

Project X: Strip to shell and asbestos removal

A presentation to the

ACHASM 'Client Lead CH&S Symposium'

21 August 2013

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Corporate and Project Risk Management - Africa and Indian Ocean Islands



Vacated premises

(Handover to project)



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Mothballed premises

(Safe for occupancy)



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Background

- The Building was constructed 1954
- Due to be demolished, and subsequently earmarked to be mothballed
- Possible tenanting at a later date
- It was known that asbestos and asbestos containing materials formed part of the structure
- Certain areas of the building house critical support and core business functions
- Certain areas of the building had been locked out
- Later fit-out requires a blank canvas and asbestos free building
- The area under consideration is 6255m² floor area (x 2 for ceiling)

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Overview

Project Brief: Strip to shell for mothballing

Project Mandate: Activities may not disrupt either core or back-up services and must be done in a manner which maintains Corporate Social Responsibility Commitments

Cautions: Asbestos

Multiple stakeholders and concurrent projects

Previous projects using water resulted in water egress and certain property damage

Various fines (R1m / hr for downtime to back-up generators)

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Planning

1. Walkthrough and Briefing – Jul 2011
2. Submission of project charter
3. Motivation for additional professional consultants
4. Submission of fee quotation and professional services
5. Appointment of HSE Risk Consultancy Services (PROCSA)
6. HSE appointment of necessary consultants (PROCSA)
7. Development of tender for Approved Inspection Authority
8. Tender on National Basis for Approved Inspection Authority (5 x)
9. Selection of AIA
10. Fee negotiations, resulting in discounted fees
11. Appointment of AIA – Sep 2011
12. Development of tender documentation for Registered Asbestos Contractor (CHS Specification, Tech Specification, Sequencing, Plan of Work, BoQ)
13. Tender on national basis for RAC (5 x)
14. Selection of RAC
15. Confirm Plan of Work and Fees
16. Appointment of RAC – Dec 2011

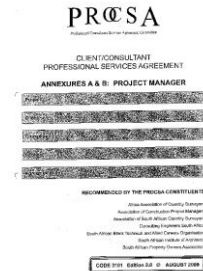
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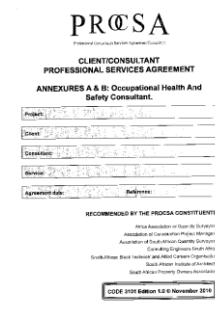


Contractual

PROCSA : Construction Project Manager



PROCSA : CHS Consultant



SACPCMP : Pr. CHSA



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Legal

National Department of Environmental Affairs (NDEA):

[Environment Conservation Act](#) R43 of 1996.

[The National Environmental Laws Amendment Act](#), 14 of 2009.

[National Environment Laws Amendment Act](#), 44 of 2008.

[Environment Conservation Act](#), 73 of 1989.

[Gazette 19599](#) and dated 11 December 1998

National Department of Labour (DoL):

[Compensation for Occupational Injuries and Diseases Act](#), 130 of 1993

[Occupational Health and Safety Act](#), 85 of 1993.

[Asbestos Regulations](#), GNR 155 of 2002.

[Construction Regulations](#), GNR 1010 of 2003

[Lead Regulations](#), GNR 236 of 2002

[Noise-Induced Hearing Loss Regulations](#), GNR 307 of 2003

[Electrical Installation Regulations](#), GNR 242 of 2009

[Electrical Machinery Regulations](#), GNR 1593 of 1988

[Pressure Equipment Regulations](#), GNR 734 of 2009

[General Administrative Regulations](#), GNR 929 of 2003

[General Safety Regulations](#), GNR 1031 of 1986

[Environmental Regulations for Workplaces](#), GNR 2281 of 1987

[Facilities Regulations](#), 924 of 2004

Chief Directorate DoL: Occupational Health and Safety

[Guide to the Asbestos Regulations](#), OHC1 of 2003

[Guide to demolition work in terms of the Asbestos Regulations](#), OHC6 of 2003

[Construction Health and Safety Guide](#), 2007

[Criteria for Registration as Asbestos Contractor](#), OHC3 of 2003

Chief Inspectorate DoL: Occupational Health and Safety

[Methods for the Determination of Hazardous Substances](#) 3914 of the Health and Safety Executive of the United Kingdom, as revised from time to time (MDHS 39/4)

Association of Construction Health and Safety Management (Recommended guides)

[Safety in Design: Standards of Competence](#)

[Recommended Guidelines for the Correct Carriage of Asbestos Waste](#)

[Recommended Guidelines for Construction Occupational Hazardous Substances assessments](#)

[Preliminary Guidance Note on Dust Suppression](#)

[Recommended Guidance on Risk Assessments, Notifications, Waivers and Plans of Work](#)

[The Contractors Guide to Asbestos Removal](#)

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Details

1. Raised access flooring = 45kg/m²
2. Total estimated dry weight (ceiling and flooring) = 90kg /m²
3. Asbestos can only be disposed of at Vissershok = R380 / kg ex transport
4. Several generations of asbestos containing vinyl floor tiles
5. Asbestos containing VFT = <5% asbestos well bound in matrix
6. Three types of asbestos found in flocking on ceilings
 - Used for noise dampening
7. Encapsulated asbestos flocking used at HVAC plant rooms
 - Used as fire break
8. Asbestos fibers are waterproof and carcinogenic (some resist acid)
9. Asbestos fibers split and break easily, quickly becoming 'uncountable'
10. OEL for Asbestos = 0.2 f / ml = 200 f/l
11. OEL for Fiber Glass = 2 f/ml = 2000 f/l
12. No insurance for asbestos related illnesses or claims (of exposure)
13. 75% chance of substantial water egress
14. Floors cannot support more than 100mm banded water



Risk Quantification

Risk Profiling

CONSTRUCTION HEALTH AND SAFETY DOCUMENT - FACE
Document 3 of 14

TEMPLATE FOR THE
CONSTRUCTION PROJECT HEALTH AND SAFETY RISK PROFILE

Project: _____
Employer / Client: _____
Construction Health and Safety Agent / Consultant: _____
Date: _____ Reference: _____

DISCLAIMER
Issued with the purpose of the Construction Health and Safety Executive Part 4 (CHSE) under the Health and Safety Act 1973 (Act No. 95 of 1973) and the Occupational Health and Safety Act 1993 (Act No. 101 of 1993) and the Occupational Safety and Health Act 1993 (Act No. 101 of 1993) and the Occupational Safety and Health Act 1993 (Act No. 101 of 1993).

REGULATORY
This document is a template. It is not intended to provide a complete risk profile for any specific project. It is intended to provide a framework for the development of a risk profile. The user is responsible for ensuring that the risk profile is accurate and up-to-date. The user is also responsible for ensuring that the risk profile is used in accordance with the relevant legislation and standards.

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Defensibility

Risk ID	Risk Description	Risk Category	Risk Level	Risk Status	Risk Owner	Risk Mitigation	Risk Review	Risk Closure
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Key concepts

1. Assistance
2. Advice
3. Options
4. Corporate Social Responsibility
5. Defensibility
6. Non-transferable risk
7. Vicarious Liability
8. Agency
9. Monitoring Professional Services and Deliverables
10. Assessing Design Risk
11. Risk Management and Loss Control
12. Clearly defined priorities (1. quality 2. cost 3. time)
13. Project adaptability
14. Project invisibility
15. Team functionality
 1. Mediation (non-antagonistic, third alternative)
 2. Admit mistakes (problem solving, no blame gaming / carpet sweeping)
 3. Encourage discussion

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Key controls

1. Work Breakdown Structures
2. Methods and Sequencing
3. Negative pressure environment
4. Glove bags
5. HEPA Filters
6. Continual training and de-briefing (conversant)
7. Ongoing medical surveillance
8. Independent AIA appointment
9. Daily air monitoring and feedback
10. Daily close-out of fiber count changes
11. Access to professional and specialist consultants

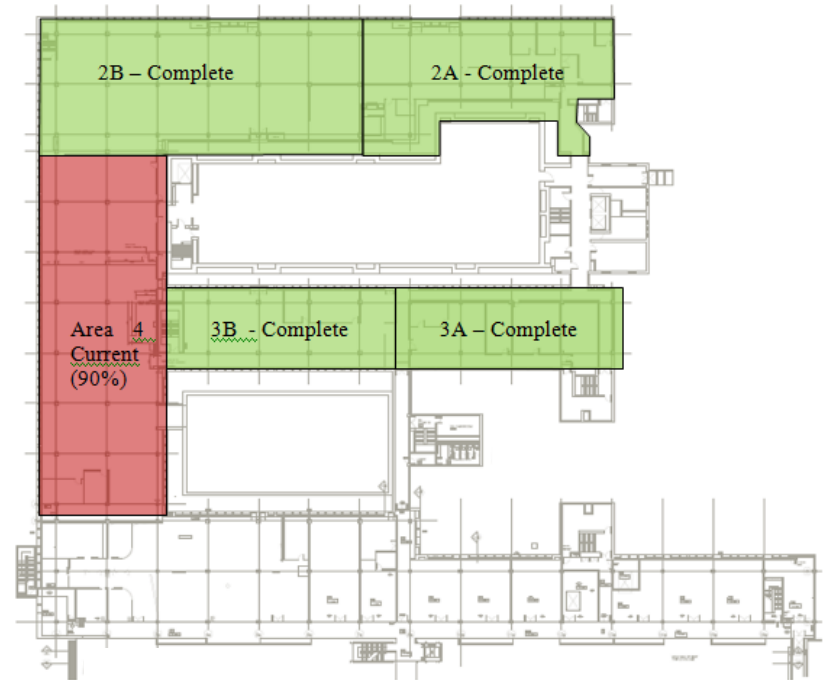
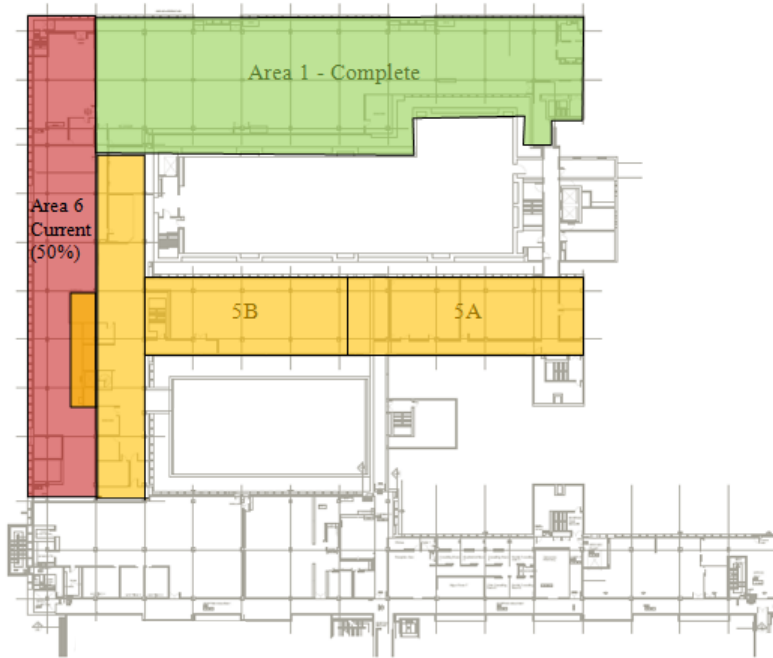
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Sequence of works

Key of areas (excluding ground floor areas completed beneath areas 1, 5 & 6)



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Sequence of works

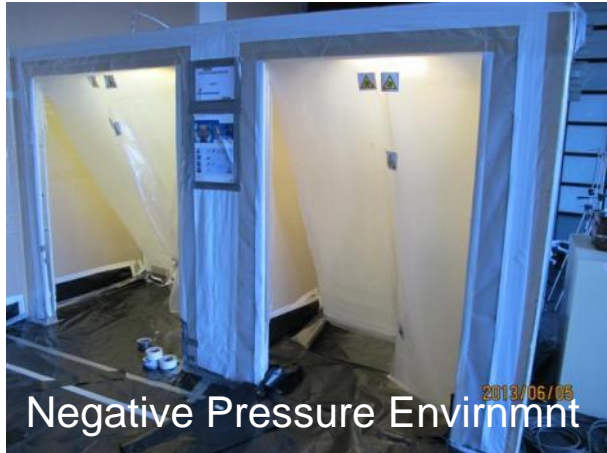


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Sequence of works



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Sequence of works

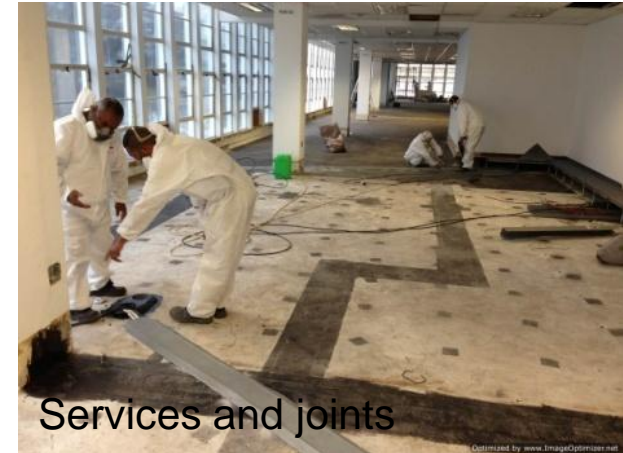


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Sequence of works



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Sequence of works



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Sequence of works



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Sequence of works



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Sequence of works



Prep team moves to next area.

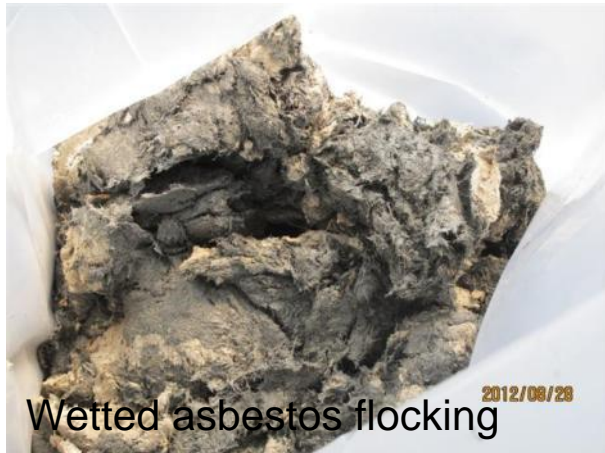


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Sequence of works

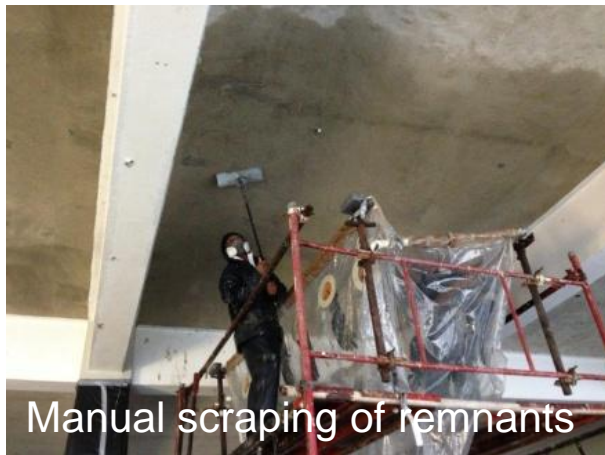
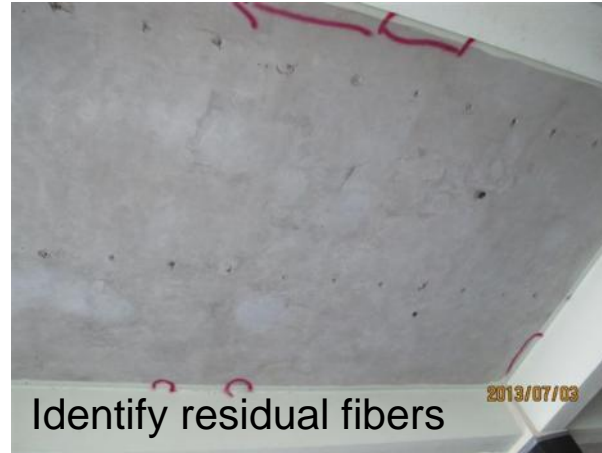


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Sequence of works



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Sequence of works



Glove bag team moves to next area

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Sequence of works



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Sequence of works

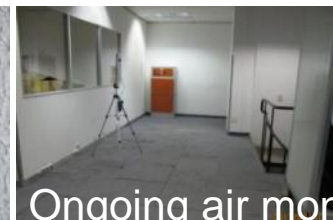


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Sequence of works



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