INVESTIGATION OF FLOORBOARDING TO ASCERTAIN AGING OF 16-18 CHENIES STREET FOR 18 MAY 2017, JOB NO. 147.17

RADA

CONTENTS

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1 INTRODUCTION

1.1 AUTHORITY AND REFERENCE

Hutton+Rostron Environmental Investigations Limited carried out an assessment of the floorboards and floor joists to the Drill Hall, Western Corridor and Bar areas to ascertain the likelihood of the boards and floor joists dating back to the original construction of circa 1882 at the RADA theatre building at 16-18 Chenies Street on 18 May 2017 in accordance with instructions received from Mr Nick King of Sinclair Johnston by email dated 8 May 2017 on behalf of RADA. Reference was made to drawings supplied by Haines Phillips, reference 3769 for the identification of structures. For the purpose of orientation in this report, the building was taken as facing north (Chenies Street)

1.2 AIM

The aim of this investigation was to establish the likely age of the floorboards and underlying floor joists in relation to whether they date back to the original period of construction in 1882-1883

1.3 LIMITATIONS

This survey was confined to the accessible structures. Concealed timbers and cavities have been investigated where necessary by the use of high-powered fibre optics. Only demolition or exposure work can enable the condition and constructional nature of timber to be determined with certainty, and this destroys what it is intended to preserve. Specialist investigative techniques are therefore employed as aids to the surveyor. No such technique can be 100 per cent reliable, but their use allows deductions to be made about the probable nature of materials at the time of examination. Structures were not examined in detail except as described in this report, and no liability can be accepted for defects that may exist in other parts of the building. We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect or in the event that such part of the property is not free from defect it will not contaminate and/or affect any other part of the property. Any design work carried out in conjunction with this report has taken account of available pre-construction or construction phase information to assist in the management of health and safety risks. The sample remedial details and other recommendations in this report are included to advise and inform the design team appointed by the client. The contents of this report do not imply the adoption of the role of Principal Designer by H+R for the purposes of the Construction Design and Management (CDM) Regulations 2015. No formal investigation of moisture distribution was made

2 EXECUTIVE SUMMARY

2.1 OBSERVATIONS

2.1.1 Drill Hall and Western Corridor

1 Floorboards

In the Builder magazine of 2 June 1883, the floorboards are described as of 'stout deal, tongued'. Deal is defined as a piece of sawn fir or pinewood between 7 and 9 inches broad and 6 foot long with a depth of 2-3 inches. A typical imported quantity of deal at a timber yard in the 19th century may be made up of different lengths and thicknesses and also of different softwood species

Examination of the floorboards revealed different softwood species ranging between *Picea spp* (*Picea abies* or *Picea obovata* – spruce) and *Pinus spp* (*Pinus taeda* group – pine). This would not be unusual bearing in mind the comments above about the composite nature of Deal

More importantly, from the point of view of assigning ageing, the floorboards were differentiated in width measurement and also in constructional nature. However, the squared shanked nail fixings to the underlying joists were found to be consistent possibly indicating a period or periods of complete lifting and relaying

The older and likely original floorboards were generally found adjacent to the perimeter of the Drill Hall and Corridor and in some locations to the central areas of the Drill Hall. They measured a consistent 30 x 170mm and were of a tongue and groove nature. They were quarter sawn denoting a higher quality of preparation in the originating saw mill. In H+R's opinion, the floorboards in these locations may well date back to 1882 but as a proportion of the whole, they only amount to a total of, say 30 per cent or 80m^2 of the total area of approximately 250m^2 and had very likely been lifted and relaid. This relatively small remnant has resulted from a combination of factors

a) Timber decay: There was clear evidence that structurally significant decay had occurred in the past and was currently occurring as a result of wet rot. Although decay was localised it had resulted in the loss and replacement of original boards over a total area of approximately 25m^2 (the total floor area of the Drill Hall and Corridor is approximately 250m^2). In addition, the underlying floor joists in these areas had been either cut back and replaced or extensively partnered

b) Fire damage: At some point in the last approximately 40 years, a fire had occurred with its seat towards the southern half of the basement. The fire had extensively charred floorboards and floor joists over an approximate area of 70m^2. Smoke staining covered an area in excess of this. As a result of the fire, an approximate area of 10 per cent of the total area of floorboards in the Drill Hall and Corridor had been replaced either with new square edged or rebated boards as part of the overall 70m^2 fire affected area. The underlying floor joists, although fire damaged, had been largely retained

c) Footfall: The original Deal floor would have been specified with the expectation of significant wear envisaged from repeated (twice weekly) peace time drill nights with the Volunteers wearing hobnailed boots. There would likely have been an anticipated service life of 50 years or to, say, the mid-20th century. However, the intervention of two 5 year periods of mobilisation (WWI and WWII) would have multiplied the footfall many times over with the Drill Hall in almost permanent use both for men and munitions (in the form of iron bound and later all-steel ammunition boxes etc). This would have greatly accelerated wear. As a comparison in relation to differential wear, the extremely robust quarry tiles laid in the entrance corridor are original. The noticeable wear to these very resilient tiles leading to the threshold of the Drill Hall and Bar would indicate that the abrasion and wear to the Deal floorboards would have been rapid and they would not exhibit the comparative lack of wear currently apparent. In H+R's opinion, and taking into account that the boards are of different species, constructional nature and type of cut – it is highly likely that the boards were extensively lifted, replaced as necessary and re-laid after both world wars i.e. in the 1920s and 1950s and almost certainly after WWII at least. A minority of original boards from 1882 probably remain but are likely to have been re-sited. H+R's estimate for this remnant is approximately 80m^2 out of a total area of approximately 250m^2

d) Installation of services and refurbishment: Since WWII, extensive refurbishment of the floor structure has occurred not only due to the factors outlined in a), b) and c) above, but also for conversion and upgrading purposes. The RADA theatre space has been created and ceilings replaced at basement level representing just two episodes. These activities would have resulted in lifting, replacement and re-laying of many of the boards. In addition, the overlay of a thick plywood sheet overall has damaged the upper surface of all the boards to a greater or lesser extent due to screw fixing and adhesives, ironically and irrevocably damaging what was to be protected

2.1.2 Bar

1 Floorboards

Although no structurally significant decay to floorboards or joists was identified and only smoke damage had resulted from an accidental fire adjacent to the fireplace – wear from footfall would have been extensive, as described in 2.1.1(1) c) above. The floorboards and joists were closely examined. The floor joists are thought to be original but none of the floorboards are thought to date to 1882. As with the Drill Hall, the timber species varies (*Pinus sytvestris* group – European Redwood and Pinus taeda – pine) but this in itself is not conclusive. However, the constructional nature of the boards does vary markedly and this is significant in dating terms. Floorboards were found to be rebated or square-edged with the latter incorporating metal strips as firrings to the joists. No tongue and groove boards as mentioned in The Builder article of 1882 were identified (although some may be present). In H+R's opinion, all of the floorboards post-date WWII

The beading around the perimeter of the floor at the junction with the plaster skirtings masks a gap. Such a gap would not have been countenanced on original construction and is a further indication that the boards are replacements

The majority of the boards appeared to be flat sawn indicating relatively poor post WWII quality originating from the saw mill and timber yard

Nail fixings as with the Drill Hall were squared shanked indicating the floor was laid, up to say, 1965. The 'blond' appearance of the boards is a result of contemporary power sanding

The underside of about 6m^2 of boards had a 'sheen' indicating their newness. The majority of the boards had a lime-wash finish to their underside subsequent to their fixing to the floor joists as did the joists indicating that they may have been left exposed prior to the subsequent

installation of the ceiling to the basement rehearsal room below. However, such lime washes were also traditionally applied as a protection against wood boring insect. Such a practice was discontinued in the 1960s reflecting the growth in the chemical remedial treatment industry

In H+R's opinion, none of the floorboards in the Bar are original to 1882 but the floor joists probably are

3 OBSERVATIONS

Some structural timber decay had occurred in the past and there were some areas of active timber decay infection. There were a number of building defects that allowed moisture build-up in the structure and provided the conditions for timber decay organisms to grow

3.1 DRILL HALL FLOOR

3.1.1 Steel beams

1 General comment: A lattice of steel beams provided principal structural support to the Drill Hall floor. Steel beams appeared to be of varying ages but were mainly of imperial measurement. The primary bridging steel beams spanning east to west appeared to have riveted joints at the southern half of the floor indicating that they were likely to date back to the period of original construction. Secondary steel I-beams spanning between the primary beams appeared to be of later and even contemporary origin in some locations, presumably in an attempt to strengthen the floor. In all cases observed, the steel beams underdrew the suspended timber floor structure forming the Drill Hall and Western Corridor above

3.1.2 Floor joists

1 Hatch 1: Floor joists measured on average 110 x 50mm at 370mm centres and spanned east to west. They had been partnered with later joist elements measuring 110 x 80mm with timber yard grade stamping to the sides

The likely original joists had been extensively fire damaged with a significant loss of cross sectional size in some locations

2 Hatch 2: Floor joists measured on average 110 x 50mm at 370mm centres and were partnered with newer elements where extending beyond the dividing wall at basement level to that area generally to the east over the void extending beneath the theatre above. The likely original joists appeared to have been partnered with contemporary softwood joists of large cross sectional size, typically 150 x 80 at 400mm centres, supported over plate seated on an even mortar bed on concrete sleeper walls. Off-cuts and other debris littered the oversite and were all of new timber dating back to the repair and replacement work in this location

3 Hatch 3: Floor joists measured approximately 110 x 50mm at 370mm centres and appeared to date back to the period of original construction. They had been partnered with later large cross sectional sized elements over the intermediate steel beams. Noggins and packing pieces had been inserted. Superficial fire damage had occurred to the joists

4 Hatch 4: Floor joists measured approximately 110 x 50mm at 350mm centres and were partnered with later large cross sectional sized joist elements overspanning the intermediate steel beams. The joists appeared to date back to the period of original construction

5 Hatch 5: Floor joists measured approximately 115 x 60mm at 370mm centres and were partnered with later larger cross sectional sized timber joist elements, as viewed within the void to the east extending beneath the theatre area above. Joists were supported on what appeared to be original plate seated on an even mortar bed over a concrete sleeper wall. New timber plate travelled along the dividing wall to the void to the east indicative of repair and replacement work generally

6 Hatch 6: Floor joists measured approximately 110 x 60mm at 370mm centres and appeared to date back to the period of original construction. No fire damage was evident extending to this location

7 Hatch 7: Floor joists measured approximately 110 x 60mm at 370mm centres and appeared to date back to the period of original construction. No fire damage was evident extending to this location

8 Hatch 8: Floor joists measured approximately 110 x 60mm at 370mm centres and appeared to date back to the period of original construction. No fire damage was evident but structurally significant timber decay had occurred as a result of water services failing. Although extensive repair and replacement had occurred, there was a high risk of progressive decay. Most of the likely original joists in this location had been partnered with new larger cross sectional timber elements with timber yard grading stamps

9 Hatch 9: Floor joists spanned east to west and were partnered with new large cross sectional sized joists supported on original plate along the external wall to the east. New secondary joists spanned north to south between the partnered elements apparently providing some lateral support to the structure in this location, which appeared to have been subject to decay and remedial action in the past. Some of the new floor joists acted as primary large cross sectional sized joists providing principal support

10 Hatch 10: Likely original floor joists spanned east to west housed into masonry pockets to their east bearing ends. structurally significant wet rot decay had occurred to the built-in bearing ends in an area of saturated masonry as a result of failure to the white goods above. The floor was inadequately supported in this location. Partnering had occurred in the past to strengthen the floor but these elements were also decayed

11 Fibre-optic inspection: Through the body of the Drill Hall to the foot of the raked seating, fibre-optic borescope inspection was undertaken in 3 no. locations. This revealed joists spanning east to west which generally appeared to date back to the period of original construction as they matched in size and constructional nature those commented upon in hatches 1 to 5 above

3.1.3 Floorboards

1 Hatch 1: Likely original floorboards were of softwood of a tongue and groove pattern measuring approximately 30 x 150mm. They were significantly charred as a result of fire damage. Some were cupped as a result of the significant damp penetration that had occurred in the past and also possibly because they were of poorer quality flat sawn nature

2 Hatch 2: Plywood sheets overspanned the floor joists and no floorboards were visible

3 Hatch 3: Floorboards were of a tongue and groove nature and of softwood measuring approximately 20 x 115mm. As viewed from beneath adjacent to the hatch, the sheen to the underside of the floorboards indicated that they were of relatively recent origin possibly replacing fire damaged boards

4 Hatch 4: Floorboards were of a tongue and groove nature and of softwood measuring approximately 20 x 115mm. As viewed from beneath adjacent to the hatch, the sheen to the underside of the floorboards indicated that they were of relatively recent origin possibly replacing fire damaged boards

5 Hatch 5: Likely original floorboards measured 30 x 170mm and appeared to be of a tongue and groove nature. There was extensive evidence of fire and smoke damage to the boards and new replacement floorboards extended beyond the wall head at basement level and under the area of the theatre staging above

6 Hatch 6: Likely original floorboards were of softwood measuring 30 x 175mm. No fire damage was evident

7 Hatch 7: Likely original tongue and groove floorboards were of softwood measuring 30 x 175mm. No fire damage was evident

8 Hatch 8: Likely original tongue and groove floorboards were of softwood measuring 30 x 120mm. This is smaller than the others. Some smoke staining was evident. Extensive structurally significant decay had occurred in this location and approximately 6m^2 of floorboards had been replaced with plywood

9 Hatch 9: Floorboards had been replaced with 35mm plywood laid directly on the joists in an area extending to at least 12m^2 from the south-east corner of the Drill Hall

10 Hatch 10: 35mm plywood sheets had been laid over the older floorboards which measured approximately 35 x 170mm. Floorboards appeared to be rebated or lap jointed as opposed to tongue and groove in this location, and were extensively decayed by wet rot as a result of failure to the white goods within the bar storage area

3.2 CORRIDOR

3.2.1 Floor joists

1 Hatch C1: Floor joists post-dating the period of original construction spanned east to west supported on galvanised hangers to their west bearing ends to the external wall masonry. Joist bearing ends were highly vulnerable to structurally significant decay as a result of being in contact with saturated masonry

2 Hatch C2: Likely original floor joists spanned east to west partnered with new large cross sectional sized elements supported at their bearing ends on old plate measuring approximately 100 x 100mm running along the damp affected external wall. Both the joist bearing ends and the underlying plate would be vulnerable to structurally significant decay in this location

3.2.2 Floorboards

1 Hatch C1: Likely original floorboards measuring approximately 35 x 170mm had been lifted and re-laid over the floor joists beneath. Floorboards were in a fragmentary and partially decayed condition and were finished with 35mm thick plywood sheeting

2 Hatch C2: The likely original floorboards had been lifted and largely replaced and re-cut to act as firring pieces beneath the new 35mm thick ply. The extent of the replacement could not be easily ascertained but is likely to extend to approximately 5m^2 in this location

3.2.3 General comment

The general delineation of the floorboards along the corridor could be discerned by the deflection of the later floor coverings over the boards and joists beneath. It was evident that there had been a significant degree of lifting, amendment and replacement of floorboards in the corridor area although this was disguised by the contemporary finishes

3.3 BAR

3.3.1 Floor joists

1 Hatch B1 to Hatch B5: Floor joists measured approximately 270 x 50mm at 360mm centres and spanned east to west. The plasterboard of the ceiling at basement level below was attached directly to the underside of the joists. Herringbone strutting provided lateral support. There was no evidence of partnering with newer large cross sectional sized joist elements. There was no evidence of structurally significant decay

Smoke damage was evident to joists in hatches B4 and B5

3.3.2 Floorboards

1 Hatch B1: Floorboards were of softwood measuring 30 x 170mm and were butt jointed and square edged and post-dated the period of original construction. They are likely to be contemporary

2 Hatch B2: Floorboards measured 30 x 170mm with a smooth underside compared with the underside of the older floorboards, e.g. to the Western Corridor which were profiled to fit over the joists. The floorboards post-dated the period of original construction. Boards appeared to be flat sawn as opposed to the higher quality quarter sawn. The underside of the boards had been painted with a lime wash probably as a preservative against wood boring insect

3 Hatch B3: The floorboards were of 'warehouse nature' incorporating metal strips as tongues or metal firrings over the joists. They post-dated the period of original construction. The underside of the boards had been painted with a lime wash probably as a preservative against wood boring insect

4 Hatch B4: The floorboards were rebated. They post-dated the period of original construction. The floorboards were smoke damaged to the underside possibly as a result of a fire resulting from mismanagement of the adjacent fireplace

5 Hatch B5: The floorboards were rebated. They post-dated the period of original construction and the sheen to the underside indicated that they were of relatively recent origin

3.3.3 General comment

The floorboards to the approximate 78m^2 Bar area had been heavily sanded and were nail fixed with squared nails to the underlying floor joists. The use of similar squared shanked nails died out during the 1960s. There was evidence of heavy patch repair and replacement to the Bar floorboards in localised areas. In H+R's opinion, none of the floorboards within the Bar area date back to the period of original construction

Appendix A

Fig 1:

Basement; showing an overall view to the north indicating the large steel primary bridging beams which may post-date the period of original construction. Downstands enclosing secondary steel beams between the primary beams indicated by the arrow were of smaller cross-sectional size and some were of contemporary origin

Fig 2:

Basement; showing the bolted connection of one of the imperial measurement secondary beams connected to the large cross-sectional sized bridging beam along the south wall of the basement. The secondary beam indicated may post-date the period of original construction

16-18 Chenies Street
Photographs
18 May 2017
Not to scale

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Fig 3:

Basement; showing the riveted large cross-sectional sized beam running along the south side of the basement. This may be original

Fig 4:

Basement, Hatch 4; showing the smaller cross-sectional sized tongue and groove floorboards which appeared to be of more recent origin than the period of original construction, and possibly replaced those significantly damaged by fire in this area of the basement

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Fig 5:

Basement, Hatch 4; showing the smaller cross-sectional sized tongue and groove floorboards which appeared to be of more recent origin than the period of original construction, and possibly replaced those significantly damaged by fire in this area of the basement. Note the plasterboard attached to the underside of the possibly original joists, and also the partnering joists, noggins and packing pieces within the floor dating back to the last major refurbishment

Fig 6:

Basement, Hatch 4; showing the smaller cross-sectional sized tongue and groove floorboards which appeared to be of more recent origin than the period of original construction, and possibly replaced those significantly damaged by fire in this area of the basement. Note the plasterboard attached to the underside of the possibly original joists, and also the partnering joists, noggins and packing pieces within the floor dating back to the last major refurbishment

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Fig 7:

Basement, Hatch 2; showing a view beyond the wall head upstand at basement level extending beneath the theatre area above. Note the almost wholly new floor construction in this location with some original floor joists indicated by the arrow. Joists were seated on possibly original plate on a concrete sleeper wall. Note the off-cuts and other debris all dating back to the last major refurbishment. The floor structure in this location had been largely replaced with plywood replacing the floorboards themselves, as also illustrated in figs. 41-44

Fig 8:

Hatch 2; showing a view beyond the wall head upstand at basement level extending beneath the theatre area above. Note the almost wholly new floor construction in this location with some original floor joists indicated by the arrow. Joists were seated on possibly original plate on a concrete sleeper wall. Note the off-cuts and other debris all dating back to the last major refurbishment. The floor structure in this location had been largely replaced with plywood replacing the floorboards themselves, as also illustrated in figs. 41-44

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Fig 9:

Basement, Hatch 2; showing a view beyond the wall head upstand at basement level extending beneath the theatre area above. Note the almost wholly new floor construction in this location with some original floor joists indicated by the arrow. Joists were seated on possibly original plate on a concrete sleeper wall. Note the off-cuts and other debris all dating back to the last major refurbishment. The floor structure in this location had been largely replaced with plywood replacing the floorboards themselves, as also illustrated in figs. 41-44

Fig 10:

Basement, Hatch 1; showing an overall view. Note the fire-damaged original joist indicated by the arrow partnered with new later large cross-sectional sized timber elements, detailed with a timber yard grade stamp. The overlying floorboards were fire-damaged but are likely to be original

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Fig 11:

Basement, Hatch 1; showing an overall view. Note the fire-damaged original joist indicated by the arrow partnered with new later large cross-sectional sized timber elements, detailed with a timber yard grade stamp. The overlying floorboards were fire-damaged but are likely to be original

Fig 12:

Basement, Hatch 1; showing an overall view. Note the fire-damaged original joist indicated by the arrow partnered with new later large cross-sectional sized timber elements, detailed with a timber yard grade stamp. The overlying floorboards were fire-damaged but are likely to be original

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Fig 13:

Basement, Hatch 1; showing an overall view. The overlying floorboards were fire-damaged but are likely to be original. It is likely that the floorboards have been lifted and re-laid in this location as part of the post-fire refurbishment

Fig 14:

Basement, Hatch 1; showing a detail of the fire and smoke damaged floorboards which are likely to be original. Note the squared shanked nails. It is likely that the floorboards had been lifted and re-laid in this location as part of the post-fire refurbishment

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Fig 15:

Basement, Hatch 3; showing the fire and smoke damaged boards in this location. The boards are likely to be original. Note the fire-damaged original joist partnered with newer large cross-sectional sized elements, dating to the post-fire refurbishment. It is highly likely that the floorboards would have been lifted and re-laid in this location

Fig 16:

Basement, Hatch 3; showing the fire and smoke damaged boards in this location. The boards are likely to be original. Note the fire-damaged original joist partnered with newer large cross-sectional sized elements, dating to the post-fire refurbishment. It is highly likely that the floorboards would have been lifted and re-laid in this location

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Fig 17:

Basement, Hatch 3; showing the fire and smoke damaged boards in this location. The boards are likely to be original. It is highly likely that the floorboards would have been lifted and re-laid in this location

Fig 18:

Basement, Hatch 3; showing the fire and smoke damaged boards in this location. The boards are likely to be original. Note the fire-damaged original joist. It is highly likely that the floorboards would have been lifted and re-laid in this location. Note the contemporary secondary steel I-beam indicated by the arrow

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Fig 19:

Basement, Hatch 5; showing fire and smoke damaged floor joists and floorboards overspanning the new joist plate on the wall head upstand at basement level. The joists had been partnered with new large cross-sectional sized timber elements dating to the post-fire refurbishment and the floorboards beyond that area indicated in the photograph were new replacements extending beneath the theatre area

Fig 20:

Basement, Hatch 5; showing fire and smoke damaged floor joists and floorboards overspanning the new joist plate on the wall head upstand at basement level. The joists had been partnered with new large cross-sectional sized timber elements dating to the post-fire refurbishment and the floorboards beyond that area indicated in the photograph were new replacements extending beneath the theatre area

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Fig 21:

Basement, Hatch 5; showing fire and smoke damaged floor joists and floorboards overspanning the new joist plate on the wall head upstand at basement level. The joists had been partnered with new large cross-sectional sized timber elements dating to the post-fire refurbishment and the floorboards beyond that area indicated in the photograph were new replacements extending beneath the theatre area

Fig 22:

Basement, Hatch 5; showing fire and smoke damaged floorboards. The joists had been partnered with new large cross-sectional sized timber elements dating to the post-fire refurbishment and the floorboards beyond that area indicated in the photograph were new replacements extending beneath the theatre area

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Fig 23:

Basement, Hatch 5; showing new floor joists and floorboards

Fig 24:

Basement, Hatch 6; showing likely original floorboards and joists in this location fixed with squared shanked nails. There was no evidence of fire or smoke damage. However, it is still likely that the floorboards would have been lifted and re-laid in this location since the period of original construction

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Fig 25:

Basement, Hatch 6; showing likely original floorboards and joists in this location fixed with squared shanked nails. There was no evidence of fire or smoke damage. However, it is still likely that the floorboards would have been lifted and re-laid in this location since the period of original construction

Fig 26:

Basement, Hatch 6; showing likely original floorboards and joists in this location. There was no evidence of fire or smoke damage. However, it is still likely that the floorboards would have been lifted and re-laid in this location since the period of original construction

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Fig 27:

Basement, Hatch 7; showing one of the relatively newly inserted airbricks dating back to the last major refurbishment providing some and through circulating ventilation beneath the theatre floor above. There was no evidence of fire or smoke damage to the timbers. However, it is likely that the floorboards would have been lifted and re-laid since the period of original construction

Fig 28:

Basement, Hatch 7; showing that there was no evidence of fire or smoke damage to the timbers. However, it is likely that the floorboards would have been lifted and re-laid since the period of original construction

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Fig 29:

Basement, Hatch 8; showing the area of significant repair and refurbishment as a result of failure to the pipework indicated by the arrow. The blue ring indicates saturated masonry putting at risk of decay the plate indicated by the arrow and the joist bearing ends. Floorboards had been extensively replaced by plywood in this location

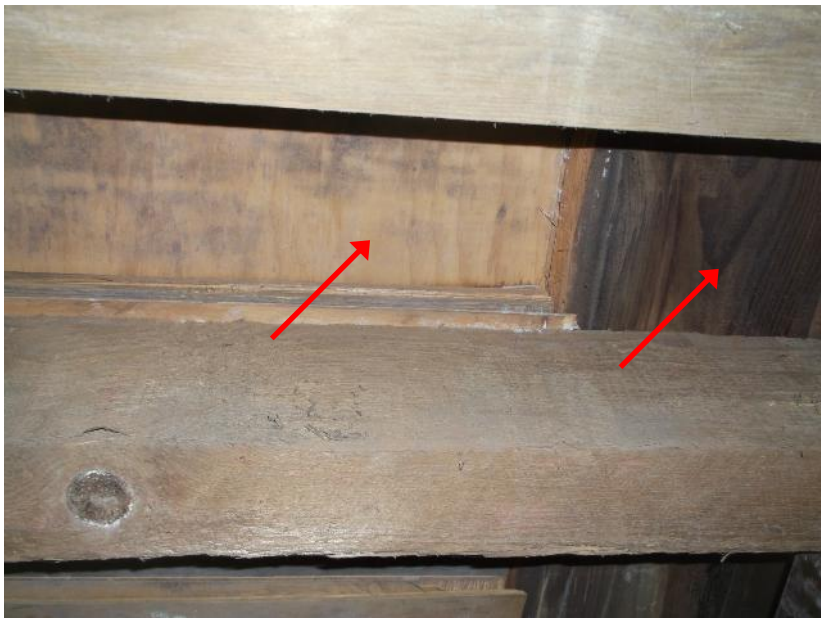

Fig 30:

Basement, Hatch 8; showing a view of the combination of plywood and older likely original floorboards

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Fig 31:

Basement, Hatch 8; showing a view of the combination of plywood and older likely original floorboards

Fig 32:

Basement, Hatch 8; showing the likely original joists partnered with large cross-sectional sized timber elements as a result of the refurbishment of the floor in this location due to the structurally significant decay that had occurred. The boards had been lifted and re-laid but were likely to be original

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Fig 33:

Basement, Hatch 8; showing the extensive use of plywood replacing the original floorboards along the western side of the area

Fig 34:

Basement, Hatch 8; showing the large cross-sectional sized partnering elements to the likely original floor joists. Note the timber yard grade stamping

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Fig 35:

Western corridor, Hatch C1; showing an overall view. Plywood overlaid the likely original floorboards which had been lifted and re-laid over the floor joists which had been replaced in this location. The replacement joists were supported in hangers and were highly vulnerable to the decay at their bearing ends, being in contact with damp affected masonry

Fig 36:

Western corridor, Hatch C1; showing a view to the east with smoke and fire damage evident to plate and floorboards above and below the replacement joists. The floorboards are likely to be original in this location

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Fig 37:

Western corridor, Hatch C2; showing the contemporary plywood sheeting which in this location did not overlay the original floorboards which had been lifted

Fig 38:

Western corridor, Hatch C2; showing the exposed original joists in this location which were highly vulnerable to decay being in contact with damp affected masonry. The likely original floorboards had been lifted, cut and re-laid as firring or packing pieces over the joists, as illustrated in fig. 39

16-18 Chenies Street
Photographs
18 May 2017
Not to scale

Fig 39:

Western corridor, Hatch C2; showing the exposed original joists in this location which were highly vulnerable to decay being in contact with damp affected masonry. The likely original floorboards had been lifted, cut and re-laid as firring or packing pieces over the joists

Fig 40:

Western corridor; showing an overall view to the south. The deflection of the contemporary finishes indicated that floorboards still remained beneath in this location, but whether they were likely to be original or not was not ascertained

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Fig 41:

Drill Hall, Hatch 9; showing the plywood sheeting replacing the original floorboards and extensive repair and replacement work to the original underlying joists. Providing support to the joists was new trimmed timber plate supported in hangers onto the large cross-sectional sized primary joists. It appeared that supporting plate seated on the concrete sleeper walls was not original

Fig 42:

Drill Hall, Hatch 9; showing the plywood sheeting replacing the original floorboards and extensive repair and replacement work to the original underlying joists. Providing support to the joists was new trimmed timber plate supported in hangers onto the large cross-sectional sized primary joists. It appeared that supporting plate seated on the concrete sleeper walls was not original

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Fig 43:

Drill Hall, Hatch 9; showing the plywood sheeting replacing the original floorboards and extensive repair and replacement work to the original underlying joists. Providing support to the joists was new trimmed timber plate supported in hangers onto the large cross-sectional sized primary joists. It appeared that supporting plate seated on the concrete sleeper walls was not original

Fig 44:

Drill Hall, Hatch 9; showing the plywood sheeting replacing the original floorboards and extensive repair and replacement work to the original underlying joists. Providing support to the joists was new trimmed timber plate supported in hangers onto the large cross-sectional sized primary joists. It appeared that supporting plate seated on the concrete sleeper walls was not original

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Fig 45:

Drill Hall, Hatch 10; showing original joists partnered with later elements as a result of progressive wet rot decay in this location. Decay was occurring to built-in bearing ends. Remnants of likely original floorboards remained but were structurally significantly decayed

Fig 46:

Drill Hall, Hatch 10; showing original joists partnered with later elements as a result of progressive wet rot decay in this location. Decay was occurring to built-in bearing ends. Remnants of likely original floorboards remained but were structurally significantly decayed

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Fig 47:

Drill Hall, Hatch 10; showing original joists partnered with later elements as a result of progressive wet rot decay in this location. Decay was occurring to built-in bearing ends. Remnants of likely original floorboards remained but were structurally significantly decayed

Fig 48:

Drill Hall, Hatch 10; showing original joists partnered with later elements as a result of progressive wet rot decay in this location. Decay was occurring to built-in bearing ends. Remnants of likely original floorboards remained but were structurally significantly decayed

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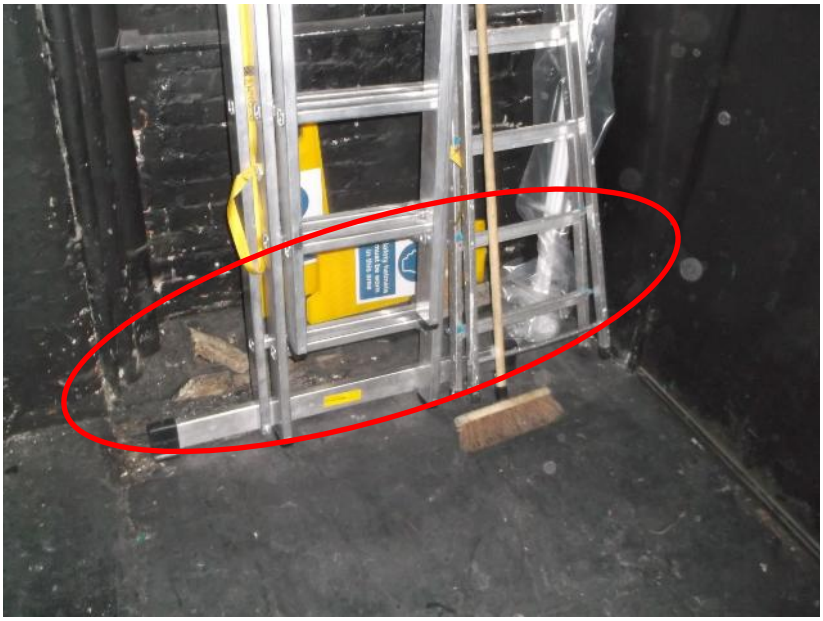

Fig 49:

Drill Hall entrance threshold; showing the area of significant damp and decay adjacent to that area illustrated in fig. 45 as a result of water leaks from the white goods and also failure to the pipework and possibly also washing activities of the floor

Fig 50:

Drill Hall; showing an overall view. The contemporary finishes showed some delineation of floorboards beneath. fibre-optic borescope revealed 35mm thick plywood laid over likely original floorboards and joists matching those recorded generally at basement level below

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Fig 51:

Bar; showing an overall view of the sanded floor finish. In H+R's provisional opinion, none of the floorboards in the bar area dated back to the period of original construction

Fig 52:

Bar Hatch B1; showing the contemporary floorboards in this location

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Fig 53:

Bar Hatch B2; showing floorboards painted with a limewash after they had been secured to the joists beneath. This was likely to have been applied as a preservative treatment against wood boring insect infestation and died away in the 1960s as a methodology. The underlying floor joists are likely to be original, but the floorboards are likely to date to the post WW2 refurbishment. The floorboards were rebated at their joints and were flat sawn and of a poorer quality than those likely original boards to the adjacent Drill Hall area

Fig 54:

Bar Hatch B2; showing floorboards painted with a limewash after they had been secured to the joists beneath. This was likely to have been applied as a preservative treatment against wood boring insect infestation and this died away in the 1960s as a methodology. The underlying floor joists are likely to be original, but the floorboards are likely to date to the post WW2 refurbishment. The floorboards were rebated at their joints and were flat sawn and of a poorer quality than those likely original boards to the adjacent Drill Hall area

Fig 55:

Bar Hatch B2; showing herringbone strutting for lateral support

Fig 56:

Bar Hatch B2; showing joist bearing ends housed into masonry pockets along the dividing wall to the west

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Fig 57:

Bar Hatch B3; showing a floorboard painted with limewash similar to that illustrated in fig. 53. Floorboards had been laid on a metal firring piece or tongue generally to the western half of the bar area. Judging by the nature of the metalwork, the boards were likely to have been laid using this methodology in the 1950s and 1960s

Fig 58:

Bar Hatch B3; showing the limewash to the underside of the floorboards and herringbone strutting

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Fig 59:

Bar Hatch B3; showing a detail of the metal firring pieces or tongues and also the poorer quality flat sawn grain to the boards, indicating later origin

Fig 60:

Bar Hatch B4; showing limewash painted to the underside of the floorboards and rebated joints

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Fig 61:

Bar Hatch B4; showing some possible smoke damage to the joists but also limewash to the underside of the floorboards and herringbone strutting

Fig 62:

Bar Hatch B5; showing smoke damage to the underside of the floorboards and joists, possibly as a result of mismanagement of the adjacent fireplace. Floorboards were of contemporary origin

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Fig 63:

Bar Hatch B5; showing the timber beading at the foot of the plaster skirting masking the gap in this location. Such a gap would not have been countenanced on original specification

Fig 64:

Bar Hatch B5; showing smoke damaged likely original floor joists but replacement contemporary floorboards above

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Fig 65:

Bar; showing a typical area of localised replacement of floorboards

Fig 66:

Bar; showing a typical area of localised replacement of floorboards

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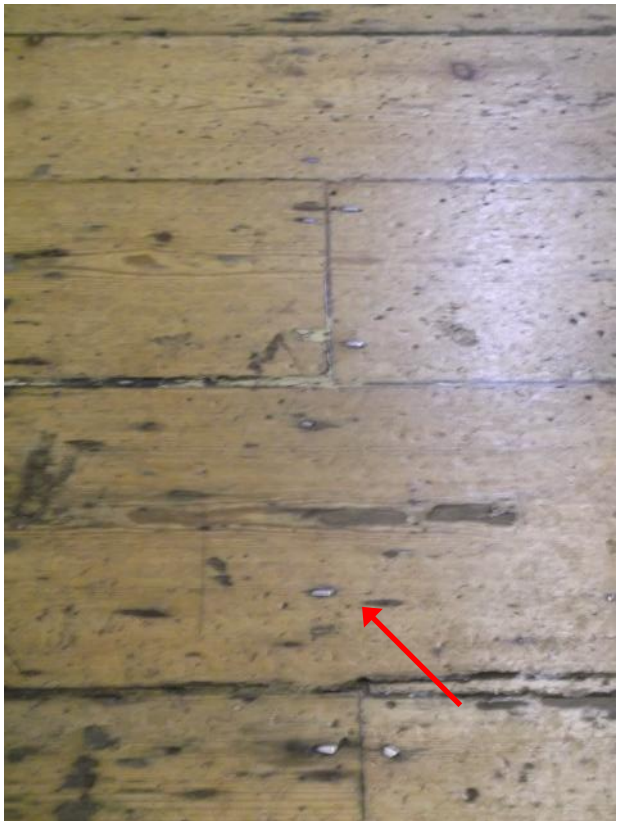

Fig 67:

Bar; showing the use of squared shanked nails for fixing throughout. The use of such nails died away in the 1960s

Fig 68:

Entrance; showing the original quarry tile floor subject to significant wear as a differential to the relative lack of wear to the more vulnerable timber floors to the adjacent Drill Hall and Bar. Such a degree of wear to the quarry tiling would almost certainly have been reflected in eventual failure and replacement of the original Deal floorboards to the Drill Hall and Bar

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Fig 69:

Entrance; showing the original quarry tile floor subject to significant wear as a differential to the relative lack of wear to the more vulnerable timber floors to the adjacent Drill Hall and Bar. Such a degree of wear to the quarry tiling would almost certainly have been reflected in eventual failure and replacement of the original Deal floorboards to the Drill Hall and Bar

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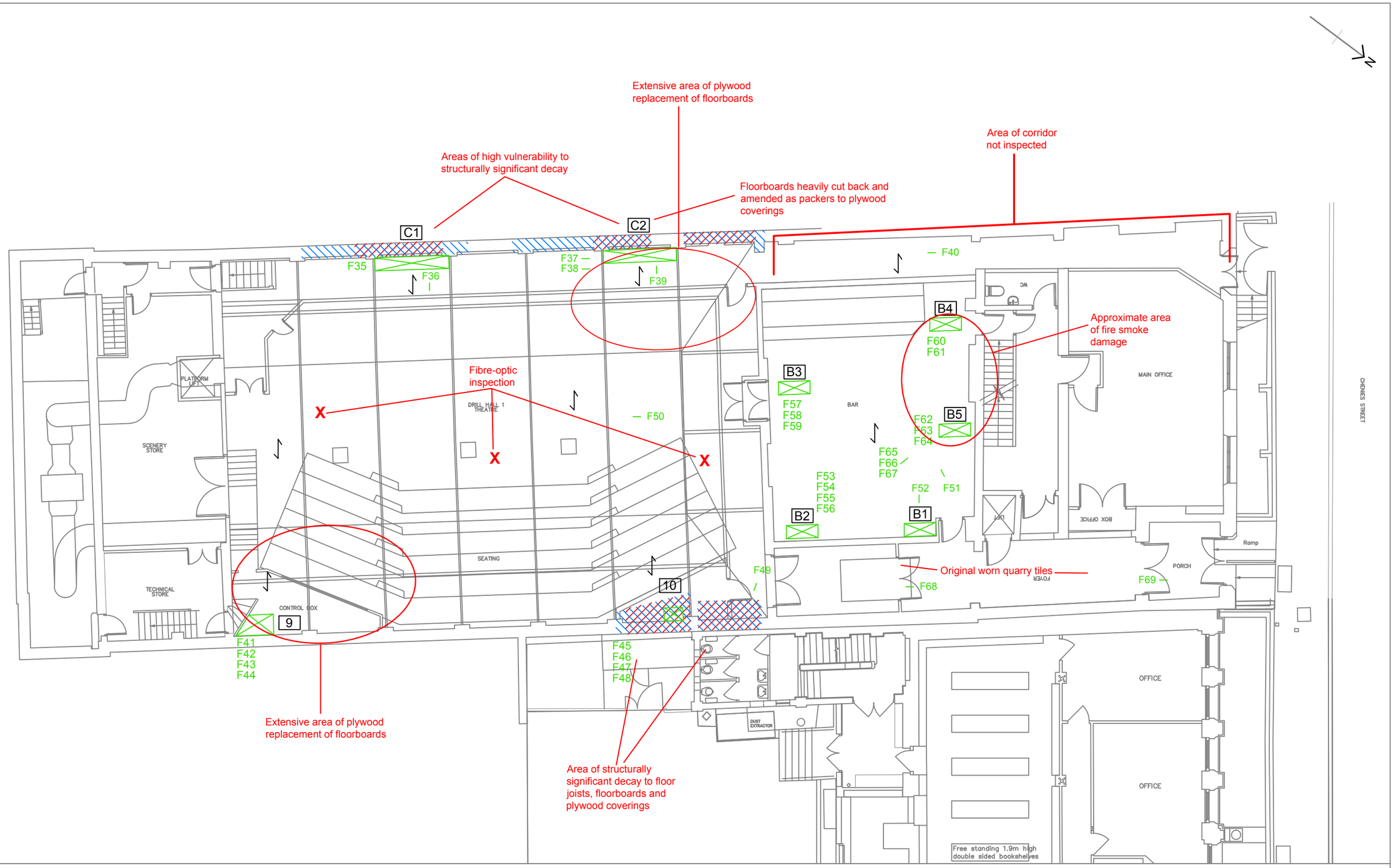
Appendix B



16-18 Chenies Street, Ground Floor

Floorboard and floor joist constructional detailing survey

18 May 2017

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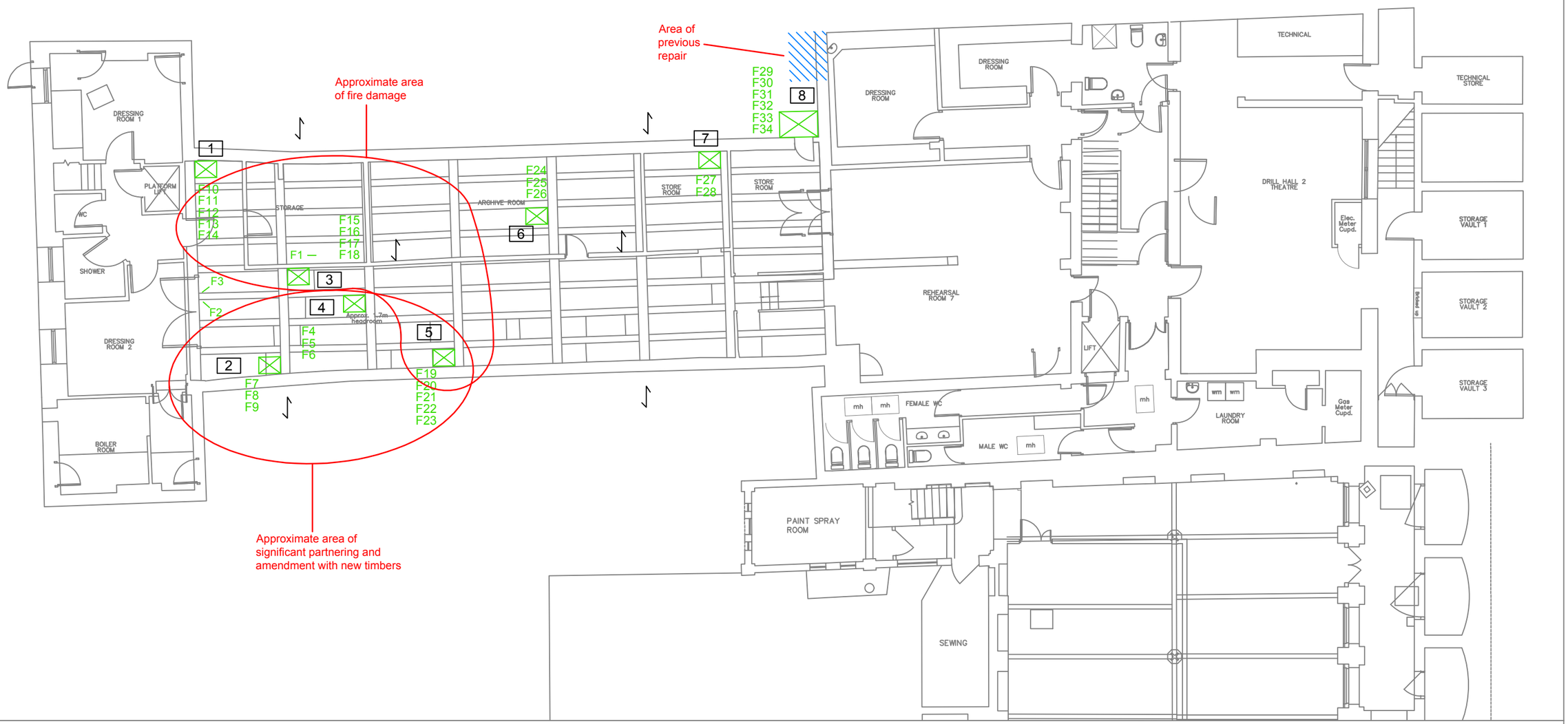
147-17 Report May 2017 -Not to scale-

Key:

- Damp affected masonry
- Area of structurally significant decay or vulnerability to decay
- X Fibre-optic inspection
- Access hatch
- — F Photograph location
- 1 B1 C1 Hatch number
- Joist direction



16-18 Chenies Street, Basement

Floorboard and floor joist constructional detailing survey

18 May 2017

Key:

- Damp affected masonry
- Access hatch
- F — Photograph location
- 1 — Hatch number
- Joist direction

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