**Parsons Brinckerhoff Australia Pty Limited**

ABN 80 078 004 798

*Level 27, Ernst & Young Centre*
*680 George Street*
*SYDNEY NSW 2000*
*GPO Box 5394*
*SYDNEY NSW 2001*
*Australia*
*Telephone +61 2 9272 5100*
*Facsimile +61 2 9272 5101*
*Email sydney@pb.com.au*

*Certified to ISO 9001; ISO 14001; AS/NZS 4801*

Our reference 2171040A LT_3088/KW/kt/**

11 October 2010

Sally Fletcher
Senior Registrar
Australian National Maritime Museum (ANMM)
2 Murray Street
Darling Harbour Sydney
GPO Box 5131
Sydney NSW 2001

Dear Ms Fletcher

# Asbestos Materials Survey – Blackmores First Lady (NMC # 00033167)

## 1. Introduction

Parsons Brinckerhoff (PB) was engaged by the Australian National Maritime Museum (ANMM) to undertake an asbestos materials survey of Blackmores First Lady located at the ANMM. The site investigation was conducted by PB on 6 October 2010.

The purpose of the survey was to identify the presence of the asbestos materials and to prepare a asbestos materials register for the artefact.

## 2. Methodology

### 2.1 General

The identification of asbestos materials involves a combination of visual inspection of the accessible areas of the artefact and the collection of representative samples of the suspect materials for the purpose of analytical confirmation. Where identical suspect materials are detected at different locations, visual confirmation onl, may have been made rather than additional sample collection.

### 2.2 Identification of Material

#### 2.2.1 Asbestos Containing Materials

Representative samples of materials suspected of containing asbestos were collected and analysed in our in-house NATA Accredited Laboratory. The identification of asbestos fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. The asbestos samples were collected for analysis where safety of personnel would not be compromised.

## 3. Restrictions/Inaccessible Areas

There was no access to internal components and machinery at the time of the inspection.

## 4. Survey findings

This section of the report summarises the findings of the asbestos materials types identified and their general locations. All findings are presented in Appendix A: Asbestos materials Register.

**Asbestos containing materials**

No asbestos containing materials were identified within the scope of the survey

## 5. Asbestos materials Risk Assessment Factors and Priority Ratings

To assess the health risk posed by the presence of asbestos-containing materials all relevant factors must be considered.

### 5.1 Asbestos Materials

These factors include:

- condition of the asbestos materials. This is described as being either good (not been damaged or have not deteriorated), medium (minor deterioration or damage) or poor (materials which have been extensively damaged or their condition has deteriorated over time)
- proximity of air plenums and direct air stream
- friability of asbestos materials (ease with which the material can be crumbled) listed as either friable or non-friable
- requirement for access for building or maintenance operations and accessibility (low, medium or high)
- likelihood of disturbance of the asbestos material
- exposed surface areas
- environmental conditions.

These aspects are in turn judged upon; (i) potential for fibre generation; and, (ii) the potential for exposure. When these factors have indicated that there is a possibility of exposure to airborne fibres, appropriate recommendations for repair, maintenance or abatement of the asbestos-containing materials are made.

### 5.2 Asbestos Materials – Priority Ratings

The risk factors described above are used to rank the health risk posed by the presence of asbestos materials:

- Low Risk – describes materials that pose a low health risk to personnel, employees and the general public providing they stay in a stable, minimal access condition.
- Medium Risk – applies to materials that pose an increased risk to people in the area.
- High Risk – materials that pose a high health risk to personnel or the public in the area of the material.

### 5.3 Priority Rating System for Control Recommendations

The following priority rating system is adopted to assist in the programming and budgeting of the control of asbestos material risk identified in the building:

1. High Priority: Hazard with Significant Risk Potential

An area has asbestos materials that are either damaged or are being exposed to continual disturbance. Due to these conditions, there is an increased potential for exposure and/or transfer of the material to other parts of the building with continued unrestricted use of this area. Prompt abatement of the hazard is recommended and instigation of control measures under a asbestos materials management plan.

2. Medium Priority: Hazard with Elevated Risk Potential

An area has asbestos materials with a potential for disturbance/exposure due to the following conditions:

- the material has been disturbed or damaged and its current condition, while not posing an immediate risk, is unstable
- the material is accessible and can, when disturbed, present a short-term exposure risk
- demolition, renovation, refurbishment, maintenance, modification or new installation, involving air handling system, ceilings, lighting, fire safety systems or floor layout is scheduled.

Appropriate abatement measures should be taken at earliest possible convenient time. A negligible health risk exists if materials remain undisturbed under the control of a asbestos materials management plan.

3. Low Priority: Maintenance Controllable – Potential Hazard During Refurbishment

An area has asbestos materials, where the condition of the material is stable and has low potential of being disturbed and the material does not present an exposure risk unless disturbed such as abraded, washed or dismantled.

Negligible health risks are present if materials are left undisturbed under the control of a asbestos materials management plan. Defer any major action unless materials are to be disturbed as a result of maintenance, refurbishment or demolition operations.

# 6. Recommendations

## 6.1 Asbestos

- No further action required, no asbestos containing materials indentified during inspection.
- If works and/or removal are to be undertaken on areas that were inaccessible during the inspection it is recommended a more intrusive inspection be undertaken prior to commencement of works.

If you have any queries regarding this report, please feel free to contact the undersigned on 9272 5100.

Yours sincerely

**Kate Warton**

Environmental Scientist
Parsons Brinckerhoff Australia Pty Limited

Attachments:
Appendix A: Asbestos materials Register
Appendix B: Photographs
Appendix C: Laboratory Results
Appendix D: Statement of Limitations

# Attachment A

Asbestos Materials Register

| | | | |
|---|---|---|---|
| **Address** | Austrailan National Maritime Museum | **Date of inspection** | 6/10/2010 |
| **Description** | Blackmores First Lady | **Inspected by** | Kate Warton |
| | | **Inaccessible areas** | Internal components of machinery |

| Event | Location | Application | Material Description | Sample Number | Analytical Result | Photo number | Extent Estimate | Material Condition | Risk Status | Control Priority | Control Recommendations/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Generator exhaust seal | Pipe insulation | Fibre glass and epoxy glue | PB-63818 | NAD | N/A | N/A | N/A | N/A | N/A | No remedial action required |
| 2 | Generator exhaust mounts | Exhaust mount braces | Fabric | PB-63819 | NAD | N/A | N/A | N/A | N/A | N/A | No remedial action required |

# Appendix B

Photographs

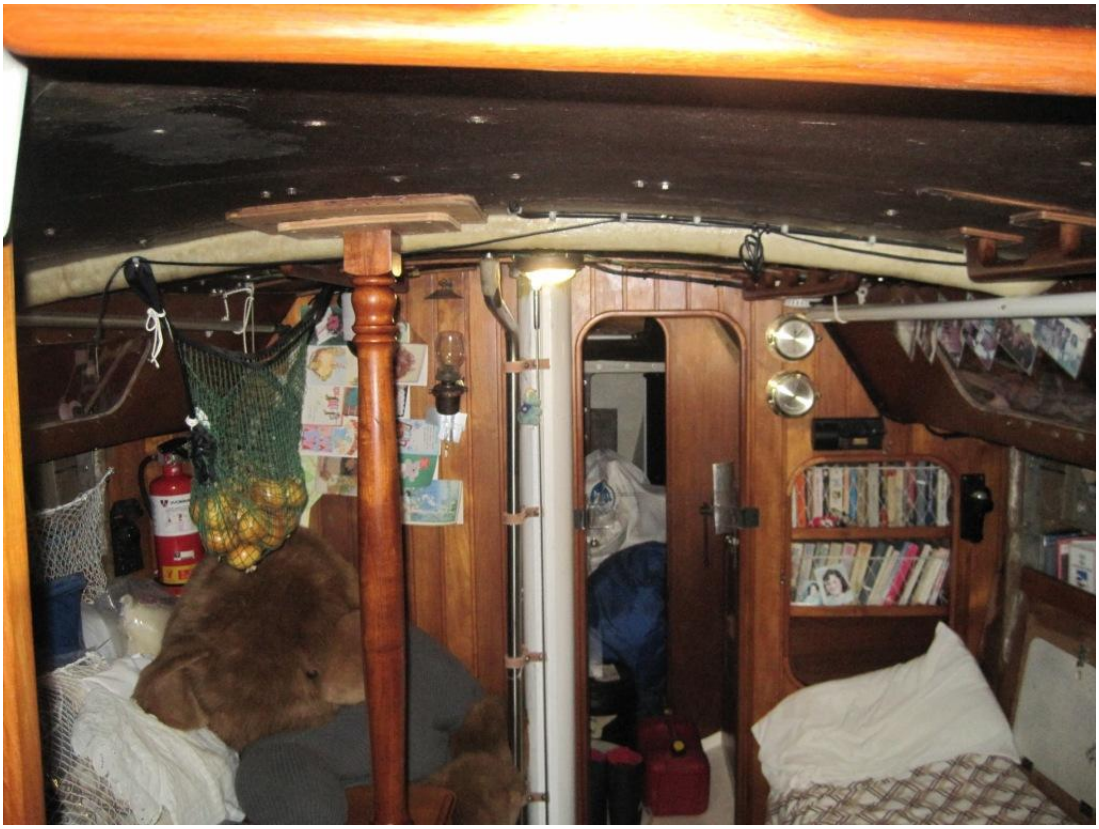

**Figure 1: Interior of Blackmores First Lady**

# Appendix C

Laboratory Results

**Parsons Brinckerhoff Australia Pty Limited**

*Level 15*
*28 Freshwater Place*
*SOUTHBANK VIC 3006*
*PO Box 19016*
*SOUTHBANK VIC 3006*
*Australia*
*Telephone +61 3 9861 1111*
*Facsimile +61 3 9861 1144*
*Email melbourne@pb.com.au*
***ABN 80 078 004 798***
*NCSI Certified Quality System ISO 9001*

# Certificate of Analysis

| | | | |
|---|---|---|---|
| CLIENT: | PB Sydney | CERTIFICATE NO: | 2171040A-0774 |
| CLIENT ADDRESS: | GPO Box 5394, Sydney, NSW, 2001 | DATE SAMPLED: | 6/10/2010 |
| TELEPHONE: | (0)2 9272 5100 | DATE RECEIVED: | 8/10/2010 |
| FAX: | (0)2 9272 5101 | DATE ANALYSED: | 8/10/2010 |
| CONTACT: | Kate Warton | | |
| LOCATION: | Maritime Museum | | |
| SAMPLED BY: | As Received | | |

TEST METHOD: Qualitative identification of asbestos types in bulk samples at Parsons Brinckerhoff Melbourne Laboratory by polarised light microscopy, including dispersion staining techniques using Parsons Brinckerhoff in-house method No.1, AS4964 (2004) and NATA accreditation No.15295. This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC:17025.

| Lab Number | Sample Id | Sample Description | Sample Dimensions cm | Identification Type |
|---|---|---|---|---|
| 10/067/001 | PB-63813 | Gasket | 1 x 0.5 | CH |
| 10/067/002 | PB-63814 | Gasket | 1 x 1 | CH |
| 10/067/003 | PB-63815 | Bituminous Material | 1 x 1 | NAD |
| 10/067/004 | PB-63816 | Rope | 11 x 0.5 | CH |
| 10/067/005 | PB-63817 | Debris | 0.5 x 0.2 | NAD |
| 10/067/006 | PB-63818 | Rope | 1 x 1 | NAD |
| 10/067/007 | PB-63819 | Rope | 1 x 1 | NAD |
| 10/067/008 | PB-63820 | Rope | 3 x 2 | CH |
| 10/067/009 | PB-63821 | Rope | 1 x 1 | NAD |
| 10/067/010 | PB-63822 | Dust | 0.5 x 0.5 | NAD |

LEGEND

NAD - No Asbestos Detected
CH - Chrysotile Asbestos Detected
A - Amosite Asbestos Detected
C - Crocidolite Asbestos Detected
UMF - Unknown Mineral Fibres Detected

NATA
ACCREDITED FOR
**TECHNICAL COMPETENCE**

Approved Identifier
Name: Mandev Kler
Signature

Approved Signatory
Name: Mandev Kler
Signature

*AUTHORISATION DATE*
8/10/2010

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. PB accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.

**Parsons Brinckerhoff Australia Pty Limited**

*Level 15*
*28 Freshwater Place*
*SOUTHBANK VIC 3006*
*PO Box 19016*
*SOUTHBANK VIC 3006*
*Australia*
*Telephone +61 3 9861 1111*
*Facsimile +61 3 9861 1144*
*Email melbourne@pb.com.au*
***ABN 80 078 004 798***
*NCSI Certified Quality System ISO 9001*

# Certificate of Analysis

Certificate: PB Sydney

Certificate NO: 2171040A-0774

LOCATION: Maritime Museum

| Lab Number | Sample Id | Sample Description | Sample Dimensions cm | Identification Type |
|---|---|---|---|---|
| 10/067/011 | PB-63823 | Electrical Board | 2 x 1 | CH |
| 10/067/012 | PB-63824 | Electrical Board | 3 x 1 | NAD |
| 10/067/013 | PB-63825 | Rope | 3 x 0.5 | CH |
| 10/067/014 | PB-63826 | Dust | 0.5 x 0.5 | NAD |

LEGEND

NAD - No Asbestos Detected
CH - Chrysotile Asbestos Detected
A - Amosite Asbestos Detected
C - Crocidolite Asbestos Detected
UMF - Unknown Mineral Fibres Detected

NATA
ACCREDITED FOR
**TECHNICAL COMPETENCE**

Approved Identifier
Name: Mandev Kler
Signature

Approved Signatory
Name: Mandev Kler
Signature

*AUTHORISATION DATE*
8/10/2010

Notes:

If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

The results contained within this report relate only to the sample(s) submitted for testing. PB accepts no responsibility for the initial collection, packaging or transportation of samples submitted by external persons. This document may not be reproduced except in full.

# Appendix D

Statement of Limitations

## Limitations of a Asbestos materials inspection

### Scope of Services

This asbestos inspection report ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Parsons Brinckerhoff (PB) ("scope of services"). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

### Reliance on Data

In preparing the report, PB has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise stated in the report, PB has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. PB will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to PB.

### No Inspection Can Be Guaranteed to Locate All Asbestos

In practice it is generally impossible to locate all asbestos in the course of an inspection.

This is because of factors such as:

- restrictions on access to lifts, lift shafts and rooms, air conditioning duct work and airways and internal construction components;
- the need to avoid damage, such as when attempting to inspect behind wall panels or under carpets;
- minimising inconvenience when premises or plant are in use whilst an inspection is being conducted; and
- the availability of building/plant construction plans.

### There is No Instrument Which Can Detect Asbestos

The presence of asbestos must be determined visually, as there is no instrument currently available for the purpose. Usually an inspector will take samples of suspect materials and have them analysed in a laboratory. Thus, any restrictions on the amount of sampling will reduce confidence in the asbestos inspection findings.

The consequence of this is that asbestos which cannot be seen will not be found.

### Asbestos is Commonplace

From the early 1900s until the early 1970s, asbestos was widely used in industry. The use of asbestos-cement in roof pipes and wall cladding was particularly widespread, as was the use of "limpet" asbestos fibre insulation in steel framed high-rise buildings. Asbestos was also used for applications such as insulation of pipes and high temperature electricity cables, in plastics, in PVC floor tiles, for reinforcement in cements, putties and mastic and in gaskets and friction materials.

Whilst major uses of asbestos were sometimes recorded on engineering drawings, there are few records of the ad hoc use of asbestos containing products and materials. To give examples from the building industry, plumbers frequently used asbestos fibre in caulking compounds and builders often used Asbestos Cement sheeting as packing under floor boards.

In short, asbestos could be almost anywhere in a building or plant constructed before the 1980s.

**Reliance on an Asbestos Inspection**

The client must not rely upon an inspection or report as indicating that a site or building is “asbestos free”(or that such asbestos as was reported to have been found is the only asbestos at the site or building). All that the report can be relied upon to show is that no asbestos was found (or that such asbestos as was identified exists at the location where it was reported to have been found) in the course of the inspection. The findings of the report must be considered together with the specific scope and limitations of the type of inspection undertaken.

**Report for Benefit of Client**

The report has been prepared for the benefit of the Client and no other party. PB assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of PB or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

For the purposes of this limitations statement, “conclusions” include statements, opinions, facts, information, conclusions and/or recommendations in the report.

**Other Limitations**

PB will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the inspection.