Condition survey of roof coverings

at

21 & 22 Russell Square, London

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21/22 Russell Square, London, WC1B 5EA
Survey of condition of main roof coverings

1 Introduction

1.1 Instructions

We were instructed through Michael Taylor, partner of Tuffin Ferraby Taylor LLP to make an inspection of the main roof coverings over 21/22 Russell Square and to prepare a report on their condition and remaining life expectancy.

Our inspection was undertaken by Stephen Bond, partner of TFT Cultural Heritage, on the morning of 20 December 2006. These adjoining buildings are currently part of a construction site. We were accompanied during our inspection by David Fletcher of JONAP, the contractor.

1.2 Inspections and Limitations

This report is based on a visual inspection of the roof coverings. Access to these is gained through a rear window on the upper floor of 21 Russell Square and thence by unfixed timber ladders lying over slated slopes onto the roof of no.21 and using a metal walkway and ladder onto the roof of no.22. No opening up was undertaking and we did not access any roof void. Accordingly, we cannot comment upon the condition or adequacy of any concealed building fabric or parts of the structure. Additionally, the access and protection arrangements to the upper roof area over 21 Russell Square are particularly unsatisfactory and unsafe. Given the localised presence of standing moisture on the flat roofed sections and near 0°C temperatures, no access was attempted to this upper leaded area, although very oblique sight was possible from the valley gutter against the chimney stack shared with no.22. Again, our inspection and this report were and are limited accordingly.

Our instructions were to undertake a condition survey of the roof coverings. We were not requested to undertake a fire risk assessment or health and safety/DDA audits. However, in this report, we have made an appropriate observation in passing about the use of the metal walkway, ladder and upper roof area over 22 Russell Square as an escape route for building users in the event of a fire.

1.3 The Buildings

21 & 22 Russell Square are Grade II listed buildings. They were first listed as part of the terrace, nos.21-24 Russell Square, with all associated pavement railings, on 14th May 1974. The list description for the terrace reads:

Terrace of 4 houses, formerly a symmetrical terrace similar to Nos 52-60 (qv). One surviving projecting end bay (No.24) and central bay (No.21). c1808. By James Burton, altered c1898 possibly by PE Pilditch. Yellow stock brick with later terracotta dressings. Slate mansard roofs with dormers to Nos 21 and 24. EXTERIOR: 4 storeys, attics and basements. 3 windows each. No.24 with 4-window return, blind except those above portico, to Thornhaugh Street. Round-arched doorways in square-headed terracotta surrounds with fanlights, side-lights and panelled doors, except No.24 with prostyle, rusticated stucco portico with balustrade. Recessed, architraved sash windows; 1st floor, some

casements, with cornices and centre windows on projecting bays pedimented. Continuous cast-iron balconies to 1st floor windows. Cornice at 3rd floor level, projecting bays with enriched frieze. Parapets; Nos 22 and 23 with balustraded parapet. Centre dormer to No.24 with terracotta pediment; No.21 with pedimented dormers, the central one semicircular. INTERIORS: not inspected. SUBSIDIARY FEATURES: attached mid C19 cast-iron railings to areas. HISTORICAL NOTE: No.21 was the home of Sir Samuel Romilly, law reformer (plaque). The Duke of Bedford was inspired to add terracotta dressings to these houses following the building of The Russell Hotel.

Grade II listed status (roughly 94% of all listed structures in England and Wales) applies to buildings of "special interest, warranting every effort to preserve them". The legislation relating to listed buildings (in 2006, primarily the *Town & Country Planning Act 1990* and the *Planning (Listed Buildings & Conservation Areas) Act 1990*) requires prior consent from the Local Authority for any change that will materially affect the character of the building. Generally, this requirement tends to exclude works of maintenance and repair of small scale where matching materials and techniques are to be applied; hence, in many instances, these can be undertaken without the need for consent from the Local Authority. However, this will not be the case for more substantive repairs or for those where matching materials are not to be used.

Two matters need to be addressed at this stage arising out of this list description. Firstly, it might be taken that absence of mention implies that the pitched and slated and leaded upper roofs over 22 Russell Square have been constructed after listing and preparation of the list description occurred. This is patently not the case. Site inspection suggests that the roofs of the two properties are Victorian in origin. Secondly (and of mere passing interest to the substance of this report), at the time of our visit, the contractor's operatives had just uncovered, from within the built fabric, a page from a newspaper dated 1897. It is to be assumed that this was used in construction of the alterations mentioned in the list description and provisionally ascribed to the architect, P E Pilditch.

2 Findings

2.1 Access to the main roofs over 21 & 22 Russell Square

As has already been noted, access to view the roofs over 21 and 22 Russell Square is gained through a rear attic level dormer window set in the lower slope of a slated mansard roof. Once through the window, the viewer steps out onto a painted metal grated walkway, mounted on iron bearers, which themselves are seated on concrete copings at the head of the parapet over the rear external wall of the building **[1]**. This walkway oversails a full drop to the ground below and, somewhat alarmingly, the protective balustrade on its outer edge has large gaps between each horizontal rail. In wintery conditions, such as at the time of our inspection, the walkway is distinctly slippery. Iron components, including fixings, are corroding badly. In the past, we understand with Fire Brigade approval, the walkway has also been designated as an escape route in the event of a fire occurring within the building. In our opinion, this walkway is unsafe for use in any circumstances, given its current configuration and condition.

Access to the upper roof areas over 21 Russell Square is gained off the metal walkway described above. An unfixed timber roof ladder is located, resting against the slated mansard slope and standing on the leaded parapet gutter mid way along the length of the walkway. The top of the ladder does not give direct access to any flat and level surface. Instead, the user has to step sideways onto a narrow valley gutter against the dividing chimney stack between the two properties, holding onto the deformed and truncated section of downpipe for support. Whilst this method was used to gain access to the valley gutter over no.21 with the assistance of Mr Fletcher of JONAP for the purposes of this survey inspection, it is entirely unsuitable as a permanent means of access to the upper roof and must be regarded as being unacceptably dangerous for any unaccompanied user to the roof area. The topmost flat leaded roof area over no.21 is notionally accessed using a second unfixed roof ladder lying against a slated slope and standing on the narrow valley gutter reached from the head of the lower ladder. The upper roof area is small and completely unprotected **[2]**. In our view, this means of access and the configuration of the top leaded roof area are unsafe.

Access to the lower roof area over 22 Russell Square is gained by ducking through a metal railing after crossing the walkway **[3]**. There is no satisfactory edge protection to this section of roof, making access for maintenance a considerable risk.

Access to the upper roof area over 22 Russell Square is by way of a fixed metal ladder located beside the party wall between the two properties. The ladder was slippery at the time of our inspection, suggesting that, in deep winter conditions, it would be dangerous to use. The upper flat roofed area does have edge protection in the form of painted metal railings set on blocks. However, these do not meet with modern standards, given the large gaps between rails and posts.

No access is possible to the base of the front roof slopes and to the front parapet gutters on either property. An oblique view of these elements was possible over 22 Russell Square from the upper roof area, but no sight could be gained of the equivalent elements over 21 Russell Square.

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2.2 Roof coverings to 21 Russell Square

Limitations on our inspection of these roof coverings have already been described.

There is a single access hatch cover set into the uppermost flat leaded section of roof. Three timber framed rooflights block the front to rear running valley gutter against the chimney stack shared with no.22 and two further grp or similar rooflights have been inserted into the lower rear mansard slope **[4]**.

Patch repairs are evident on the upper leadwork, many using flashband, which can be considered to be of temporary palliative benefit only. The lead is old, heavily indented and softened **[5,6]**. It is probable that considerable corrosion of the underside of the lead sheet is occurring. Where visible, the lead rolls are distorted and some are clearly split and failing. Our limited view suggests that this covering has reached the end of its useful life. Immediate repair is required to defective areas (including failing past repairs), if there is any delay before recovering takes place. Otherwise, the covering should be renewed in a suitable code milled or sand cast lead sheet. Care needs to be taken with the specification of this work to ensure the appropriate detailing is used. Amongst other things, a chalk emulsion should be applied to the underside of the new sheet to reduce the risk of corrosion occurring in the future. It is likely that extensive repair of timber decking and perhaps parts of the supporting structure will be required prior to recovering of the flat roof. Improved access and edge protection arrangements to the upper roof areas for maintenance purposes are also regarded as being essential.

Lead flashings and valley gutters should be renewed at the same time as the recovering of the lead roof.

The slate coverings to the upper side and steep rear mansard slopes are superficially in fair condition. However, slippage is occurring and a number of slates are fractured or unacceptably damaged at their edges. When slates are touched, it becomes clear that there is widespread failure of the nail fixings. The slates appear to have been stripped and refixed on at least one occasion already. Whilst short term repairs can be effected to these slopes, complete renewal of the slate coverings will be required in the next five years or so. Accordingly, in the circumstances, it is recommended that this work is brought forward to coincide with other roofing works described in this report. Some timber repairs may be needed in the mansard structure behind.

Extensive patch repairs have been carried out in recent years to the timber rooflight structures, mostly using flashband **[4]**. Decay is evident in exposed sections of timber. Considerable deterioration can be anticipated in the surrounding concealed fabric. Major overhaul of these structures will be required at the same time that the roof is recovered. The lower grp rooflights are in serviceable order, but are wholly out of keeping with the character and listed status of the building. Ideally, these should be replaced with dormer windows of more appropriate design when the re-roofing works are carried out, recognising, nonetheless, that the one dormer window currently provides the only means of access to the roofs.

There is a lower lead covered flat roof over the rear bay to no.21 **[7]**. Rainwater from this roof drains into a valley gutter at the base of the slated mansard roof. Splits are evident in the lead covering, which is also aged and soft. Again, it is anticipated that corrosion is occurring on the underside of the lead sheets. Upstands on the roof are of inadequate depth and the lead rolls are deformed. The sump at the lower end of the valley gutter was found to be choked with leaves and other debris at the time of our inspection. The roof is almost at the end of its useful life and should be recovered in the

next two to three years. If this work is not undertaken immediately, temporary repairs will need to be put in hand to keep the roof watertight in the short term.

2.3 Roof coverings to 22 Russell Square

Limitations on our inspection of these roof coverings have already been described.

There are two timber and metal framed roof lights set into the upper flat leaded roof section, along with a large painted iron or steel hatch cover. As has already been noted, inadequate edge protection is in place on both sides of the roof **[8]**.

The leadwork has been repaired in the past with soldered patches and more recently with a bitumen coating and flashband. The latter temporary repairs are now failing again. The lead sheeting is old, heavily indented and softened. Some sheets are overly long, given the thickness of lead sheet that has been used. Areas of ponding are visible and the outline of the timber boarding to the deck beneath is clearly visible across the whole roof **[9]**. It is probable that considerable corrosion of the underside of the lead sheet is occurring. In at least one area, decay of the timber deck is also evident, with a marked depression in the surface of the roof. Elsewhere, minor splits and rucking of the lead can be found **[10]**. The lead rolls are badly distorted and particularly liable to splitting. Lead flashings protecting the upstand between the covering and adjacent walls are loose and in places have dropped out of their joint entirely **[10]**. In summary, the covering has reached the end of its useful life. It should be renewed at an early date using a suitable code and detailed milled or sand cast lead sheet. As before, care needs to be taken with the specification of this work to ensure the appropriate detailing is used. It is probable that extensive repair of timber decking and perhaps parts of the supporting structure will be required prior to recovering of the flat roof. Improved access and edge protection arrangements to the upper roof area will be needed for maintenance purposes.

Overhaul of the rooflights will need to be undertaken at the same time as recovering of the flat roof. Corrosion and decay were noted in the framing and cills to these structures and the lead cappings are reaching the end of their useful life.

The front slated roof slop to no.22 has been repaired extensively in the past. At some time, the slates have been stripped and reinstated. Since then, further slippage has occurred with at least 15no. slates being refixed with tingle clips **[11]**. Continued slippage of slates was noted at the time of our inspection. Other slates are fractured or badly damaged at their edges and some delamination is occurring. The rear slated slope has somewhat fewer tingle clips, but a number of slates are displaced or loose. Clearly, extensive failure of nail fixings is taking place. As with the slated coverings over no.21, short term repairs can be effected to these slopes, but ongoing slippage will undoubtedly be a regular and increasing problem. Complete renewal of the slate coverings will be required in the next five years or so. Accordingly, it is recommended that this work is brought forward to coincide with the other essential roofing works. It is unlikely that many slates can be salvaged for reuse given the evidence of previous refixing and signs of delamination. Timber repairs may be required to the concealed timber mansard structure. The lead sheet covering to the dormer structure in the rear slope is in similar condition to other leadwork on the two properties **[12]** and, consequently, this structure should be repaired and recovered at the same time that the roof coverings are renewed.

The lower lead covered roof to the rear of no.22 is in similar condition to the upper leaded area. There is a significant depression in the centre of this roof, indicating the substantial water ingress and

consequential decay to the timber deck has occurred **[13]**. This roof may not be structurally sound, as a result, and access should only be attempted with considerable care.

2.4 Other matters

The chimney stacks forming part of the dividing parapets on each side of these roof areas require localised repointing, extensive renewal of failed render **[14]**, and attention to flaunching and cappings. All these repairs need to be carefully considered and specified to ensure that the historic character and interest of the buildings are not compromised.

The low parapet walls and copings to the front and rear of the properties are also in need of repair. The use of concrete coping to the rear is unfortunate. Most joints are open or fractured and the copings over the head of the rear wall of no.22 are loose and displaced. Corrosion of iron cramps were noted in some parapet copings to the rear and over the party wall between nos.21 and 22.

3 Summary

Comprehensive recovering of the main roofs to 21 and 22 Russell Square is recommended at an early date. This work needs to be carefully planned and specified to protect the significance of the buildings. It is envisaged that some significant repairs to decking and perhaps supporting timber structures may found to be required at the same time.

Considerable improvements need to be effected to access and edge protection arrangements around these roof areas. At the present time, access arrangements are substandard and unsafe.

In our opinion, it is undesirable to continue to rely upon use of these roof areas as a means of escape for building users in the event of a fire. The same applies to emergency use by occupiers of the adjoining no.24.

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For and on behalf of Tuffin Ferraby Taylor LLP

21 December 2006

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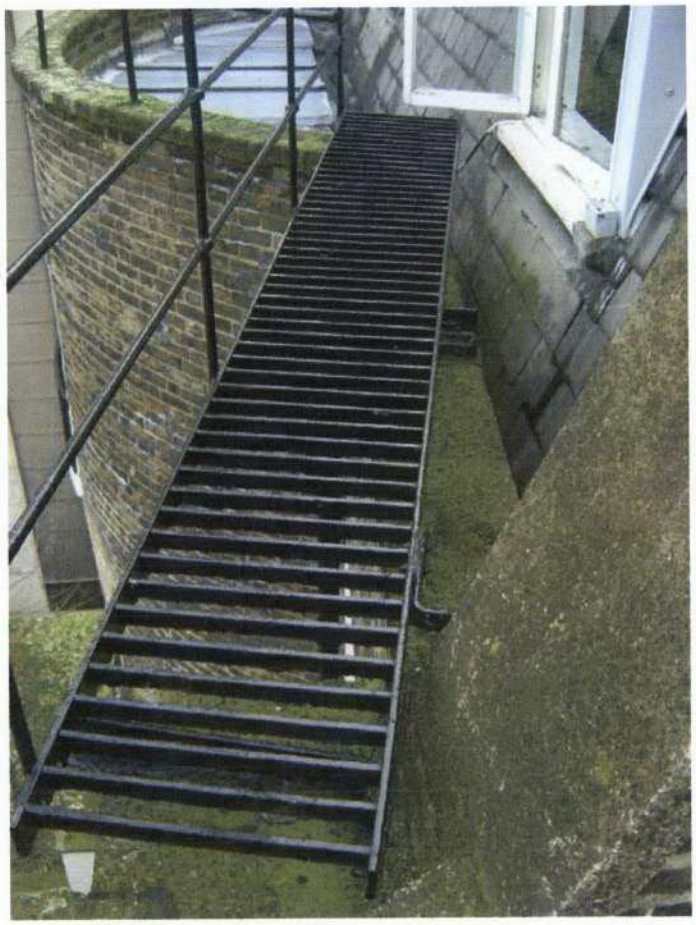
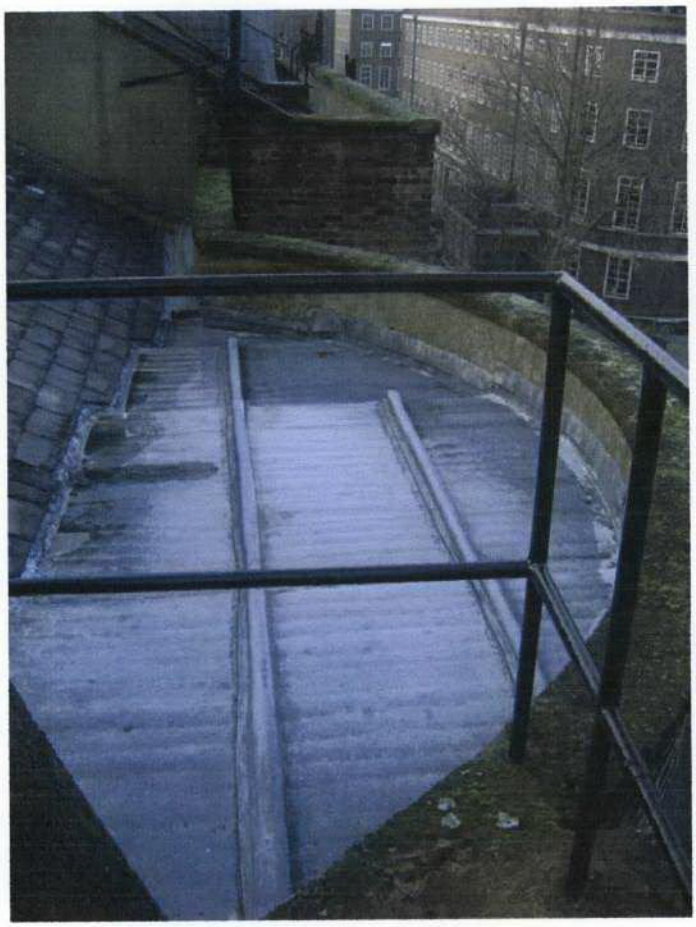
Appendix I: Photographs



1: *Access and escape walkway to rear of no. 21*

2: *Upper rear roof over no.21 without edge protection*

Appendix I: Photographs



3: *Lower roof over no.22*

4: *Upper roof over no.21 with rooflights*

Appendix I: Photographs

5: *Upper leaded roof area over no.21*

6: *As (5), upper roof over no.21*

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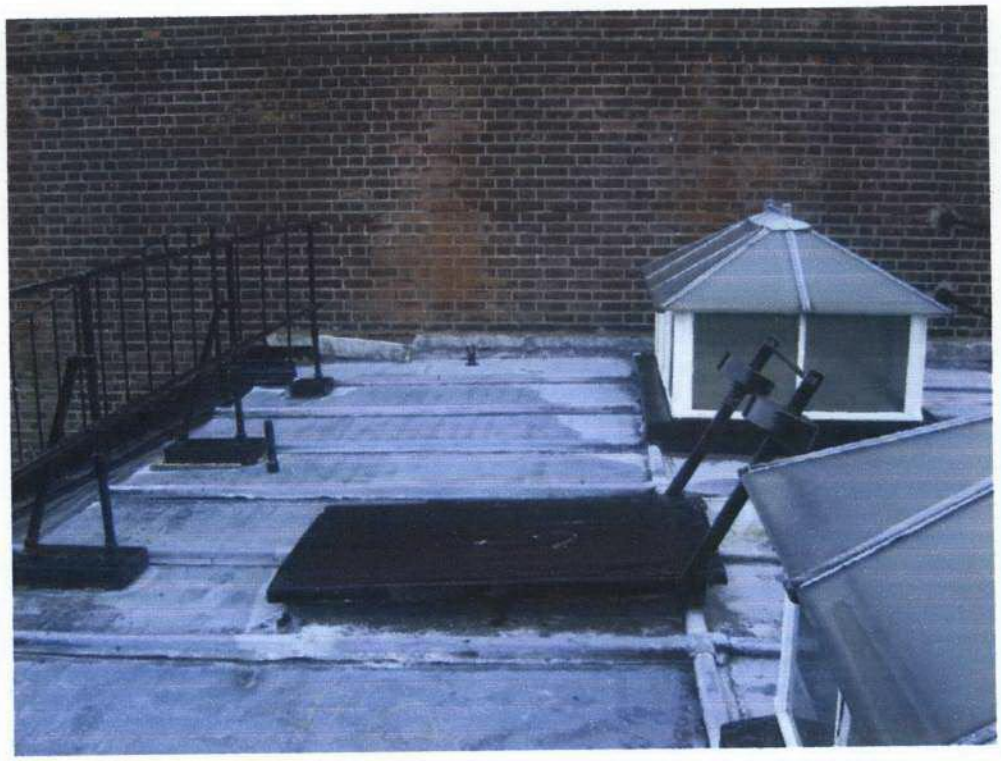
7: *Lower roof to no.21*

8: *Upper roof over no.22*

9: *As (8), upper roof over no.22*

10: *Loose flashing and rucked lead sheet over no.22*

Appendix I: Photographs



9: *As (8), upper roof over no.22*

10: *Loose flashing and rucked lead sheet over no.22*

Appendix I: Photographs

11: *Front slope over no.22*

12: *Dormer structure in rear slope of no.22*

Appendix I: Photographs

13: *Depressed areas and defective leadwork on the lower roof to no.22*

14: *Defective render to shared chimney stack with no.23*