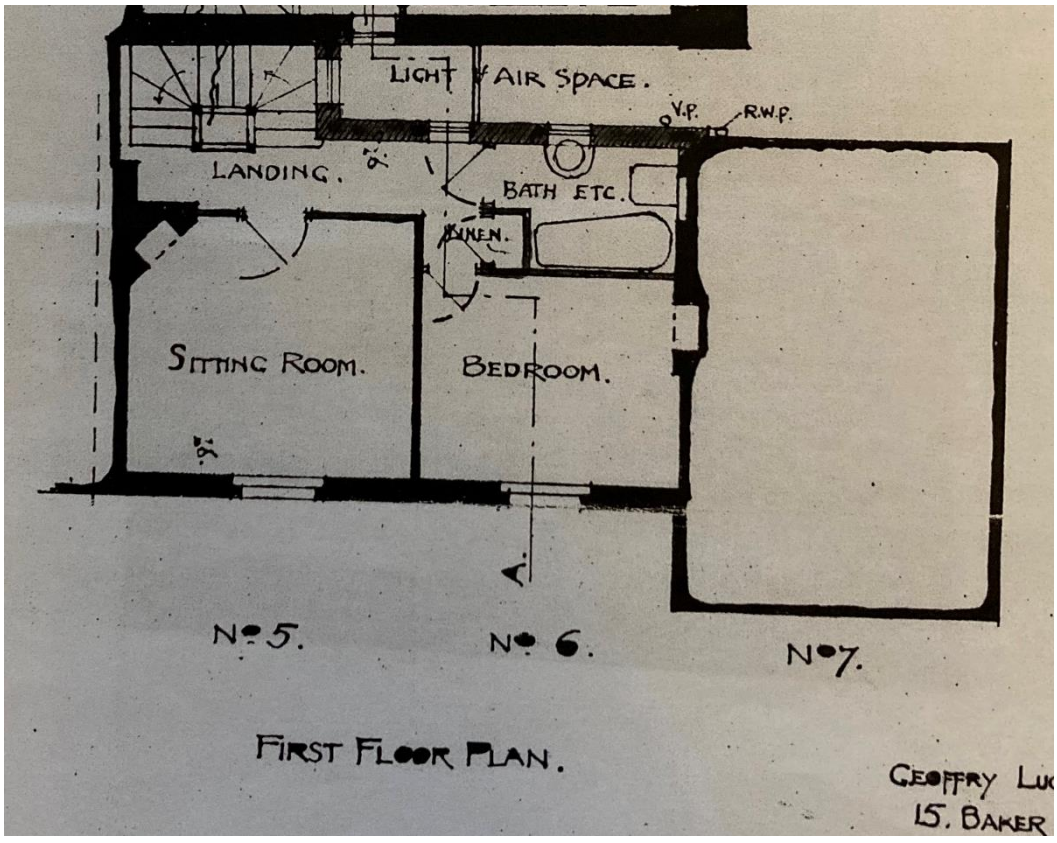
Whilst the upper part of the building's front elevation contains much fabric which dates from the early 19th century, the internal fabric dates largely from the 20th/ century, whilst the rear wall is of 1930s construction with a brick elevation and window details which do not match the front of the building.

Six Crittall Homelight SMW windows of various sizes were originally fitted to the new rear elevation formed by the light well, of which three have been replaced.

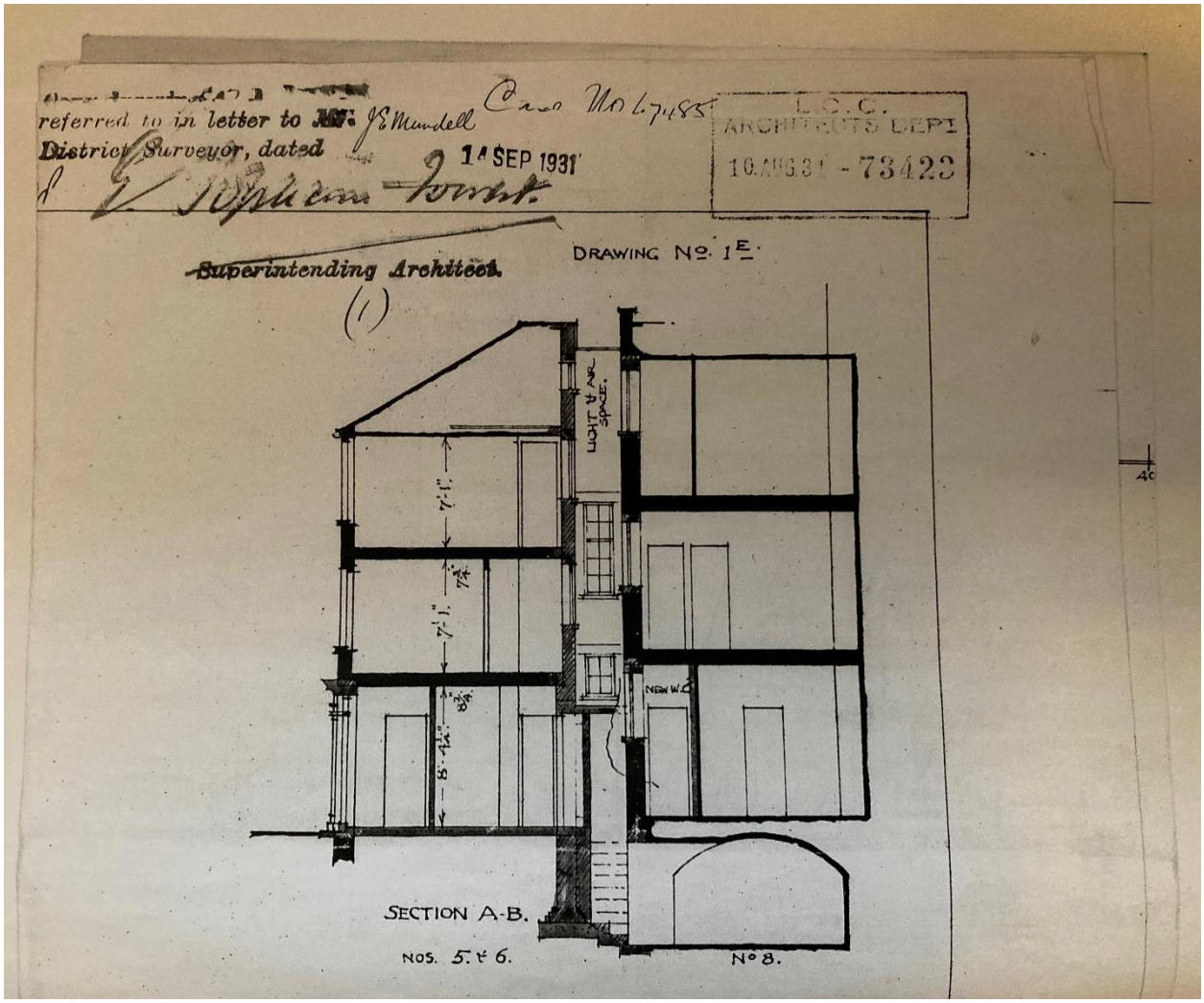
Ground Floor Plan – 1931 modernisation



First Floor Plan – 1931 modernisation



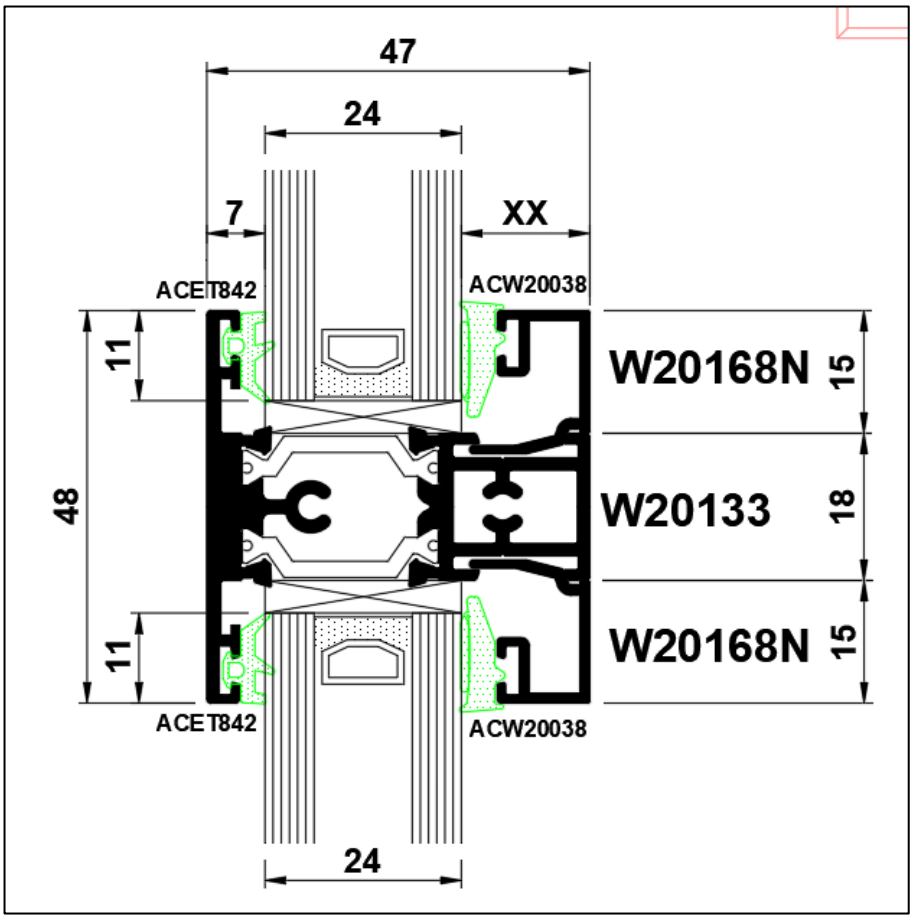
Cross Section – 1931 modernisation



APPENDIX 7 – ALUMINIUM INTEGRAL GLAZING

In the light of Camden Council's general preference against the use of applied glazing bars, Smart Architectural Aluminium were consulted to confirm whether any fixed glazing bar alternatives are available which would maintain the look and feel of the existing windows as far as possible.

The only alternative design using fixed glazing bars is a transom-style design, using a W20168 profile. A cross sectional diagram of this profile is shown in Figure 8 below. An email from the technical department at Smart Architectural Aluminium setting out the limitations of this type of glazing bar is included below.



W20168 Transom (integral) Glazing Bar Profile

The use of a transom-style glazing bar of this type would have a number of significant disadvantages.

First, the system is only compatible with top-hung windows and cannot be used with normal casement windows. This is because the greater bulk of the fixed transom-style bars interferes with the window's locking mechanism.[33] Top-hung windows would be inappropriate for use in bathrooms, as they would not offer the necessary levels of ventilation at times of high humidity. Top-hung windows are also inconsistent with the almost universal use of side-opening metal casement windows at the time the rear light well was constructed.

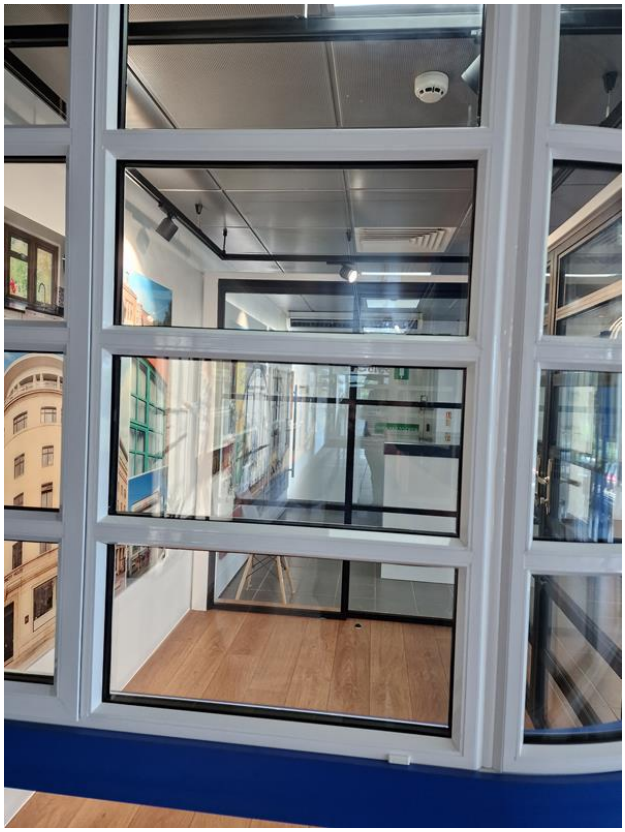
Second, the transom-style glazing bars are significantly more bulky and intrusive than other options. The total thickness is 47mm, the thickness of the entire window frame, compared with 31mm in the case of the proposed applied bars. More seriously the transom-style bars are 48mm wide when viewed externally, compared with 25mm wide applied bars and 19mm wide glazing bars in the existing Crittall windows.

The overall appearance of the transom-style bars would create windows of an entirely different and much bulkier character, neither consistent with the look and feel of the existing windows, nor appropriate for the two small bathrooms that they serve (both around 3 square metres square).

The picture below shows transom-style fixed glazing bars, provided by Smart Architectural Aluminium.

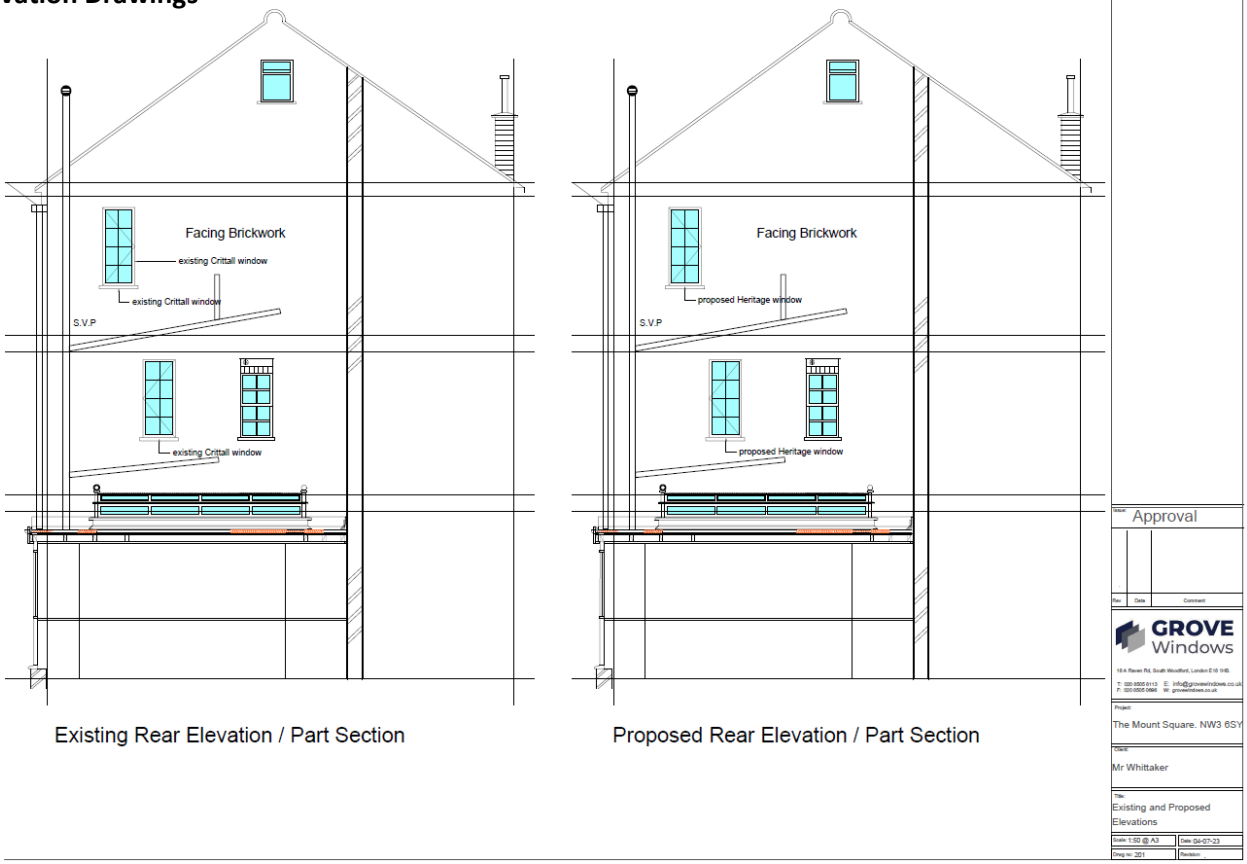
[33] Email message from Smart Architectural Aluminium dated 11th July.

Picture of transom-style fixed glazing bars



APPENDIX 8 – APPLICATION DRAWINGS

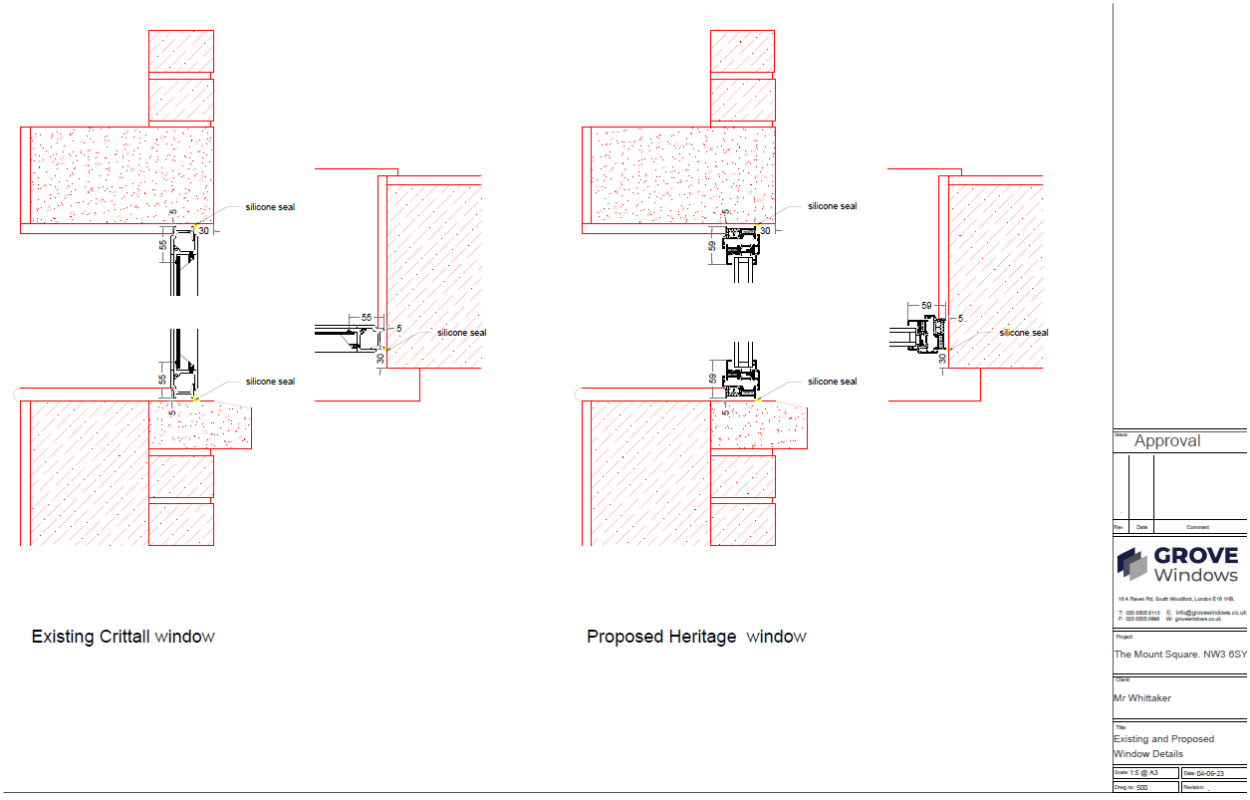
Elevation Drawings



Existing Rear Elevation / Part Section

Proposed Rear Elevation / Part Section

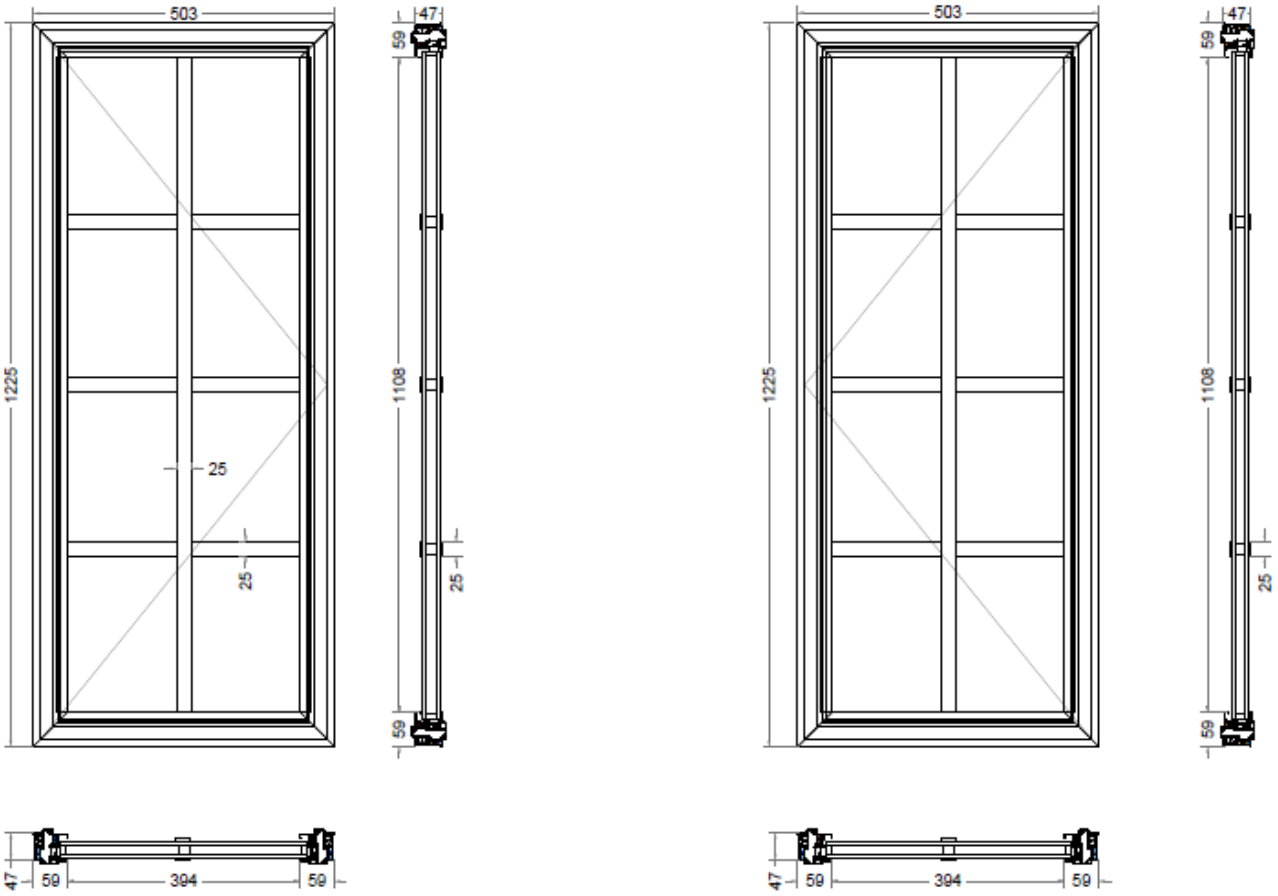
Detailed Drawings – Sills and Jambs



Existing Crittall window

Proposed Heritage window

Detailed Window Design



1st Floor Bathroom

2nd Floor Bathroom

- Existing Crittall
  - steel frames and windows with eight clear-glass single-glazed panes, putty beading
  - welded 18mm glazing bars
  - brass handles
  - brass stays
  - all painted over in white
  - overall frame depth (including window when shut) – 28mm
- Proposed Alitherm Heritage 47 –
  - slimline aluminium sections to match Crittall style windows.
  - PPC to a white gloss finish.
  - Polyamide thermal break.
  - Internal beading
  - reverse espagnolette locking.
  - 25mm flat aluminium Georgian astragal bars with duplex spacer bars
  - Double glazed in clear glass with 4mm low iron glass/ 4mm 1.2 soft coat glass.
  - Art deco brass handles
  - Bulb-end beg stays

Issue: Approval

Rev	Date	Comment

GROVE Windows

16 A Raven Rd, South Woodford, London E18 1HB.

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P: 020 8505 0886 W: grovewindows.co.uk

Project: The Mount Square. NW3 6SY

Client: Mr Whittaker

Title: Proposed Heritage Windows

Scale: 1:10 @ A3	Date: 04-07-23
Dwg no: 200	Revision: -