Ambassadors Theatre CONDITION INSPECTION OF ASBESTOS CONTAINING MATERIALS REPORT

Ambassadors Theatre London

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EXECUTIVE SUMMARY

1 Executive Summary - Materials

Sample No	Relevant Report Section	Location, Description	Result	Material Assessment Algorithm	Priority Assessment	Risk Assessment
1	6.2.1	Room 2, Basement Light Store, Pipework, Insulation	**Chrysotile**	**6 - Low**	**3**	**9 - Very Low**
P1	6.2.2	Room 1, Props Room, Electrical Fuse/Switch Box Internal Flash Guards, Textile	**Presumed to contain Chrysotile**	**5 - Low**	**3**	**8 - Very Low**

The analyses of the bulk samples are discussed in more detail in the following sections of this report. Calculation of the Material Assessment and Priority Assessment Algorithms are detailed in Sections 7 & 8 and our Recommendations are presented in Section 9.

Details of any condition changes or works undertaken on any ACMs are noted within the individual material records in this report, including photographic images.

EXECUTIVE SUMMARY

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The following actions should be implemented on the basis of the risk assessment scores highlighted in the table above:

HAZARD DESCRIPTION	PRIORITY	RECOMMENDED ACTION
High Risk Assessment Score (>15)	1	**Immediate Action Required. These areas should be isolated.** The materials should be removed before re-occupation is permitted. Alternatively the materials could be thoroughly encapsulated and the areas environmentally cleaned prior to re-occupation. A management plan should then be implemented. A management plan would include labelling the material and periodically checking the condition, as determined by the company Asbestos Management Policy.
Medium Risk Assessment Score (13-15)	1	**Action Required within Short-term. Access to these areas should be limited.** These materials should be removed within 3 months. Alternatively the materials could be thoroughly encapsulated and the areas environmentally cleaned prior to re-use. A management plan should then be implemented. A management plan would include labelling the material and periodically checking the condition as determined by the company Asbestos Management Policy.
Low Risk Assessment Score (10-12)	2	**Action Required within Medium-term.** If the materials are not intended for removal within 6 months, then they should be thoroughly encapsulated. A management plan should then be implemented. A management plan would include labelling the materials and periodically checking the condition as determined by the company Asbestos Management Policy.
Very Low Risk Assessment Score (<10)	3	A management plan should be implemented for these materials. A management plan would include labelling the materials and periodically checking the condition as determined by the company Asbestos Management Policy.

EXECUTIVE SUMMARY

2 Executive Summary - Plans

Refer to original Type 2 / Management Asbestos Survey for Building Plans

3 Introduction

Site Name:	**Ambassadors Theatre**
Client:	**Andrew Mills of Ambassadors Theatre**
Lead Surveyor:	Gary Whitehead
Survey Date:	16 September 2015
Report Quality Approval:	Gary Whitehead
Report Approval Date:	16 September 2015

This condition inspection of Asbestos Containing Materials undertaken by Healthy Buildings International (HBI) involves a visual examination of asbestos containing materials identified by the initial Type 2 / Management Asbestos Survey or subsequent Condition Inspections. Where this information has been sourced from a third party other than HBI, HBI cannot take any responsibility for the quality, scope or integrity of the previous assessments and information. This report solely represents a condition inspection of the materials identified as containing asbestos in the original Type 2 / Management survey (or subsequent Condition Inspection) and as such does not fall within HBI's UKAS Scope of Accreditation.

HBI have requested that the client provide information pertaining to any removal of asbestos containing materials since the previous inspection. If this information has not been provided there is potential for non-asbestos replacement materials to be considered asbestos containing.

This report does not constitute a Management or Refurbishment and Demolition survey under the scope of HSG 264 and the original report should be referred to for all details of non asbestos materials identified, material assessment, material extent and scope of survey.

Where possible, materials not sampled will be strongly presumed to be the same as other comparable materials sampled during the survey. This will be undertaken in the form of a reference system, where identical materials are cross-referred to the original sample, i.e.; ‘As 5’ refers to sample 5. If a material is not sampled and a similar product has not been sampled in the survey, the most likely asbestos type has been determined according to the consultant’s experience, together with published reference tables in HSG 264. In all cases, where a number of scenarios are possible, the ‘worst case’ will be assumed.

INTRODUCTION

Under the guidance given in HS(G) 248, laboratories are no longer able to give guidance, on asbestos percentages of samples submitted, under their UKAS accreditation. Interpretations given by some laboratories are therefore not accredited and should be used for guidance purposes only. Any samples detailed within this report will have their asbestos type identified. Further information taken from HSG 264 can be referenced in the standards and abbreviations section of this report.

A full Material Assessment is provided in the written report for each item found to contain asbestos, presumed or strongly presumed to contain asbestos. Also included are recommendations for possible remedial action, however it should be pointed out that these are included as useful information only, as **under the Control of Asbestos Regulations, the Duty Holder is preferred to carry out the full Risk Assessment** (this is because the HSE require a more detailed knowledge of each of the areas sampled and surveyed than the person undertaking this survey would be expected to have). Nevertheless, HBI have compiled the risk assessment by completing the priority assessment scores at the time of the survey. The priority assessment scores were undertaken by the surveyor and can only be assumed to be valid at the time of the assessment and are therefore considered only indicative. It must be recognised that the use of areas may well change significantly and hence the risk assessment should be reviewed on a regular basis. The Priority Assessment and hence Risk Assessment are not considered within HBI's scope of UKAS accreditation.

Where further suspect materials not identified in the previous survey were identified, HBI personnel, at their discretion, have sampled the material. These samples have been submitted for analysis.

No additional samples were taken at this visit.

4 Regulatory Requirements

The Control of Asbestos Regulations (2012) place a number of further requirements upon the duty holder, in addition to undertaking this survey. These include (but are not limited to) the following, which **must be undertaken**;

- **Every employer shall prevent the exposure of his employees to asbestos so far as is reasonably practicable. (*Regulation 11*)**

- **Every employer shall prevent or, where this is not reasonably practicable, reduce to the lowest level reasonably practicable, the spread of asbestos from any place where work under his control is carried out. (*Regulation 16)***

It is also a requirement that;

- **Every employer shall ensure that adequate information, instruction and training is given to those of his employees…. (*Regulation 10*) -** This includes asbestos awareness training for persons who are likely to disturb asbestos while carrying out their normal everyday work, or who may influence how work is carried out.

- **Prior to any major work demolition/refurbishment works on the building, a further assessment in the form of a Refurbishment & Demolition Asbestos Survey will be required (*Regulation 5*)**

Healthy Buildings International would be happy to offer further assistance in any of the above areas should it be required. **For guidance on the correct use of this asbestos survey, please contact Healthy Buildings International, who can offer guidance and training.**

5 General Description

5.1 General Building Information

Building Name:	Ambassadors Theatre
Building Address:	West Street, London
Building Use:	
Number of Floors:	
Number of Basements:	
Estimated Floor Area:	
Estimated No of Occupants:	
Estimated Age:	
Building Occupancy:	

Refer to the previous Type 2 / Management Asbestos Survey or Condition Inspection for building information.

5.2 Scope of Survey

This Condition Inspection involves only an inspection of those materials previously identified and does not constitute a Management Asbestos Survey. HBI can take no responsibility for the information contained within previous surveys.

6 Results of Analyses

Various samples of suspect building materials were taken for subsequent laboratory testing. All testing was carried out in laboratories qualified and accredited to perform such tests, by Technicians trained and experienced in accepted procedures. The specific methods used are referenced where appropriate.

Where further samples have been taken during this survey, estimates of asbestos content outside the laboratories scope of accreditation as per UKAS guidance under HS(G) 248. Further detail is however provided by Healthy Buildings International, taken from HSG 264 for informative purposes only, in the “Standards and Abbreviations” section of this report.

RESULTS OF ANALYSES

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6.1 Examination of Bulk Samples

OBJECTIVE To establish the presence of asbestos materials in various bulk samples.

METHOD Sampling of bulk samples with subsequent examination using Polarised and Dispersion Staining Microscopy.

RESULTS

No additional samples were taken at this visit.

Sample No	Location, Description and Area	Result
1	Room 2, Basement Light Store, Pipework, Insulation	**Chrysotile**

RESULTS OF ANALYSES

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6.2 Sample Details

Locations of materials sampled can be seen in Section 2 – Executive Summary – Plans.

6.2.1 Room 2, Basement Light Store, Pipework, Insulation

Sample Number	1	**Condition**	Good
Extent	3m x 150mm x 25mm	**Surface Treatment**	Painted
Asbestos Type	**Chrysotile**		

Comments Material recently encapsulated.

Recommendations This material can remain in situ and be managed, however, it is defined as Licensable and Notifiable and if it is to be removed, it should only be done using an HSE Licensed removal contractor.

Material Assessment Score	6	Low
Priority Assessment Score	3	
Risk Assessment Score	9	Very Low

RESULTS OF ANALYSES

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6.2.2 Room 1, Props Room, Electrical Fuse/Switch Box Internal Flash Guards, Textile

Sample Number	P1	**Condition**	Low damage
Extent	1 x fuse box	**Surface Treatment**	Sealed
Asbestos Type	**Presumed to contain Chrysotile**		

Comments

Recommendations This material can remain in situ and be managed.

Material Assessment Score	5	Low
Priority Assessment Score	3	
Risk Assessment Score	8	Very Low

7 Material Assessment Algorithms

HSG 264 calls for all samples identified as being ACMs to be subject to a Material Assessment Algorithm, in order to assess the potential for fibre release when subject to a standard disturbance. The factors to be considered are:

A	Product Type	Scored 1-3
B	Extent of Damage or Deterioration	Scored 0-3
C	Surface Treatment	Scored 0-3
D	Asbestos Type	Scored 1-3

For each of these factors a score is allocated and the results are added together to give a result between 2 and 12. Scores are interpreted as follows:

<5: Very Low

5-6: Low

7-9: Medium

>9: High

This material assessment purely assesses the condition of the material. It identifies the materials that present a higher risk of fibre release *if disturbed*. This algorithm does not automatically mean that those materials with a higher score should be given a higher priority for remedial work. Rather, this score should be considered along with other factors involved, such as the location of the material (for example; outside, inside, in plant areas, by or in ventilation systems), its extent, occupancy and the type of activity likely to affect it. Factors affecting such activity are; for example, that it may be only accessed during major works or alternatively, occupants undertake actions which may easily disturb it during everyday activity.

Under the Control of Asbestos Regulations, it is the responsibility of the Duty Holder of the premises to undertake the risk assessment once this survey and material assessment has been carried received. This is because it is believed that the Duty Holder will have a far more detailed understanding of the areas sampled than the person undertaking this survey.

MATERIAL ASSESSMENT ALGORITHMS

7.1 Material Assessments

Sample No.	Relevant Report Section	Location/Description	A	B	C	D	Total	Risk
1	6.2.1	Room 2, Basement Light Store, Pipework, Insulation	3	0	2	1	**6**	**Low**
P1	6.2.2	Room 1, Props Room, Electrical Fuse/Switch Box Internal Flash Guards, Textile	2	1	1	1	**5**	**Low**

8 Priority Assessment And Risk Assessment

HSG227 specifies that the risk assessment should be undertaken by a person with detailed knowledge of the use of a building. A surveyor can contribute to an assessment team but the dutyholder, under CAR, is required to make the risk assessment, using the information provided in the survey and their detailed knowledge of the activities in the building. Nevertheless, HBI have compiled the risk assessment by completing the priority assessment scores at the time of the survey. The priority assessment scores were undertaken by the surveyor and can only be assumed to be valid at the time of the assessment and are therefore considered only indicative. It must be recognised that the use of areas may well change significantly and hence the risk assessment should be reviewed on a regular basis. The Priority Assessment and hence Risk Assessment are not considered within HBI's scope of UKAS accreditation.

The Material Assessment Scores (MAS) assess the potential for fibre release whilst the Priority Assessment Scores (PAS) assess the potential for human exposure to those fibres. The resultant scores of these two algorithms are added to produce the Risk Assessment Score. The factors to be considered for the Priority Assessment are;

A	Normal Occupant Activity	Scored 0-3
B	Likelihood of Disturbance	Scored 0-3
C	Human Exposure Potential	Scored 0-3
D	Maintenance Activity	Scored 0-3

For each of these factors a score is allocated and the results are added together to give a result between 0 and 12. Appendix 7 highlights more precisely how these scores are derived. The PAS when added to the MAS give a total result between 2 and 24. The Management Plan should detail the policy on interpretation of these scores but in the absence of such information HBI would interpret the results as follows:

<10: Very Low

10-12: Low

13-15: Medium

>15: High

The management plan should detail the implication of these results with the timescales involved. A high score, for example will most probably indicate immediate remedial / management action be implemented. Any ACMs managed in situ should be subject to regular condition checks with both MAS and PAS revisions.

PRIORITY ASSESSMENT AND RISK ASSESSMENT

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8.1 Priority Assessment Algorithm and Risk Assessment

Sample No.	Relevant Report Section	Location/Description	A	B	C	D	Total PAS	Risk Assessment	Risk Rating
1	7.2.1	Room 2, Basement Light Store, Pipework, Insulation	0	1	1	1	**3**	**9**	**Very Low**
P1	7.2.2	Room 1, Props Room, Electrical Fuse/Switch Box Internal Flash Guards, Textile	0	1	1	1	**3**	**8**	**Very Low**

CONCLUSIONS

The Risk Assessment Scores should be utilised with the specification detailed in the management plan in order that the identified ACMs are removed or managed in situ. The higher risk assessment scores should be designated as the highest priority for management and as such should be dealt with in the most practicable shortest possible time.

Each ACM managed in situ should be regularly monitored (as detailed in the management plan).

RECOMMENDATIONS

9 Recommendations

9.1 Regulation 4 of the Control of Asbestos Regulations (2012) sets out the requirement for Duty Holders to manage the asbestos in their premises. This condition inspection was undertaken by Healthy Buildings International and represents an element of fulfilling these requirements. The full management plan, including risk assessment score implications may be found in the Company Policy and Procedures Document.

9.2 A full Risk Assessment Score is provided for each record, updated for each item identified as containing asbestos in the initial survey. Also included are initial recommendations for possible remedial action.

9.3 **www.RecordsForBuildings.com** provides full Risk Assessment Scores for each identified ACM (including Priority Assessment Scores). These should be updated based on the information in this report and also as any changes in risk factors occur (e.g. change in use of an area). Hence the up-to-date risk factors should be viewed in **www.RecordsForBuildings.com**.

9.4 Experienced personnel carried out this condition check in a professional manner. The extent of the check is however limited to a check of the condition of previously identified materials. The investigation did not include for removal of any fittings or fixtures of the buildings. It is therefore quite probable that further works may reveal other asbestos containing materials, which were not noted at the time of either the original survey or our condition check and so we recommend that prudent action be applied accordingly. Specifically, in the event that either refurbishment or demolition works are being undertaken in any areas of the building, a Refurbishment or Demolition Survey must be conducted before any such works are undertaken.

9.5 The information and data collected from this inspection will be maintained within a database and any future inspections will be added to that database. We recommend that any asbestos found be subject to regular (at least annual) inspection to ensure that there is no deterioration in condition. The next routine inspection for this building is scheduled for one year's time from the completion of this assessment.

APPENDIX 1

10 Appendix 1 - General Background Information

Asbestos is a general term covering several fibrous mineral silicates. The general properties of these materials are that they are chemically inert and are insoluble in water and other solvents. Asbestos fibres are not affected by heat or chemicals and do not conduct electricity. For these reasons, together with the resilience and strength of the fibres, asbestos has been widely used in industry for a whole range of applications.

Asbestos can be divided into two main groups, amphibole and serpentine. **Chrysotile**, or white asbestos as it is sometimes known is a serpentine asbestos, so called because the fibres are snake-like in appearance. Chrysotile is significantly different in composition and is noticeably softer and more flexible than other kinds and for this reason found widespread use and once accounted for 95% of all asbestos used worldwide. The two other commonly found forms of asbestos, **Crocidolite** (blue asbestos) and **Amosite** (brown asbestos) are known as amphiboles. The fibres are more needle-like in nature than Chrysotile. There are three other, less common forms occasionally found. These are Tremolite, Actinolite and Anthrophylite.

Asbestos was widely used in the last century up to around the 1970s, with peak usage occurring in the 1960s and mid 1970s, with approximately 6 million tonnes of asbestos, mainly Chrysotile, being imported since 1900.

The use and importation of asbestos has been slowly phased out since the mid 1970s, with the application of sprayed asbestos ceasing in 1974. The use of asbestos-reinforced insulating boards was phased out in 1980 while the importation, use in manufacture and marketing of Amosite and Crocidolite and products containing them, and the installation of asbestos materials for thermal insulation has been prohibited in the UK since 1986. The importation and use of Chrysotile in the UK was banned in November 1999.

Asbestos becomes potentially problematic to health when it is inhaled in fibrous form. Fibres of respirable size (those that are in the size range that can be drawn directly into a person's lungs during normal breathing activity) remain embedded in the lungs and are not easily metabolised. Asbestos fibres have a much smaller diameter than other fibres commonly used in industry (<1µm for asbestos compared with 1-10µm for man-made mineral fibre wools) and are therefore more readily drawn directly down into a persons lungs. Furthermore, unlike other fibrous material used in industry which tend to break transversely, asbestos fibres break down longitudinally, into finer and finer fibres, therefore increasing the overall number of fibres present in the lungs. In the case of Chrysotile fibres however, magnesium is slowly leached from the fibres in the lung, causing eventual fibre breakdown. For this reason Chrysotile fibres are treated differently to other asbestos fibres for the purposes of establishing airborne limits and risk factors. Inhalation of all types of asbestos fibres may lead to lung fibrosis (often known as asbestosis) which is characterised by the on-set of breathlessness and cough. Exposure to respirable asbestos fibre is also associated with lung cancer, usually after a time-lag of many years and mesothelioma, a cancer of the inner lining of the chest or the abdominal wall.

APPENDIX 2

11 Appendix 2 - Standards and Abbreviations

The following terms are used to indicate the proportion of asbestos material present in the samples analysed:

CAR:	Control of Asbestos Regulations 2012.
ACoP L143:	Approved Code of Practice L143: Work With Materials Containing Asbestos
HSG 264:	Asbestos: The Survey Guide 2010
EH 40:	HSE's Guidance Note EH 40; Occupational Exposure Limits 2000
HSG 213:	Introduction to Asbestos Essentials; Comprehensive Guidance on Working With Asbestos in Building and Allied Trades 2001
HSG 210:	Asbestos Essentials: A task manual for building, maintenance and allied trades on non-licensed asbestos work. 2nd Ed. 2008
HSG 248:	Asbestos: The analysts' guide for sampling analysis and clearance procedures 2005
HSG 227:	A Comprehensive Guide to Managing Asbestos in Premises 2002
RIDDOR:	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
CDM:	Construction (Design and Management) Regulations 2007
HSWA:	Health & Safety at Work Act 1974
MHSWR:	Management of Health & Safety at Work Regulations 1999
HWR:	Hazardous Waste Regulations 2005
HSE:	Health and Safety Executive
HSC:	Health and Safety Commission

APPENDIX 2

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Other common scientific abbreviations and terms are used in this report and their full forms or meanings are given below:

ACM	Asbestos containing material
AIB	Asbestos insulation board
l/s:	litres per second
WEL:	Workplace Exposure Limit
$\mu g/m^3$:	micrograms per cubic metre
mg/m^3:	milligrammes per cubic metre
N/A:	Not Applicable
Presumed (to contain asbestos):	A material for which there is insufficient evidence that it is not an ACM.
Strongly presumed (to contain asbestos):	A material believed to contain asbestos, but for which laboratory analysis has not been undertaken to confirm this.
TWA:	Time Weighted Average
f/ml:	Fibres (of asbestos) per millilitre of air
ppm:	parts per million
≥	Greater than or equal to
≤	Less than or equal to

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HSG 264 (Asbestos: The Survey Guide) Estimated Asbestos Contents

The following estimated asbestos contents are taken from the HSE document HSG 264 (Asbestos: The Survey Guide). These should be used for reference only and it should be recognised that any of the products listed may deviate from these levels due other factors such as operational use, or production.

Material	**Typical Asbestos Content (as per HSG 264 (Asbestos: The Survey Guide)**
Loose Insulation	Up to 100% asbestos
Spray Coating	55-85% asbestos
Thermal Insulation	6-85% asbestos
Textiles/Papers/Ropes	Up to 100% asbestos
Millboard	37-97% asbestos
Insulating Board (Older and Marine Boards)	15-25% asbestos Up to 40% asbestos
Cement Profiled Sheets	10-15% asbestos
Textured Coatings	3-5% asbestos
Bitumen Products	Usually 8% asbestos
Thermoplastic Floor Tiles	Up to 25% asbestos
PVC Vinyl Floor Tiles	Up to 7% asbestos
Magnesium Oxychloride Flooring	Around 2% asbestos
Reinforced PVC	1-10% asbestos
Reinforced Plastic	1-10% asbestos
Reinforced Resin	20-50% asbestos

APPENDIX 3

12 Appendix 3 - Exclusions

This survey constitutes an inspection of previously identified ACMs only and does not involve surveying new areas unless contractually requested. The original Type 2 / Management Survey should be referenced for areas excluded.

APPENDIX 4

13 Appendix 4 - Laboratory Certificates

No additional samples were taken at this visit. Refer to previous surveys for copies of laboratory certificates.

APPENDIX 5

14 Appendix 5 - Priority Assessment Scoring

HS(G)227 specifies that the risk assessment should be undertaken by a person with detailed knowledge of the use of a building. A surveyor can contribute to an assessment team but the dutyholder, under CAR, is required to make the risk assessment, using the information provided in the survey and their detailed knowledge of the activities in the building.

The following tables detail the factors taken into account when calculating the Priority Assessment Score. This is calculated for each identified ACM, to give a PAS scored out of 12. This PAS is added to the previously calculated MAS from the Type 2 / Management survey, to give the overall Risk Assessment Score for each identified ACM, as detailed in the main body of this report.

Main Type of Activity in Area	Rare Disturbance	**0**
	Low Disturbance	**1**
	Periodic Disturbance	**2**
	High Disturbance	**3**
Secondary Activities for Area	Rare Disturbance	**0**
	Low Disturbance	**1**
	Periodic Disturbance	**2**
	High Disturbance	**3**
Normal Occupancy Activity (above scores, averaged and rounded up)		
Location	Outdoors	**0**
	Large Rooms	**1**
	Rooms up to 100m²	**2**
	Confined Spaces	**3**
Accessibility	Usually inaccessible	**0**
	Occasional Disturbance	**1**
	Easily Disturbed	**2**
	Routinely Disturbed	**3**
Extent/Amount	Small amounts	**0**
	<10m² or <10m pipe run	**1**
	10 – 50m² or 10-50m pipe run	**2**
	>50m² or > 50m pipe run	**3**
Likelihood of Disturbance (above scores, averaged and rounded up)		

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Number of Occupants	None	**0**
	1 to 3	**1**
	4 to 10	**2**
	>10	**3**
Frequency of use of area	Infrequent	**0**
	Monthly	**1**
	Weekly	**2**
	Daily	**3**
Average Time area is in use	<1 hour	**0**
	1-3 hours	**1**
	4-6 hours	**2**
	>6 hours	**3**
Human Exposure Potential (above scores, averaged and rounded up)		
Type of maintenance activity	Minor Disturbance	**0**
	Low Disturbance	**1**
	Medium Disturbance	**2**
	High Disturbance	**3**
Frequency of maintenance activity	Unlikely	**0**
	< 1 per year	**1**
	> 1 per year	**2**
	>1 per month	**3**
Maintenance Activity (above scores, averaged and rounded up)		
TOTAL PRIORITY ASSESSMENT SCORE (out of 12)		