Fig 21:

Timber condition investigation; showing central ceiling plate supporting historic plaster and lath ceiling running parallel to principal spine RSJs. Note limited access to plate for inspection and for planned improved fixings

Fig 22:

Timber condition investigation; showing approximate location of inaccessible ceiling plate

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

Fig 23:

Timber condition investigation; showing typical view of west perimeter ceiling structure supported onto perimeter RSJs

Fig 24:

Timber condition investigation; showing ceiling structures subject to inactive surface mould growth

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

Fig 25:

Timber condition investigation; showing south lightwell to ceiling structures RMG17. Note localised water penetration has resulted in failure to non -historic plasterboard finishes around ceiling lights

Fig 26:

Timber condition investigation; showing decorative plaster and lath and plasterboard ceiling finishes to central bay of RMG17 without appropriate exposure of ceiling voids to aid ventilation

The Hope Project, KOKO
Photographs
05 August 2020
Not to scale

Fig 27:

Timber condition investigation; showing non-historic previous generation remedial softwood timbers supporting new addition plasterboard ceilings with surface moisture content at 14% which, although elevated, is too low to support decay organisms

Fig 28:

Timber condition investigation; showing perimeter partially embedded RSJ to octagonal ceiling lights subject to fairly extensive surface corrosion, likely due to historic failure of flashings to flat roof above in the past

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

Fig 29:

Timber condition investigation; showing further extensive surface corrosion to partially embedded RSJs supporting the south ceiling lights

Fig 30:

Timber condition investigation; showing multiple generations of timber structures supporting decorative plaster and laths ceilings at south corner of RMG17. Note that cornice void with insufficient through ventilation

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

Fig 31:

Timber condition investigation; showing close-up view of typical embedded lath to historic fibrous plaster and lath ceiling subject to decay

Fig 32:

Timber condition investigation; showing extensive surface corrosion to embedded steel elements within clinker concrete flat roof structures. Likely due to historic failure of finishes to flat roof above including flashings to ceiling lights in the past

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

Fig 33:

Timber condition investigation; showing remaining blackout curtains to west elevation. Curtains requiring removal to aid ventilation of area and windows beneath opened for additional ventilation

Fig 34:

Timber condition investigation; showing principal east elevation. South front doors chained shut and unable to be opened to aid ventilation

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

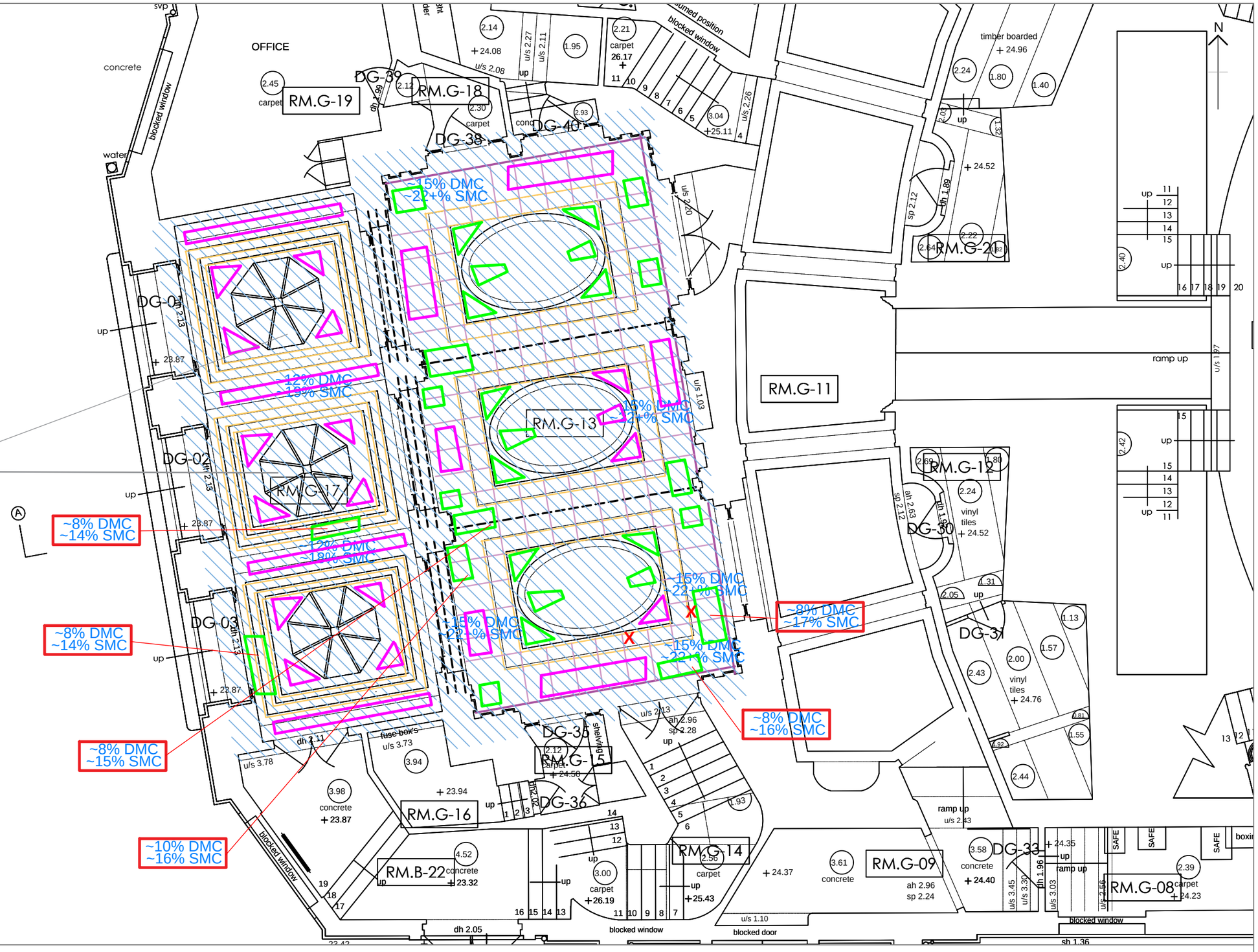
Fig 35:

North octagonal ceiling light with what appears to be later edition plasterboard finishes at spandrels subject to complete failure or delamination

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Fax: 01483202911 email: ei@handr.co.uk

Attachment B

Limited access to ceiling voids within RM.G-17. Voids subject to moderate levels of surface mould growth



ADDENDUM

The Hope Project / KOKO - Ground Floor

Timber Ceiling Structures Condition Investigation

5 August 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911

146-89 Site Note 8(Addendum) August 2020 -Not to scale-

Key:

- Areas of exposed ceilings to aid in ventilation
- Recommended areas of additional vented openings
- X Removed or structurally compromised ceiling element
- Ceiling joist/plate element
- Ceiling plate element fixed to clinker slab above
- Area subject to water penetration providing the conditions for damp, decay and surface mould growth

- ~12% DMC Deep Moisture Content reading (14/04/20)
- ~20% SMC Surface Moisture Content reading (14/04/20)
- ~12% DMC Addendum Deep Moisture Content reading
- ~20% SMC Addendum Surface Moisture Content reading
- SCS Sold Ceiling Structures
- Boxed RSJ beam element

Site Note 9: Timber floor structures condition investigation

April 2020

Hutton + Rostron
Environmental Investigations Limited

The Hope Project (KOKO): Timber floor structures condition Investigation

Site note 9 for 14 April 2020, job no. 146.89

CONTENTS

Attachments

Distribution:

Andrew Bridge - Cotton Thompson Cole Ltd
Francesca Cipolla - Stephen Levrant: Heritage Architecture Ltd
Shantanu Subramaniam - Stephen Levrant: Heritage Architecture Ltd

Prepared by:	Technical review by:	Administration by:
Andrew Ellis BA(Hons) MSc	Joe Lovelock BSc	Jennifer Birchard BA(Hons)

Hutton+Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA

Tel: 01483 203221 Email: ei@handr.co.uk Web: www.handr.co.uk

1 INTRODUCTION

1.1 AUTHORITY AND REFERENCES

Hutton + Rostron Environmental Investigations Limited carried out site visits to The Hope Project (KOKO Camden) on the 8-14th April 2020 in accordance with instructions from Andrew Bridge by email, on 10 March 2020 (16:13). Drawings provided by Archer Humphryes Architects, Ref AHA/KKC/EX/ were used for the identification of structures. For the purpose of orientation in this report, the building was taken as facing west onto Camden High Street

1.2 AIM

The aim of this survey was to make an initial assessment of the construction and condition of remaining timber floor structural elements. The extent and distribution of residual or interstitial moisture/condensation build-up within floor voids has been commented upon. Recommendations for effective 'drying-down' and further detailed investigation of residual moisture and advice on short term remedial works are given, to promote drying of the structure and protect historically significant building fabric from damage and decay

1.3 LIMITATIONS

This survey was confined to the accessible structures. The condition of concealed timbers was investigated with the use of high power fibre optics and thermal imaging. The condition of concealed timbers may be deduced from the general condition and moisture content of the adjacent structure. Only demolition or exposure work can enable the condition 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 most probable condition 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 STAFF ON SITE AND CONTACTS

2.1 H+R STAFF ON SITE

Andrew Ellis
Joe Lovelock

2.2 PERSONNEL CONTACTED

Russell Higson – Od Projects

3 OBSERVATIONS AND *RECOMMENDATIONS*

3.1 INTRODUCTION TO TIMBER FLOOR STRUCTURES CONDITION INVESTIGATION

This investigation was only interested in areas previously identified within *146-89, Site Note 7- Damp Condition Investigation* as being subject to moisture penetration and vulnerable to damp and decay issues as a result of the firefighting efforts of the 6 January 2020 fire. Broadly, this may be summarised as all structures beneath the fire damaged dome roof to the west facing onto Camden Hight Street, the main auditorium and the north and south areas of the main auditorium

Regrettably, due to the recent identification of significant asbestos containing materials (ACMs) within vulnerable damp areas, as well as areas still deemed unsafe post the January 2020 fire, not all intended areas were safely accessible for inspection. These areas have been marked clearly on the Plans at Attachment B and are pending further investigation when safe access is made available. However, assumptions have been made upon the condition and construction of these areas based upon the evidence gained from safely accessible adjacent and similarly constructed areas. Broadly, this may be summarised as the second, first and ground floor balcony structures where ACMs were identified within the floor/ceiling voids. The Basement and lower basement were not accessible for investigation

Following completion of the pending investigatory works to the inaccessible areas, fuller and more concise remedial recommendations may be generated, however our initial findings are conclusive evidence that significant moisture entrapment, as well as issues relating to interstitial condensation and inadequate airflow is widespread within vulnerable historic timber floor structures and associated voids. This has already led to the presence of significant surface mould growth and spores in areas, which if left unchecked is likely to lead to further and more damaging/significant damp and decay issues

Actions required to facilitate investigation of inaccessible areas:

1 *Asbestos containing materials: Health and safety requirements necessitate that zones containing hazardous levels of asbestos containing materials be cleared and certified full in accordance with the Control of Asbestos Regulations before further intrusive works may commence to these areas. This may necessitate the removal of all compromised timber elements that can not be effectively 'cleaned' of ACM particles. Specialists asbestos consultants to comment*

2 *Areas currently inaccessible due to structural works relating to fire damaged issues, such as the second-floor balcony RM.2-15 should be made available for investigation by H+R when suitable and safe access is achievable*

3.2 TIMBER CONDITION

3.2.1 Recent water penetration providing the conditions for decay

Representative and vulnerable timber bearing ends and central spans were deep drilled and moisture probed to ascertain the presence of decay and the relative moisture content of specific timber elements. Other than to the west area of the ground floor stage structures RM.B-11, no active decay was detected, however, in general timbers (such as embedded floor groundings and wall plates) in contact with masonry structures showed highly elevated surface and superficial moisture content readings of up to 26 per cent and raised deep moisture contents of between 14-17 per cent in places. This supports the findings from *146-89, Site Note 7- Damp Condition Investigation* in that a proportion of the masonry structural elements are acting as moisture 'reservoirs' and creating the correct conditions for damp and decay to vulnerable timber elements. However, these recorded high moisture contents, combined with the current evident lack in active decay organisms suggests that potentially chronic levels of moisture which had been allowed to penetrate

the building's fabric during recent firefighting efforts to combat the blaze to the west domed roof structure, was the primary cause of the adverse findings

If left unchecked, such sudden and overwhelming water penetration to the property is highly likely to create significant latent building defects as the retained moisture within the masonry masses progressively migrates, gaining access to vulnerable timber elements, creating the conditions for damp and decay

3.2.2 Timber decay

1 Wet rot decay: Although not all structures were accessible, there was little to no evidence of historic or current widespread fungal decay affecting timber floor structures. However, there was evidence of what appeared to be recent wet rot decay activity affecting the west perimeter stud work supporting the ground floor stage structures RM.B-11. This included up to ~5no. decayed post feet and up to ~3m linear of stud wall plate

2 Access: Not all the available floor timbers were inspected in detail at the time of investigation. Previous repairs to floor structures were noted, these were commonly made as alterations, repairs or in addition to the original structures

No chemical remedial timber treatments or wall irrigations are required. All practical measures should be taken to maintain the external envelope so as to minimise further water penetration into the structure, during and after the refurbishment. This should include repair and re-detailing of external masonry and the rainwater drainage system. Identified decayed elements to the ground floor balcony should be cut out and replaced in like-for-like or to an improved specification. All vulnerable timber elements in contact with damp or suspected damp masonry should be separated by a ventilated air-gap or isolated via a suitable damp proof membrane (DPM)

3 Non-historic screed surfaces: The use of levelling screed was prevalent through-out the property. Apparently in an attempt to improve the level and surface of historic floor finishes before the application of later surfaces such as vinyl or carpet. However, it is now probable that areas of non-breathable cementitious screed application are now trapping moisture within vulnerable structures beneath and creating/accelerating the conditions for damp and decay. Although visually inaccessible, screed cover floor surfaces were deep drilled and moisture probed to ascertain the presence of conditions conducive to decay organisms. See Plans at Attachment B for areas of likely moisture entrapment beneath screed surfaces

To prevent the entrapment of moisture by cementitious screed surfaces and encourage ventilation and drying to wet solid floor structures beneath screed timber floor finishes; provisional allowance should be made for the removal of damaged or moisture retaining screed surfaces and to the underlying floorboards. Attempting to remove screed surface independently of the floor finishes (with the aim of then careful lifting of the floorboards for retention, storage and reinstatement) is not advised, as the likely damage incurred to the floorboards during this process, along with their general poor condition and the prohibitive costs/labour involved would render this effort impractical. This should provisionally include RM.2-22 as well as the royal box balcony RM.1-18 and its opposite balcony RM.1-0.7

4 Grounding timbers: There was widespread evidence of historic grounding timbers partially embedded (with only the upper face exposed - these timbers were likely inserted during the curing process) into the solid floor slabs as fixing locations for floor battens, joists, plates or floorboards directly. Being partially embedded into damp and potentially damp masonry structures, these timber elements were highly vulnerable to damp and decay issues, albeit localised and non-structural in consequence. Typical moisture contents readings showed highly elevated moisture

contents at ~15-20 per cent with some (superficial) decay already evident to the undersides of select groundings lifted for inspection

Provisional allowance should be made for the removal of all remaining obsolete and vulnerable grounding timbers and the recesses to the solid floor surfaces made good with masonry infill when appropriately dry. This should provisionally include RM.1-12 and RM. G-11

5 Floorboards: In general, floorboards did not appear original to construction and were not deemed of significant historic interest/value. Investigated floorboards were of softwood construction, likely *Pinus genus* with tongue and groove/secret or face nailed fixings. Although only a limited amount of decay was detected, available boards were found to be generally in poor condition. This was due to a number of reasons, including; significant quantities of historic alterations/ localised repairs, cementitious screed overlay, carpet glue, general wear and tear from use and mechanical damage. In addition to these issues the undersides of floorboards and floorboards concealed by non-breathable floor finishes such as screed or vinyl were subject to significant mould growth and spores to their undersides, salt damage and nail corrosion as a result of the recent chronic water penetration relating to the January 2020 fire

Furthermore, floor voids compromised by known ACMs, whereby historic fireproofing methods of sandwiching asbestos boards between floorboards and joists would have heavily contaminated floorboards, especially at fixing locations which had punctuated ACMs. See section 3.2.5 below

Due to the high probability of contamination of floorboards by ACM particles and mould spores, as well as their current general poor condition weighed against the cost of their repair/cleaning, likely damage in removal/ventilation to floor voids beneath (see section 3.2.6 below) and their low historic value, it is H+Rs recommendation that consideration be given to the wholesale removal and disposal of remaining floorboards as the most cost effective, aesthetic and practicable option. In particular to areas RM.2-15, RM.1-11, RM.1-12, RM.G-10, RM.G-12 and RM.G-21

3.2.3 Wood boring beetle

There was minimal evidence of wood boring beetle damage to inspected floor timbers. However, this was from limited initial access and some low levels of insect activity is highly probable in a building of this age, especially where timbers come into contact with current or historically damp masonry. In the view of H+R, any existing beetle damage in itself is not unlikely to be ongoing to any significant degree and was unlikely to be structurally significant. However, should timbers and timber surfaces be allowed to remain damp (See 3.2.1 above) the likelihood of increased wood boring insect activity is probable, especially to remaining vulnerable sapwood bands

No chemical remedial timber treatments are required or necessary. Allowance should be made for superficially wet timbers and timbers conducive to insect attack to be dried-out in order to holistically create an environment which may not support wood boring insect activity. Additionally, upon further exposure work during the planned refurbishment, and subject to approval of the Conservation Team, timbers with significant proportions of remaining vulnerable sapwood bands should be cut out and replaced with heartwood only variants. All newly inserted timbers should be of external grade pre-treated stock in order to withstand moderate wood boring insect attack

3.2.4 Hazardous mould growth within floor voids

1 Surface mould growth was found to be widespread within both historic and non-historic floor voids investigated. Especially to balcony floor structures R.M.1-11,

RM. G10, and likely to RM. G-12 and RM. G-21. In general mould growth and mould spores were predominantly judged to be superficial. Affecting only the timbers vulnerable surfaces. However high concentrations of these mould spores may cause allergic reactions upon exposure to sensitive individuals and lead to long term health issues. The type of available mould was not verified at the time of investigation. However, should black mould or *Stachybotrys* be present, it can produce mycotoxins- A toxic chemical compound which may cause a wide range of symptoms upon exposure from asthma to neurotoxicity

2 Mould growth and mould spores within floor/ceiling voids are likely being caused by the effect of trapped or retained moisture within the concealed timber elements and/or from interstitial condensation build-up as a result of 'thermal inertia' between the moist trapped air within the void meeting the relatively cold clinker concrete floor slab above. This then condenses leading to a moisture sink within the building's fabric and a high potential of condensation and potentially hazardous mould growth

No chemical remedial timber treatments are required. Timbers subject to surface mould growth and active mould spores should be tested for the type and toxicity of mould to ascertain potential health hazard and a suitable response/remedial action. H+R can conduct such tests if instructed to do so

Cleaning of mould surfaces: Prior to the introduction of increased ventilation, mould affected surfaces should be scrubbed with a dilute solution of sodium hypochlorite or household bleach at 1:4 parts. Using a soft brush, the mould should be scrubbed until it disappears. After scrubbing the surfaces, allow the bleach solution to continue to penetrate the surfaces and dry. For particularly badly affected areas perform this action twice with the surfaces being hoovered between bleach applications. Those undertaking this task should be provided with appropriate respiratory protection, eye protection, gloves and protective clothing. Consideration should be given to undertaking these works while the building has reduced activity during the current Covid 19 crisis

NB. Floor/ceiling voids vulnerable to damp and with evidence of surface mould growth cannot be safely ventilated until cleaned. Although air flow across the damp affected areas will undoubtably have the positive effect of drying down structures and reduce further risk of decay, the possible negative health implications of those working and occupying areas where the mould spores would be mobilised towards does not warrant the benefit

3.2.5 Asbestos hazard affecting floor voids and structures

Asbestos sheet boarding was identified within floor structures. Particularly to suspended timber balcony floor structures at ground and first floor level. The asbestos sheeting had been previously laid as a fire prevention method between the floor joists and the tongue and groove floorboards. This would have inadvertently allowed loose and damaged asbestos particles and debris to settle at the bottom of the void and upon plaster and timber ceiling elements below. Furthermore, it is highly probable that all timber elements used as fixing timbers for ACMs will have had their surfaces punctuated by asbestos particles by the nail and screw fixings

These structures should not be subject to inspection, remedial works or increased ventilation/air flow until the relevant specialists have certified the voids as clean. Timbers worthy of retention which have been punctured by fixings contaminated with asbestos should have the ALL fixings pulled/screwed out and the contaminated fixing holes bored out to a greater diameter to a specification and guidance from the specialist ACM removal contractors. Timbers judged to be too heavily contaminated or compromised by the penetrating of ACM particles into their sections by nail and screw fixings may be impractical for cleaning via the hole-boring method. In such instances and under the direction of the Conservation Team and the specialist cleaning contractors, consideration should be given to the removal of all hazardous materials impracticable for deep cleaning

Once hazardous materials (including timbers impractical for cleaning) have been removed and voids suitably cleaned of asbestos and mould contaminants, consideration should be given to the opened voids and cavities being sprayed with hydraulic limewash to stabilise all remaining dust and hazardous loose material. This will also have the added advantage of encapsulating all remaining mould and effectively killing it, lime wash being an effective biocide. Note that the hydraulic limewash recipe should not include caseins or tallow as these are known to feed moulds

It should be noted that, although the ACMs within floor and ceiling voids are an historic and encapsulated issue, the widespread mould growth to timbers trapped within these voids has come about as a result of sudden and mass moisture penetration to structures as a result of the 6 January 2020 fire. If left unchecked, the damp and mould affected timbers will likely lead to significant decay issues. Ventilation to these voids is vital to check the damp issues and safeguard the remaining building fabric. However, these voids cannot be safely ventilated until suitably cleaned of mould and asbestos contaminants

3.2.6 Ventilation and drying

As mentioned in *146-89, Site Note 7;* Ventilation and drying within the general structure subject to water penetration before, during and after the recent fire had dramatically improved since H+Rs initial site visits; especially with the 'soft strip' and conservation enabling works undertaken to date. In particular, through and cross ventilation with external air via window openings and openings formed for construction works adjacent to the original fabric was allowing through ventilation in conjunction with the 'passive stack effect' of air rising up through the building, through adventitious gaps in the provision for temporary roofing

However, relative humidity, temperature and dew point was measured in representative floor/ceiling voids, and surface temperatures were measured with a thermal camera.

These tests revealed evidence of condensation at the time of survey (see 3.2.4(2) above), however partial vapour pressures differentials between the existing fabric and the ambient air was deemed sufficient to allow drying, albeit at a moderate pace. This positive drying balance is likely to continue through May. However, the increased moisture content of warmer external air in the summer months was likely to reverse this process, resulting in condensation and preventing further drying in the absence of the introduction of accelerated drying measures. However as discussed previously, increased ventilation and drying would also eventually result in potentially irritant or hazardous materials in becoming part of 'airborne dust'; where they may represent an increasing and significant health hazard to those entering the building before, during and after refurbishment (see 3.2.4 and 3.2.5 above)

1 *Background ventilation: Through and cross ventilation should be provided to all areas and building voids as soon as possible, so as to minimise the risk of further condensation and mould growth, and so as to facilitate drying. However, potentially contaminated debris must be removed before further ventilation measures are taken, as described at 3.2.5 above*

2 *Mechanical ventilation: Preparation should be made for providing mechanical ventilation to poorly ventilated floor voids where it is not possible to provide through and cross ventilation by opening windows and the 'passive stack vent effect' up through the building. H+R can advise further if required*

3 *Conservation and remedial exposure: All building floor voids should be opened as part of conservation enabling works, so as to provide through and cross ventilation as described at 1 above and to protect as much historic building fabric as possible. In particular vulnerable decorative moulded plaster elements beneath suspended timber floors as found at balcony structures. In order to safeguard as much historic decorative plaster ceiling elements as possible, continuous vent gaps should be*

introduced to floor voids at the vulnerable floor-wall junctures to allow the flow of air into floor/ceiling voids. Continuous vent gaps should always have corresponding and opposing vent gaps for the effective movement of air

4 *Ventilation to floor structures from above at sub-floor voids: Where vulnerable suspended timber floors are found above solid floor structures, provision should be made for through and cross ventilation to all accessible voids; This may be done by lifting floorboards adjacent to the walls on either side of each area of suspended floor. In particular RM.2-21, RM.G-09 and RM.G-08. H+R can advise further if required*

5 *Monitoring: The residual moisture content of floor structures subject to water penetration before, during and after the recent fire should be monitored, so as to ensure adequate drying measures are applied to allow completion and refurbishment of floor finishes to time and budget; and so as to minimise the risk of moisture or salt related problems to timber and plaster elements during and after the latent defect period*

6 *Accelerated drying: Preparation should be made for the installation of specialist accelerated drying measures during summer and autumn months of 2020. These will require a dedicated power supply which may be provided with 3 phase electricity mains, or with dedicated silenced diesel powered generators, and are likely to include the use of 110V electrical radiant heaters, and desiccant dehumidifiers with warm dried air ducted into the voids behind dry linings around damp affected structures. H+R can advise further when required*

7 *Long term drying: Provision should be made for the isolation of vulnerable materials from original fabric with high residual moisture and/or hygroscopic salt content, and for provision of continued through ventilation to the building voids during and after the latent defect period. This may be done by making provision for 'trickle ventilation' and ventilation gaps on reinstatement of existing and new claddings; taking due regard to current Building Regulations with regard to fire and sound barriers. H+R can advise further when required*

3.3.7 Pigeon and site hygiene

The site and within some floor and ceiling voids remained contaminated with areas of heavy contamination by feral pigeon faeces. These represent a potential health hazard to those entering the building/voids before, during and after refurbishment; and restricted access for inspection, maintenance and refurbishment

Pigeon faeces: All pigeon faeces should be removed as soon as practical. Those undertaking this task should be provided with appropriate respiratory protection, eye protection, gloves and protective clothing; and pigeon faeces and contaminated materials should be disposed fully in accordance with the requirements of the local authority. Consideration should be given to undertaking these works in conjunction with the removal of asbestos containing materials, as described at 1 above

4 H+R WORK ON SITE

4.1 H+R made a limited initial visual inspection of the structure for defects liable to allow water penetration before and after refurbishment

4.2 H+R took samples from representative masonry masses, so as to determine their gravimetric and hygroscopic moisture content

5 PROPOSED ACTION BY H+R

5.1 H+R will return to site to investigate the timber structures for damp and decay when access is available

5.2 H+R will return to site to make further investigations to determine the extent of residual moisture and salts within the existing fabric

5.3 H+R will return to site to monitor progress of natural and accelerated drying when instructed

5.4 H+R will investigate and advise further on the chemical composition of original clinker ash concrete, and its effect on the structural adequacy of concrete matrix and corrosion to reinforcements in conjunction with the Structural Engineer, when instructed

5.5 H+R will advise on repair and conservation of timber elements, so as to minimise the risk of decay after refurbishment if instructed

5.6 H+R will advise on remedial detailing, so as to minimise the risk of damp and decay problems after refurbishment if instructed

5.7 H+R will advise on conservation of original fabric with regard to damp, decay and salt damage, as necessary and if instructed

5.8 H+R will review proposed remedial details as these become available if instructed

5.9 H+R will return to site to inspect sample remedial details if instructed

5.10 H+R will liaise with conservation and historic building authorities, if instructed, so as to ensure the cost-effective conservation of original fabric

5.11 H+R will advise further on cost effective accelerated drying and forced ventilation when required and when instructed

5.12 H+R will advise further on pigeon control measures if required and when instructed

5.13 H+R will liaise with loss adjustors and/or insurers if required when instructed

6 INFORMATION REQUIRED BY H+R

6.1 H+R should be advised when access is available for further site investigations as described at 5 above

6.2 H+R require up-to-date copies of project programmes, as these become available

6.3 H+R require copies of up-to-date lists of project personnel and contact lists as these become available

6.4 H+R require copies of proposed remedial details for comment as these become available

6.5 H+R should be informed as a matter of urgency if further significant water penetration occurs onto site; so that advice can be given on cost-effective remedial measures, to minimise the risk of cost or programme overruns and so as to minimise the risk of damp or decay problems during the latent defect period

7 ADMINISTRATION REQUIREMENTS

7.1 H+R require formal instructions for further investigations and consultancy on this project

7.2 H+R require confirmation of distribution of digital and printed copies of reports and site notes

Attachment A

Fig 1:

Floor structures, fourth floor, RM.4-02; showing solid floor structures at ~220mm depth. Solid floor structures were not the focus of this investigation

Fig 2:

Floor structures, fourth floor, RM.4-02; showing solid floor structures beneath fire damaged dome area. Note concrete floor slab supported by large section (~470mm depth) riveted RSJs subject to superficial corrosion

The Hope Project/ KOKO
Photographs
14 April 2020
Not to scale

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 3:

Floor structures, third floor, RM.3-12 towards RM.3-13; showing likely newer addition intermediate floor of solid construction with finishes removed

Fig 4:

Floor structures, third floor, RM.3-12; showing likely newer addition solid floor slab at ~120mm

Fig 5:

Floor structures, third floor, RM.3-14; showing defunct historic floor structures/level beneath likely newer addition solid floor slab above. Timber structures now serving as ceiling joists to bar area beneath. Note substantial build-up of debris within void

Fig 6:

Floor structures, third floor, RM.3-14; showing void beneath likely newer addition floor structures/stairs landing at north end

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 7:

Floor structures, third floor, RM.3-16; showing image of historic floor area with new split level creating void beneath

Fig 8:

Floor structures, third floor, RM.3-14; showing historic defunct floor level where it meets and is supported onto the west masonry wall. Representative and vulnerable timber bearing ends were deep drilled and moisture probed. No structural decay detected, typical deep moisture contents raised at ~18 per cent and surface moisture contents at ~22 per cent which is high enough to support decay organisms

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 9:

Floor structures, third floor, RM.3-14; showing historic defunct floor level forming ceiling structures to north area of bar. Note significant fire related water damage to non-historic plaster structures. Representative and vulnerable timber bearing ends were deep drilled and moisture probed. No structural decay detected, typical deep moisture contents raised at ~18 per cent and surface moisture contents at ~22 per cent which is high enough to support decay organisms

Fig 10:

Floor structures, third floor, RM.3-14; showing a selection of potentially historically significant artefacts removed from floor void by author for documentation

Fig 11:

Floor structures, third floor, RM.3-14; showing potentially historically significant film real/artefacts removed from floor void by author for documentation. NB historic film real was often made from highly flammable material and should not be left within floor voids

Fig 12:

Floor structures, second floor, RM.2-16; showing view in general looking south. Note floors of solid construction

Fig 13:

Floor structures, second floor, RM.2-22; showing small area of historic timber floor structures over solid floor slab beneath partially concealed by ~10mm floor screed

Fig 14:

Floor structures, second floor, RM.2-20; showing timber floor structures supported directly onto clinker ash concrete structures beneath. No decay detected . Timber moisture contents too low to support decay organisms

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 15:

Floor structures, second floor, RM.2-20; showing timber floor structures supported directly onto clinker ash concrete structures beneath. No decay detected . Timber moisture contents too low to support decay organisms

Fig 16:

Floor structures, second floor, RM.2-21; showing concealed floor structures by hardboard and floorboard covering. Most vulnerable zones highlighted in red. Requires exposure

Fig 17:

Floor structures, second floor, RM.2-20; showing visibly fire related moisture damaged structures above vulnerable concealed floor structures

Fig 18:

Floor structures, first floor, RM.1-14; showing area in general. Note historic parquet flooring removed revealing solid floor

Fig 19:

Floor structures, first floor, RM.1-14; showing remaining timber floor elements laid onto solid floor. Area inaccessible due to know hazardous materials. However structures clearly well ventilated and no decay or trapped moisture suspected

Fig 20:

Floor structures, first floor, RM.1-14; showing remaining timber floor elements laid onto solid floor. Area inaccessible due to know hazardous materials. However structures clearly well ventilated and no decay or trapped moisture suspected

Fig 21:

Floor structures, first floor, RM.1-12; showing area in general looking north. Floor finishes removed revealing solid floor slab beneath

Fig 22:

Floor structures, first floor, RM.1-12; showing typical detail of remaining floorboard grounding embedded into damp floor slab and vulnerable to damp and decay. Note floorboard nail fixings still visible

Fig 23:

Floor structures, first floor, RM.1-12; showing typical detail of remaining floorboard grounding embedded into damp floor slab with visible superficial decay to its underside. Note floorboard nail fixings still visible

Fig 24:

Floor structures, first floor, RM.1-12; showing typical detail of remaining floorboard grounding embedded into damp floor slab with a moisture content of ~29 per cent. Which is high enough to support decay organisms

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 25:

Floor structures, first floor, RM.1-12; showing typical detail of remaining floorboard grounding embedded into damp floor slab with a moisture content of ~26 per cent. Which is high enough to support decay organisms

Fig 26:

Floor structures, first floor, RM.1-09; showing area in general. Floor structures of solid construction

Fig 27:

Floor structures, first floor, RM.1-07; showing south balcony area looking east. Note floor structures of solid construction with floorboards laid/fixed onto perpendicular battens/groundings set into floor slab

Fig 28:

Floor structures, first floor, RM.1-07; showing south balcony south-west area, showing visibly damp area of partially revealed floorboards beneath screed surface. Concealed floorboards to this area vulnerable to damp and decay

Fig 29:

Floor structures, first floor, RM.1-07; showing south balcony floor structures of solid construction with floorboards laid/fixed onto perpendicular battens/ groundings set into floor slab

Fig 30:

Floor structures, first floor, RM.1-07; showing south balcony floorboards exposed beneath damaged surface of <5mm screed

Fig 31:

Floor structures, first floor, RM.1-18; showing royal box in general looking east. Floor structures of solid construction with floorboards laid/fixed onto perpendicular battens/groundings set into floor slab

Fig 32:

Floor structures, first floor, RM.1-18; showing royal box floor structures comprising of solid construction with floorboards laid/fixed onto perpendicular battens/groundings set into floor slab

Fig 33:

Floor structures, first floor, RM.1-12; showing east area/juncture of floor structures between solid floor and balcony tiered floor of suspended timber floor construction. Structures inaccessible at the time of investigation due to known ACMs. However, structures within void suspected of being damp and mould affected

Fig 34:

Floor structures, first floor, RM.1-12; showing east area/juncture of floor structures between solid floor and balcony tiered floor of suspended timber floor construction. Structures inaccessible at the time of investigation due to known ACMs. However, structures within void suspected of being damp and mould affected

Fig 35:

Floor structures, first floor, RM.1-12; showing partially exposed area of south floor structures between solid floor and balcony tiered floor. Structures inaccessible at the time of investigation due to known ACMs. However, structures within void suspected of being damp and mould affected

Fig 36:

Floor structures, first floor, RM.1-12; showing partially exposed area of south floor structures between solid floor and balcony tiered floor. Note juncture of timber elements where they have been cut short by the introduction of remedial structural works

Fig 37:

Floor structures, first floor, RM.1-12; showing partially exposed area of south floor structures between solid floor and balcony tiered floor. Surface content reading showing dry at ~14 per cent. However, inaccessible structures within void suspected of being damp and mould affected

Fig 38:

Floor structures, first floor balcony, RM.1-11; showing north area subject to visible water and salts damage. Floorboards showing moisture contents at ~35 per cent

Fig 39:

Floor structures, first floor balcony, RM.1-11; showing north area of bar with access into floor void for visual inspection only

Fig 40:

Floor structures, first floor balcony, RM.1-11; showing north area of bar floor void. Note suspended timber floor construction supported by perpendicular dwarf studwork walls

Fig 41:

Floor structures, first floor balcony, RM.1-11; showing north area of bar with timbers within floor void visibly subject to surface mould growth as a result of recent moisture penetration and inadequate ventilation

Fig 42:

Floor structures, first floor balcony, RM.1-11; showing south area of bar with timbers within floor void visibly subject to surface mould growth as a result of recent moisture penetration and inadequate ventilation

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 43:

Floor structures, first floor balcony, RM.1-11; showing south area of bar with timbers within floor void visibly subject to surface mould growth as a result of recent moisture penetration and inadequate ventilation

Fig 44:

Floor structures, first floor balcony, RM.1-11; showing south area subject to visible water and salts damage

Fig 45:

Floor structures, first floor balcony, RM.1-11; showing south area subject to visible water and salts damage. Floorboards showing moisture contents at ~29 per cent

Fig 46:

Floor structures, first floor balcony, RM.1-11; showing south lower tier area exposed floor structures. Note visible ACM sandwiched between floorboard and joist elements

Fig 47:

Floor structures, first floor balcony, RM.1-11; showing south lower tier area. Note visible ACM sandwiched between floorboard and joist elements. Also note available timbers visibly subject to surface mould growth

Fig 48:

Floor structures, Ground floor, RM.G-13; showing typical image of historic black and white tiled solid floor structures beneath protective boarding's. Timber floorboards understood to have been removed previously during phase 1 strip-out

Fig 49:

Floor structures, Ground floor, RM.G-13; showing south-east area adjacent to DG-35. Note visible water collecting within cavity in solid floor structures as a result of the fire related water penetration. Door joinery highly vulnerable to decay in this area

Fig 50:

Floor structures, Ground floor, RM.G-12; showing suspended timber floor structures inaccessible for investigation due to know ACMs within void

Fig 51:

Floor structures, Ground floor, RM.G-09; showing view looking west of non-historic suspended timber floor over suspected blocked staircase/exit. No decay suspected

Fig 52:

Floor structures, Ground floor, RM.G-08; showing view looking east of non-historic suspended timber floor over solid floor structures. No decay suspected

Fig 53:

Floor structures, Ground floor, RM.G-21; showing suspended timber floor structures inaccessible for investigation due to know ACMs within void

Fig 54:

Floor structures, Ground floor, RM.G-19; showing superficially excavated solid floor structure with visible embedded steel reinforcement

Fig 55:

Floor structures, Ground floor balcony, RM.G-10; showing general view looking north. Known ACMs within floor void

Fig 56:

Floor structures, Ground floor balcony, RM.G-10; showing visual access to floor void. Note ACM sandwiched between floorboards and floor joist elements. Structures within void suspected of being highly vulnerable to damp and decay issues

The Hope Project/ KOKO
Photographs
14 April 2020
Not to scale

Fig 57:

Floor structures, Ground floor balcony, RM.G-10; showing vulnerable timber element within floor void with a surface moisture content at ~26 per cent. Which is high enough to support decay organisms

Fig 58:

Floor structures, Ground floor balcony, RM.G-10; showing general view looking south. Note change in direction of floorboards suggest altered joist direction below

Fig 59:

Floor structures, Basement floor, RM.B -15; showing general view of main auditorium floor currently exposed and of modern construction

Fig 60:

Floor structures, Basement floor, RM.B -15; showing currently exposed structures of sound modern construction. Note dwarf brick wall with ventilation slots

Fig 61:

Floor structures, Basement floor, RM.B -11; showing stage floor structure with finishes visibly damp. Note multiple (<4no.) layers of impermeable membrane/floor finishes to stage floor. These all appeared to be trapping/ retaining moisture and may be creating the conditions for damp and decay to structures beneath

Fig 62:

Floor structures, Basement floor, RM.B -11; showing stage floor structures west perimeter stud work subject to active decay at post feet and horizontal plate elements. Timber moisture contents at ~30+ per cent

Fig 63:

Floor structures, Basement floor, RM.B -11; showing typical view of stage floor structures from below. Note visible active surface mould growth suggestive of damp conditions and inadequate ventilation

Fig 64:

Floor structures, Basement floor, RM.B -11; showing typical view of stage floor structures from below. Note visible active surface mould growth suggestive of damp conditions and inadequate ventilation

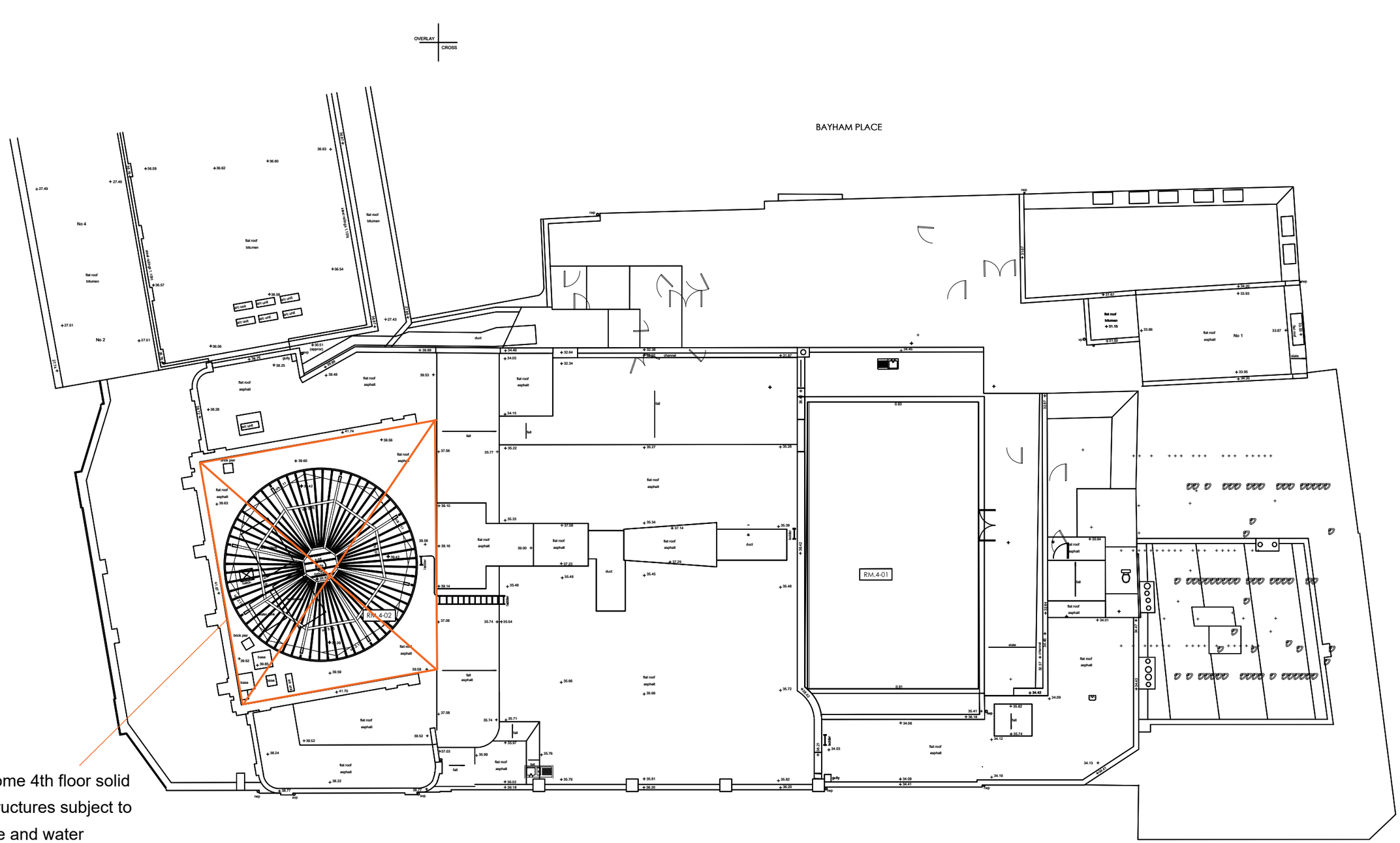
Fig 65:

Floor structures, Basement floor, RM.B -11; showing stage floor structures west perimeter stud work subject to active decay at post feet and horizontal plate elements. Timber moisture contents at ~30+ per cent

Fig 66:

Floor structures, Basement floor, RM.B -11; showing stage floor structure west perimeter stud work subject to active decay at post feet and horizontal plate elements. Timber moisture contents at ~30+ per cent

Attachment B



Dome 4th floor solid structures subject to fire and water exposure not subject to investigation by H+R

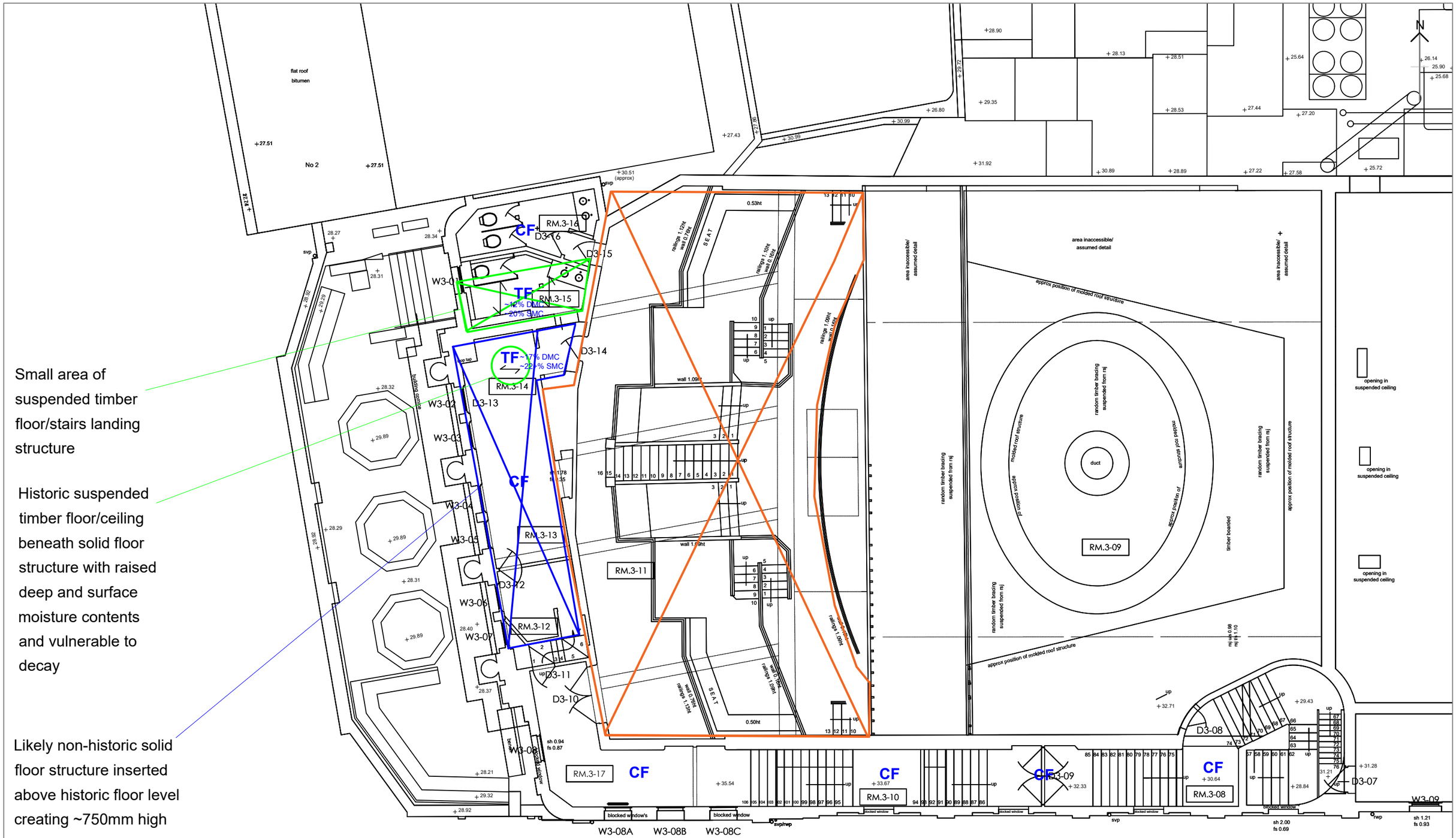
The Hope Project / KOKO - Fourth Floor
Timber Floor Structures Condition Investigation
April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 9 April 2020 -Not to scale-

Small area of suspended timber floor/stairs landing structure

Historic suspended timber floor/ceiling beneath solid floor structure with raised deep and surface moisture contents and vulnerable to decay

Likely non-historic solid floor structure inserted above historic floor level creating ~750mm high void



Key:

- Area of no access at time of survey
- No access. Area containing suspected or identified ACMs
- Area subject to timber decay
- Structurally decayed timber element
- X Structurally compromised bearing end
- Area subject to water penetration providing the conditions for damp and decay
- CF Concrete floor
- TF Timber floor
- TF/CF Timber floor over concrete floor
- Joist direction

The Hope Project / KOKO - Third Floor
Timber Floor Structures Condition Investigation
April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911

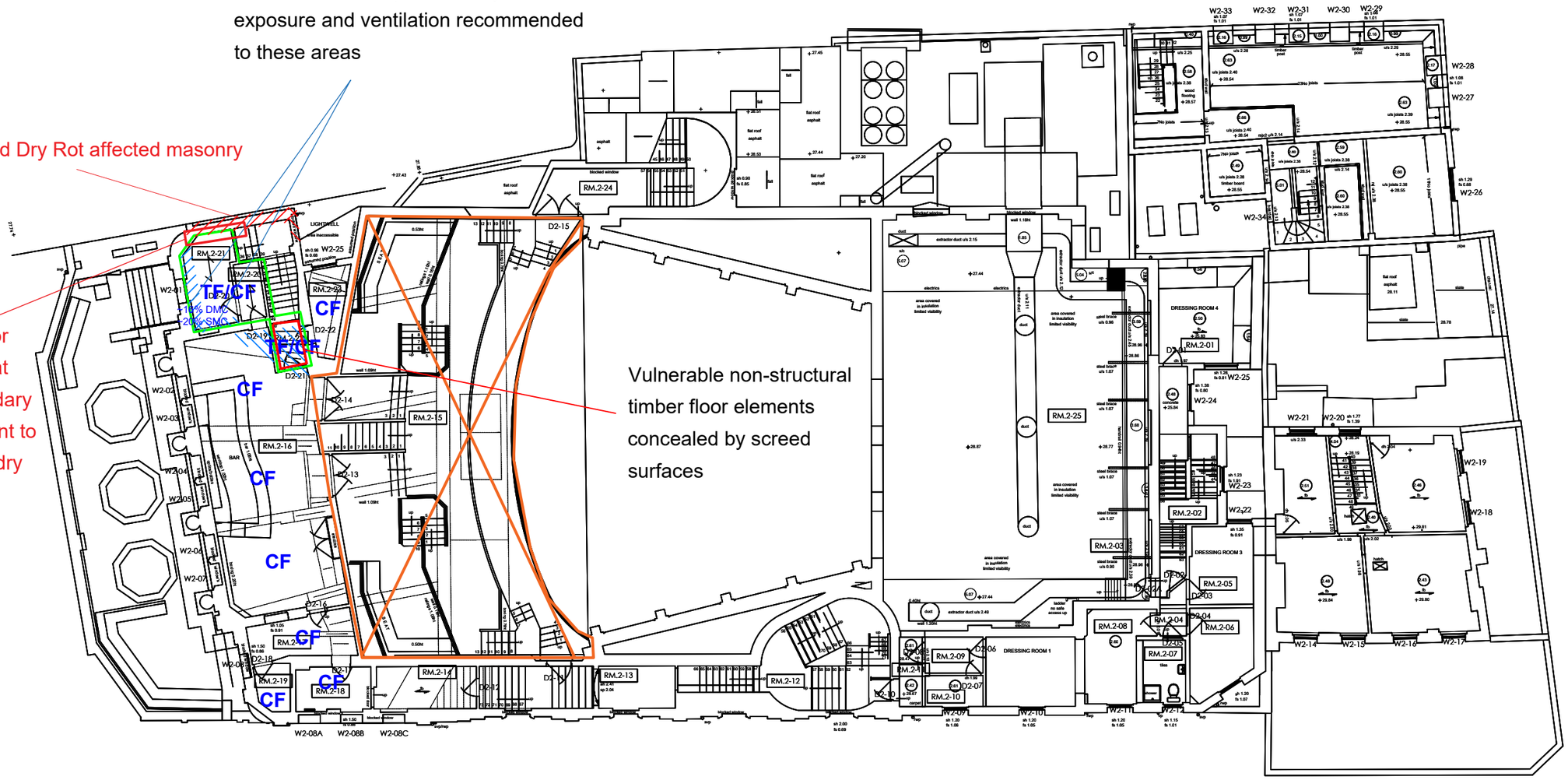
146-89 Site Note 9 April 2020 -Not to scale-

Timber floor elements at east and south walls concealed by floor finishes and vulnerable to damp and decay. Further exposure and ventilation recommended to these areas

Suspected Dry Rot affected masonry

Expose floor structures at north boundary wall adjacent to suspected dry rot affected masonry

Vulnerable non-structural timber floor elements concealed by screed surfaces



SECOND FLOOR PLAN

Key:

- Area of no access at time of survey
- No access. Area containing suspected or identified ACMs
- Area subject to timber decay
- Structurally decayed timber element
- X Structurally compromised bearing end
- Area subject to water penetration providing the conditions for damp and decay
- CF Concrete floor
- TF Timber floor
- TF/CF Timber floor over concrete floor
- Joist direction
- ~12% DMC Deep Moisture Content reading
- ~20% SMC Surface Moisture Content reading

H+R

The Hope Project / KOKO - Second Floor

Timber Floor Structures Condition Investigation
April 2020

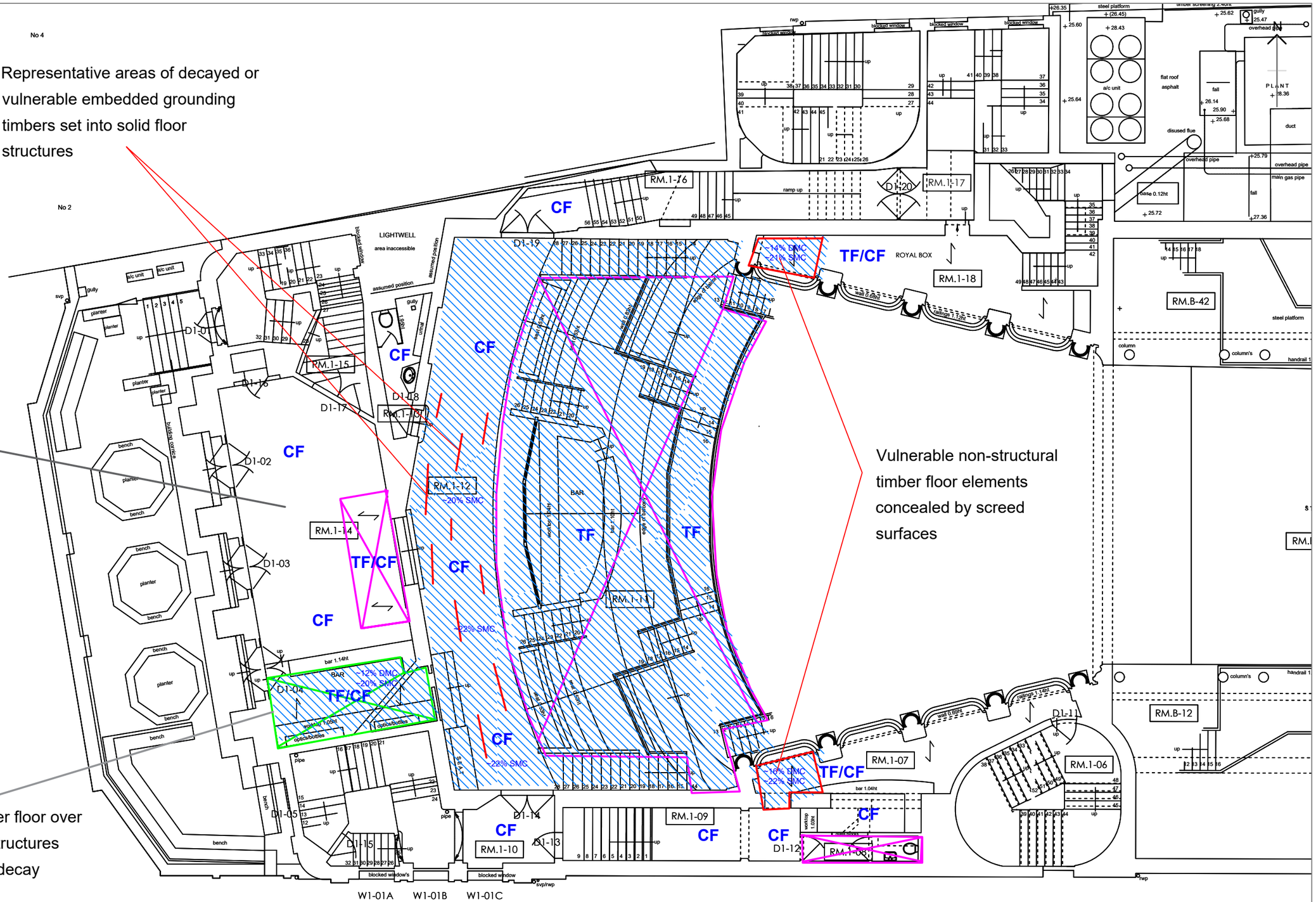
Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 9 April 2020 -Not to scale-

Representative areas of decayed or vulnerable embedded grounding timbers set into solid floor structures

Historic parquet floor previously removed

Modern suspended timber floor over solid construction floor structures vulnerable to damp and decay

Vulnerable non-structural timber floor elements concealed by screed surfaces

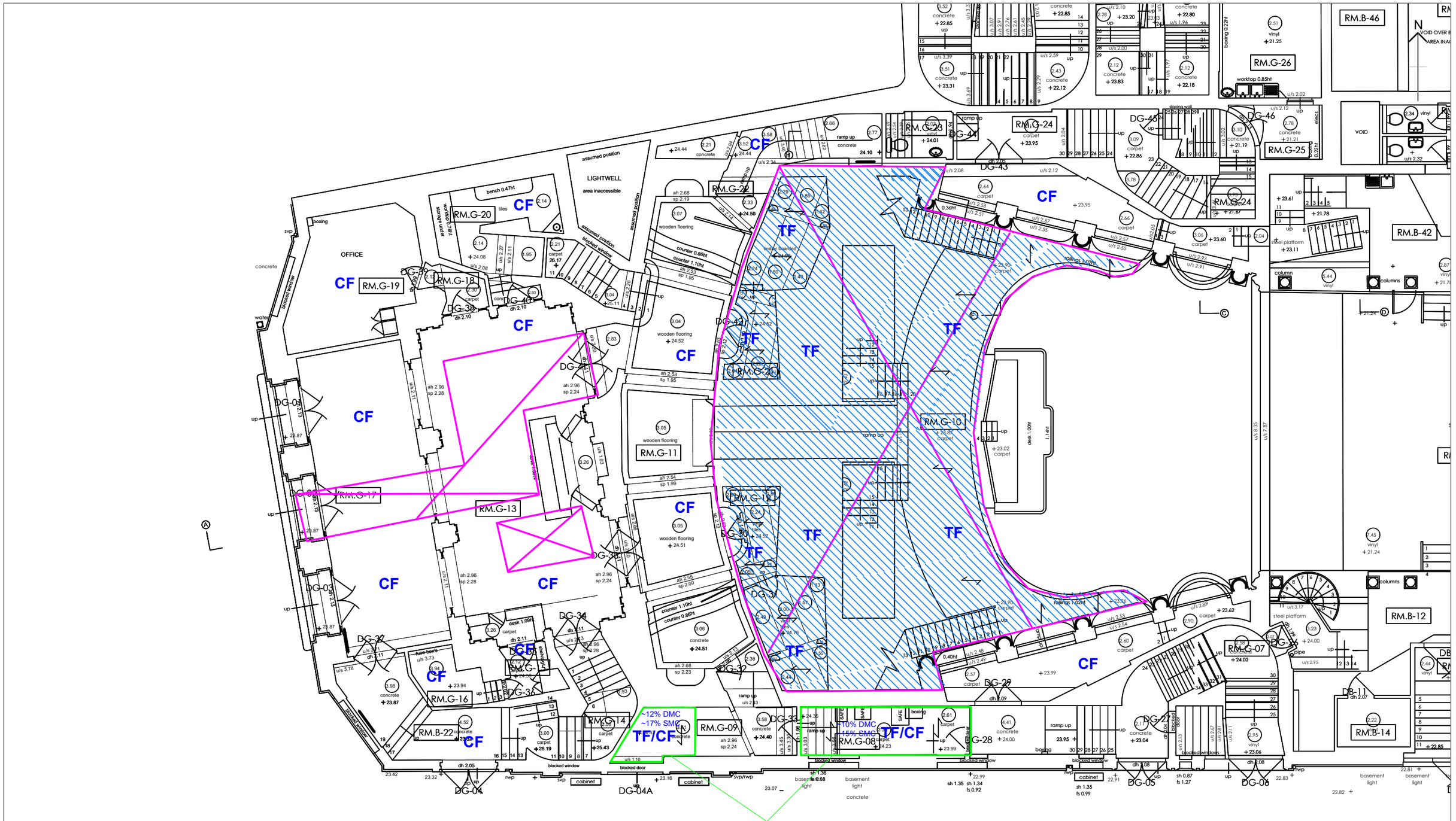


Key:

- Area of no access at time of survey
- No access. Area containing suspected or identified ACMs
- Area subject to timber decay
- Structurally decayed timber element
- X Structurally compromised bearing end
- Area subject to water penetration providing the conditions for damp and decay
- CF Concrete floor
- TF Timber floor
- TF/CF Timber floor over concrete floor
- Joist direction
- ~12% DMC Deep Moisture Content reading
- ~20% SMC Surface Moisture Content reading

The Hope Project / KOKO - First Floor
Timber Floor Structures Condition Investigation
April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 9 April 2020 -Not to scale-

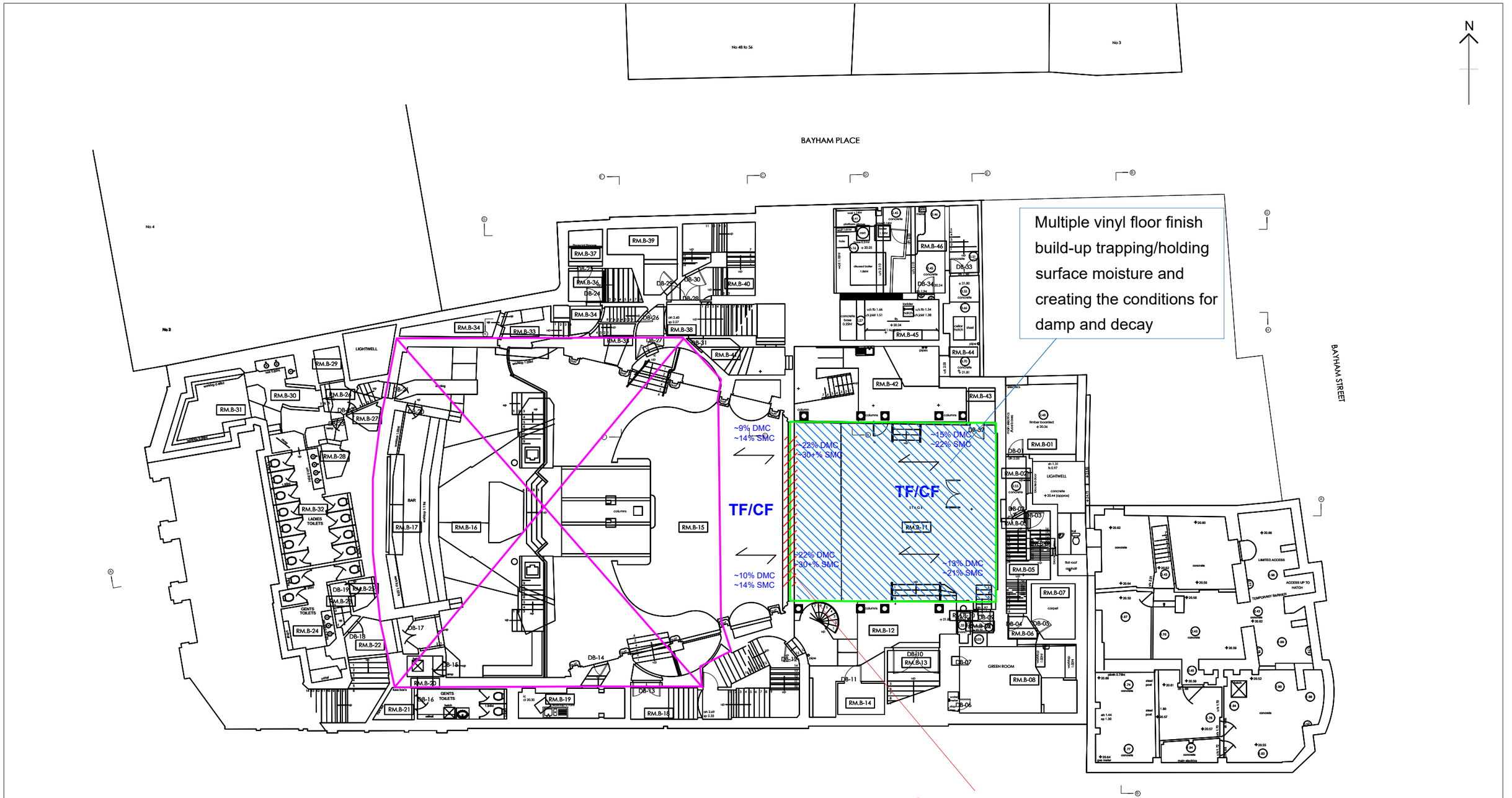


The Hope Project / KOKO - Ground Floor
Timber Floor Structures Condition Investigation
April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 9 April 2020 -Not to scale-

Key:

- Area of no access at time of survey
- No access. Area containing suspected or identified ACMs
- Area subject to timber decay
- Structurally decayed timber element
- X Structurally compromised bearing end
- Area subject to water penetration providing the conditions for damp and decay
- CF Concrete floor
- TF Timber floor
- TF/CF Timber floor over concrete floor
- Joist direction
- ~12% DMC / ~20% SMC Deep Moisture Content reading / Surface Moisture Content reading



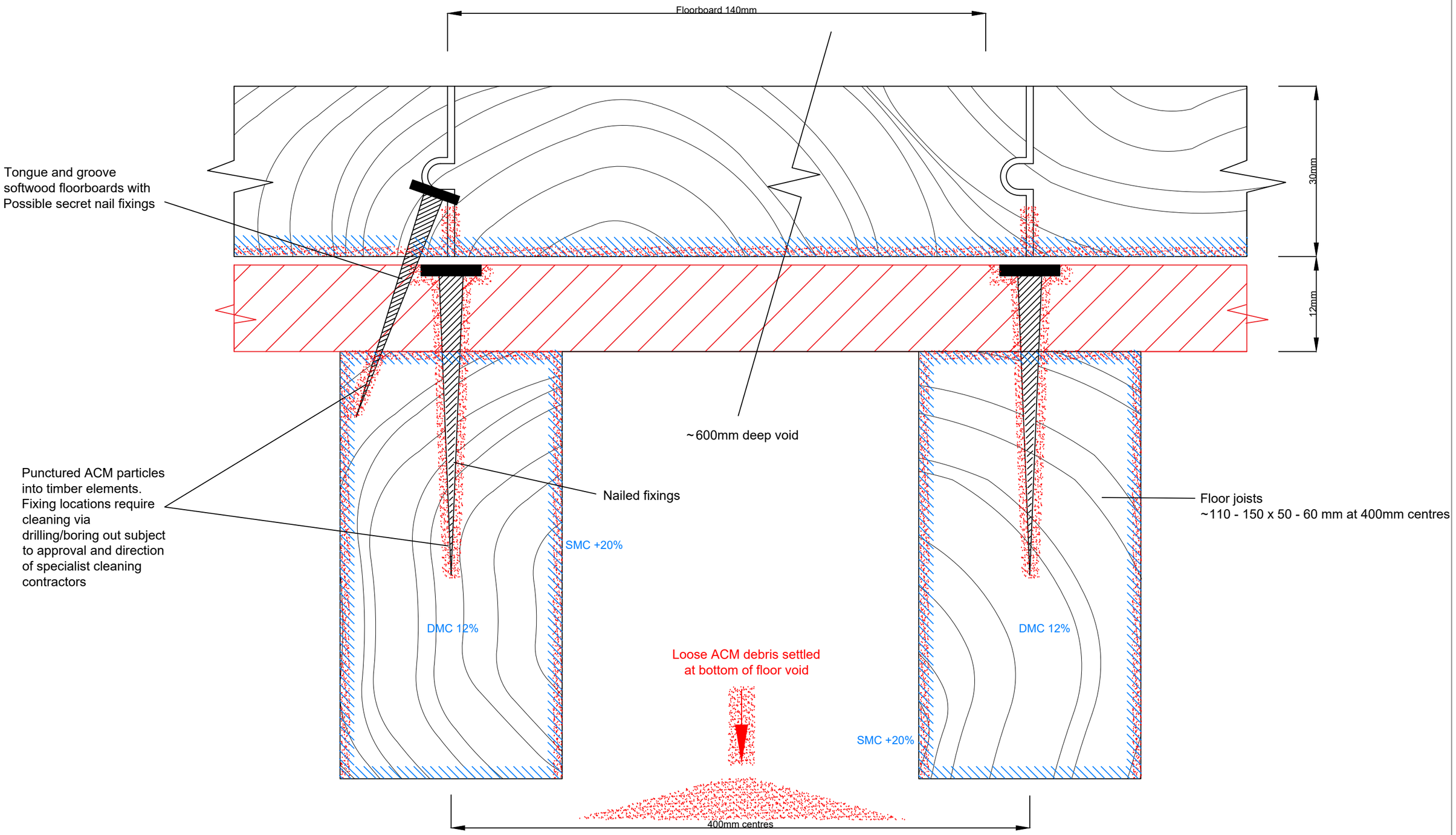
The Hope Project / KOKO - Basement
Timber Floor Structures Condition Investigation
April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 9 April 2020 -Not to scale-

Key:

- Area of no access at time of survey
- No access. Area containing suspected or identified ACMs
- Area subject to timber decay
- Structurally decayed timber element
- **X** Structurally compromised bearing end
- Area subject to water penetration providing the conditions for damp and decay
- **CF** Concrete floor
- **TF** Timber floor
- **TF/CF** Timber floor over concrete floor
- Joist direction
- ~12% DMC / ~20% SMC Deep Moisture Content reading / Surface Moisture Content reading

Attachment C



Key: <6% w/w% of moisture content of skirting boards
Area subject to water penetration providing the conditions for damp and decay
Corrosion

The Hope Project / KOKO -
Balcony floor structures detail
April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 9 April 2020 -Not to scale-

Attachment D

SCHEDULE OF OBSERVATIONS AND RECOMMENDATIONS

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
FOURTH FLOOR				
Not subject to investigation by H+R				
THIRD FLOOR				
RM.3-08 **RM.3-09** **RM.3-10**	South access stair landings/access structures: Comprising steel reinforced clinker ash concrete	-	-	
RM.3-11	Balcony floor structures. No access at time of investigation works due to stabilisation works to 4th floor structures	**-**	-	
RM.3-12 **RM.3-13** **RM.3-14**	Later addition intermediate solid floor structures: Comprising; ~120mm steel reinforced concrete Suspended historic timber floor level below RM.3-14 now acting as ceiling structures to RM.2-16 and RM.2-22; Comprising; Floor/ceiling joists ~55x200@450mm centres	**-** **-** Historic floor structures superseded by later addition solid floor structure above **No active or structural decay detected** Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~22+ per cent Typical recordings of elevated (damp) deep moisture contents at ~16-19 per cent Significant moisture was being trapped within historic floor/ceiling timber elements at the time of investigation and preventing effective drying. Factors trapping and retaining moisture include; water logged gypsum plaster, plaster board, MDF boarding and significant debris/loose matter within ceiling voids Available structures subject to widespread surface mould growth which may represent a health hazard to those working in and occupying related air space	- - *No chemical remedial timber treatments are required* *Subject to approval by the Heritage Team, provision should be made for the removal of all water logged non-historic elements currently trapping moisture within the timber floor/ceiling elements and promoting the conditions for damp and decay* *Allowance may then be made for the increased provision of background ventilation: Natural or mechanical through and cross ventilation should be provided to the ceiling void, so as to minimise the risk of further condensation and mould growth, and so as to facilitate drying* *Timbers subject to surface mould growth and active mould spores should be tested for the type and toxicity of mould to ascertain potential health hazard H+R can conduct such tests if instructed to do so* *Cleaning of mould surfaces: Prior to the introduction of increased ventilation, mould affected surfaces*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
			should be scrubbed with a dilute solution of sodium hypochlorite or household bleach at 1:4 parts. Using a soft brush, the mould should be scrubbed until it disappears. After scrubbing the surfaces, allow the bleach solution to continue to penetrate the surfaces and dry. Those undertaking this task should be provided with appropriate respiratory protection, eye protection, gloves and protective clothing. Consideration should be given to undertaking these works during the buildings reduced activity during the current Covid 19 crisis	
RM.3-15	Small suspended timber floor forming landing structure: Comprising; Floor joists ~60x160mm	**No active or structural decay detected** Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~20 per cent Typical recordings of stable (dry) deep moisture contents at ~12-13 per cent	*No chemical remedial timber treatments are required* *No action required. Structures already provided with adequate ventilation*	
RM.3-16	Solid floor structures; Comprising steel reinforced clinker ash concrete	-	-	
SECOND FLOOR				
RM.2-12 **RM.2-13** **RM.2-14**	South access stair landings/access structures: Comprising steel reinforced clinker ash concrete	-	-	
RM.2-15	Balcony timber and solid floor structures. No access at time of investigation	-	*Area requires investigation when full and safe access is made available*	
RM.2-16 **RM.2-17** **RM.2-18** **RM.2-19**	Solid floor structures; Comprising steel reinforced clinker ash concrete with screed overlay	-	-	
RM.2-20	Timber floor elements laid onto solid floor structures of reinforced clinker ash concrete Comprising; Floor joists ~180x50@380mm Floorboards ~30x140mm	**No active or structural decay detected** Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~20 per cent Typical recordings of stable (dry) deep moisture contents at ~12-13 per cent	*No chemical remedial timber treatments are required* *No remedial action required*	
RM.2-21	Limited access. Timber floor over solid Comprising; Floor joists ~180x50@380mm Floorboards ~30x140mm	Floors structures visibly concealed by hardboard floor finishes/build-up Concealed/unventilated timber floor structures in contact with potentially damp masonry at the south and west walls vulnerable to damp and decay	*Consideration should be given to wholesale removal of floor finishes/build-up to allow for improved access to potential vulnerable floor elements beneath* *Allowance should be made for boards to be lifted adjacent to/at junctures with potentially damp masonry walls to allow for increased ventilation to sub-floor voids and for inspection*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		Concealed/unventilated timber floor structures in contact with potentially dry rot infected masonry at north boundary wall vulnerable to non-structural damp and decay	*Allowance should be made for boards to be lifted adjacent to/at junctures with potentially dry rot infected masonry walls to allow for increased ventilation, inspection and possible remedial works*	
RM.2-22	Screed over timber over solid	Floor structures concealed by screed surface Screed surfaces highly likely to be trapping moisture within the available timber elements beneath as a result of significant moisture during the January 2020 firefighting efforts Typical recordings of elevated (wet) surface moisture contents at ~16-22 per cent	*No chemical remedial timber treatments are required* *Allowance should be made for moisture impermeable cementitious screed surfaces to be removed to allow for increased ventilation to vulnerable timber elements beneath*	
RM.2-23	Solid floor	-	-	
RM.2-24	Solid floor	-	-	
FIRST FLOOR				
RM.1-06	Solid floor	-	-	
RM.1-07	Balcony; (South balcony) screed floor over timber over solid floor Comprising; Floor battens ~80x10@400mm Floorboards ~30x140mm	**No active or structural decay detected** Floor structures concealed by screed surface Screed surfaces highly likely to be trapping moisture within the available timber elements beneath as a result of significant moisture during the January 2020 firefighting efforts Typical recordings of elevated (wet) surface moisture contents at ~16-22 per cent	*No chemical remedial timber treatments are required* *Allowance should be made for moisture impermeable cementitious screed surfaces to be removed to allow for increased ventilation to vulnerable timber elements beneath*	
RM.1-08 **RM.1-09** **RM.1-10**	Solid floors	-	-	
RM.1-11	Main balcony floor structures constructed of suspended timber floor elements over solid/RSJ structures Comprising; Floor boards -140x30mm Floor joists -150x50mm@400mm Plates- Stud elements-	**Floor structures and void inaccessible for full inspection due to known ACMs** **Asbestos sheet boarding was identified within floor structures. The asbestos sheeting had been previously laid as a fire prevention method between the floor joists and the tongue and groove floorboards. This would have inadvertently allowed loose and damaged asbestos particles and debris to settle at the bottom of the void and upon plaster and timber ceiling elements below. Furthermore, it is highly probable that all timber elements used as fixing timbers for ACMs will have had their surfaces punctuated by asbestos particles by the nail and screw fixings** Available timbers were surface and deep resistance drilled and moisture probed;	*No chemical remedial timber treatments are required* *These structures should not be subject to inspection, remedial works or increased ventilation/air flow until the relevant specialists have certified the voids as clean. Timbers worthy of retention which have been punctured by fixings contaminated with asbestos should have the ALL fixings pulled/screwed out and the contaminated fixing holes bored out to a greater diameter to a specification and guidance from the specialist ACM removal contractors. Timbers judged to be too heavily contaminated or compromised by the penetrating of ACM particles into their sections by nail and screw fixings may be impractical for cleaning via the hole-boring method. In such instances and under the direction of the Conservation Team and the specialist cleaning contractors, consideration should*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		Typical recordings of elevated (wet) surface moisture contents at ~24 per cent Typical recordings of stable (dry) deep moisture contents at ~12-13 per cent	*be given to the removal of all hazardous materials impracticable for deep cleaning* *Once hazardous materials (including timbers impractical for cleaning) have been removed and voids suitably cleaned of asbestos and mould contaminants, consideration should be given to the opened voids and cavities being sprayed with hydraulic limewash to stabilise all remaining dust and hazardous loose material. This will also have the added advantage of encapsulating all remaining mould and effectively killing it, lime wash being an effective biocide. Note that the hydraulic limewash recipe should not include caseins or tallow as these are known to feed moulds* *It should be noted that, although the ACMs within the balcony floor voids are an historic and encapsulated issue, the widespread mould growth to timbers trapped within these voids has come about as a result of sudden and mass moisture penetration to structures as a result of the 6 January 2020 fire. If left unchecked, the damp and mould affected timbers will likely lead to significant decay issues. Ventilation to these voids is vital to check the damp issues and safeguard the remaining building fabric. However, these voids cannot be safely ventilated until suitably cleaned of mould and asbestos contaminants*	
		Structures generally believed to be superficially damp with inadequate provision for ventilation to assist in drying	*When safe to so. Provision should be made for through and cross ventilation to dry/protect as much historic building fabric as possible. In particular vulnerable decorative moulded plaster elements beneath the investigated floor structures and which are intended to remain in situ, should be carefully recorded and continuous vent gaps at or close to the cornice/soffit juncture and nearest to damp affected masonry walls, cut open and set aside to all suspended ceilings and floor voids through the non-decorative and more easily repaired ceiling plaster. Continuous vent gaps should always have corresponding and opposing vent gaps for the effective movement of air. Alternatively, floorboards may be removed wholesale or at vulnerable floor/ceiling junctures to allow ventilation of voids beneath*	
		Available structures subject to widespread surface mould growth which may represent a health hazard to those working in and occupying related air space	*Timbers subject to surface mould growth and active mould spores should be tested for the type and toxicity of mould to ascertain potential health hazard H+R can conduct such tests if instructed to do so* *Cleaning of mould surfaces: Prior to the introduction of increased ventilation, mould affected surfaces should be scrubbed with a dilute solution of sodium hypochlorite or household bleach at 1:4 parts. Using a soft brush, the mould should be scrubbed until it disappears. After scrubbing the surfaces, allow the*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
			bleach solution to continue to penetrate the surfaces and dry. Those undertaking this task should be provided with appropriate respiratory protection, eye protection, gloves and protective clothing. Consideration should be given to undertaking these works while the building is effectively 'mothballed' during the current Covid 19 crisis	
RM.1-12	Solid floor. Timber floor finishes removed. Embedded timber groundings still in-situ Comprising; Groundings ~ 18x50mm@ random centres	Floor board fixing groundings highly vulnerable to non-structural decay from trapped moisture within solid floor structure Typical recordings of elevated (wet) surface moisture contents at ~16-22 per cent	*Allowance should be made for all available grounding elements to area to be removed and remaining voids made good when solid floor structures are suitably dry*	
RM.1-13	Solid floor	-	-	
RM.1-14	Solid floor	-	-	
RM.1-15 **RM.1-16** **RM.1-17**	Solid floors	**-**	-	
RM.1-18	Balcony (Royal Box); screed floor over timber over solid floor Comprising; Floor battens ~80x10@400mm Floorboards ~30x140mm	**No active or structural decay detected** Floor structures concealed by screed surface Screed surfaces highly likely to be trapping moisture within the available timber elements beneath as a result of significant moisture during the January 2020 firefighting efforts Typical recordings of elevated (wet) surface moisture contents at ~16-22 per cent	*No chemical remedial timber treatments are required* *Allowance should be made for moisture impermeable cementitious screed surfaces to be removed to allow for increased ventilation to vulnerable timber elements beneath*	
GROUND FLOOR				
RM.G-07	Solid floor	**-**	**-**	
RM.G-08	Modern suspended timber floor over solid floor structures- Safe room Timber structures likely to be of significant build-up to support ~3-4no. safes	Non-historic timber floor elements concealed by floor finishes (carpet) build-up However, no decay suspected Typical recordings of stable (dry) surface moisture contents at ~14 per cent	*No chemical remedial timber treatments are required* *No remedial action required*	
RM.G-09	Modern suspended timber floor over solid floor-concealing historic exit	Non-historic timber floor elements concealed by floor finishes (vinyl) build-up However, no decay suspected Typical recordings of stable (dry) surface moisture contents at ~14 per cent	*No chemical remedial timber treatments are required* *No remedial action required*	
RM.G-10	Main balcony floor structures constructed of suspended timber floor elements over solid/RSJ structures	**Floor structures and void inaccessible for full inspection due to known ACMs**	*No chemical remedial timber treatments are required*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
	Comprising; Floor boards -140x30mm (tongue + groove) Floor joists -110x60mm@400mm Plates- Stud elements- ~600mm void	**Asbestos sheet boarding was identified within floor structures. The asbestos sheeting had been previously laid as a fire prevention method between the floor joists and the tongue and groove floorboards. This would have inadvertently allowed loose and damaged asbestos particles and debris to settle at the bottom of the void and upon plaster and timber ceiling elements below. Furthermore, it is highly probable that all timber elements used as fixing timbers for ACMs will have had their surfaces punctuated by asbestos particles by the nail and screw fixings** Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~22 per cent Typical recordings of stable (dry) deep moisture contents at ~12-13 per cent	*These structures should not be subject to inspection, remedial works or increased ventilation/air flow until the relevant specialists have certified the voids as clean. Timbers worthy of retention which have been punctured by fixings contaminated with asbestos should have the ALL fixings pulled/screwed out and the contaminated fixing holes bored out to a greater diameter to a specification and guidance from the specialist ACM removal contractors. Timbers judged to be too heavily contaminated or compromised by the penetrating of ACM particles into their sections by nail and screw fixings may be impractical for cleaning via the hole-boring method. In such instances and under the direction of the Conservation Team and the specialist cleaning contractors, consideration should be given to the removal of all hazardous materials impracticable for deep cleaning* *Once hazardous materials (including timbers impractical for cleaning) have been removed and voids suitably cleaned of asbestos and mould contaminants, consideration should be given to the opened voids and cavities being sprayed with hydraulic limewash to stabilise all remaining dust and hazardous loose material. This will also have the added advantage of encapsulating all remaining mould and effectively killing it, lime wash being an effective biocide. Note that the hydraulic limewash recipe should not include caseins or tallow as these are known to feed moulds* *It should be noted that, although the ACMs within the balcony floor voids are an historic and encapsulated issue, the widespread mould growth to timbers trapped within these voids has come about as a result of sudden and mass moisture penetration to structures as a result of the 6 January 2020 fire. If left unchecked, the damp and mould affected timbers will likely lead to significant decay issues. Ventilation to these voids is vital to check the damp issues and safeguard the remaining building fabric. However, these voids cannot be safely ventilated until suitably cleaned of mould and asbestos contaminants*	
		Structures generally believed to be superficially damp with inadequate provision for ventilation to assist in drying	*When safe to so. Provision should be made for through and cross ventilation to dry/protect as much historic building fabric as possible. In particular vulnerable decorative moulded plaster elements beneath the investigated floor structures and which are intended to remain in situ, should be carefully recorded and continuous vent gaps at or close to the cornice/soffit juncture and nearest to damp affected masonry walls, cut open and set aside to all suspended ceilings and floor voids through the non-decorative and more easily repaired ceiling plaster. Continuous vent gaps should always have corresponding and opposing vent gaps for the effective movement of air. Alternatively, floorboards*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
			may be removed wholesale or at vulnerable floor/ceiling junctures to allow ventilation of voids beneath *Timbers subject to surface mould growth and active mould spores should be tested for the type and toxicity of mould to ascertain potential health hazard H+R can conduct such tests if instructed to do so* *Cleaning of mould surfaces: Prior to the introduction of increased ventilation, mould affected surfaces should be scrubbed with a dilute solution of sodium hypochlorite or household bleach at 1:4 parts. Using a soft brush, the mould should be scrubbed until it disappears. After scrubbing the surfaces, allow the bleach solution to continue to penetrate the surfaces and dry. Those undertaking this task should be provided with appropriate respiratory protection, eye protection, gloves and protective clothing. Consideration should be given to undertaking these works while the building is effectively 'mothballed' during the current Covid 19 crisis*	
RM.G-11	Solid floor	-	**-**	
RM.G-12 **RM.G-21**	Balcony cupboards. Timber floors structures Comprising; Floorboards~140x30mm Blockboard sheet flooring~30mm Floor joists~50x200mm@400mm	**Floor structures and void inaccessible for full inspection due to known ACMs** **Asbestos sheet boarding was identified within floor structures. The asbestos sheeting had been previously laid as a fire prevention method between the floor joists and the tongue and groove floorboards. This would have inadvertently allowed loose and damaged asbestos particles and debris to settle at the bottom of the void and upon plaster and timber ceiling elements below. Furthermore, it is highly probable that all timber elements used as fixing timbers for ACMs will have had their surfaces punctuated by asbestos particles by the nail and screw fixings** Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~22 per cent Typical recordings of stable (dry) deep moisture contents at ~12-13 per cent	*No chemical remedial timber treatments are required* *These structures should not be subject to inspection, remedial works or increased ventilation/air flow until the relevant specialists have certified the voids as clean. Timbers worthy of retention which have been punctured by fixings contaminated with asbestos should have the ALL fixings pulled/screwed out and the contaminated fixing holes bored out to a greater diameter to a specification and guidance from the specialist ACM removal contractors. Timbers judged to be too heavily contaminated or compromised by the penetrating of ACM particles into their sections by nail and screw fixings may be impractical for cleaning via the hole-boring method. In such instances and under the direction of the Conservation Team and the specialist cleaning contractors, consideration should be given to the removal of all hazardous materials impracticable for deep cleaning* *Once hazardous materials (including timbers impractical for cleaning) have been removed and voids suitably cleaned of asbestos and mould contaminants, consideration should be given to the opened voids and cavities being sprayed with hydraulic limewash to stabilise all remaining dust and hazardous loose material. This will also have the added advantage of encapsulating all remaining mould and effectively killing it, lime wash being an effective biocide. Note that the hydraulic limewash recipe should not include caseins or tallow as these are known to feed moulds*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
			It should be noted that, although the ACMs within the balcony floor voids are an historic and encapsulated issue, the widespread mould growth to timbers trapped within these voids has come about as a result of sudden and mass moisture penetration to structures as a result of the 6 January 2020 fire. If left unchecked, the damp and mould affected timbers will likely lead to significant decay issues. Ventilation to these voids is vital to check the damp issues and safeguard the remaining building fabric. However, these voids cannot be safely ventilated until suitably cleaned of mould and asbestos contaminants	
		Structures generally believed to be superficially damp with inadequate provision for ventilation to assist in drying	*When safe to so. Provision should be made for through and cross ventilation to dry/protect as much historic building fabric as possible. In particular vulnerable decorative moulded plaster elements beneath the investigated floor structures and which are intended to remain in situ, should be carefully recorded and continuous vent gaps at or close to the cornice/soffit juncture and nearest to damp affected masonry walls, cut open and set aside to all suspended ceilings and floor voids through the non-decorative and more easily repaired ceiling plaster. Continuous vent gaps should always have corresponding and opposing vent gaps for the effective movement of air. Alternatively, floorboards may be removed wholesale or at vulnerable floor/ceiling junctures to allow ventilation of voids beneath*	
		Available structures subject to widespread surface mould growth which may represent a health hazard to those working in and occupying related air space	*Timbers subject to surface mould growth and active mould spores should be tested for the type and toxicity of mould to ascertain potential health hazard H+R can conduct such tests if instructed to do so* *Cleaning of mould surfaces: Prior to the introduction of increased ventilation, mould affected surfaces should be scrubbed with a dilute solution of sodium hypochlorite or household bleach at 1:4 parts. Using a soft brush, the mould should be scrubbed until it disappears. After scrubbing the surfaces, allow the bleach solution to continue to penetrate the surfaces and dry. Those undertaking this task should be provided with appropriate respiratory protection, eye protection, gloves and protective clothing. Consideration should be given to undertaking these works while the building is effectively 'mothballed' during the current Covid 19 crisis*	
RM.G-13	Entrance lobby solid floor. Historic black and white marble tiles still in-situ Modern timber floor finishes removed	-	-	
RM.G-14 **RM.G-15** **RM.G-16**	Solid floors	-	-	
RM.G-17	Entrance. Solid floors	-	-	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
RM.G-18 **RM.G-19** **RM.G-20** **RM.G-22** **RM.G-23** **RM.G-24**		-	-	
RM.G-25	Suspended historic timber floor Comprising: Floorboards~ removed Floor joists~110x60mm@380mm Plate~110x60mm	**No structural or significant decay detected** Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~15 per cent Typical recordings of stable (dry) deep moisture contents at ~10 per cent	*No chemical remedial timber treatments are required* *No remedial action required*	
BASEMENT				
RM.B-11	Suspended timber stage floor structure Comprising; Floor joists~50x150@270mm Bressumer~100x150mm Vertical studs~100x45mm Horizontal stud wall plate~100x45mm Floor finishes included; Hardboard Rubber membrane Upper vinyl membrane Lower vinyl membrane	Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~30+ per cent Typical recordings of elevated (damp) deep moisture contents at ~18 per cent Structural decay detected to the west perimeter stud work supporting the ground floor stage structures This included up to ~5no. decayed post feet and up to ~3m linear of stud wall plate Build-up of 4no. impermeable floor finishes were found to be trapping moisture between layers. Although this did not appear to be trapping moisture within the floor timber elements beneath and only between the layers themselves, it is highly likely that moisture will eventually migrate to the timber elements beneath and cause the conditions for damp and decay Available structures subject to superficial surface mould growth which may represent a health hazard to those working in and occupying related air space	No chemical remedial timber treatments are required All practical measures should be taken to maintain the external envelope so as to minimise further water penetration into the structure, during and after the refurbishment. This should include repair and re-detailing of external masonry and the rainwater drainage system. Identified decayed elements to the stage floor structures should be cut out and replaced in like-for-like or to an improved specification. All vulnerable timber elements in contact with damp or suspected damp masonry should be separated by a ventilated air-gap or isolated via a suitable damp proof membrane (DPM) *Allowance should be made for all non-essential floor finishes build-up to be removed and subsequent concealed layers beneath dried before a protective construction surface laid over* *Timbers subject to surface mould growth and active mould spores should be tested for the type and toxicity of mould to ascertain potential health hazard H+R can conduct such tests if instructed to do so* *Cleaning of mould surfaces: Prior to the introduction of increased ventilation, mould affected surfaces should be scrubbed with a dilute solution of sodium hypochlorite or household bleach at 1:4 parts. Using a soft brush, the mould should be scrubbed until it disappears. After scrubbing the surfaces, allow the bleach solution to continue to penetrate the surfaces and dry. Those undertaking this task should be*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
			provided with appropriate respiratory protection, eye protection, gloves and protective clothing. Consideration should be given to undertaking these works while the building is effectively 'mothballed' during the current Covid 19 crisis	
RM.B-15	Central audience pit/dancefloor. Modern suspended timber floor supported by ventilated brick dwarf walls over solid structures Comprising; Floorboards- removed Floor joists~145x45@400mm Plate~100x50mm	No structural or significant decay detected Available timbers were surface and deep resistance drilled and moisture probed; Typical recordings of elevated (wet) surface moisture contents at ~15 per cent Typical recordings of stable (dry) deep moisture contents at ~10 per cent	*No chemical remedial timber treatments are required* *No remedial action required*	

Site Note 10: Secondary timber condition investigation

April 2020

Hutton + Rostron
Environmental Investigations Limited

Hope Project/Koko: Secondary timber condition investigation

Site note 10 for 8 and 9 April 2020, job no. 146.89

CONTENTS

Distribution:

Andrew Bridge - Cotton Thompson Cole Ltd
Francesca Cipolla - Stephen Levrant: Heritage Architecture Ltd
Shantanu Subramaniam - Stephen Levrant: Heritage Architecture Ltd

Prepared by:	**Technical review by:**	**Administration by:**
Joe Lovelock BSc	James Hutton	Jennifer Birchard BA(Hons)

Hutton+Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA

Tel: 01483 203221 Email: ei@handr.co.uk Web: www.handr.co.uk

1 INTRODUCTION

1.1 AUTHORITY AND REFERENCES

Hutton + Rostron Environmental Investigations Limited carried out site visits to The Hope Project (KOKO Camden) on the 8-9th April 2020 in accordance with instructions from Andrew Bridge by email, on 10 March 2020 (16:13). Drawings provided by Archer Humphryes Architects; Ref AHA/KKC/EX/ were used for the identification of structures. For the purpose of orientation in this report, the building was taken as facing west onto Camden High Street

1.2 AIM

The aim of this survey was to make an initial assessment of the construction and condition of remaining secondary timber elements. Recommendations for effective 'drying-down' and further detailed investigation of residual moisture and advice on short term remedial works are given, to promote drying of the structure and protect historically significant building fabric from damage and decay

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. The condition of concealed timbers may be deduced from the general condition and moisture content of the adjacent structure. Only demolition or exposure work can enable the condition 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 most probable condition 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 any 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 STAFF ON SITE AND CONTACTS

2.1 H+R STAFF ON SITE

Joe Lovelock
Andrew Ellis

2.2 PERSONNEL CONTACTED

Russell Higson – Od Projects

3 OBSERVATIONS AND *RECOMMENDATIONS*

3.1 INTRODUCTION TO SECONDARY TIMBER CONDITION INVESTIGATION

This investigation was confined to those areas previously identified within H+R Site Note 7 - Damp Condition Investigation, as being subject to moisture penetration and vulnerable to damp and decay issues as a result of the fire-fighting efforts of the 6 January 2020 fire. Broadly, this may be summarised as all structures beneath the fire damaged dome roof to the west facing onto Camden Hight Street, the main auditorium and the north and south areas of the main auditorium

3.2 SUMMARY OF CONSTRUCTION

3.2.1 Skirting

All skirting investigated at the time of survey was preliminarily identified as being of softwood timber, most likely of the *Pinus* genus. Sections were nailed/screwed to timber grounds embedded in masonry walls, or to battens also retaining wall finishes such as plasterboard or laths. Mouldings and profiling varied throughout, and there was limited evidence of recurring architectural details. Historic large-section skirting had been replaced with modern smaller skirting in several areas associated with historic water penetration and subsequent decay, or as part of remodelling and refurbishment. See attached schedule for dimensions and detailing

3.2.2 Architrave

Architrave was, again, preliminarily identified as being of softwood timber, most likely of the *Pinus* genus. These were nailed/screwed to timber door frames, with frames nailed/screwed to timber grounds embedded in masonry walls. As described above, mouldings varied throughout the building with no recurring architectural theme. Later remedial works or refurbishments had resulted in the replacement of large-section historic architrave, with smaller section modern timber. It was deemed likely that some architrave may date from original construction, and was therefore of historic significance. See attached schedule for dimensions and detailing

3.2.3 Windows

Windows within external wall openings were generally boarded over with plywood and therefore visual access to internal framing and sashes was limited. Where visible, construction varied between casement windows, and double-hung sliding sash windows. Glass was noted to be stained and leaded at first floor level on the south side of the building suggesting historic integrity and significance

3.2.4 Doors and frames

Door construction varied throughout the building, with many doors of solid-core construction presumably to conform to fire protection regulations. Most doors were of panelled construction comprising solid timber stiles, rails, and muntins, with solid timber panels. Most of these doors were deemed to be of historic significance and were of considerable age, but unlikely to date from original construction. Several doors were preliminarily identified as being of tropical hardwood, and were therefore considered, again unlikely to date from original construction. Doors were hung incorporating various types of hinge, from floor-mounted pivot hinges, to saloon bar type ‘double-action’ hinges, and standard butt hinges; those of historic significance are referred to in the attached schedule. Historic door frames were presumed to be nailed/screwed to embedded timber grounds set within the masonry on construction or during alteration of internal walls, or screwed to masonry using modern plastic plugs. There were sections of joinery where

original doors had been removed to form open-plan areas, although this was generally confined to room RM.G-13; the main foyer/reception area. See attached schedule for more information

3.3 CONDITION

3.3.1 Skirting

No active fungal decay was noted affecting historic and non-historic timber skirting in the areas affected and directly below the water penetration during the recent fire-fighting efforts; however, surface moisture readings taken using a resistance-based moisture meter were locally well above the level required to sustain fungal decay organisms or wood-boring beetle infestation indicating significant retention of moisture within the masonry walls. This leaves timbers in contact highly vulnerable to issues with damp and decay before, during, and after refurbishment; generally, readings above ~20 per cent w/w are considered high enough for decay to occur. Much of the skirting, especially in rooms RM.1-14 and 12, and RM.G-11 and 13 returned surface moisture levels in excess of 30 per cent w/w, referred to as fibre saturation. Skirting is likely to be secured to timber grounds embedded within the masonry walls which will almost certainly decay unless drying is enabled. Areas affected by the water penetration, and returning high moisture content levels are shown on the attached drawings and referred to in the attached schedule

Timber skirting elements in contact with potentially damp masonry walls, or walls previously identified as being damp, should be removed and discarded if deemed of non-historic significance, or stored off-site ready for reinstatement if deemed to be of historic significance. This will enable effective drying of the masonry masses affected by the water penetration during the firefighting efforts. On reinstatement, timber should be isolated from the masonry affected by dampness with a continuous damp-proof material or through-ventilated air gap

3.3.2 Architrave

Again, no fungal decay by wet or dry rot was noted affecting timber architrave; however, moisture content readings taken from architrave at the time of survey were locally high enough for decay to occur. This was exclusively confined to the areas directly below the dome roof, particularly rooms RM.1-12 and 14, and rooms RM.G-11 and 13. Moisture was found to be collecting in pockets around the base of door jambs, and locally saturating the lower sections of architrave. Head sections were mostly ‘dry’, although water is likely to continue to travel down, collecting on hidden lintel structures, and may further affect horizontal sections of architrave before, during, and after post-fire remedial works

Timber architrave elements in contact with potentially damp masonry walls, or walls previously identified as being damp, should be removed and discarded if deemed of non-historic significance, or off-site ready for reinstatement if deemed to be of historic significance. This will enable effective drying of the masonry masses affected by the water penetration during the firefighting efforts. On reinstatement, timber should be isolated from the masonry affected by dampness with a continuous damp-proof material or through-ventilated air gap. One way to achieve this would be to increase the width of door frames proud of the masonry using small timber battens. Although aesthetically altering the appearance, this would leave a subsequent air gap behind

3.3.3 Windows

Windows were generally boarded up at the time of survey and therefore physical inspection was limited; however, those directly below the water penetration which occurred during fire-fighting efforts were likely to have been affected by the water penetration, and retained moisture within the masonry mass may affect timbers in contact

or embedded in damp affected masonry during and after the post-fire remedial works. No structural decay was detected at the time of survey

Windows do not require removal but are a useful source of through-ventilation during the drying phase and therefore any boarding should either be removed, or perforated to provide air-flow, which will also require the removal of glazing in some locations. Existing glazing, if deemed historically significant, should be carefully removed for off-site storage ready for reinstatement after the post-fire remedial works. Care should be taken to removing historic glazing prior to perforation of boarding to avoid accidental damage or breakage. Window openings currently filled-in with blockwork/brickwork should be opened up for additional through-ventilation during the drying phase. For security, steel mesh should be used to cover openings, and to maintain ventilation

3.3.4 Doors and frames

Doors at front of house areas had been affected by water penetration during the fire-fighting efforts. Moisture content readings of lower sections of frames, and horizontal sections in several places, were locally elevated beyond the decay threshold. This was almost exclusively confined to those areas below the dome roof, i.e. RM.2-15 and 16, RM.1-12 and 14, and RM.G-13 and 17. Moisture retained within the masonry masses was likely to affect timber in contact with damp affected masonry before, during, and after post-fire remedial works. Where floor-mounted pivot hinges had been removed and replaced with standard butt hinging, the resulting pockets at floor level were found to be a collection point for liquid water. In some cases, timber sections were isolated from these, whereas in most locations, end-grain of door jambs was saturated and likely to be further drawing liquid upwards through capillary action. Retained moisture in masonry masses was considered likely to affect all timber elements in contact with or embedded within potentially damp walls, and will almost certainly result in issues with damp and decay during and after post-fire remedial works. Existing mechanical damage noted was deemed likely to have been exacerbated by the results of the fire-fighting efforts and subsequent water penetration, and the immediate post-fire remedial works

Doors and frames deemed to be highly vulnerable to future risk of issues with damp and decay as a result of the fire-fighting efforts should be removed and stored on or off-site as specified by the Architect or Conservation Officer, in the locations shown on attached plans and specified in the attached schedule, in order to allow drying down of masonry masses, and to protect historically significant timber items

3.3.5 Other joinery items

1 Bar furniture and ticket booths: The water penetration during fire-fighting efforts had appeared to have generally concentrated towards masonry masses, with only limited evidence of transmitting through ceiling finishes onto historic or non-historic joinery items below. In Room RM.2-16, the suspended ceiling above the bar partially collapsed causing direct water damage to the bar counter below. In Room RM.1-14, plaster ceiling adjacent to bar counter partially collapsed due to water ingress resulting in wetting of the bar counter and associated joinery. Bar in balcony RM.1-11 is affected by water ingress directly above it. This area was ply-boarded up and when opened revealed significant water ponding in the area. There was widespread existing mechanical damage to joinery items which was deemed likely to have been exacerbated by post-fire remedial works. Any retained moisture within timber elements would almost certainly result in further damage and warping and twisting of joinery items over time. Examination suggested that many of these joinery items were not of particular historic importance and most likely a relatively recent addition

2 Decorative forming timbers: Inspection of the boxing-in at the bases of the arches in RM.G-11 found fungal growth which had resulted in structural decay of timbers forming the decorative columns. Moisture content readings were again at fibre

saturation (over 30 per cent w/w), and although the decay appeared to be historic and may be a result of inadequate ventilation in the past, elevated moisture content readings such as this are considered high enough for further decay to occur which may begin to affect adjacent secondary timber elements

No chemical remedial treatments are required or recommended in relation to fungal decay organisms

All joinery items within areas RM.2-16, RM.1-11 and RM.1.14, and RM.G-13 should be removed and replaced, like-for-like, with new to match existing. This includes ticket booths and bar furniture, and associated joinery such as architrave, trims, skirting, shelving, and hatches/doors. This will have the additional benefit of providing increased ventilation of internal floor areas

The decorative boxed-in arches in RM.G-11 should be removed and all forming timbers within removed and discarded. This will aid in increasing ventilation to potentially damp masonry during the drying phase and limit sources of nutrition for fungal decay organisms

3.4 STORAGE OF MATERIALS

H+R understand that the majority of all Phase 1 elements of significance to be conserved and retained on refurbishment have been set aside and stored since the previous H+R site visit. However, should developing situations create conditions in which any remaining historic non-structural items become vulnerable to damage or decay/distortion etc due to high or fluctuating moisture contents then the following advice should be followed

High quality storage of heritage items is essential. All removed material should be well marked/labelled and documented via photography and on drawings prior to removal. Labels should carry a code relating each item to its exact location. Items should be stacked in a drying pile with regularly arranged and carefully positioned spacer sticks. Stacks should be above ground level, ideally on pallets and there should be good access to walk around the stacks. The environment should be dry and well ventilated or controlled to 45-60%RH at 18-20°C. Wide variations in ambient humidity and temperature should be avoided and regular inspections of stored materials should be carried out. Inspections and any observations and actions taken should be recorded in a site diary, for insurance purposes

3.5 DRYING DOWN STRATEGY FOR DOORS AND WINDOWS

H+R understand that a preliminary drying-down strategy has been agreed, including wedging open of non-historic doors, or removing of historic doors and windows for safe off-site storage, and replacement with steel mesh for security where necessary. This is in-line with recommendations previously highlighted in H+R Site Note 7 and has been reviewed by H+R

All historically significant doors and windows should be removed for safe storage off-site in accordance with recommendations in 3.4 above. Non-historic doors can be retained in-situ and carefully wedged in an open position to allow for through-ventilation of the structure. Blocked windows deemed useful sources for through-ventilation., as shown on attached plans, should be unblocked and covered with steel mesh for security

3.6 LINTEL STRUCTURES

Although not a part of the investigation, lintel structures were deemed highly vulnerable to issues with damp and decay due to being embedded within potentially damp masonry masses, especially in those areas directly below the dome roof. Any timber lintel structures over internal and external door and window openings were considered highly vulnerable to structural timber decay

Consideration should be given to a full and extensive lintel investigation to determine vulnerability to issues with damp and decay, and extent of decay if present. This involves minimally-invasive micro-bore drilling into lintel structures to verify construction and, if timber, deep-moisture content, from which the level of risk can be determined. If timber lintels are present, they are likely to perform as 'moisture reservoirs', retaining moisture and resulting in issues with damp and decay before, during, and after refurbishment, and total decay may represent structurally significant issues, and also a source of nutrition for fungal organisms if ventilation is inadequate

4 H+R WORK ON SITE

4.1 H+R inspected all secondary timber elements and joinery, as necessary, so as to determine their decay state and deep moisture content

5 PROPOSED ACTION BY H+R

5.1 H+R will advise on repair and conservation of secondary timber elements and joinery, so as to minimise the risk of decay after refurbishment if instructed

5.2 H+R will advise on remedial detailing, so as to minimise the risk of damp and decay problems after refurbishment if instructed

5.3 H+R will advise on conservation of original fabric with regard to damp, decay and salt damage, as necessary and if instructed

5.4 H+R will review proposed remedial details as these become available if instructed

5.5 H+R will return to site to inspect sample remedial details if instructed

5.6 H+R will liaise with conservation and historic building authorities, if instructed, so as to ensure the cost-effective conservation of original fabric

6 INFORMATION REQUIRED BY H+R

6.1 H+R require up-to-date copies of project programmes, as these become available

6.2 H+R require copies of up-to-date lists of project personnel and contact lists as these become available

6.3 H+R require copies of proposed remedial details for comment as these become available

6.4 H+R should be informed as a matter of urgency if further significant water penetration occurs onto site; so that advice can be given on cost-effective remedial measures, to minimise the risk of cost or programme overruns and so as to minimise the risk of damp or decay problems during the latent defect period

7 ADMINISTRATION REQUIREMENTS

7.1 H+R require formal instructions for further investigations and consultancy on this project

7.2 H+R require confirmation of distribution of digital and printed copies of reports and site notes

Attachment A

SCHEDULE OF OBSERVATIONS AND RECOMMENDATIONS

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
SN10.1 THIRD FLOOR				
D3-10	Doors and frame	Double-door set, 5-panelled with 4no. lower panels and one horizontal top panel. Aluminium handles with brass pushplate. North door stacked on edge in RM.3-17 970 x 2120 x 45mm Top rail – 105mm Stiles – 110mm Muntin – 110mm Intermediate rail – 105mm Middle rail – 220mm Bottom rail – 210mm Architrave – 75 x 20mm (large ogee with small ovolo), missing to south side, none to east side of doorway	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase* *Doors to be stored on-site should be raised off potentially damp floors on softwood timber battens, and protected from accidental damage and dust with breathable dust sheets*	
D3-11	Door and frame	Softwood 4-panelled door with flush panels. Off hinges and stacked on edge in RM.3-17 750 x 2085 x 45mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D3-12	Door and frame	Softwood, lower 2no. panels with reinforced glass panel above, off double-action spring hinges, and stacked on base to north side of doorway 765 x 1815 x 45mm Framing – 95 x 50mm, hardwood (tropical) Architrave – 45 x 20mm (square-edged) Glass smashed, west door jamb missing and top head of frame subsequently damaged to west	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D3-13	Door and frame	Softwood, 4-panelled, double-action hinges 750 x 1980 x 45mm Stiles – 95mm Top rail – 100mm Middle rail – 220mm Bottom rail – 230mm Muntin – 100mm Architrave 45 x 20mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
W3-08A-C and W3-08	Windows	Circular windows, with framing ~50mm in thickness (depth unknown). All sashes removed and openings boarded up with 18mm birch plywood. Reveal ~70 x 23mm. Overall width ~540mm Architrave, ~55 x 23mm (double ogee), missing from W3-08C	*Windows do not require removal. Boarding should be removed, perforated, and replaced in-situ to provide through-ventilation of the structure during the drying phase*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		Limited vulnerability to issues with damp and decay during and after post-fire remedial works due to retained moisture in masonry masses directly below the dome structure		
W3-02-07	Windows	Arched, sashes and frames removed to allow access for scaffolding retention elements	*No immediate action required*	
RM.3-12	Architrave	Opening at top of stairs – 64 x 20mm (double chamfer) – missing on three sides. Doorway framing timbers in this location warped and twisted due to water penetration Moisture contents of west jamb well over the decay threshold of ~22 per cent w/w	*Non-historic secondary timber elements to be discarded and replaced after the drying phase with new to match existing. Provision for isolation from potentially damp masonry to be incorporated on reinstatement*	
	Skirting	60 x 20mm (square-edged) Moisture contents throughout in excess of the decay threshold of ~22 per cent w/w		
Staircase between RM.3.12 and RM.3-17	Staircase	No access to inspect staircase void at the time of survey, although no obvious signs of issues, such as structural failure or decay to timber resulting from fire or water penetration during fire-fighting efforts. However, timber embedded in or in contact with potentially damp masonry vulnerable to issues with damp and decay during and after post-fire remedial works	*Access to inspect the under-stair void and structure should be provided to determine condition of structural timbers and nature of construction*	
SN10.2 SECOND FLOOR				
D2-11	Door and frame	Timber door and frame Moisture contents below the decay threshold	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-12	Door and frame	Timber door and frame Moisture content at base of jambs high enough at the time of survey for decay to occur, liquid water ponding below jambs	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-13	Doors and frame	Double-door set with brass ironmongery, doors removed from frame and stacked in RM2-17, 15-pane glazing Top rail – 100mm Stiles – 100mm Bottom rail – 150mm Glazing bars - 45mm 840 x 1965 x 45mm Moisture content at base of jambs high enough at the time of survey for decay to occur, liquid water ponding below jambs	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-14	Doors and frame	Double door set with brass ironmongery, south door removed from frame and stacked in RM2-17 Top rail – 100mm Stiles – 100mm Bottom rail – 150mm Glazing bars - 45mm 840 x 1965 x 45mm	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		Moisture contents at base of jambs high enough at the time of survey for decay to occur, liquid water ponding below jambs		
D2-15	Doors and frame	Double-door set with modern ironmongery Moisture contents too low for decay to occur at the time of survey	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-16	Door and frame	4-panelled door with fire-proof boarding secured to face Stiles – 100mm Muntin – 110mm Middle rail – 225mm Bottom rail – 210mm 1960 x 740 x 48mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-17	Door and frame	Solid-core door with modern ironmongery and door closer. Vent in lower section 1965 x 752 x 43mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-18	Door and frame	Door removed for access to scaffolding through window opening, frame cut approximately in half resulting in significant damage to framing and architrave	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-19	Door and frame	Solid-core fire door	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-20	Door and frame	Solid-core fire door with modern ironmongery and door closer 1965x 763 x 45mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-21	Door and frame	Solid-core fire door with modern ironmongery and door closer. Glazed panel above, with cushioned material fixed to south side of door 1980x 762 x 45mm Architrave – 70 x 20mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D2-22	Door and frame	Solid-core door fitted with fire-proof boarding, with modern ironmongery and door closer 1960 x 760 x 57mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
2nd floor windows	Windows to south and west	Windows generally boarded up with plywood at the time of survey, limited visibility for inspection; however, some were deemed likely to be historic with historic leaded glazing. Architrave detached from west side of window W2-25 which may relate to immediate post-fire remedial works	*Windows do not require removal. Boarding should be removed, perforated, and replaced in-situ to provide through-ventilation of the structure during the drying phase. This will require removal of glazing to enable air-flow. Historic glass should be carefully removed for safe off-site storage. Windows currently blocked with blockwork/brickwork should be opened-up to provide*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
			additional through-ventilation of the structure and covered with steel mesh for security	
SN10.3 FIRST FLOOR				
D1-01	Door and frame	Double arched door set with pseudo-square lower panels below glazed spandrels above. Brass ironmongery. No access (screwed shut at time of survey) Superficial mechanical damage from human interaction and reduced historic significance due to remedial intervention and inappropriate painting	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
D1-02-04	Doors and frame	Double door sets set into arched-topped frames; upper curved segmental arches glazed in multiple sections to form 'sunrise' effect. Glazed and leaded side panels. Doors of tropical hardwood and appeared to be of a much later date than the framing Architrave – 135 x 55mm (multiple sections, ogee and ovolo) Superficial mechanical damage from human interaction and reduced historic significance due to remedial intervention and inappropriate painting. Moisture contents at base of architraves well over decay threshold	*Historic doors, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
D1-11	Door and frame	Solid-core fire door 750 x 2020 x 45mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D1-13	Door and frame	Solid-core fire door. Modern door-closer 825 x 1965 x 45mm Architrave 80 x 30mm (ogee with scotia internal edge)	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D1-14	Doors and frame	Double-door set with reinforced glazed upper panel and four panels below. Historic 1950s era door closers Top rail – 130mm Middle rail – 200mm Bottom rail – 220mm Stiles – 90mm Muntin – 100mm Architrave – 175 x 55 (multiple sections, ogee and ovolo)	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D1-15	Door and frame	Solid-core door with small glazed panel to top. Modern door-closer. Aluminium ironmongery 805 x 1960 x 43mm Architrave – 80 x 30mm (ogee with scotia internal edge)	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D1-16	Door and frame	5-panelled door with single upper horizontal panel. Yale and dead lock Architrave 150 x 65 (multiple sections, ogee and scotia with baseblocks)	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
D1-17	Doors and frame	Double-door set with large semi-circular arched frame above and tapered leaded lights. Each door ~870mm in width. Reinforced glass in upper panel and moulded panel below. Modern door closers fitted to both doors Top rail – 80mm Middle rail – 180mm Bottom rail – 160mm Glazing bars – 50mm (scotia moulding) Architrave - 150 x 65mm (multiple sections, ogee and ovolo)	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D1-19	Doors and frame	Double-door set with reinforced glazed and painted upper panel and four panels below. Modern door closers Top rail – 130mm Middle rail – 200mm Bottom rail – 220mm Stiles – 90mm Muntin – 100mm Architrave – 175 x 55 (multiple sections, ogee and ovolo) Glazing smashed to west door	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
D1-20	Doors and frame	Double-door set with reinforced glazed and painted upper panel and four panels below. Modern door closers Top rail – 130mm Middle rail – 200mm Bottom rail – 220mm Stiles – 90mm Muntin – 100mm Architrave – 175 x 55 (multiple sections, ogee and ovolo)	*Non-historic doors, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
RM.1-07	Bar furniture and other secondary timber elements	Bar furniture to south of balcony consisting of MDF worktops, cupboards and shelving deemed to be highly vulnerable to issues with damp and decay during and after post-fire remedial works after likely saturation during fire-fighting efforts. Damage from twisting and warping likely to occur in the future primarily due to the construction material utilised Skirting, architrave, and other secondary timber elements in contact with potentially damp masonry also vulnerable to structural decay during and after post-fire remedial works	*Non-historic secondary timber elements to be discarded and replaced after the drying phase with new to match existing. Provision for isolation of timber from potentially damp masonry to be incorporated on reinstatement*	
RM.1-12-14		Area directly below dome roof and therefore likely saturated during firefighting efforts. Partial ceiling collapse in RM.1-14 indicated significant water penetration. Secondary timbers in contact with damp masonry, including skirting, architrave, and dado rail sections, highly vulnerable to issues with damp and decay during and after post-fire remedial works Bar furniture to south likely to have been saturated during fire-fighting efforts and also highly vulnerable to further issues with damp and decay during remedial works	*Non-historic secondary timber elements to be discarded and replaced after the drying phase with new to match existing.* *Historic joinery and secondary timber elements to be carefully dismantled and removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation of timber from potentially damp masonry to be incorporated on reinstatement*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
W1-01A-C	Windows	Windows generally boarded up with plywood at the time of survey, limited visibility for inspection; however, some were deemed likely to be historic with historic leaded glazing.	*Windows do not require removal. Boarding should be removed, perforated, and replaced in-situ to provide through-ventilation of the structure during the drying phase. This will require removal of glazing to enable air-flow. Historic glass should be carefully removed for safe off-site storage. Windows currently blocked with blockwork/brickwork should be opened-up to provide additional through-ventilation of the structure and covered with steel mesh for security*	
SN10.4 GROUND FLOOR				
DG-01 to 03	Doors and frames	Double door sets of tropical and temperate hardwood with glazed panels to sides. Doors glazed with 9no. panels and one solid timber panel below. Hinged on floor and frame-mounted pivot hinges Thickness – 45mm Stiles – 90mm Glazing bars – 48mm Top rails – 70mm Middle rails – 190mm Bottom rails – 190mm Opening – 1650 x 2100mm Moisture contents at base of jambs well above the decay threshold of ~20 per cent w/w	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement* *Door openings to be covered with perforated steel grille for security and continuance of through-ventilation*	
DG-26	Door and frame	Large glazed panel to upper half, aluminium push plate and pull plate, Modern door-closer Dimensions – 2130 x 920 x 45mm	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-27	Door and frame	No significant damage to door and frame from the fire or subsequent fire-fighting efforts	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-28	Door and frame	No access at the time of survey due to the presence of confirmed ACMs	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-29	Door and frame	Double-door set. Large glazed panel to upper half, aluminium push plate and pull plate, Modern door-closer Dimensions – 2130 x 920 x 45mm No significant damage other than mechanical damage from human traffic. Moisture content readings well below the decay threshold	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-30	Door and frame	No access at the time of survey due to the presence of confirmed ACMs	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-31	Door and frame	No access at the time of survey due to the presence of confirmed ACMs; however, door, frame and associated	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		joinery not considered at risk of issues with damp and decay during post-fire remedial works following the water-penetration during fire-fighting efforts	*open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-32	Door and frame	Solid-core fire door Door, frame and associated joinery not considered at risk of issues with damp and decay during post-fire remedial works following the water-penetration during fire-fighting efforts	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-33	Doors and frame	Double door set with large glazed panel above solid timber panel below, hinged on large 7” double-action hinges Each door – 820 x 2100mm Moisture contents at base of jambs well above the decay threshold of ~20 per cent w/w	*Historic doors, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-34	Doors and frame	Double door set of tropical hardwood with glazed panels to sides. Doors glazed with 9no. panels and one solid timber panel below. Hinged on double-action saloon bar-type hinges Thickness – 45mm Stiles – 90mm Glazing bars – 48mm Top rails – 70mm Middle rails – 190mm Bottom rails – 190mm Opening – 1650 x 2100mm Moisture contents at base of jambs well above the decay threshold of ~20 per cent w/w	*Historic doors, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-35	Door and frame	9-pane glazing to upper section. Carving to face with lower solid timber panel. Historic brass ironmongery and modern Yale lock and combination keypad. Likely to be of historic significance Some dropping noted to ceiling above door, but considered historic due to door top rail scribed to suit	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-36	Door and frame	Much-reduced solid-core fire door cut to suit opening within ticket office Door, frame and associated joinery not considered at risk of issues with damp and decay during post-fire remedial works following the water-penetration during fire-fighting efforts	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-37	Doors and frame	No access due to adjacent storage of suspected ACMs, but of hardwood double-door and frame construction	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-38	Door and frame	Door of tropical hardwood with glazed panels to sides. Door glazed with 9no. panels and one solid timber panel below. Hinged on floor and frame-mounted pivot hinges	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		Thickness – 45mm Stiles – 90mm Glazing bars – 48mm Top rails – 70mm Middle rails – 190mm Bottom rails – 190mm Opening – 1650 x 2100mm No significant damage other than mechanical damage from human traffic, although moisture contents at base of jambs well above the decay threshold of ~20 per cent w/w	*reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-39	Door and frame	Solid timber panelled door No significant damage other than mechanical damage from human traffic. Moisture content of frame and door well below the decay threshold, and at low risk of future issues with damp and decay during post-fire remedial works	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-40	Door and frame	Door of tropical hardwood with glazed panels to sides. Door glazed with 9no. panels and one solid timber panel below. Hinged on floor and frame-mounted pivot hinges Thickness – 45mm Stiles – 90mm Glazing bars – 48mm Top rails – 70mm Middle rails – 190mm Bottom rails – 190mm Opening – 1650 x 2100mm No significant damage other than mechanical damage from human traffic, although moisture contents at base of jambs well above the decay threshold of ~20 per cent w/w	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-41	Doors and frame	Double door set with large glazed panel above solid timber panel below, hinged on large 7” double-action hinges Each door – 820 x 2100mm No other significant damage other than mechanical damage from human traffic, although moisture contents at base of jambs well above the decay threshold of ~20 per cent w/w	*Historic door, frame, and associated secondary timber elements to be carefully removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
DG-42	Door and frame	No access at the time of survey due to the presence of confirmed ACMs; however, door, frame and associated joinery considered at risk of issues with damp and decay during post-fire remedial works following the water-penetration during fire-fighting efforts	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-43	Doors and frame	Double-door set with 3 upper panes; one horizontal with reinforced glass. Modern door-closers. Multiple historic repairs including metal strapping to top-rail/stile interfaces 2040 x 815 x 45mm (x2) Some mechanical damage, although not considered a result of fire and water penetration during fire-fighting efforts. Moisture content at base of jambs in excess of the	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		decay threshold but again reducing significantly above ~50mm from FFL		
DG-44	Door and frame	Timber door and frame Moisture content at base of jambs over decay threshold but decreasing rapidly over ~50mm from FFL	*Non-historic door, frame, and associated joinery to be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation of the structure to aid in the drying-down phase*	
DG-45	Door and frame	Tropical hardwood door through to Royal Box stair access. Single horizontal glazed and leaded panel above 2no. large leaded glazed panels below. Timber panels in lower section. Frame arched and segmented Door - 2040 x 755 x 55mm Architrave – 90 x 20mm (double round-over) Moisture content at base of jambs over decay threshold but decreasing rapidly over ~50mm from FFL	*Historic door and frame were unaffected by the fire and subsequent issues with damp and decay following water penetration during fire-fighting efforts* *Door should be wedged open to provide ventilation of the structure*	
DG-46	Doors and frame	Curved historic double-door set possibly retained from original construction. Leaded upper panels with solid timber panels below. Historic ironmongery although significantly damaged. Doors boarded over on stairwell face Stiles – 90mm Thickness – 45mm Middle rail – 180mm Glazing bars – 40mm Bottom rail – 200mm Existing damage not considered a result of the fire or subsequent water penetration during fire-fighting efforts. Partially collapsed ceilings in RM.G-25 deemed most likely to be a result of historic water penetration, evidenced by significant salt efflorescence on adjacent masonry	*Historic doors and frame were unaffected by the fire and subsequent issues with damp and decay following water penetration during fire-fighting efforts* *Doors should be wedged open to provide ventilation of the structure*	
RM.G-13 & RM.G-17	Historic door joinery	Glazed and leaded timber framing previously housing doors (now missing). Preliminary identification for oak (*Quercus spp.*). Relatively high historic significance and may date from original construction, being the main thoroughfare into the building from the west side Mouldings most likely formed from multiple sections housed together and primarily featuring large ovolo, with smaller ogee detailing, and scotia with beading Architraves – 100 x 70mm Framing - ~110 x 80mm Some mechanical damage from human traffic and heavy use of area likely to have been exacerbated during fire and subsequent water penetration during fire-fighting efforts. Partial collapse of adjacent ceiling structures indicated likely moisture retention in masonry masses in contact with timber. Liquid water collecting in historic pivot hinge placements in solid floor at base of jambs	*Historic joinery and secondary timber elements to be carefully dismantled and removed for off-site storage as directed by the Architect or Conservation Officer, ready for reinstatement after the drying phase. Provision for isolation from potentially damp masonry should be incorporated on reinstatement*	
	Ticket booth furniture	Ticket booth furniture and joinery directly below area of significant water penetration during fire-fighting efforts and	*Non-historic secondary timber elements to be discarded and replaced after the drying phase with new to match existing.*	

REFERENCE	ITEM	OBSERVATIONS	RECOMMENDATIONS	CLIENT COMMENTS
		likely to have been saturated. Some existing damage, likely to have exacerbated by the fire and fire-fighting efforts, and subsequent immediate post-fire remedial works. Increased risk of issues with damp and decay going forward, likely to result in warping of timber and further damage	*Provision for isolation from potentially damp masonry to be incorporated on reinstatement*	
	Skirting/architrave	Skirting and architrave in contact with damp masonry highly vulnerable to issues with damp and decay. Moisture contents well above the decay threshold of ~20 per cent w/w	*Non-historic secondary timber elements in contact with damp masonry should be removed and discarded. Historically significant secondary timbers should be removed for off-site storage ready for reinstatement after the drying phase. Provision for isolation from damp masonry should be incorporated on reinstatement*	
RM.G-11	Decorative boxed arches	Significant fungal growth within void indicative of wet rot decay. Structural decay of timber elements within boxing-in, with moisture content readings well in excess of the decay threshold of ~20 per cent w/w	*Decorative boxed-in arches should be stripped of coverings and all timbers within removed and discarded. On reinstatement with new to match existing, provision for isolation from damp masonry should be incorporated*	
Ground floor windows	Windows	Windows generally boarded up with plywood at the time of survey, limited visibility for inspection; however, some were deemed likely to be historic with historic leaded glazing.	*Windows do not require removal. Boarding should be removed, perforated, and replaced in-situ to provide through-ventilation of the structure during the drying phase. This will require removal of glazing to enable air-flow. Historic glass should be carefully removed for safe off-site storage. Windows currently blocked with blockwork/brickwork should be opened-up to provide additional through-ventilation of the structure and covered with steel mesh for security*	

Attachment B

Fig 1:

Third floor; showing door D3-13

Mechanical damage was noted to door, framing, and to surrounding architrave which was likely to have been exacerbated by the fire-fighting efforts and subsequent immediate post -fire remedial works

Fig 2:

Third floor; showing door D3-12

The door jamb had been forcibly removed to the west side resulting in damage to the head section of the frame

Also note architrave missing from the west and door stacked on edge to north

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 3:

Third floor; showing doorway at top of stairs to upper part of third floor

Architrave was missing from the west side, and moisture contents of frame elements behind high enough, at the time of survey, for decay to occur, at over 20 per cent w/w

Fig 4:

Third floor; showing window W3-07

Sashes and frames of windows W3-02-07 had all been removed to provide access for scaffolding restraint elements

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 5:

Third floor; showing doors D3-10 and D3-11

The south door of D3-10 and door D3-11 were removed from hinges and stored nearby on edge

Note architrave missing from D3-10

Fig 6:

Third floor; showing windows W3-08 A, B, and C

Windows were boarded up with 18mm birch-faced plywood; however, were suspected to be vulnerable to issues with damp and decay during and after post-fire remedial works

Note architrave missing from W3-08C

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 7:

Third floor; showing an historically blocked window in the stairwell up to the third floor

Windows were boarded up at the time of survey; however, were suspected to be vulnerable to issues with damp and decay during and after post-fire remedial works

Fig 8:

Third floor; showing an historically blocked window in the stairwell up to the third floor

Windows were boarded up at the time of survey; however, were suspected to be vulnerable to issues with damp and decay during and after post-fire remedial works

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 9:

Second floor mezzanine; showing an historically blocked window on the west side of the building

Windows were boarded up at the time of survey; however, were suspected to be vulnerable to issues with damp and decay during and after post-fire remedial works

Fig 10:

Second floor mezzanine; showing an historically blocked window on the west side of the building

Windows were boarded up at the time of survey; however, were suspected to be vulnerable to issues with damp and decay during and after post-fire remedial works

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 11:

Second floor; showing historic window elements behind plywood sheeting at the intermediate level between first and second floors, on the south side of the building

Windows were boarded up at the time of survey; however, were suspected to be vulnerable to issues with damp and decay during and after post-fire remedial works

Fig 12:

Second floor; showing window W2—25

Architrave was detached on the west side

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 13:

Second floor; showing window opening W2-08

Sash and framing timbers had been removed to provide access to the scaffold. This had resulted in damage to the door frame of doorway D2-18

Door was stacked to the side along with doors from door openings D2-13 and 14

Fig 14:

Second floor; showing door D2-14

The door had been removed from the frame situated in RM.2-16 and stacked on-edge in room RM.2-17

Existing damage may have been exacerbated by the fire and fire-fighting efforts, and subsequent immediate post-fire remedial works

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 15:

Second floor; showing doorway D2-16

The architrave was opening slightly at the east mitre, although dust accumulation within the joint indicated this was historic and not a result of the fire-fighting efforts; however, these effects may have been exacerbated by the water penetration

Fig 16:

Second floor; showing doorway D2-16

Non-historic doors can be discarded or retained in-situ and carefully wedged in an open position to provide through-ventilation to the structure

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 17:

Second floor; showing room RM.2-16

Bar elements were likely to have been saturated during fire-fighting efforts and can be discarded and replaced with new to match existing, after the drying phase

Fig 18:

Second floor; showing doorway D2-14

The north door had been removed and stacked in RM.2-17 on-edge. Moisture was noted to be collecting in pockets at the base of jambs of both doorways D2 -13 and 14 and is likely to lead to localised wet rot decay of timber door framing. Moisture contents were at fibre saturation (over 30 per cent w/w) at the base of door jambs

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 19:

Second floor; showing timber skirting to the south of doorway D2-13

Moisture content readings taken from skirting in this area were mostly well below the decay threshold of ~20 per cent w/w; however, issues with damp and decay were considered likely to affect timbers in contact with damp masonry during and after the post-fire remedial works

Fig 20:

First floor; showing door D1-04

These doors may be of historic significance but were noted to be of a tropical hardwood timber, and heavily painted, including over the leaded and glazed side panels which may reduce their historic integrity further. Although framing was deemed to most likely be of some age

Moisture content of architrave at floor level was high enough for decay to occur at the time of survey

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

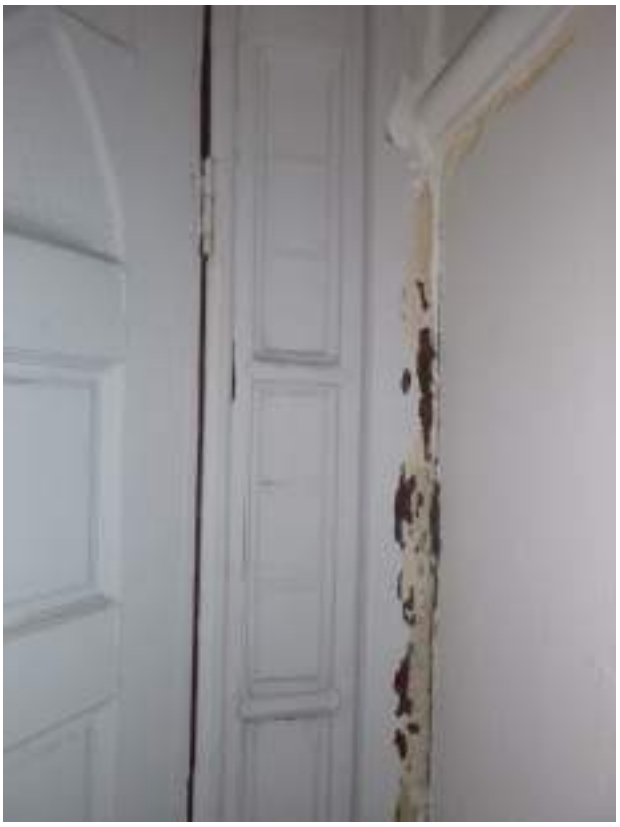


Fig 21:

First floor; showing the painted, glazed and leaded side panels of door D1-03

Moisture contents of architrave at floor level was noted to be above the level required for decay to occur

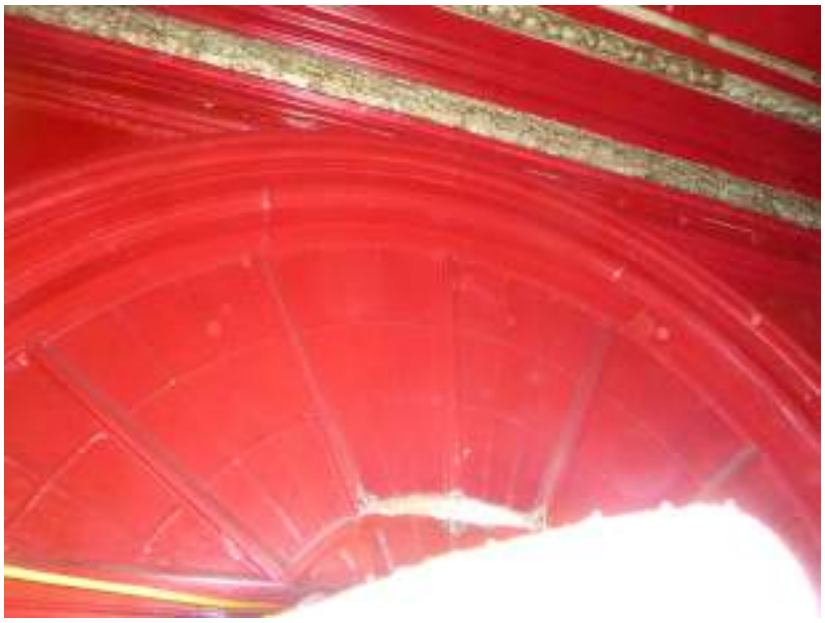


Fig 22:

First floor; showing the timber arched glazed panel above doorway D1-17

The historic significance of secondary timber elements such as this had been drastically reduced due to excessive painting during recent refurbishments. Timber elements in contact with damp masonry should be removed and either discarded, or retained for off-site storage and later reinstatement

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 23:

First floor; showing the doorway through to the balcony from the bar area at first floor level

Moisture content readings taken from the architrave and framing around the opening were generally above the level required for decay to occur indicating elevated moisture retained within the masonry mass leaving timbers in contact vulnerable to issues with damp and decay

Fig 24:

First floor; showing square corner detailing of the architrave around the doorway through to the balcony from the first floor bar area

Moisture content readings taken from the architrave and framing around the opening were generally above the level required for decay to occur

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 25:

First floor; showing significant reduction of detail on plaster-run mouldings on decorative panelling in RM.2-14 due to excessive painting on past refurbishments

Fig 26:

First floor; showing timber dado rail in RM.2-12

Secondary timber elements in this area in contact with the west masonry wall were deemed vulnerable to issues with damp and decay due to retained moisture within the masonry mass. Moisture contents of timbers were recorded at well over the decay threshold of ~20 per cent w/w

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 27:

First floor; showing doorway D1-14

Non-historic secondary timber elements can be either discarded or retained at the discretion of the Architect or Conservation Officer. Historic secondary timbers should be removed for off-site storage

Fig 28:

First floor; showing doorway D1-13

Door should be carefully wedged in an open position to allow through-ventilation of the structure

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 29:

First floor; showing the balcony on the south side of the main auditorium

Secondary timbers in contact with damp affected masonry should be removed and either discarded or retained for off-site storage

Fig 30:

First floor; showing the first floor balcony bar area to the south of the main auditorium

Bar furniture was deemed likely to have been saturated during fire-fighting efforts and will almost certainly be affected by issues with damp and decay during and after post-fire remedial works

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 31:

First floor; showing boarded-up windows on the south façade of the building

Limited access through holes in the boards revealed historic windows behind

Consideration should be given to using these to increase through-ventilation of the structure to aid in the drying process

Fig 32:

First floor; showing historic windows behind boarding as described in Fig. 31 above

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 33:

Ground floor; showing the curved door of DG-46

The door is of significant historic importance, but appeared to be well out of the area affected by the fire-and subsequent fire-fighting efforts, and as such was unaffected by issues with damp and decay

Fig 34:

Ground floor; showing partial ceiling collapse in RM.G-25 almost certainly associated with historic water penetration, and not a result of fire-fighting efforts

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 35:

First floor; showing doorway between Royal box and RM.1-17

The damage to the door was likely to have been exacerbated by the water penetration during fire-fighting efforts, or the immediate post-fire remedial works

Fig 36:

First floor; showing the door through to the Royal box access stairway—DG-45. Non-historic doors to be retained in -situ should be carefully wedged in an open position to allow through-ventilation of the structure during the drying phase

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 37:

First floor; showing doorway D1-11

Non-historic doors to be retained in-situ should be carefully wedged in an open position to allow through-ventilation of the structure during the drying phase

Fig 38:

Ground floor; showing door DG-02

Previous planing of the door revealed material of tropical hardwood which may indicate door replacement has occurred in the past

Historic doors should be removed for off-site storage

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 39:

Ground floor; showing glazed and leaded side panels to doors at this level, mirroring those seen above at first floor

Historic doors should be removed for off-site storage

Fig 40:

Ground floor; showing timber framing and glazed panels of doorway through from the entrance into the main foyer

Timber was preliminarily identified as being of oak (*Quercus spp*). Liquid water was noted to be collecting in pockets previously housing pivot hinges at the base of jambs

Retained moisture within the masonry masses leaves joinery in contact highly vulnerable to issues with damp and decay during and after post-fire remedial works

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 41:

Ground floor; showing loss of plaster above timber framing almost certainly a result of water penetration following fire-fighting efforts. This suggested that moisture retained within masonry is likely to be elevated and leaves timber in contact with, or embedded into masonry vulnerable to issues with damp and decay

Fig 42:

Ground floor; showing a section of timber framing of one of the doorways through from the entrance into the main foyer

Retained moisture within the masonry masses leaves joinery in contact highly vulnerable to issues with damp and decay during and after post-fire remedial works

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 43:

Ground floor; showing door DG-35

The retained moisture within the masonry mass leaves joinery items below and adjacent vulnerable to issues with damp and decay during and after refurbishment

Historic joinery should be removed for off-site storage

Fig 44:

Ground floor; showing the drop in the ceiling above door DG-35

The retained moisture within the masonry mass leaves joinery items below and adjacent vulnerable to issues with damp and decay during and after refurbishment

Historic joinery should be removed for off-site storage

Fig 45:

Ground floor; showing door DG-40

The retained moisture within the masonry mass leaves joinery items below and adjacent vulnerable to issues with damp and decay during and after refurbishment

Historic joinery should be removed for off-site storage

Fig 46:

Ground floor; showing door DG-33, which was mirrored to the north with door set DG-41

The retained moisture within the masonry mass leaves joinery items below and adjacent vulnerable to issues with damp and decay during and after refurbishment

Historic joinery should be removed for off-site storage

Hutton + Rostron Environmental Investigations Ltd, Netley House, Gomshall, Surrey, GU5 9QA
Tel: 01483 203221 Email: ei@handr.co.uk

Fig 47:

Ground floor; showing the damaged glazed side panel of door DG-35

Door and associated joinery should be removed and stored off-site to prevent further accidental damage or subsequent issues with damp and decay during and after the post-fire remedial works

Fig 48:

Ground floor; showing the west door of doorway DG-34

Moisture content were elevated at the base of jambs

The retained moisture within the masonry mass leaves joinery items below and adjacent vulnerable to issues with damp and decay during and after refurbishment

Historic joinery should be removed for off-site storage

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 49:

Ground floor; showing the damaged brass ironmongery of door DG-34 on the west door

Damage such as this may have been exacerbated by the immediate post-fire remedial works

Fig 50:

Ground floor; showing the south door of DG-41

The retained moisture within the masonry mass leaves joinery items below and adjacent vulnerable to issues with damp and decay during and after refurbishment

Historic joinery should be removed for off-site storage

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 51:

Basement; showing door DB-26

The south door jamb was loose and detached from embedded timber grounds or masonry. This was not deemed a direct result of water penetration during fire-fighting efforts, but most likely related to historic issues with dampness

Fig 52:

Basement; showing the curved doors of DB-27

Again, moisture was noted to collecting in the pockets at the bases of jambs. Moisture content readings were above the level required for decay at the time of survey

The Hope Project/KOKO
Photographs
8 and 9 April 2020
Not to scale

Fig 53:

Basement; showing door DB-31 leading into the lower basement area to the east side of the auditorium

Door jambs were loose around the frame, although this was most likely associated with historic issues with dampness and not a direct result of the water penetration during fire-fighting efforts

Fig 54:

Basement; showing door DB-29 through to the north-east corner stairwell

Again, moisture content readings at the bases of jambs were elevated and generally above the level required for decay to occur at the time of survey

Fig 55:

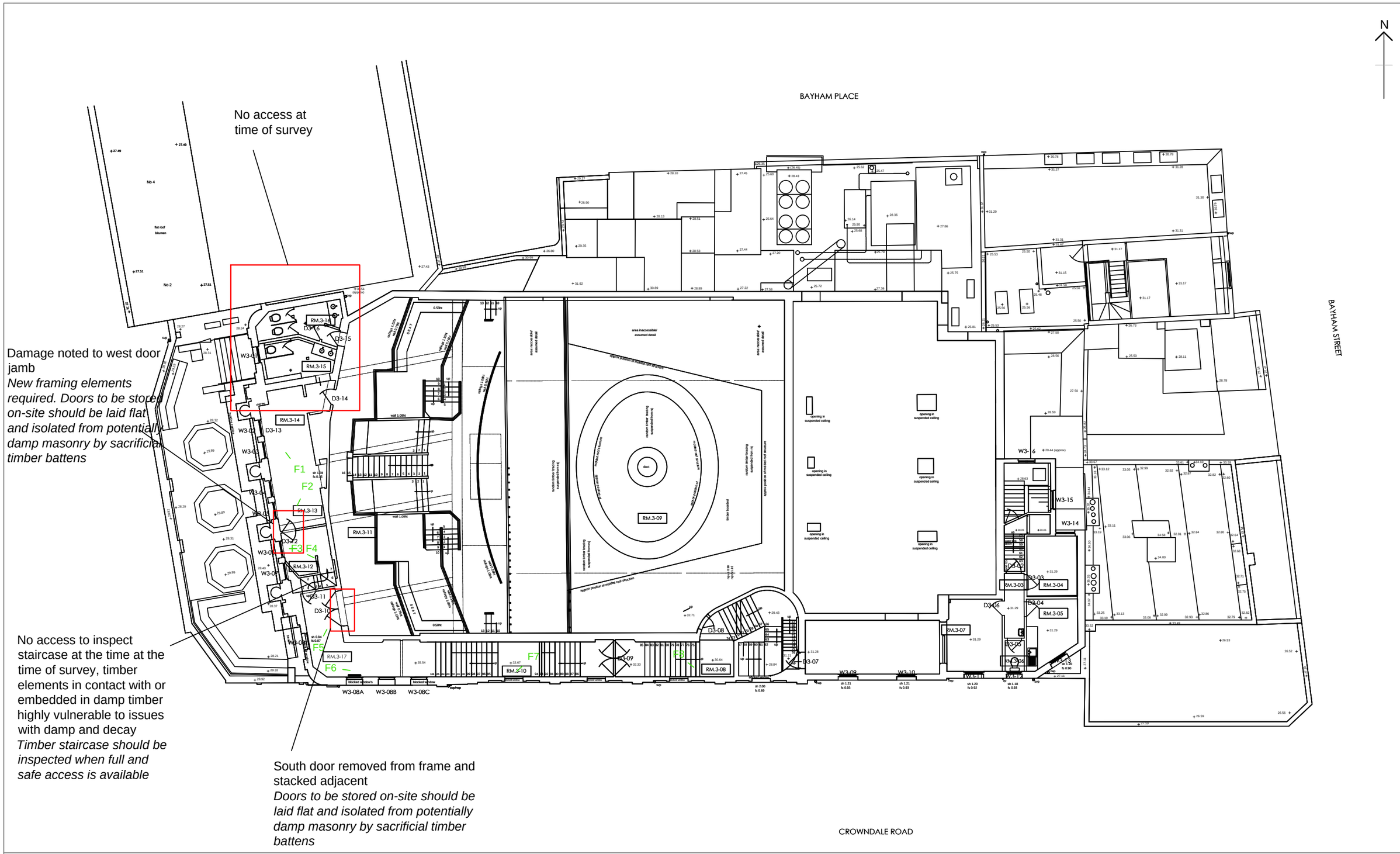
Second floor; showing the decayed window at second floor level in the north-west corner stairwell

Dry rot mycelial growth was noted in the ceiling void and around the window frame, and hygroscopic salt efflorescence was noted to the masonry wall to the north

Fig 56:

Basement; showing no access to the west part of the basement at the time of survey due to presence of ACMs

Attachment C



The Hope Project / KOKO - Third Floor

Secondary timber condition investigation
8 and 9 April 2020

Key:

+20%	Deep moisture content (%w/w)
	Area of liquid water
	Area of timber decay
	Secondary timbers in contact with masonry vulnerable to issues with damp and decay
F	Approximate location of photograph

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 10 -Not to scale-

Historic dry rot infection of masonry, timber window frame structurally decayed

Frame and sash should be removed, repaired, and reinstated with provision for isolation after drying phase

Bar furniture in RM.2-16 likely to have been saturated during fire-fighting efforts and highly vulnerable to issues with damp and decay during and after post-fire remedial works

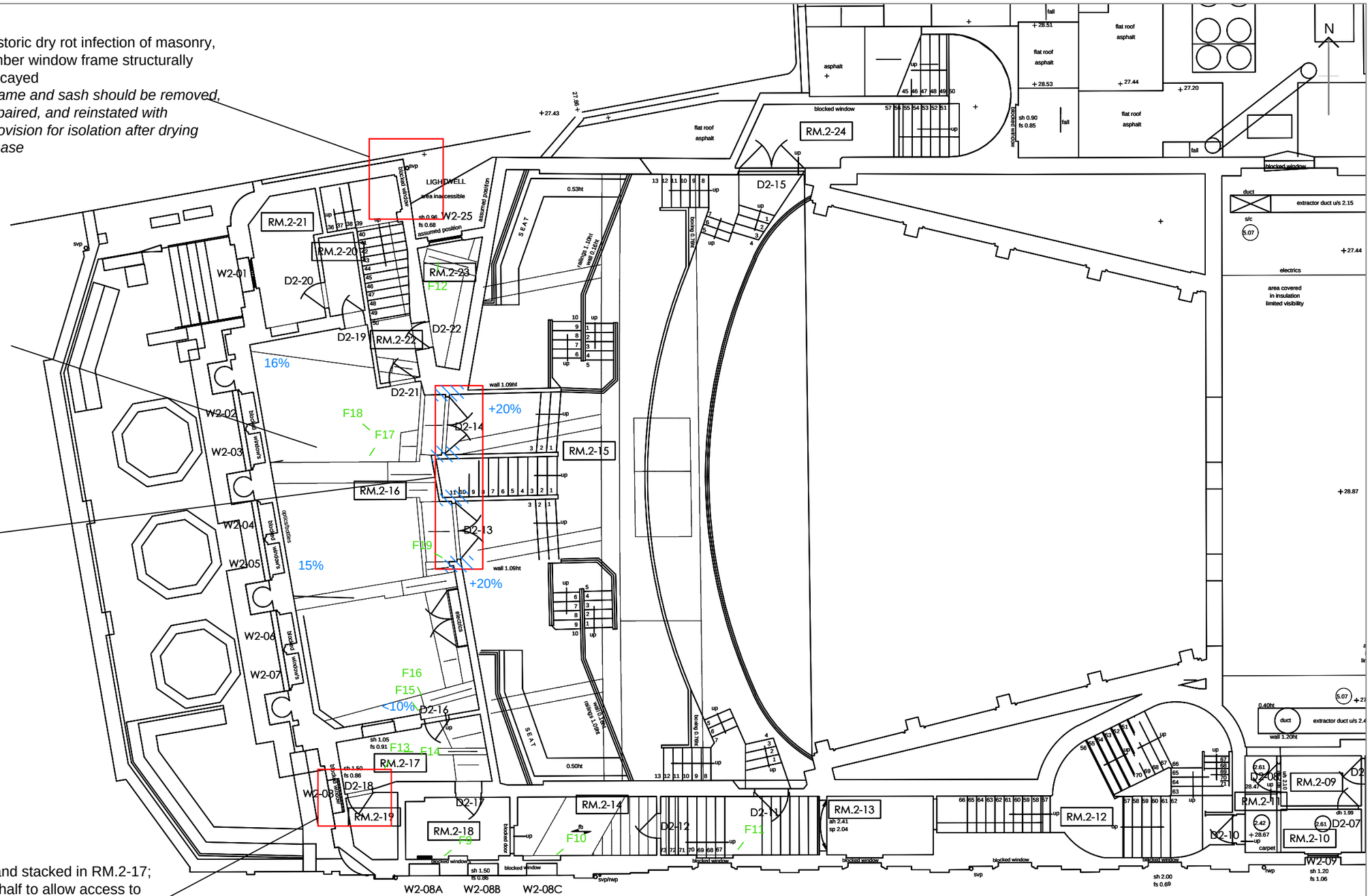
Remove and replace all bar furniture, worktops, and associated joinery with new to match existing

Water collecting at base of jambs. Moisture content high enough for decay to occur. Doors stacked on-edge in room RM.2-17

Door frames should be removed and reinstated with new to match existing after drying phase with provision for isolation from masonry

Door removed from frame and stacked in RM.2-17; frame cut approximately in half to allow access to scaffolding through adjacent window opening

New frame required, with replacement architrave to mach existing. Doors to be stored on-site should be laid flat and isolated from potentially damp masonry by sacrificial timber battens



Key:

+20%	Deep moisture content (%w/w)
	Area of liquid water
	Area of timber decay
	Secondary timbers in contact with potentially damp masonry; vulnerable to issues with damp and decay
F	Approximate location of photograph

The Hope Project / KOKO - Second Floor

Secondary timber condition investigation

8 and 9 April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911

146-89 Site Note 10 -Not to scale-

Timber framing elements and architrave of opening between balcony and bar area all at over 20% moisture content, high enough for decay to occur
Non-historic material can be removed to allow masonry to dry, and discarded

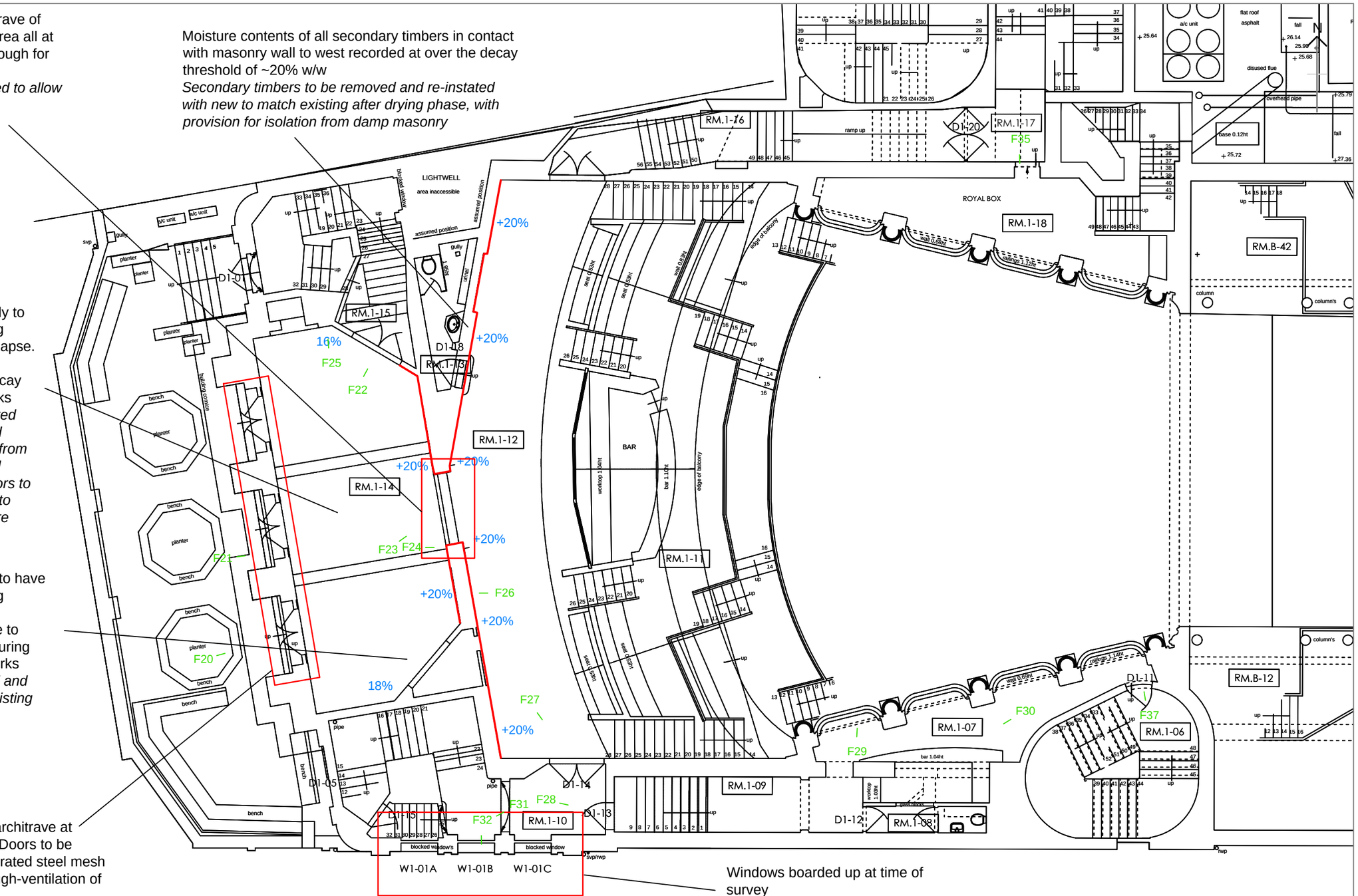
Moisture contents of all secondary timbers in contact with masonry wall to west recorded at over the decay threshold of ~20% w/w
Secondary timbers to be removed and re-instated with new to match existing after drying phase, with provision for isolation from damp masonry

Area directly below dome roof and likely to have been saturated during fire-fighting efforts; evidenced by partial ceiling collapse. All secondary timbers deemed highly vulnerable to issues with damp and decay during and after post-fire remedial works
Historic joinery to be removed and stored off-site. Non-historic doors to be stored on-site should be laid flat and isolated from potentially damp masonry by sacrificial timber battens/pallets. Non-historic doors to be retained in-situ to be wedged open to allow through-ventilation of the structure

Bar furniture in RM.1-14 likely to have been saturated by water during fire-fighting efforts and are subsequently highly vulnerable to issues with damp and decay during and after post-fire remedial works
All bar furniture to be removed and replaced with new to match existing after the drying phase

Moisture contents at base of all architrave at fibre-saturation (over 30% w/w). Doors to be removed and replaced with perforated steel mesh for security and to maintain through-ventilation of the structure
Architrave to be removed and re-instated with new to match existing, with provision for isolation from damp masonry after drying phase

Windows boarded up at time of survey
Consideration should be given to opening-up windows to increase provision for through-ventilation of the structure



Key:

+20%	Deep moisture content (%w/w)
	Area of liquid water
	Area of timber decay
	Secondary timbers in contact with potentially damp masonry; vulnerable to issues with damp and decay
— F	Approximate location of photograph

The Hope Project / KOKO - First Floor
Secondary timber condition investigation
8 and 9 April 2020

Hutton + Rostron Environmental Investigations Ltd
Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911
146-89 Site Note 10 -Not to scale-

Timber framing forming boxing-in at bases of decorative arches structurally decayed. Moisture contents well above the level required for further decay

Boxing should be stripped out further and all decayed timber removed. On refurbishment, new timber should be isolated from masonry with damp-proof material after drying phase

DG-38 and DG-40 vulnerable to issues with damp and decay

To be removed for storage. All associated joinery including architrave and frames to be removed to allow for drying

Water collecting in pockets at bases of historic oak door jambs

Joinery vulnerable to on-going issues with damp and decay; remove for off-site storage. Reinstate after drying phase with provision for isolation

Ticket booth furniture in RM.G-13 likely to have been saturated during fire-fighting efforts, and highly vulnerable to issues with damp and decay, or accidental damage, that may occur during remedial works

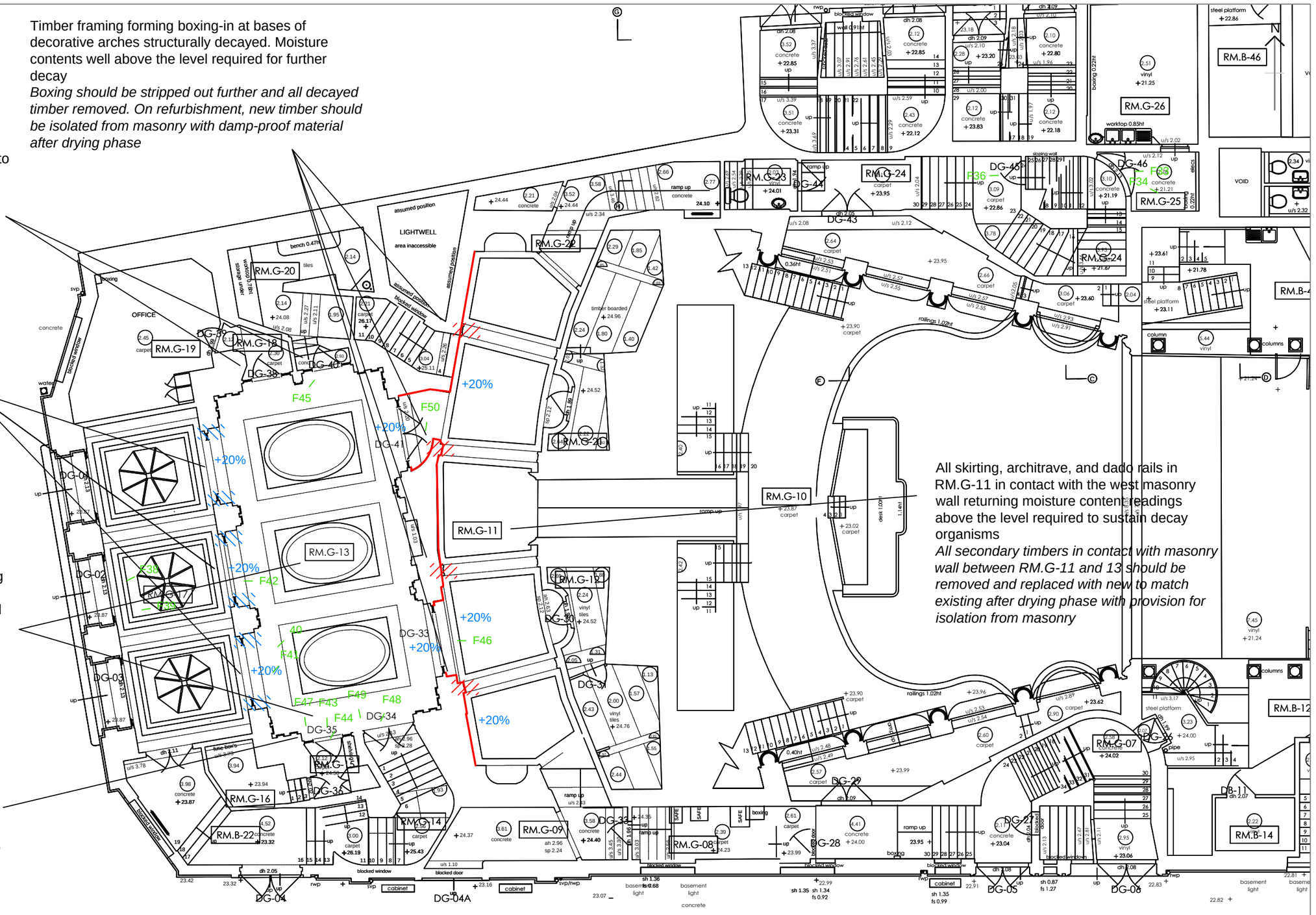
Remove and replace, with new to match existing, all ticket booth furniture, worktops, and associated joinery

DG-34 and DG-35 vulnerable to issues with damp and decay

Doors and all associated joinery including architrave and frames to be removed for off-site storage to allow for drying

All skirting, architrave, and dado rails in RM.G-11 in contact with the west masonry wall returning moisture content readings above the level required to sustain decay organisms

All secondary timbers in contact with masonry wall between RM.G-11 and 13 should be removed and replaced with new to match existing after drying phase with provision for isolation from masonry



Key:

+20%	Deep moisture content (%w/w)
	Area of liquid water
	Area of timber decay
	Secondary timbers in contact with potentially damp masonry; vulnerable to issues with damp and decay
— F	Approximate location of photograph

The Hope Project / KOKO - Ground Floor

Secondary timber condition investigation

8 and 9 April 2020

Hutton + Rostron Environmental Investigations Ltd

Netley House, Gomshall, Surrey, GU5 9QA Tel: 01483 203221 Fax: 01483 202911

146-89 Site Note 10 -Not to scale-

Locker & Riley

Artisans in Plaster

Report on Fibrous Plaster

April 2020 (updated September 2020)

LOCKER & RILEY

Koko, Camden, London.

Locker & Riley (Heritage) Ltd. Capital House 42-50 Bancrofts Road, South Woodham Ferrers, Essex, CM3 5UQ
+44 (0)1245 322 022 enquiries@lockerandriley.com www.lockerandriley.com

VAT No. 218 4356 09 REGISTERED IN ENGLAND 9674486

Date of Visit: *4th March 2020.*

Project Title: *Koko*

Site and Location: Koko, Camden Town, London. NW1.

L&R Reference: J2016 Koko.

Locker and Riley (FP) Ltd

Contents:

1. Summary

- *Locker and Riley* were appointed by the Client (*Hope Lease Ltd*) on 19th February 2020 to carry out a condition survey and to take squeezes samples of the decorative plasterwork at the Koko Theatre following the fire on 6th January 2020.
- The strategy for the conservation and repair of the decorative plasterwork in the building following the fire was set out in L&R's email dated 5th February 2020 and estimate reference *EN 5385 Koko Fire Damage Q01.*
- Simon Willcox of L&R attended site on Wednesday 4th March 2020 to commence an initial inspection of the main areas affected by the fire and the water ingress into the building. In the absence of confirmation from the Consultant that the building is clear of asbestos it was not possible to carry out any intrusive inspections of the plasterwork in these areas.
- A contractor has commenced works to strip out the water affected items from the front of the building. These works were ongoing at the time of the visit on the 4th March.
- It is clear from this visit and previous inspections that water ingress from the fireman's hoses and subsequent rainfall has penetrated through the building on all floors and this is having a serious detrimental effect on the fibrous plasterwork and the solid plaster to the walls. This has already resulted in the loss of sections of fibrous plaster.
- It has been noted that the damp environment within the building is causing mould growth to the supporting timbers. This has been confirmed by the inspection and subsequent Report of the building by *Hutton & Rostron*. They confirm the importance of ensuring that the

building is water tight and that adequate ventilation should be provided to all areas to maximise the drying out process.

- Many areas of walls and ceilings have been painted with a red gloss paint. It is suspected that this paint covering is impermeable and therefore capable of 'trapping' moisture in the plaster substrate behind.
- The inspection of the plasterwork carried out on the 4th March was limited to Rooms 1.14; 1.12; G-11 & G13.

2. Introduction & Description.

2.1. Room 1.14 Bar.

- A room of three bays divided by beams and with an enriched cornice to the perimeter. The Western and Middle Bays largely retain the fibrous plaster decorative cornice and the ornate scroll features on the ceiling to each mitre. The fibrous plaster beams have a recessed panel to the soffit with similar ornate features in relief at either end and centre. The Eastern bay has lost the original ceiling to accommodate the Bar and only retains a section of the cornice to the North and West elevation.
- The ingress of water from the fire fighting has caused the loss of much of the fibrous plaster ceiling to the West and Central bays to expose the timber supporting structure above.
- The walls are of plaster onto a masonry substrate and are decorated with plaster panels in relief. These panels have decorative quadrant corners.

- The walls and ceiling soffits are coated with thick red paint. In many areas this has ‘blistered’ due to the trapped moisture held in the masonry walls behind. The Report by *Catherine* Hassall (March 2020) confirms that the red surface paint covers a succession of applications including to some surfaces a gypsum skim coat. The removal of these paint layers by chemical and mechanical means would be time consuming and expensive with an uncertain outcome given the damp status of the plaster substrate.
- The complete removal of the wall plaster to reveal the masonry substrate is the only way to ensure successful drying out. Retention of wall plaster greatly hinders and prevents the loss of trapped moisture in the masonry which will leave a legacy of potential efflorescence of salts, conditions suitable for fungal attack on timber and the appearance of ‘damp patches’ and discolouration on completed decorated walls.

- It was not possible to closely inspect the timber support system below the concrete soffit nor assess the integrity of the remaining fibrous plaster cornice and soffit.
- At this preliminary stage and subject to the reports by the Asbestos Consultant, the Structural Engineer, the paint and timber/damp specialists we would suggest the following:
    - The complete removal of the wall plaster to reveal the masonry substrate is the only way to ensure successful drying out.
    - Samples and squeezes should be taken of the:
        1. ceiling corner enrichments,
        2. decorative cornice,
        3. beam casing including the ornate relief details
        4. wall mouldings.
    - The condition and integrity of the fibrous plaster cornice and remaining ceiling soffit should be closely inspected.
    - It is anticipated that due to the condition of the timber supporting structure and the damp condition of the existing plasterwork as a consequence of the January 2020 fire that there will be further loss of plasterwork and which will lead to 100% replacement.
    - Replacement and renewal of decorative plasterwork can be achieved by creating moulds from samples/squeezes obtained from site.

2.2. Room 1.12.

- A large room behind the Circle Bar with a curved elevation to the raking North elevation. The perimeter cornice is a large plain cove with a profiled band to the flat soffit. Beneath the cove is an egg and dart enriched light trough cornice and a frieze with theatrical swags in relief. The sloping soffit is plain. These mouldings are all constructed of fibrous plaster suspended by timbers below a concrete soffit.
- The condition of the fibrous plaster cornice, frieze and ceiling is very poor due to the considerable amounts of fire related water and the ongoing damp conditions. Considerable sections of plaster ceiling and cove have been lost and those that remain appear to be in a fragile state.
- The insertion of structural piers was permitted by Planning Application nr 2019/0695/L and granted on 15th May 2019. There has been some loss of plaster fabric due to their insertion but this has greatly been compounded by the damage caused by the fire and water penetration since January 2020.

- The walls are plain with a simple dado rail and skirting. Much of the wall surface has been painted over a textured (paper?) surface with a thick gloss red paint.

- It was not possible to closely inspect the timber support system below the concrete soffit nor assess the integrity of the remaining fibrous plaster cornice and soffit.
- At this preliminary stage and subject to the reports by the Asbestos Consultant, the Structural Engineer, the paint and timber/damp specialists we would suggest the following:
    - It is L&R's consideration that all of the remaining sections of plaster ceiling, cornice and frieze will be lost due to the irreversible damage caused by the fire and water ingress.. Therefore, samples and squeezes should be taken of the following mouldings:
        1. Plain cove and ceiling band.
        2. Egg and Dart cornice and frieze.
    - Chases are cut into the wall plaster to determine the condition of the masonry and substrate behind with the assumption that it will be removed to aid the drying process.

2.3.Room G-11.

- The Entrance Hall/Foyer on the Ground Floor of the Theatre. The area is divided by four wide plain arches and pilasters into five bays. Each bay has a plain fibrous plaster flat ceiling with a egg and dart cornice to the perimeter. The North elevation has two matching profiled fibrous plaster niche heads above door openings into the main auditorium.
- The insertion of structural piers was permitted by Planning Application nr 2019/0695/L and granted on 15th May 2019. There has been some loss of plaster fabric due to their insertion but this has greatly been compounded by the damage caused by the fire and water penetration since January 2020.

- The arches and pilasters have lost small sections due to the structural works, however the poor condition and fragility of the ceiling, cornice and walls are as a consequence of the fire and subsequent water damage.
- The walls are plain with a simple dado rail and skirting. Much of the wall surface has been painted over a textured (paper?) surface with a thick gloss red paint.
- It was not possible to closely inspect the timber support system below the concrete soffit nor assess the integrity of the remaining fibrous plaster cornice and soffit due to issues of access and the risk of asbestos.

- At this preliminary stage and subject to the reports by the Asbestos Consultant, the Structural Engineer, the paint and timber/damp specialists we would suggest the following:
    - It is L&R's consideration that much of the remaining sections of plaster ceiling, cornice and frieze will be lost. Therefore, samples and squeezes should be taken of the following mouldings:
        1. Arch and pilaster sections.
        2. Egg and Dart cornice.
        3. Niche heads.
    - Chases are cut into the wall plaster to determine the condition of the masonry and substrate behind.
    - Removal of the wall plaster would greatly enhance the drying process and greatly remove the risk of legacy issues such as efflorescence, fungal attack and staining/damp on finished decorative surfaces.

2.4.Room G-13.

- This Foyer area consists of three bays each containing a shallow oval dome and an enriched cove to the perimeter. The dividing beams have decorative elements in relief. The walls are decorated with marble pilasters and panels with ornate quadrant corners.
- The ceilings, cornice and beams are of fibrous plaster construction suspended from the concrete slab above on timber joists and noggins. The recent ingress of water has caused the failure and loss of some sections of ceiling soffit. Further areas appear to be in a poor condition and are at risk of collapse.

- It was not possible to closely inspect the timber support system below the concrete soffit nor assess the integrity of the remaining fibrous plaster cornice and soffit due to lack of close access and the potential of ACM's within the ceiling void.
- At this preliminary stage and subject to the reports by the Asbestos Consultant, the Structural Engineer, the paint and timber/damp specialists we would suggest the following:
    - It is probable that some areas and sections of the ceiling, beam and cornice may be lost. Therefore, samples and squeezes should be taken of the following mouldings:
        1. Beam sections.
        2. Enriched cornice.

3. Wall mouldings

- Chases are cut into the wall plaster to determine the condition of the masonry and substrate behind.
- Sample areas of wall and ceiling should be paint stripped. This would help to determine the value and benefit of such a task

3. **Recommendations.**

- The asbestos, paint, structural and timber/damp inspections and reports are concluded and issued.
- The ongoing strip out is concluded. This will allow with the issue of other Reports for the decorative plasterwork to the areas described above to be closely inspected. Consequently, a schedule can be produced of areas of existing plasterwork which cannot be reasonably be saved and those areas which should be carefully removed.
- It is generally accepted that the removal of areas of plasterwork to ceilings and walls will allow the building to dry out at a quicker rate. There is a real risk that retained fibrous plasterwork and lime based plaster can be detrimentally affected by residual moisture left in retained

in historic fabric and masonry for some time after the building works are completed.

ADDENDUM Nr 1 **14th April 2020.**

1. Summary

This Addendum Nr 1 to the Preliminary Report is written in response to the receipt of further inspections, telephone and video discussions and reports on the condition of the building following January's fire. These Reports include the Asbestos Survey Report by *Ayerst Environmental Ltd* dated 23rd March 2020 and the interior Paint Analysis Report dated March 2020 by *Catherine Hassall*. The site surveys of the timber structure by *Hutton & Rostron Ltd* are ongoing.
The current lockdown instructed by the U.K. Government due to the Corvid-19 virus has prevented a further visit to site to continue with the visual inspection of the decorative plasterwork. This Addendum is therefore, a summary of the further discussions and the issued Reports as it affects the plasterwork to the fire damaged areas at the front of the building.

2. Comments

2.1.Room 1.14. Bar.

- The Paint Analysis Report (March 2020) describes the original 1900 paint decorative scheme to be present on all surfaces to walls and ceilings with many later layers subsequently added. The red paint visible on the walls, ceiling and joinery is *" not a standard house paint. It is flexible, with a rubbery texture and is unaffected by a range of solvents".* The wall panels above the dado rail have received a skim coat of gypsum plaster.
- The Asbestos survey identified some asbestos present in the cupboard and that this should be removed.

- Action to remove the asbestos, redundant fire and water affected services and the layers of paint from the walls and ceilings by chemical means are likely to lead to further damage and loss of the existing mouldings.
- The complete removal of the wall plaster and the remaining sections of cornice, beam and ceiling will allow full access to the structure behind, and facilitate the drying process. The loss of original plasterwork will be mitigated by the absence for the need to remove layers of paint, carry out securing works and repairs to remaining mouldings. It will also allow the successful drying out of the substrate.
- The earlier L&R Report recommended that samples and squeezes of the existing mouldings should be taken at an early stage as it is probable that the ceiling, cornice, beams and wall mouldings will be lost and will need to be replaced to match the existing.

2.2.Room 1.12. Lobby at back of Auditorium.

- The Paint Analysis Report (March 2020) describes the original 1900 paint decorative scheme to be present on all surfaces to walls and ceilings with many later layers subsequently added. The red paint visible on the walls, ceiling and joinery is*" not a standard house paint. It is flexible, with a rubbery texture and is unaffected by a range of solvents*". The plain moulding between the cove and the flat soffit is thought to be a C20th replacement.
- The Asbestos survey identified some asbestos present in the floor and that this should be removed.
- Action to remove the asbestos, redundant fire and water affected services, temporary structural piers and the layers of paint from the walls and ceilings by chemical means are likely to lead to further damage and loss of the existing mouldings.
- The complete removal of the wall plaster and the remaining sections of cornice, beam and ceiling will allow full access to the structure behind and will facilitate the drying process. The loss of original plasterwork will be mitigated by the absence for the need to remove layers of paint, carry out securing works and repairs to remaining mouldings.
- The earlier L&R Report recommended that samples and squeezes of the existing mouldings should be taken at an early stage as it is probable that all the plain cove, ceiling band, enriched frieze and cornice will be lost due to their poor condition due to water ingress from the firefighting efforts and will require to be replaced to match the existing.

2.3.Room G.11. Ground Floor Lobby between Entrance and Auditorium.

- The Paint Analysis Report (March 2020) describes that much of the original 1900 paint decorative scheme has been lost and this has been replaced with lining paper. The red paint visible on the walls, ceiling and joinery is *" not a standard house paint. It is flexible, with a rubbery texture and is unaffected by a range of solvents*". The plain moulding between the cove and the flat soffit is thought to be a C20th replacement.
- The Asbestos survey identified some asbestos present in the accumulated debris and insulating board within the ceiling void. Asbestos was also found in lagging around pipes. The removal of this asbestos will inevitably cause further loss to the plasterwork.
- Action to remove redundant services, temporary structural piers and the layers of paint from the walls and ceilings by chemical means are likely to lead to further damage and loss of the existing mouldings.
- The complete removal of the wall plaster and the remaining sections of cornice, beam and ceiling will allow full access to the structure behind, and facilitate the drying process. The loss of original plasterwork will be mitigated by the absence for the need to remove layers of paint, carry out securing works and repairs to remaining mouldings.
- The earlier L&R Report recommended that samples and squeezes of the existing mouldings should be taken at an early stage as it is probable that all the egg and dart cornice, arches and pilasters and niches will be lost and will require to be replaced to match the existing. If possible, the surviving niche heads should be retained.

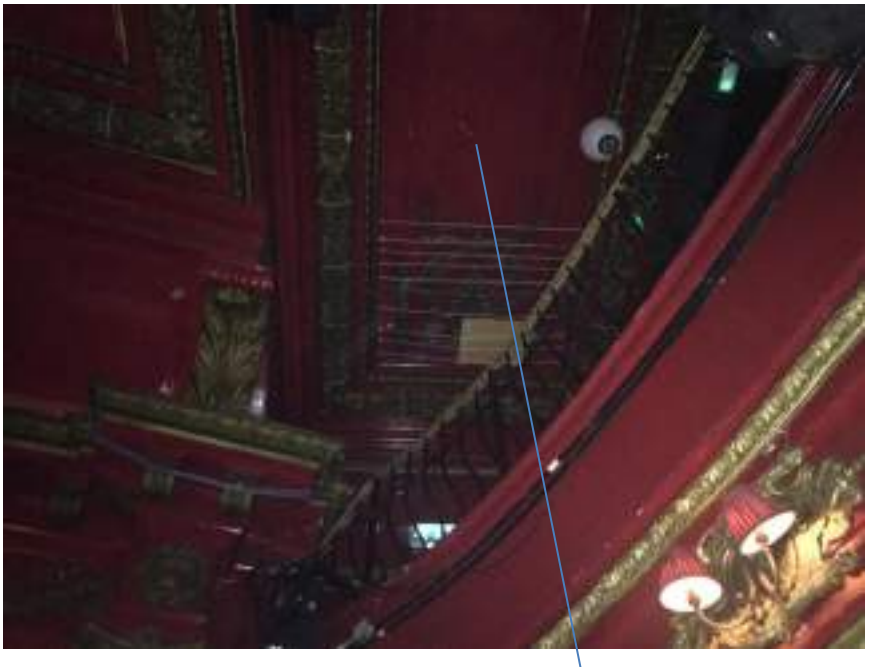
2.4.Room G.13. Ground Floor Main Entrance.

- The Paint Analysis Report (March 2020) describes the original 1900 paint decorative scheme to be present on all surfaces to walls and ceilings with many later layers subsequently added.
- The Asbestos survey identified some asbestos contained within bagged rubble and other debris present in the room.
- The loss of some sections of plaster due to direct water ingress and the damp conditions may lead to some further loss of plaster and some localised areas where holes need to be cut in the plaster soffit to facilitate the drying process and if necessary, aid inspection in the ceiling void. It is anticipated that efforts should be made to save and secure the decorative plaster in this room as at present so much of it appears largely intact and missing sections are plain with low significance. However, samples and squeezes should be taken of the

beam, the enriched cornice and the dome mouldings as a precaution against complete loss.

2.5.Room 3.09. Third Floor level, Western End of Main Auditorium.

- This area lies to the far western side of the main auditorium and consists of a rectangular area of three coffers. The works to secure, repair and replace missing and damaged sections was partially completed in the L&R contracted works carried out in the Autumn of 2019.
- We have noted that this area has been badly affected by water ingress as a consequence of the January 2020 fire. Subject to further inspection it is considered that this flat coffered ceiling will be lost and should be carefully removed. The removal of these plaster sections will also benefit the drying out process and allow access for other trades.
- Samples and squeezes of the existing fibrous plaster mouldings will be required so that new moulds and replacement fibrous plaster casts made and installed all to match the existing.



2.6. Auditorium Walls.

- It has not been possible to inspect the fibrous plaster adorning the Auditorium walls due to the lack of access and the risk of ACM contamination.
- The walls and the balcony fronts are heavily decorated with fibrous plaster mouldings applied to the building structure. The Catherine Hassall Paint Report (March 2020) records the extensive use of the red paint over many of the wall surfaces together with gold paint over many of the wall enrichments and figures.
- Initial observation of these walls would suggest that damage caused by the fire and water ingress was localised. The exact locality and extent of this damage can only be assessed from a future close inspection. It is possible that the discovery of ACM's , the need to treat, ventilate and/or remove damp timber structures and damaged services may lead to the controlled loss of plaster fabric from walls and balcony fronts. If this requirement occurs then specialist advice and careful removal will help to minimise any loss of fabric.

2.7. Auditorium Ceiling.

- The works to secure the main Auditorium fibrous plaster ceiling were being undertaken by L&R and were 60-70% complete up to November 2019 when these works were halted due to the discovery of ACM.
- The Auditorium void has not been inspected to assess the impact from the January 2020 fire. With the exception of the flat coffered area of fibrous plaster (Item 2.5 above refers) it is considered that the void escaped any large scale flooding and fire damage. The present condition of the plasterwork post fire can be assessed when safe access is possible.
- It is possible that the discovery of ACM's , the need to treat, ventilate and/or remove damp timber structures and damaged services may lead to the controlled loss of plaster fabric. If this requirement occurs then specialist advice and careful removal will to minimise any loss of fabric.

2.8. Ground Floor G-17 Entrance Foyer.

- The plasterwork to this area has not yet been inspected by L&R.
- The ceiling is formed by three equal rectangular coffers with an octagonal skylight to each coffer. The beams, spandrel soffits and modillion enriched cornice all appear to be of fibrous plaster.
- The condition of the plasterwork as a result of the January 2020 fire and flood is not known. It is thought that the area was affected by water and therefore consideration must be given to the status and condition of the timber supporting structure and the plasterwork itself.
- Therefore, as a precaution samples and/or squeezes should be taken of the decorative elements to ensure that the decorative plasterwork can be faithfully recorded and reproduced if required.

3. Conclusion.

- The decorative plasterwork to ceilings and walls in Rooms G-11; 1.12; part 3.09 & 1.14 are likely to be completely lost and will require new fibrous plaster sections to match the existing. Consequently, samples and squeezes should be taken as soon as possible, subject to clarity and approval on the current works to remove asbestos from the building.
- The loss of these mouldings and plaster from these areas will greatly benefit the drying process and remove any need to strip layers of paint from surfaces and mouldings. It will also aid the introduction of new services where applicable to these areas.
- It is anticipated that from samples and squeezes removed from site that new moulds will be made that will match the original profiles 'as new'. These new fibrous plaster casts will be installed to new metal supports where applicable.
- The fibrous plaster enrichments and mouldings to the Auditorium walls and balcony fronts have not been inspected. However, it is anticipated that these areas have largely been unaffected by the consequences of the January 2020 fire. We would suggest that when access can be provided these elevations are closely inspected to determine the extent of any remedial work that will be required.
- L&R's contracted works to secure the main Auditorium ceiling was 70% complete at the time of the fire. It is not known if the fibrous plaster domed ceiling was adversely affected by the fire and water. When safe to do so, this area should be inspected to confirm any damage.
- Areas of the building still remain to be inspected for damage to the decorative plasterwork as a consequence of the fire. These areas include the Basement, the Entrance Foyer G-17 and smaller rooms on other floors.

ADDENDUM Nr 2 **5th May 2020.**

1. Summary.

This Addendum Nr 2 is written in following an inspection of the decorative plasterwork carried out by Simon Willcox and Lee Watts of *Locker and Riley* on the 5th May 2020. This inspection was possible due to confirmation by ODP that the areas to be inspected were clear of ACM's and that access was possible.

The aim of this inspection was to assess the existing plasterwork to Areas 1.14; 1.12, G13 & G11 to see if its condition and status had significantly changed since the previous inspection on the 4th March 2020. Secondly its purpose was to inspect the Entrance Foyer G-17, the Auditorium Walls and the rectangular area to the Western end of 3.09 if safe access allowed. Reference is made to the *Hutton & Rostron Draft Report* on the Timber Structures Condition Report dated 14th April 2020.

There was also an intention to identify and confirm sections of decorative plasterwork which were to be removed as a sample and those where rubber squeezes could be taken.

2. Comments

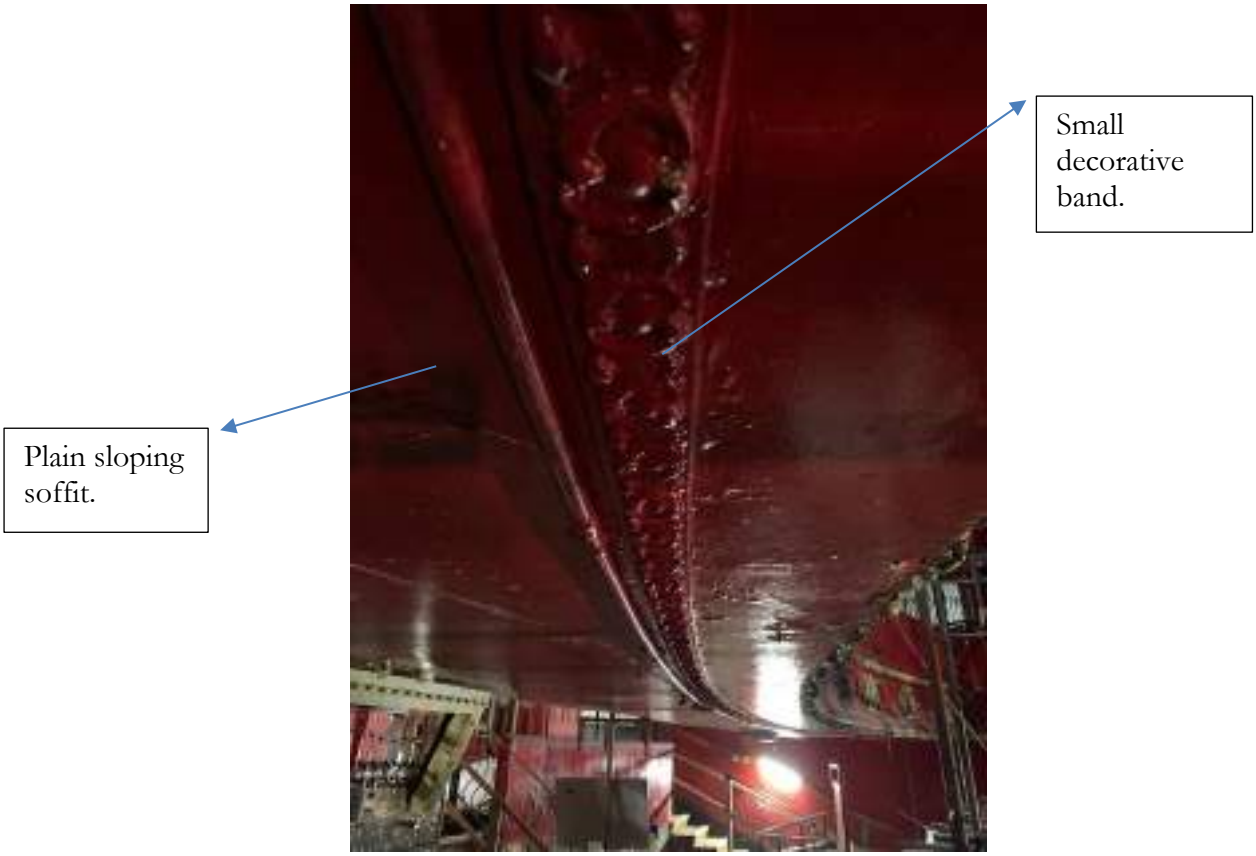
2.1. Room 1.14. Bar.

- A sample paint strip of the wall moulding had been carried out. This confirmed that the plain panel moulding was fibrous plaster and approximately 70mm wide with an integral 'stile' of 90mm. This was applied to the masonry wall surface to create 'raised and fielded panels.
- The *Hutton & Rostron Report* confirmed that the supporting timber elements behind the ceiling had been badly affected by water ingress and were vulnerable to fungal decay. Their Report also expressed concern on the condition of the steel plate fixings in the clinker concrete slab.
- L&R would confirm their view that their proposed strategy for the complete removal of the plaster from the ceiling and walls should be adopted due to the magnitude and extent of the water ingress through the building's structure following the fire.
- It was possible to confirm that the following samples and squeezes were required:
    - Ceiling corner enrichments,
    - Decorative cornice,
    - Beam casing including the ornate relief details
    - Plain wall moulding including enriched quadrant corner.

2.2.Room 1.12. Lobby at back of Auditorium.

- The *Hutton & Rostron Report* confirmed that the supporting timber and steel elements behind the ceiling had been badly affected by water ingress and were vulnerable to fungal decay. Their Report also identified the ceiling void is contaminated by ACM's.
- The existing condition and obvious fragility of the remaining sections of decorative plasterwork to this area would confirm L&R's recommendation that it should be replaced with new sections to match the existing. This would include the replacement of the existing angled and sloping soffit with new fibrous plaster sections.
- This raking plain soffit ends at the Balcony Front where there is a small decorative band, approximately 60mm wide. This will be lost but samples/squeezes of this should be taken to ensure faithful replication.
- Therefore, samples and squeezes should be taken of the following mouldings:
    - Plain cove and ceiling band.

- Egg and Dart cornice and frieze.
- Small decorative band at lower end of raking soffit.



2.3.Room G.11. Ground Floor Lobby between Entrance and Auditorium.

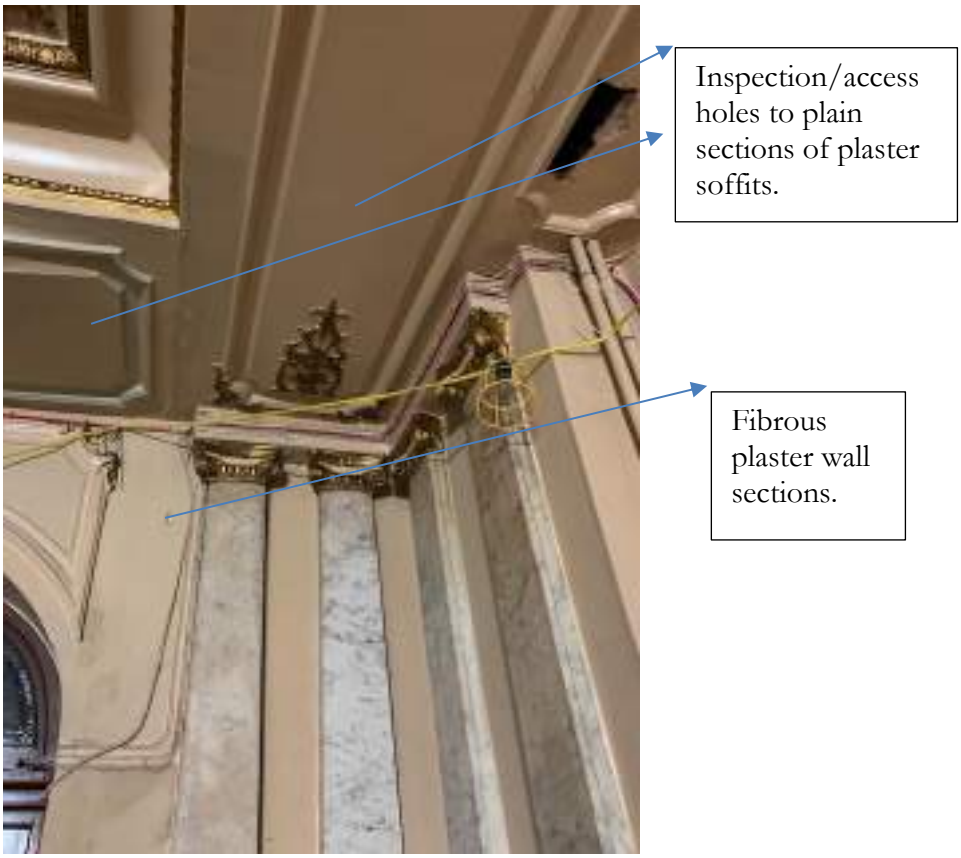
- The *H&R Report* confirmed the threat posed by the retention of moisture within the structure behind the ceilings, arch and pilaster fibrous plaster due to the absence of ventilation.
- It remains L&R's consideration that much of the remaining sections of plaster ceiling, cornice, arches and pilasters will be lost as their condition is so poor as a consequence of the water ingress following the fire. Therefore, samples and squeezes should be taken of the following mouldings:
    - Arch and pilaster sections.
    - Egg and Dart cornice.

- Every effort should be made to protect the decorative niche hoods (2nr) and the plain niche hoods (2nr) as they are in a reasonable condition and should remain insitu. L&R would suggest that their condition is monitored on a regular basis and any threat to their status from the removal of ACM's is assessed.

2.4.Room G.13. Ground Floor Main Entrance.

- The inspection on 5th May 2020 of this area confirmed that the condition of the plaster ceiling had deteriorated in recent weeks. It is thought that damp is penetrating through the fibrous plaster and 'pushing' off the layers of paint.
- Areas of the plaster ceiling were 'prodded' with a broom handle and in a number of locations the condition and integrity of the fibrous plaster was found to be weak.
- *The Hutton & Rostron Report* made a recommendation that ventilation should be made possible to the ceiling void to aid the drying process. L&R would therefore propose that a number of holes be cut into the fibrous plaster ceiling soffit. These holes where possible would be sited in plain sections to minimise the cost of restoration and would be approximately 250-350mm in diameter. These holes would therefore provide the ventilation to dry out the timber and plaster in the ceiling void they would also allow access to introduce new gypsum plaster wads with quadaxial and wire reinforcement to re-secure the soffit to the timber sub-structure.
- L&R would recommend that these holes and securing works are carried out as soon as possible to ensure the maximum amount of plaster fabric can be retained.

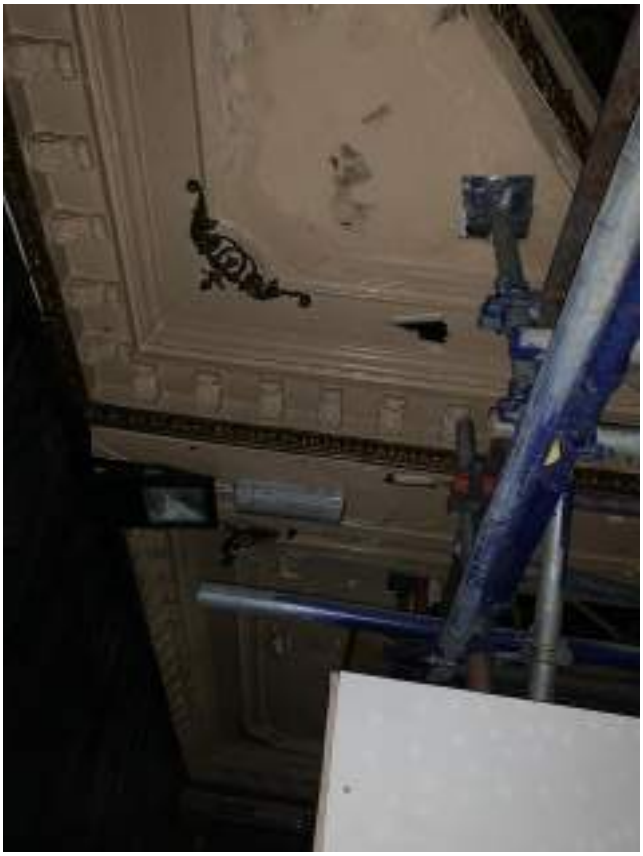
- The walls are also fabricated in fibrous plaster and fixed to timber noggins secured to the masonry walls. It can be assumed that water has penetrated these masonry walls and has affected the timber battens/noggins behind.



- Similarly, L&R would propose to cut inspection holes into the fibrous plaster wall sections at suitable sites. This would aid the drying process and allow further inspection of the timber fixings behind and if applicable to secure with plaster, quadaxial and wire ties.

2.5.Ground Floor G-17 Entrance Foyer.

- Close access to this area was not possible due to the amount of builders rubbish and debris on the floor in this area. Furthermore, the ceiling and walls were obscured with scaffolding making any close inspection impossible.
- The presence of this scaffolding makes an assessment of the plasterwork's status and condition difficult. It is highly probable that significant amounts of water from the fire have penetrated the plaster soffits and skylights. However, at this stage we would assume like the neighbouring ceiling in G13 the intention must be to save and conserve the plasterwork to these coffers.
- L&R would advise that access is made possible as soon as is reasonably possible to allow a close inspection of the ceiling soffit plasterwork.



2.6.Room 3.09. Third Floor level, Western End of Main Auditorium.

- Access was possible to the central part of this rectangular ceiling via a bespoke scaffold on 5th May 2020.
- L&R have in their Contract works up to November 2019 carried out some major securing works to the back of this fibrous plaster ceiling. This involved the introduction of wires and gypsum plaster with quadaxial wadding to the back of the ceiling. In addition, some of the missing decorative plaster elements to the face of the ceiling were moulded and replaced to match the existing.
- The H&R Report noted that water was still visibly present on the back of the ceiling and that the supporting timber structure should be considered for replacement as they would be vulnerable to decay. The Report also notes that the recent repairs to the back of this ceiling include for encased timber battens which have become damp and will prove to be resistant to drying.
- Close investigation from below reveals that the original plaster face with its layer of red paint is structurally weak in places. In particular the red painted fibrous plaster downstand to the Auditorium dome itself was found to be in a

very poor condition. The black soffit and upstand on the other side is in a similar poor condition.

- L&R would confirm its earlier recommendation that the fibrous plaster soffit with its decorative enrichments forming two matching bays and to include the red painted downstand and black painted upstand should be carefully taken down and replaced with new sections to match the existing.
- L&R have reached this conclusion on the basis of the widespread and significant water ingress as a consequence of the fire in January 2020. Water ingress and persistent damp conditions are well known factors leading to the degradation and eventual failure of hessian embedded within the fibrous plaster casts and supporting wads. The combination of this threat and that highlighted in the H&R Report of the legacy risk of timber decay in the supporting structure supports this recommendation.

Large scroll enrichment .

Egg and Dart enriched cornice.

Enriched band.

Black soffit and upstand.

2.7.Auditorium Walls.

- Access to the Northern elevation was possible to the upper area below the modillioned cornice on the 5th May 2020.
- L&R have to complete their contracted works to secure the projecting modillion enriched cornice.

- Our limited inspection of the fibrous plaster walls on the Northern elevation revealed little evidence of any substantial water ingress from the January 2020 fire. It is possible that moisture has affected the masonry structure behind. The H&R investigation did not include for the Auditorium walls due to access issues and the discovery of ACM's.
- L&R would recommend that some inspection holes are cut into the fibrous plaster wall mouldings to allow access to view the status and condition of the timber support system behind.

2.8 Auditorium Ceiling

- There is no access to the face of the Auditorium ceiling. A number of holes exist in the fibrous plaster ceiling caused by the removal of redundant light fittings.
- L&R would recommend that the face of the Auditorium ceiling is inspected when access is available.

3.0. Conclusion.

- The further discovery of ACM's in and around the Auditorium and in particular beneath the floorboards as highlighted in the H&R Report and its authorised removal will cause further damage and loss to the decorative plasterwork. The contamination by ACM to the back of ceiling soffits and supporting timbers may mean that the collateral damage and loss of plasterwork will be quite extensive. At this stage it is difficult to assess the extent of the plasterwork that will be affected. However, we would suggest that the works by authorised asbestos removal contractors are monitored and controlled to minimise this potential loss of historic fabric.
- There will be further collateral damage to existing plasterwork by the removal of redundant and the introduction of new M&E services. Again we would suggest that these works be monitored and managed to minimise the damage to the plasterwork.
- The H&R Report (April 2020) provided *"…conclusive evidence of significant moisture entrapment, as well as issues relating to interstitial condensation and an inadequate airflow widespread within historic ceiling voids. This has already led to the presence of significant surface mould growth and spores in areas, which left unchecked will lead to further and more damaging/significant damp and decay issues and widescale deterioration of decorative moulded plaster ceilings beneath."*
- Hessian incorporated in historic fibrous plasterwork when in contact with moisture degrades at a faster rate leading to failure and potential collapse and loss. Failure of historic plasterwork can be immediate due to large amounts of water penetrating from above as in the case of sections of ceiling in the

Entrance Hall G-13 or it can be as a consequence of long term moisture entrapment.

- The L&R investigations and of those carried out by *Hutton & Rostron* confirm that the plasterwork in the areas described in the Report above have all been affected by water ingress as a result of the fire in January 2020. L&R have proposed to attempt to save the fibrous plaster ceilings in the Entrance Hall G-13 and Foyer G17 partially because of their significance and partially because they remain at the moment essentially intact. The plasterwork to the Bar 1.14; the Lobby 1.12; Lobby G.11 and the Western ceiling in 3.09 Auditorium are in a much poorer condition with significant areas lost due to the ingress of water and beyond reasonable repair and restoration.

ADDENDUM Nr 3. August 2020.

1. Summary.

Simon Willcox of *Locker and Riley* and Andrew Ellis of *Hutton & Rostron* met on site on the morning of Wednesday 5th August 2020. The purpose of the meeting was to carry out an inspection of the ceiling void in the Entrance Hall G-13 and to inspect the existing ceiling in the Foyer G-17.Earlier works carried out under instruction by L&R had cut inspection holes to the plain sections of ceiling soffit in G-13 to further expose the ceiling void. The purpose of these holes was to allow greater access across the soffit to inspect the condition and status of the existing fibrous plasterwork and its timber supporting structure and to allow for an increased air flow to assist with the drying process.

The areas below the three coffered ceilings in the Foyer G-17 had largely been cleared of rubbish and other debris allowing access via a ladder to inspect the ceiling soffit. Scaffolding, erected to support the ceiling and structure above was still in place which did hinder a full inspection across all three areas.

2. Observations.

G-13 Entrance Hall.

- L&R had cut away areas of fibrous plaster ceiling to the plain sections of the perimeter panels and to the two beams. Smaller holes had been formed to the enriched central domes.
- The fibrous plaster casts were fixed by means of ferrous screws and unreinforced plaster wads to a timber structure creating a void some 520mm high. The fibrous plaster central dome occupied this height and

were secured to the surrounding timber structure. Timber battens (approx 75 x 45mm) were fixed to a concrete clinker by means of ferrous nails.

- Our inspection showed that the fibrous plaster was in a weak and poor condition as a consequence of its exposure to water ingress and the damp conditions. The plaster wads tying the casts to the timber were observed to be friable and weak. Applied pressure from below to the plaster soffit produced cracking and movement demonstrating its weak condition.
- The H&R Report will detail and fully describe the status and condition of the timber structure.

- The walls are constructed in fibrous plaster sections fixed to timber battens off the masonry walls. Our initial investigation showed that they are in a better condition than the ceiling having been less affected by water and damp. However, some further investigation should be carried out to assess the masonry for water penetration.

- Some of the ‘gold painted’ enrichments are made of composition and applied to the fibrous plaster soffit. The damp conditions have caused some sections of moulding to detach and are lost and missing.

Clinker concrete soffit.

Timber battens secured with nails to the clinker soffit.

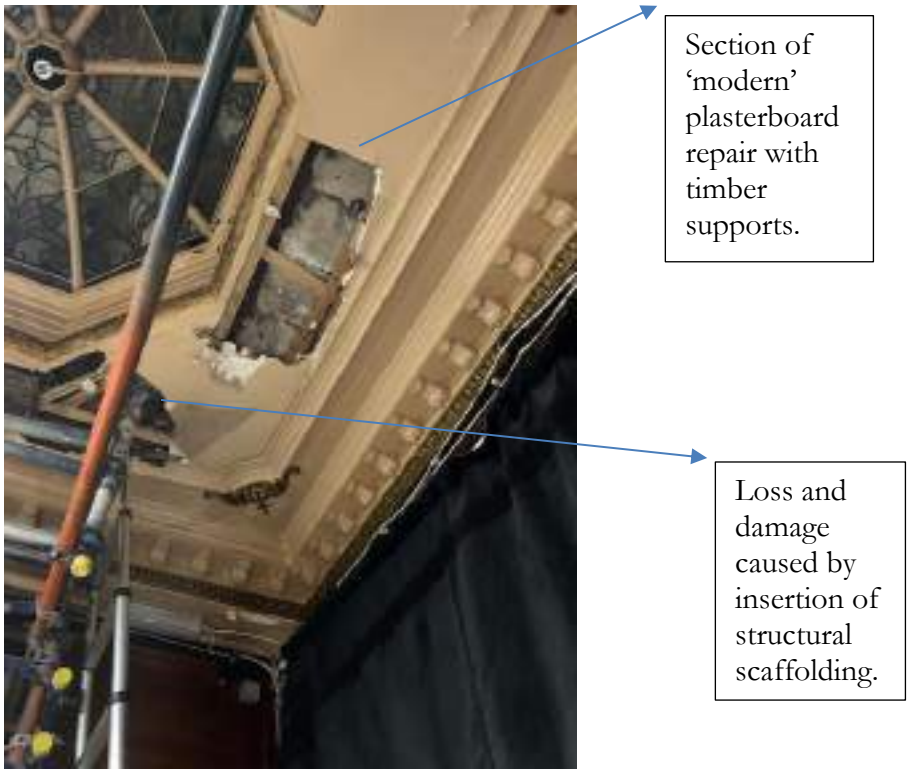
Unreinforced plaster wad securing dome and soffit to timber supporting

Decorative element of composition applied to beam soffit.

Section of detached composition detail.

G-17 Entrance Foyer.

- This area consists of three equal coffers rising to an octagonal skylight with a coloured glass dome. The downstand from the skylight is partially timber with a plaster leaf enriched frieze in relief to the perimeter.
  The plaster soffit is flat with a plain plaster moulding in relief with enriched quadrants to the perimeter. The cornice is a large modillioned enriched plaster moulding.
- Some damage has been caused to the plaster soffit by the insertion of supporting scaffolding in order to reach the concrete clinker behind. This loss of plaster has exposed the clinker soffit and the timber supporting structure. It was noted that some of the flat soffit has been 'repaired' with modern plasterboard which would indicate some earlier issues with water ingress.
- The existing plaster soffit appeared to be in a reasonable condition with fewer indications of water inundation and damp. Of greater concern was the timber supporting structure and its anchorage to the clinker concrete soffit which appeared to be in a fragile and weak condition. Some of these timber supports appeared to be contemporary with the plasterboard repairs.



3. Recommendations.

G-13 Entrance Hall.

- L&R and H&R are both of the opinion that the timber supporting structure should be viewed as redundant. (See H&R's Report). The condition of the fibrous plaster ceiling is poor but it has dried out in recent weeks and is essentially intact. Consequently L&R would recommend that the ceiling should be saved and restored. We would propose that the following methods and techniques be utilised to achieve this outcome:
    - Further sections of mainly plain panels of ceiling soffit are removed from the room perimeter. This would improve access to the back of the ceiling. Samples and squeeze moulds would be taken to ensure that these sections can be faithfully replicated and replaced.
    - Metal channel is securely fixed to the clinker concrete soffit where applicable to provide the means of introducing metal hangers down to the remaining sections of fibrous plaster.
    - Any dust and other debris is removed from the back of the plaster ceiling.
    - The remaining sections of the existing fibrous plaster ceiling is reinforced on the back with quadaxial mesh and gypsum plaster and secured to the new metal structure by means of wires and wads.
    - New fibrous plaster sections are cast from moulds and installed in place and made good to the existing sections where applicable.
    - Any missing and damaged enrichment is moulded, cast in plaster and fixed in place to match the existing.
- Further investigation of the wall plaster is undertaken with regard to water penetration to the masonry and timber fixings behind and to potential M&E works. Exiting holes/chases etc can be repaired and made good as applicable.

G-17 Entrance Foyer.

- Currently damage and loss of plaster fabric is confined to the flat soffit surrounding the octagonal skylights. L&R would propose that where applicable that these areas are repaired and restored as follows:

- Sections of plasterboard are to be carefully removed and replaced with new fibrous plaster sections. Any defective timber supports are to be removed and new metal channel installed to provide a secure fixing for the new plaster soffit.
- New relief plaster mouldings including decorative quadrant corners are to be replaced as applicable to match the existing.
- Cracks, holes and chases in the existing remaining plaster sections are to be repaired and made good. As required existing sections of plaster cornice would be re-secured with screws.

Date:

Simon Willcox MSc Building Conservation.

Signed ……
On behalf of Locker and Riley (FP) Ltd

Appendix A.

1. Copy of email sent 5th February 2020.

Simon Willcox

From: Simon Willcox
Sent: 05 February 2020 12:49
To: Shantanu Subramaniam; Francesca Cipolla
Cc: Gary Buckley; Lauren Hewer
Subject: KOKO Theatre.
Attachments: EN 5385 Koko Fire Damage 001.pdf

Good morning Francesca

Thank you for meeting me on site last week and for our tour of the building and those areas affected by the fire and its aftermath. As we discussed please find below our thoughts and comments on a strategy for the conservation and repair to the existing decorative plasterwork as follows:

- L&R had left site in late November 2019 as a consequence of the further discovery of asbestos in the ceiling void above the Auditorium dome. At the time of the fire on 6th January 2020 we were waiting for confirmation from the Main Contractor that their Asbestos Contractor had inspected the back of the dome and it was safe for our operatives to carry on their works to secure the fibrous plaster. In light of the fire and the inundation of the building of water from fireman's hoses etc it is essential that a thorough inspection by an approved and competent asbestos contractor is carried out. This inspection should include the ceiling void as well as the Entrance Halls and Foyers, Bar areas.
- We were able to view the damage caused by water ingress to the Entrance Hall, Foyer, Bar and other areas. Our current order and scope of works did not extend to these areas. The effect of the water ingress was widespread and substantial. The slope of the concrete slab above the Auditorium ceiling had directed the water flow to the front of the building. This had resulted in the collapse of sections of plain and decorative fibrous plaster ceilings and cornices. We observed that the water and damp was causing the paint to 'blister' on the surface of the plaster. It is likely that some sections of fibrous plaster were still retaining 'puddles' of water as they were unable to drain away and escape.
- We also observed the mould growth to the plaster surfaces and on the supporting timbers. It was proposed that a specialist be appointed to inspect the timber supports for fungal infections and to assess their suitability for retention following the water ingress.
- It was also proposed that a Structural Engineer carry out a survey to determine the suitability and condition of the existing structure following the fire and water inundation.
- We also expressed concern that it was essential to prevent further water ingress into the building from rain/snow.
- We understand that a contractor will be appointed to 'strip out' the carpets, debris and other areas affected by the fire and water. We noted that water and damp had affected the masonry walls behind the plaster. Consideration will have to be given to the removal of the wall covering and also the plaster to allow the masonry and the building as a whole to 'dry out'.
- We would propose that we carry out an inspection of the decorative plasterworks in all areas including the Auditorium ceiling void. This inspection should be carried out on completion of the 'strip out' and would identify those areas of plasterwork which could be retained and those sections which are so badly affected by the water and damp should be removed and replaced with new casts of fibrous plaster to match the existing. We would propose that any sections of plasterwork that have to be removed are labelled, photographed and stored in a dry place. In addition further samples and 'squeezes' of

1

sections of plaster can be taken to ensure faithful and accurate replication of the plasterwork. It is likely that retained sections of plasterwork will have to be further secured and reinforced to prevent further loss or damage.

We are attaching an estimate reference *EN 5385 Koko Fire Damage Q01* for carrying out the inspection and a PSUM for subsequently attending site and taking samples and 'squeezes'.

All rates are nett and are ex-VAT.

Our terms of trade are monthly account.

Please let me know if you have any queries on these proposals.

Kind regards

Simon

Simon Willems

MSc Building Conservation

Business Development
DDI +44 (0) 1245 326 752
M +44 (0) 7771 922388

LOCKER & RILEY

ARTISANS IN PLASTER

Locker & Riley (FP) Ltd Capital House 42-50 Bancrofts Road South Woodham Ferrers Essex CM3 5UQ
+44 (0) 1245 322 022 [illegible]

Locker & Riley (Heritage) Ltd. Capital House 42-50 Bancrofts Road, South Woodham Ferrers, Essex, CM3 5UQ
+44 (0)1245 322 022 enquiries@lockerandriley.com www.lockerandriley.com

VAT No. 218 4356 09 REGISTERED IN ENGLAND 9674486

LOCKER & RILEY

Date:	3rd February 2020.	EN 5385 Koko Fire Damage	Q01		Author		Simon Willcox	
Item	**Location**	**Description**	**Ref**	**Qty**	**Per**	**Rate**	**Total**	**NOTES/INSTRUCTION**
		To supply and install the fibrous plaster/GRG as per the details provided and as listed below:						
							BUDGET	
	Koko							
	1	To attend on site and carry out inspection of the plasterwork to Auditorium and 'Front of House' areas. Provide a Report on the status and condition of the decorative plasterwork following the fire and water ingress.	**Item**				**£5,985.00**	
	1	To attend on site and take squeezes and samples as applicable of decorative plaster mouldings to Front of House areas. Record and label items and remove from site for safe storage.	**PSUM**				**£7,000.00**	Subject to review following site inspection.
		Sub Total					**£12,985.00**	
	Prelims							
		Mobile Towers		2.00	Wk	£140.00	**£280.00**	Allows for 1nr mobile tower.
		Access Allow for Irata qualified abseiler to be in attendance to ensure safe working in ceiling void.		1	Wk	£ 380.00	**£380.00**	Allow for attendance on site 1nr Irata qualified person, 1nr weeks @ £380/8hour day.
		Supervision Allow for weekly visits by Contracts Manager		2	Wk	£ 350.00	**£ 4,200.00**	Allow for weekly visits by Contracts Manager, @ £350 per visit.
		To Collection					**£17,845.00**	

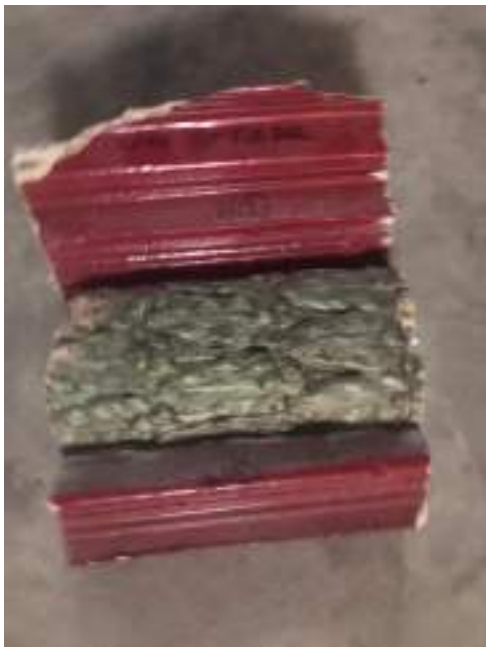
Schedule of Samples and Moulds taken from Koko Theatre

July/August 2020.

1. Room 1.14

a:- ceiling corner enrichments, A.

b :- enriched cornice, B

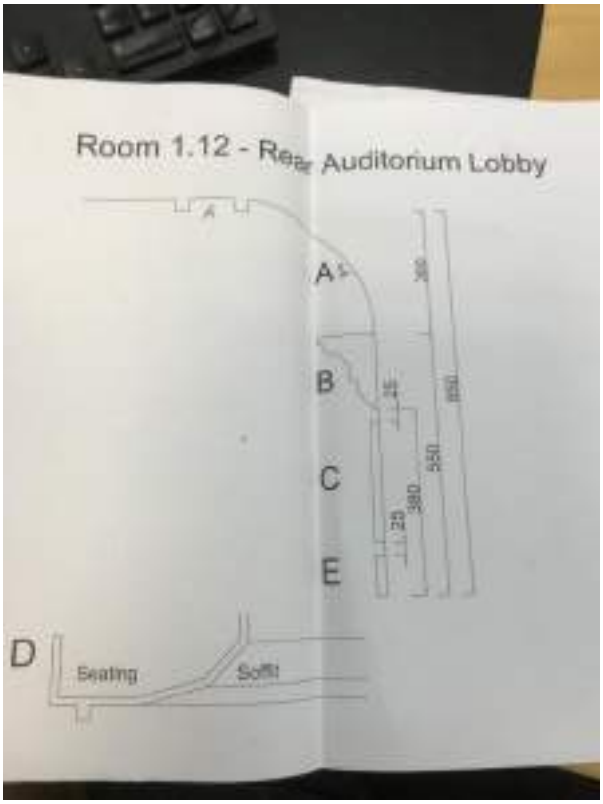


c:- beam soffit enrichments, C.

d:- Corner enrichments and plain panel moulding,D.

2. Room 1.12 Lobby at back of auditorium.

a. Site Notes.



b. Ceiling Band A.

c. Ceiling Cove A1.

d. Enriched Cornice B.

e. Swag & Drop Frieze C.

f. Plain Panel Moulding below frieze C1.

g. Enriched moulding at lower end of raking ceiling soffit D.

3. Room G11, Ground Floor between Entrance and Auditorium.

a. Plain arch section and profile A

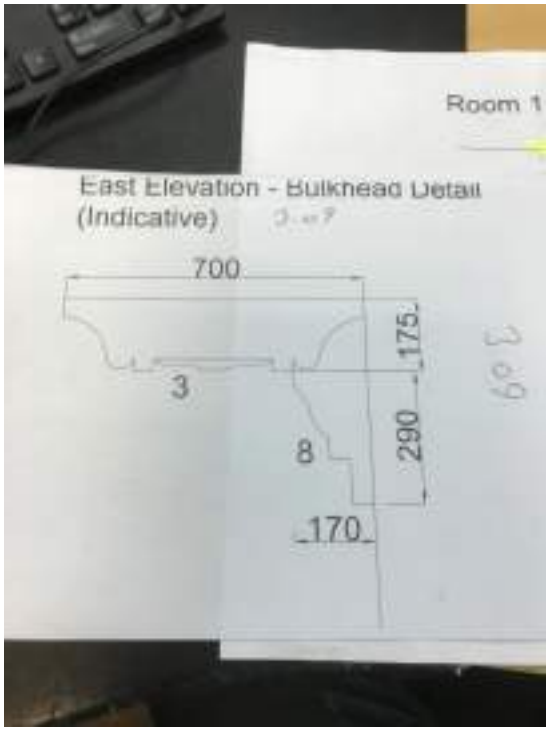
b. Plain Pilaster section and profile B.

c. Egg and Dart Cornice C.

4. Room 3.09, Third Floor Western End of Auditorium.

a. Site Notes 1.

b. Sites Notes 2.



c. Plain run cornice , up to enriched beam N.E & W. elevations 8.

d. Central ceiling Rose A.

e. Circular beam case with egg and dart moulding, B.

f. Straight enriched beam case, C.

g. Scroll sunken panel and panel moulding, D.

h. Wall enriched panel moulding, E.