

The background features a partial view of the Earth on the left side. Overlaid on the right side is a Venn diagram consisting of two overlapping circles, one light red and one light blue, with their intersection shaded in a lighter greyish-blue.

# Scottish House Builders H&S Forum

## Asbestos Contaminated Land

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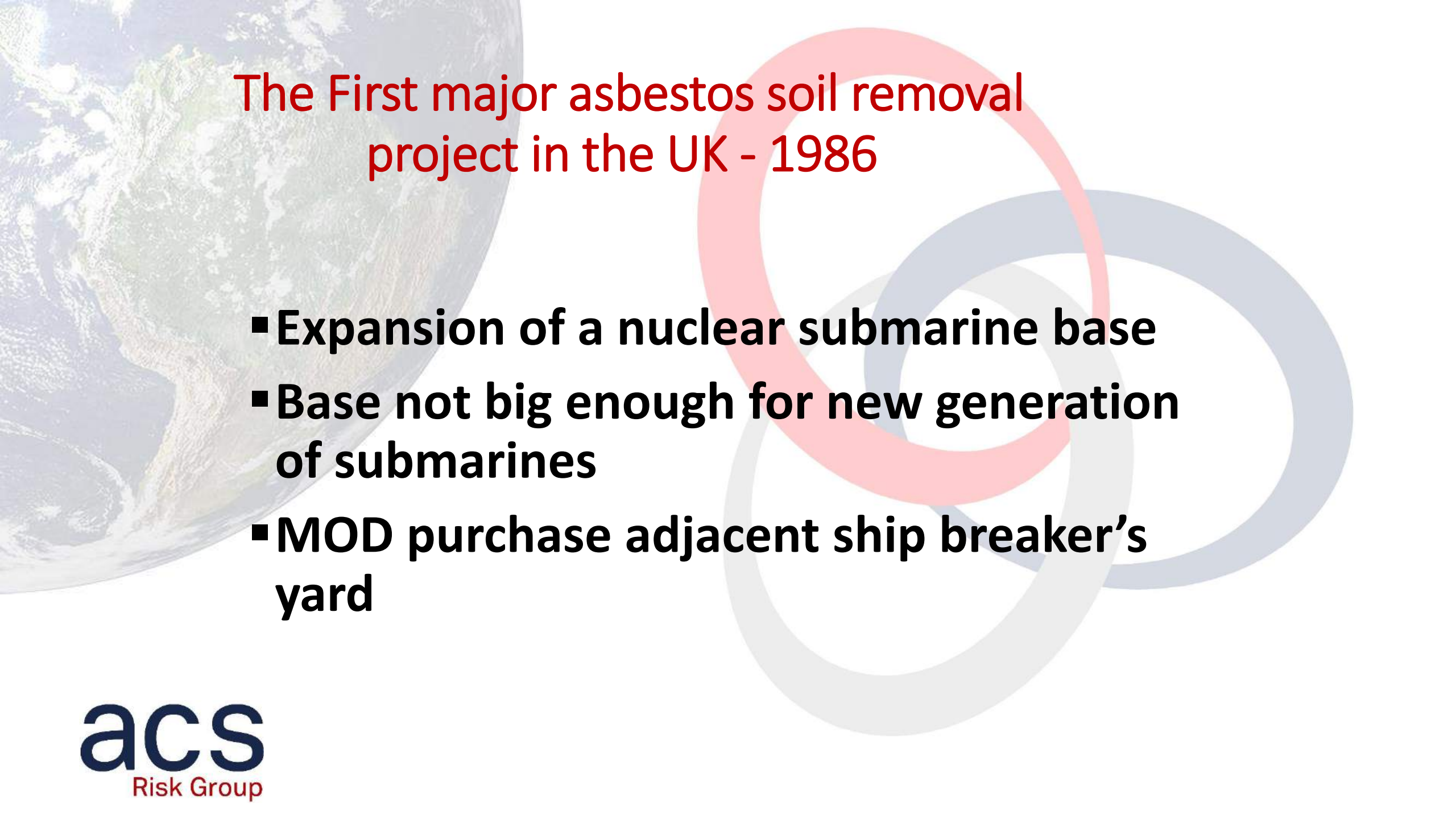
**ACS Physical Risk Control Ltd**

[www.acsrisk.com](http://www.acsrisk.com)



# ACS Physical Risk Control Ltd

- **Founded in 1978**
- **First private asbestos test house in Scotland**
- **R&D, Consultancy, Measurement, Training, Expert Witness**
- **40 years, five Continents, over 100 000 asbestos jobs**



## The First major asbestos soil removal project in the UK - 1986

- **Expansion of a nuclear submarine base**
- **Base not big enough for new generation of submarines**
- **MOD purchase adjacent ship breaker's yard**



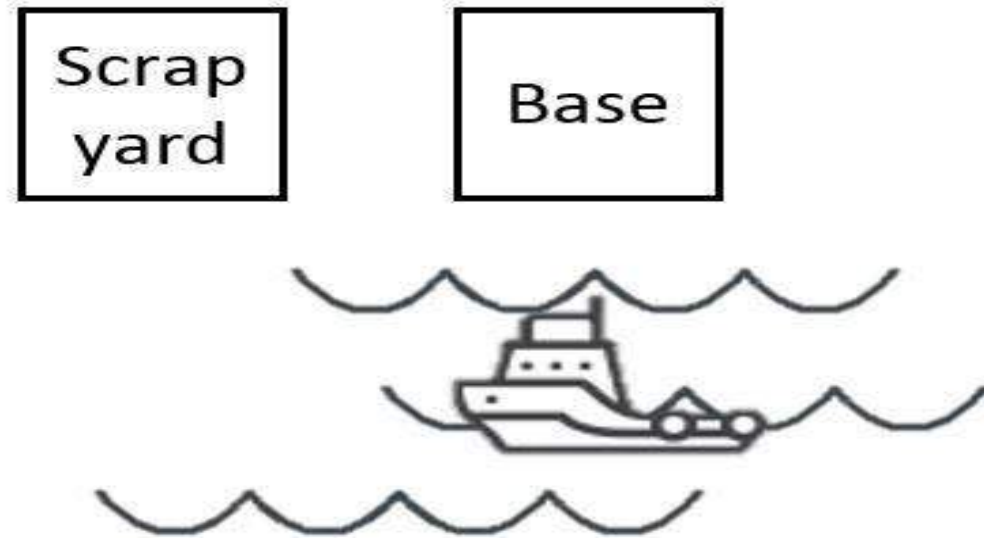
# First Large Scale Job in the UK



## A little problem

- Site heavily contaminated: asbestos, heavy metals, etc

Figure 1

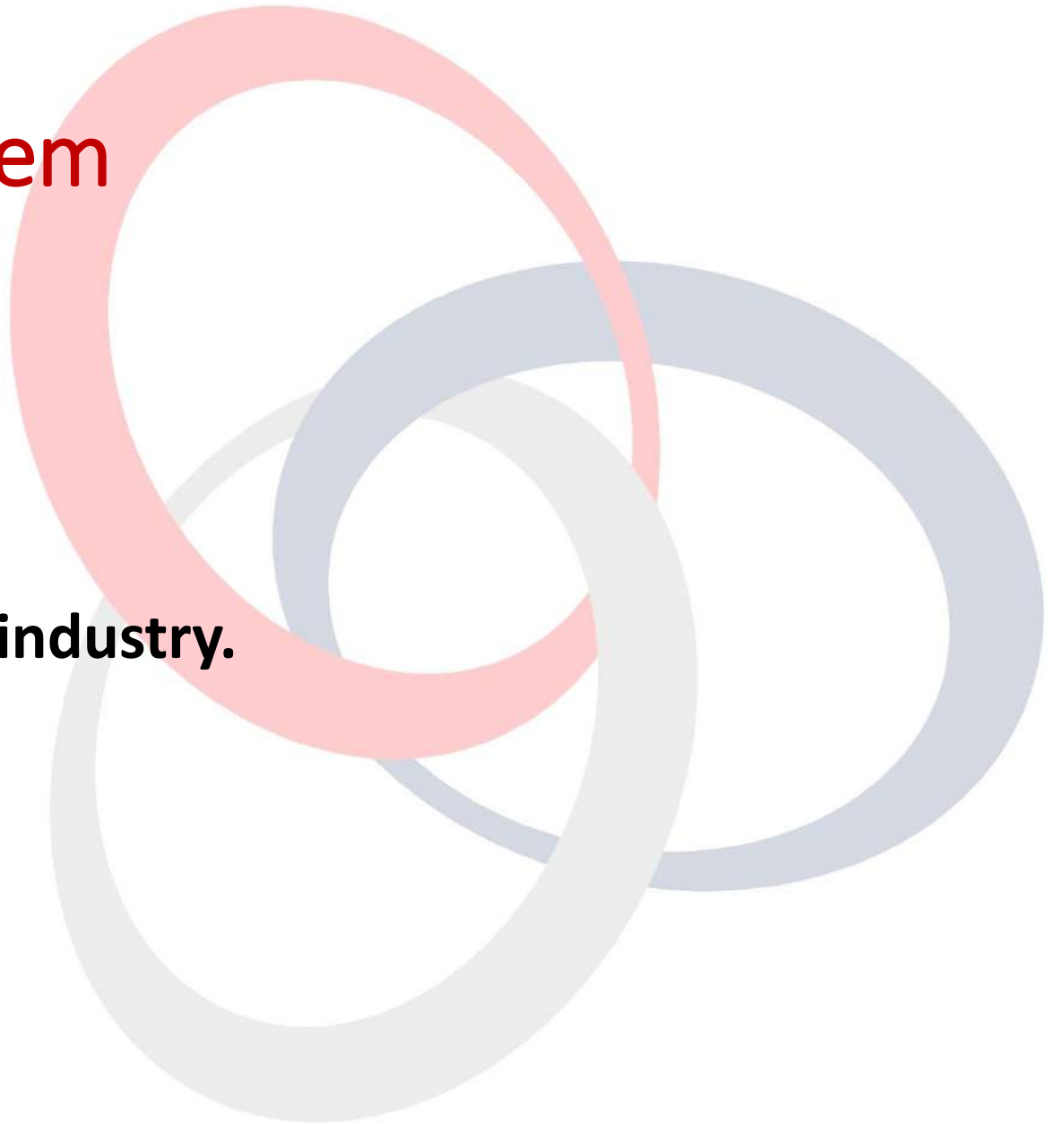


- approx. 100 000 m<sup>3</sup> contaminated land



## A little problem

- What do we do?
- How do we do it?
- Early days of the asbestos industry.
- No information available.



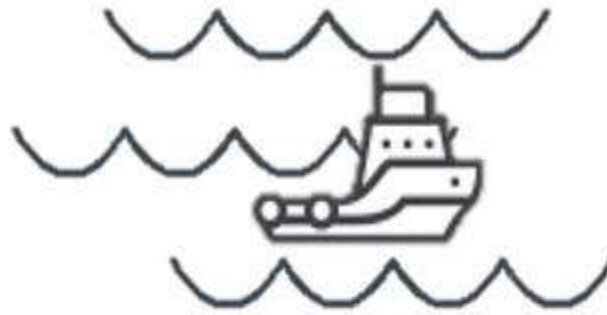


# Common sense approach

- Establish two zones

Figure 2

Dirty Zone	Clean Zone
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## Working Procedures

- Dig out the contaminated material.
- Dispose of it.
- Certify land is asbestos free.
- Job done.

■ Easy !!





## Not so easy - a problem

- How do you know the ground is asbestos free?
- What does **“asbestos free”** actually mean?



# A very big problem

## First attempts:

- Remove 100 mm
- Test ground
- Find asbestos
- Remove 100 mm
- Test ground
- Find asbestos
- Remove 100 mm .....



## A very big problem

- **Always** found some level of asbestos material/fibres.
- But: was it a **risk**?
- No one knew.





What happened next?



**A series of simple experiments**

# No. 1 Relate f/ml to cont. level

Figure 3

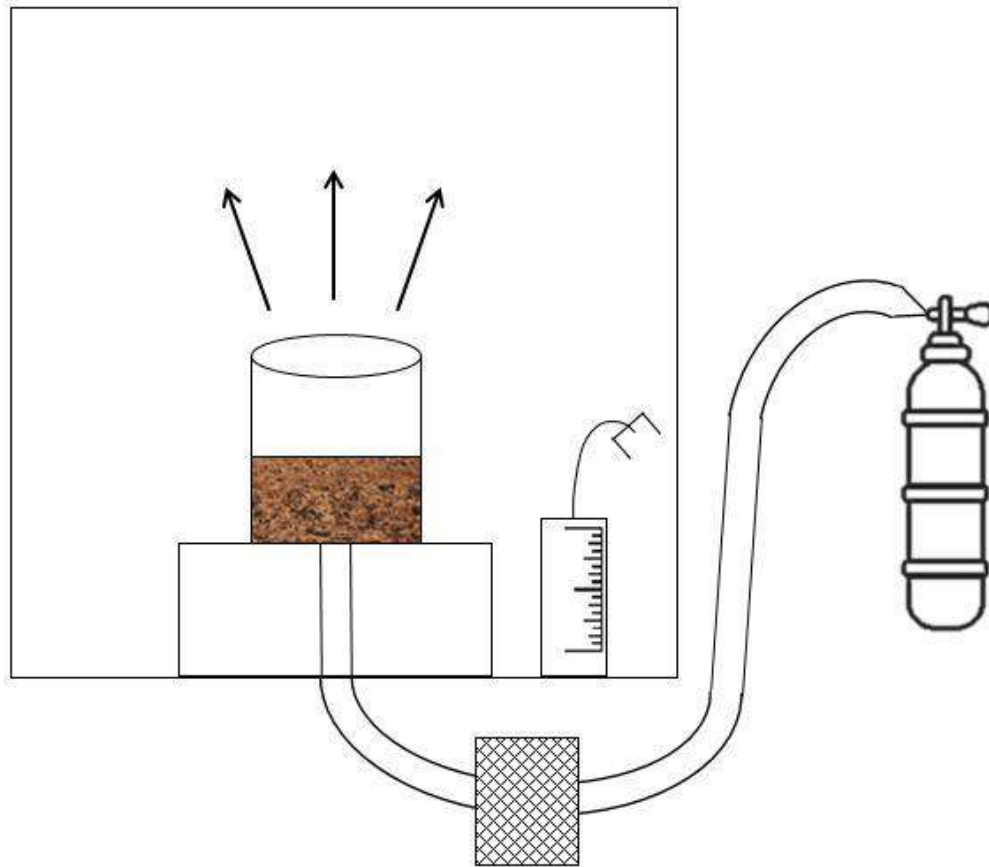
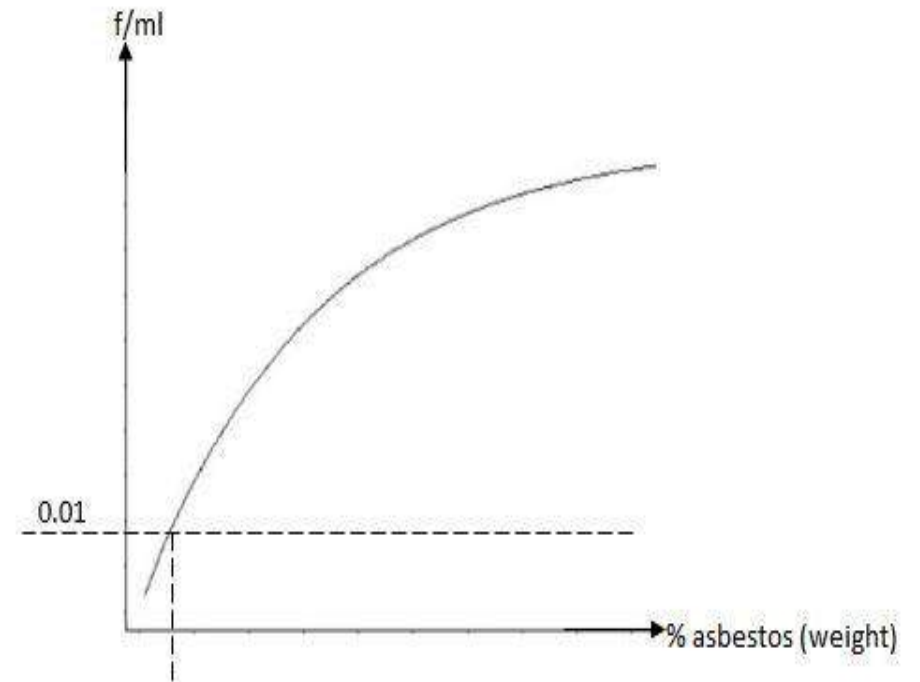


Figure 4



## No. 2 Relate $f/m_l$ and water in soil

Figure 5

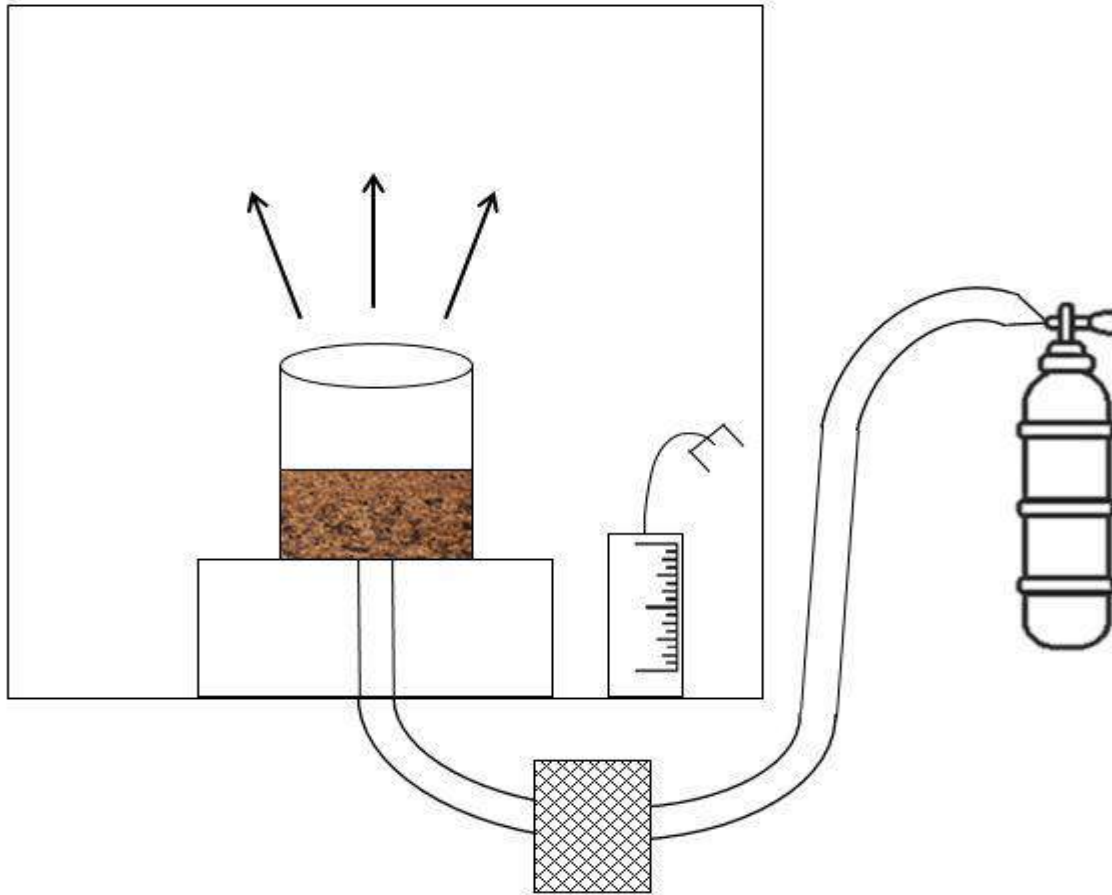
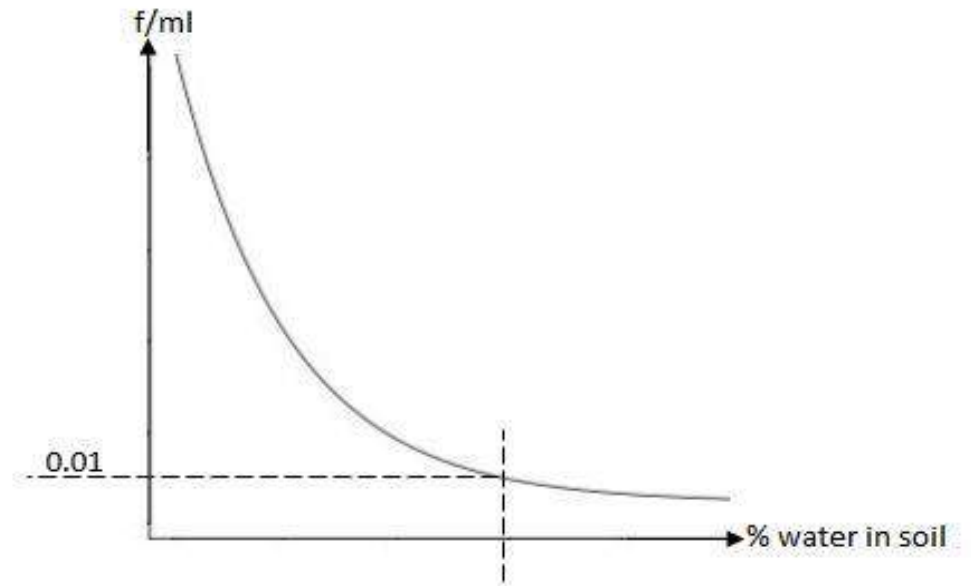


Figure 6





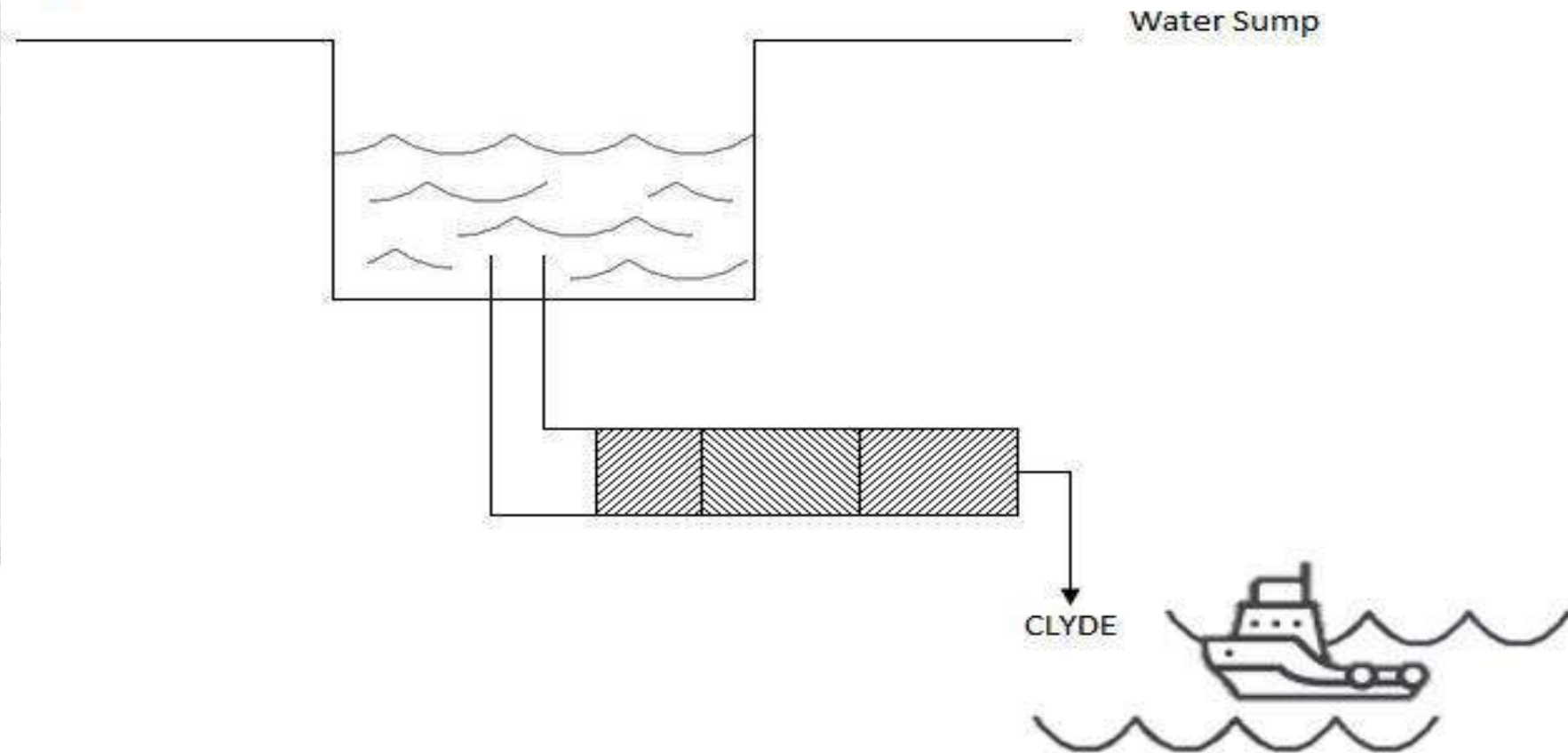


Pretty good, but another problem

- **Now have rather a lot of contaminated water.**
- **SEPA do not like lots of contaminated water going into the Clyde Estuary**

## No. 3 Filtration experiments

Figure 7





## The Results

- We know how much wt % asbestos in soil will give “negligible risk”.
- If soil level is above this then we know how much water to put in to lower risk.
- We know how to filter the water to minimise risk to the environment.

Pretty good



Thank you very much said the R.N. (and the HSE)





## What happened next?

- **Two years later (1988).**
- **Construction of a very large hospital in Clydebank.**
- **Similar problem as the subs:  
(ex shipyard in zone 1, contaminated land in zone  
2).**



## A very big problem

- **BUT**, zone 2 was the site of a large Turner and Newall asbestos factory.
  - Closed down, T&N walked away.
  - L.A. made safe by burying all of the asbestos materials.
- 
- **One of the largest asbestos tips in Europe.**



# Third large scale job in UK

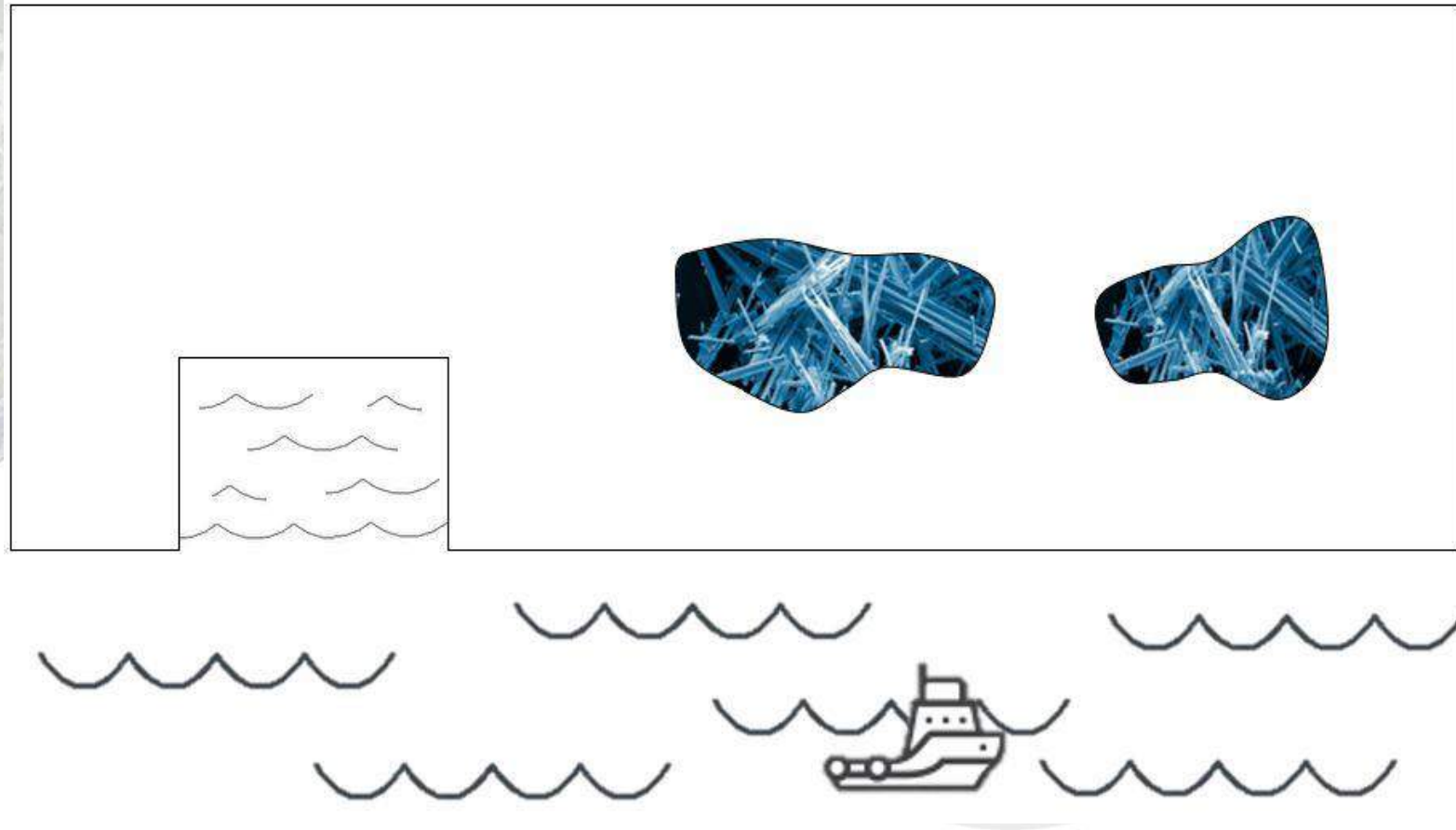
**Build a huge new hospital on one of the largest asbestos dumps in Europe.**





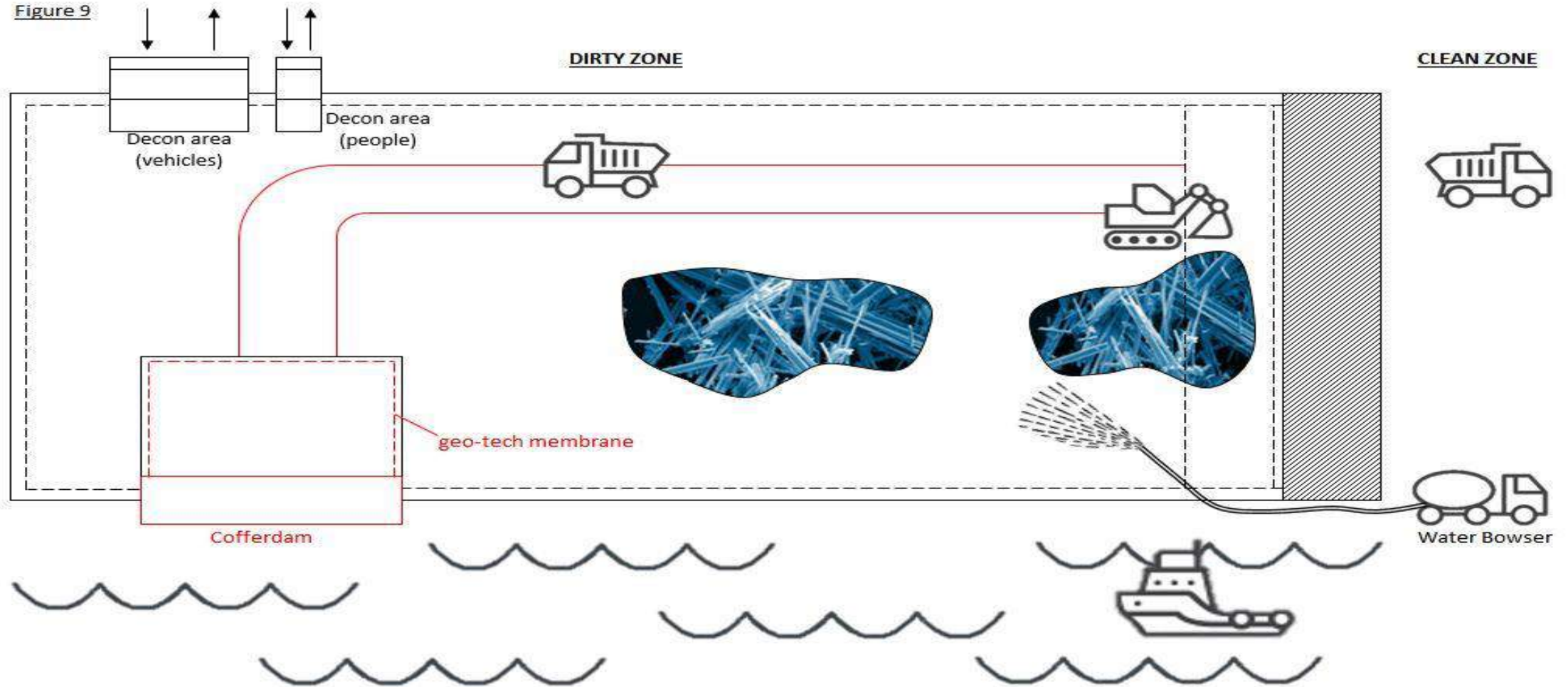
# Largest asbestos tip in Europe

Figure 8



# Working Protocols

Figure 9

















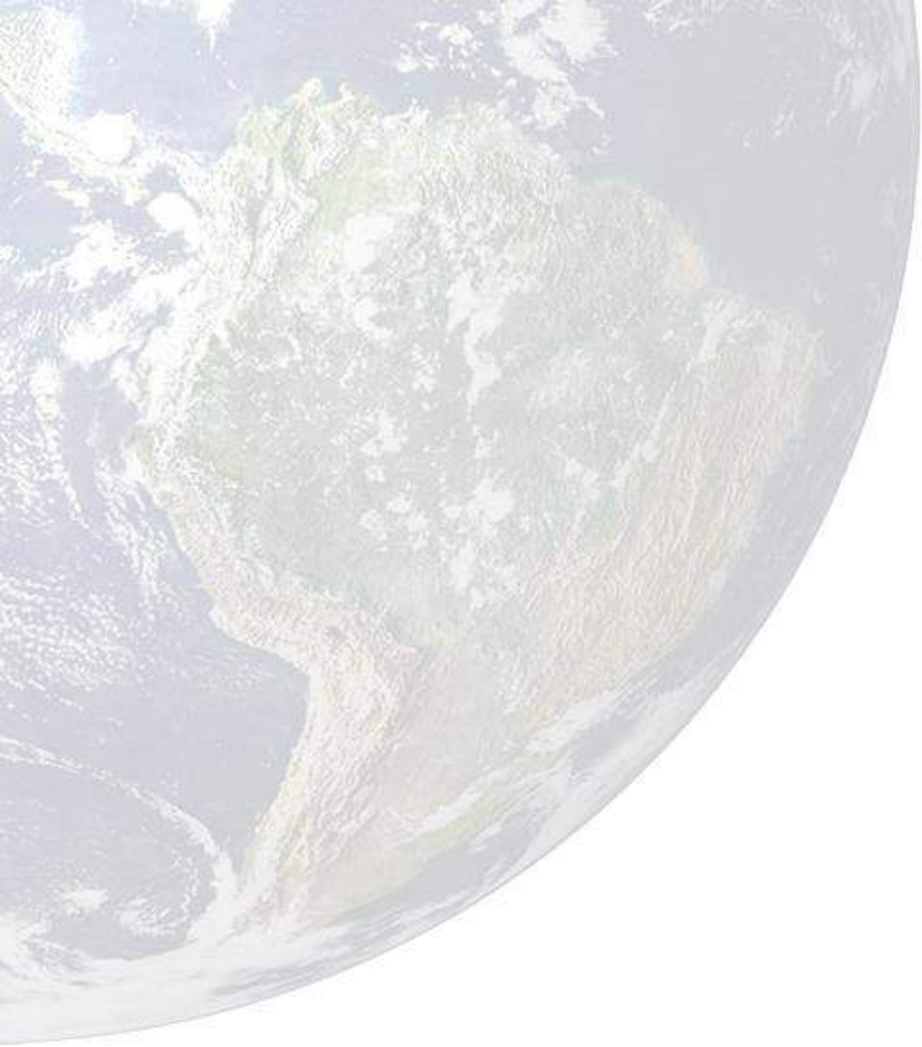




# Golden Jubilee National Hospital







## Part 2





## The current position

- Increasing amount of building on “brown field” sites.
- Very many of them contaminated.
- For example:



# Buried AC Pipes





# Buried AC Fragments





# Fly-Tipped AC and AIB





# Buried Asbestos Rope





# Buried Asbestos Textile and Raw Insulation (Blue)





# Made Ground with Loose Asbestos Fibres







## A Word of Caution

- **Virtually ALL ‘problem sites’ on which ACS has been commissioned had previously been subject to a Geotechnical Site Investigation.**
- **Asbestos Site Investigation requires a different approach and competencies.**

# Asbestos Specific Site Investigation







# Options for Asbestos Contaminated Land Depend on:

- **Asbestos Legislation**
- **Health & Safety Legislation**
- **Environmental Legislation**
- **Waste Legislation**

**There are conflicts in some areas of the  
different sets of legislation.**



**and also on:**

- **Extent of contamination**
- **Classification of ACM's**
- **Presence and concentration of loose fibres**
- **Intended use of site**
- **Local environment / political drivers**



# The Remediation Plan

- Now have well defined procedures, based on good science
- Assess options against **REAL** risk as opposed to **PERCEIVED** risk  
*(taking account of all legal and technical considerations)*
- Consider **END USE** of site but also **SAFE WORKING** for the remediation and during subsequent development





# Typical Remediation Options

No Remediation – Leave as ‘contaminated land’ and design safe work methods





# Remediation by Wholesale Disposal (Special Waste) – Waste Classification Essential





# Remediation by Onsite Relocation and Burial





# Remediation by Onsite Capping





# Remediation by Sorting / Waste Stream Segregation





## In ALL Cases

- Remediation Plan and Authorisations
- Notification Likely (ASB5 or>NNLW1)
- Licenced or Competent Contractors
- Contractors Insured / Medicals
- POW / RAMS
- Supervision, Monitoring and Testing
- Waste Classifications and Testing





# Be Safe Not Sorry

**Strongly suggest competent asbestos consultancy carries out:**

- **Assessment**
- **Remediation advice / plan**
- **Project Management of remediation**
- **Preparation of Remediation Statement and other Documentation**

# A little financial help: Land Remediation Relief

- Relief claimed against qualifying expenditure.
- Available to Companies cleaning up contaminated land acquired from a third party.
- 100% on qualifying expenditure.
- 50% on costs of clean up.
- Deduct from Corporation Tax.





## Qualifying Expenditure

- **Incurred on land which is contaminated or derelict.**
- **Would not have been incurred if not cont./der.**
- **Cost of establishing level of cont. and remediation.**
- **Staff, materials for third party (see caveats).**



Details

[www.hmrc.gov.uk/manuals/cirdmanual/  
cird60050.htm](http://www.hmrc.gov.uk/manuals/cirdmanual/cird60050.htm)



Thank you folks – any questions?  
Please make them easy – or else!





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