DAMAGE:

THE POOR CONDITION OF ASBESTOS IN OUR SCHOOLS, HOSPITALS & HOUSES

An analysis of 3 million asbestos samples from Alpha Tracker®

alpha tracker

FOREWORD

alpha tracker

Alpha Tracker® is a leading asbestos software system in the UK, with a vast repository of asbestos data for millions of buildings. The developers of **Alpha Tracker**®, **Start Software**, are committed to supporting the advocacy work of various organisations including **Mesothelioma UK**, the **Mavis Nye Foundation**, **NORAC**, and **Airtight on Asbestos**, to improve the management of asbestos in UK buildings.

Start Software is also committed to the **OpenAsbestos**® data sharing standard and supports the work of the **UK National Asbestos Register**, UKNAR. **Alpha Tracker**® is the first asbestos system to be fully **OpenAsbestos**® compliant.

To shed light on the state of asbestos across various sectors, Start Software requested ten of the largest UK asbestos consultancies, all **Alpha Tracker**® users, to share summarised data with Professor Simon Wilson, Chair of Statistical Uncertainty and Risk, from Trinity College Dublin. Professor Wilson was then commissioned to analyse and compare the condition of asbestos in education, healthcare, domestic properties and commercial businesses.

Professor Wilson's report is included in full as an appendix at the end of this report. Please do read the key facts and highlights from the report and share widely. The state of asbestos in the UK is worrying and appears to be deteriorating. There is much important work to be done.

Robin Bennett
Director, Start Software
May 2023

start software

INTRODUCTION & BACKGROUND

In February 2022 the Work and Pensions Select Committee completed its inquiry into the Health and Safety Executive's management of asbestos in the UK. The inquiry identified that there was little evidence for the committee to consider about the extent and condition of asbestos in UK buildings. Current regulations for the management of asbestos require 'duty holders', most commonly the owners or managers of buildings, to keep their own record of asbestos in the form an asbestos plan. The data contained in these records are not collated and organised in a central register and consequently the Health & Safety Executive does not have a complete understanding of the current position. In fact, the HSE cannot say with any certainty how many buildings contain asbestos.

The Work and Pensions Select Committee recommended that, "the HSE works with others in government to develop a central digital register of asbestos in non-domestic buildings, describing its location and type." However, the HSE has disputed the utility of a central register, while questioning the high costs of such an endeavour. In a recent Westminster Hall debate the Minister Mimms Davies, stated that, "a new register would require significant resources from duty holders and the Government […] The concern is about duplication of information, and there is no clear understanding that risks of exposure would be improved."

The findings of the select committee and the subsequent reaction from the HSE and Government has moved industry bodies to respond. In November 2022 the UK's leading associations representing the interests of asbestos surveyors and analysts – ATAC and NORAC – published their report about the presence and condition of asbestos in buildings. This report analysed a large electronic data sample compiled from routine asbestos survey data collection and report generation. This demonstrated that empirical data already exists, and that collating and analysing this data can be relatively straight forward.

Start Software, a software development company specialising in software for asbestos consultancies, has now added to this policy debate with Professor Simon Wilson's analysis of over 3 million asbestos samples across 700,000 buildings in the UK, including schools, hospitals and houses.

DATA SUMMARY

3.5 million asbestos samples were analysed across more than 600,000 surveys in 700,000 buildings.

More than 1.3 million of these samples were found to contain asbestos after lab analysis.

Key Finding 1

More than <u>half</u> of all samples show that the asbestos material is already damaged:

602,952 45.5%

were recorded with **low damage**;

61,907   4.7%

were recorded with **medium damage**;

93,003   7%

were recorded with **high damage**

551,198 41.6%

were recorded with no damage;

Key Finding 2

1 in 5 asbestos-containing materials in hospitals and other healthcare settings have high damage:

High damage **20%**

Medium damage **5.2%**

Low damage **26.3%**

Key Finding 3

In schools 55% of asbestos is already in poor condition:

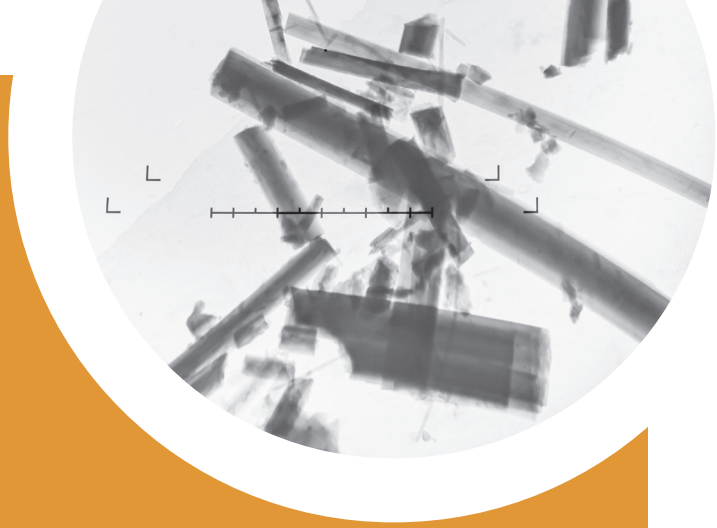**Low damage 37.3%**

Medium damage 5.5%

High damage 11%

Key Finding 4

1 in 9 asbestos samples taken are significantly damaged.

These materials are at serious risk of releasing fibres into the air.

Key Finding 5

In schools and hospitals, at least 1 in 3 damaged samples contains Amosite:

Education   45%

Healthcare 35%

Amosite has a 100-fold greater risk for Mesothelioma compared to Chrysotile.

Analysis of Asbestos Sampling Data in the UK

Professor Simon Wilson

April 2023

This report describes the analysis of asbestos sampling data as provided to me by Start Software, the developer of Alpha Tracker®, a widely used software system used to locate, analyse and manage asbestos in buildings.

Interest is in looking at the rate of positive samples across different sampling companies and sectors (such as Education or Domestic buildings), as well as the proportion of positive samples that have different levels of damage.

Data

Start Software provided with summarised, anonymised, non-attributable data from a representative sample of 10 of the largest UKAS-accredited asbestos sampling companies in the UK. The data record how many surveys, buildings and samples each company has made. On occasion, more than 1 building is recorded in a survey, and typically many samples will be taken within a survey. The number of samples that were recorded positive, as well as the damage level (one of 4 categories: No, Low, Medium, High) were also recorded. For each company, these data were split by time period (either Older or Recent, with recent being in the last 12 months) and sector (one of Commercial, Domestic, Education and Healthcare). So, for each company, the data on sampling is separately recorded for the 8 different combinations of time period and sector.

Summary Statistics

A total of 3,712,251 samples are recorded in the data across 691,861 surveys and 778,175 buildings, of which 1,390,535 (37.5%) were recorded positive. As regards the positivity rate by sector and company, there are variations and those differences across companies are statistically significant. Table 1 shows the positive sample rate by sector.

The level of damage among the positive samples was recorded as:

- 579,001 (41.6%) were recorded with no damage;

- 650,236 (46.8%) were recorded with low damage;

- 64,593 (4.6%) were recorded with medium damage;

- 96,704 (7.0%) were recorded with high damage;

- 1 sample had no damage level recorded. This is ignored in the rest of the analysis and has a negligible effect on it.

Table 2: Shows the percentage of positive samples with different levels of damage by sector. There are significant differences in the rates of high damage by sector, but not of the none and medium damage levels. There are significant differences in the proportions of each low and high damage level by company e.g. the proportion of positive samples that are recorded as having no damage varies significantly by the company doing the sampling, and similarly for low, medium and high damage.

Table 3: Shows the percentage of positive samples that are damaged by by asbestos type by sector.

Sector	Proportion of positive samples	Margin of error on estimate of proportion of +ve samples
Commercial	35.3%	$\pm$ 1.1%
Domestic	35.7%	$\pm$ 1.8%
Education	42.7%	$\pm$ 1.6%
Healthcare	38.0%	$\pm$ 3.5%

Table 1. The percentage of samples that are positive, with the margin of error.

Sector	No Damage	Low Damage	Medium Damage	High Damage
Commercial	36.8%	43.4%	6.4%	13.4%
Domestic	43.0%	50.1%	3.7%	3.1%
Education	45.9%	37.7%	5.5%	10.9%
Healthcare	48.0%	26.7%	5.2%	20.1%

Table 2. The percentage of positive samples with each damage level by sector.

Sector	Chrysotile (Type 1)	Amosite (Type 2)	Crocidolite (Type 3)
Commercial	43.8%	16.7%	2.6%
Domestic	49.3%	6.5%	1.1%
Education	30.4%	21.7%	2.0%
Healthcare	29.6%	18.4%	4.0%

Table 3. The percentage of positive samples of each asbestos type that are damaged by sector.

Visualisations of the Data
(shown overleaf)

Figure 1: Shows the proportion of samples determined to be positive by each company against the total number of samples tested by that company. This is done for the 4 different sectors. It illustrates the differences in this proportion across the 4 sectors. It also shows that there does not appear to be any trend in the positivity rate as a function of the number of samples the company is taking.

Figure 2: Shows the proportion of positive samples with the 4 different damage levels as recorded by each company. It illustrates that there is considerable variation in the rates of damage according to the company that is doing the testing, as well as showing the greater
variation by sector for the "Low" and "High" damage categories.

Figure 3: Shows the proportion of positive samples that are damaged of each absestos type recorded by each company. Like Figure 2, it illustrates that there is considerable variation in the proportion of positive samples that are damaged of each type by company.

Conclusion

- Around 11.6%, or about 1 in 9, positive samples taken in this data set exhibit medium or high damage, and are therefore of particular concern with regard to creating dangerous asbestos exposure. This rate is 16.4%, or about 1 in 6 positive samples, for the education sector, and 25.3%, or 1 in 4 positive samples, in the healthcare sector.

- The data do not give us much information on the causes of differences in positivity rate and in the rate of different damage levels that we see by company. Potential reasons, that would have to be investigated separately, are:

  - Different companies specialise in asbestos management at different risk levels e.g. particular companies are preferred in situations where the perceived risk is higher;
  - Different levels in testing competence between the companies, leading to greater or lower detection rates.

I assume that there are other reasons that would occur to someone who is expert in the field.
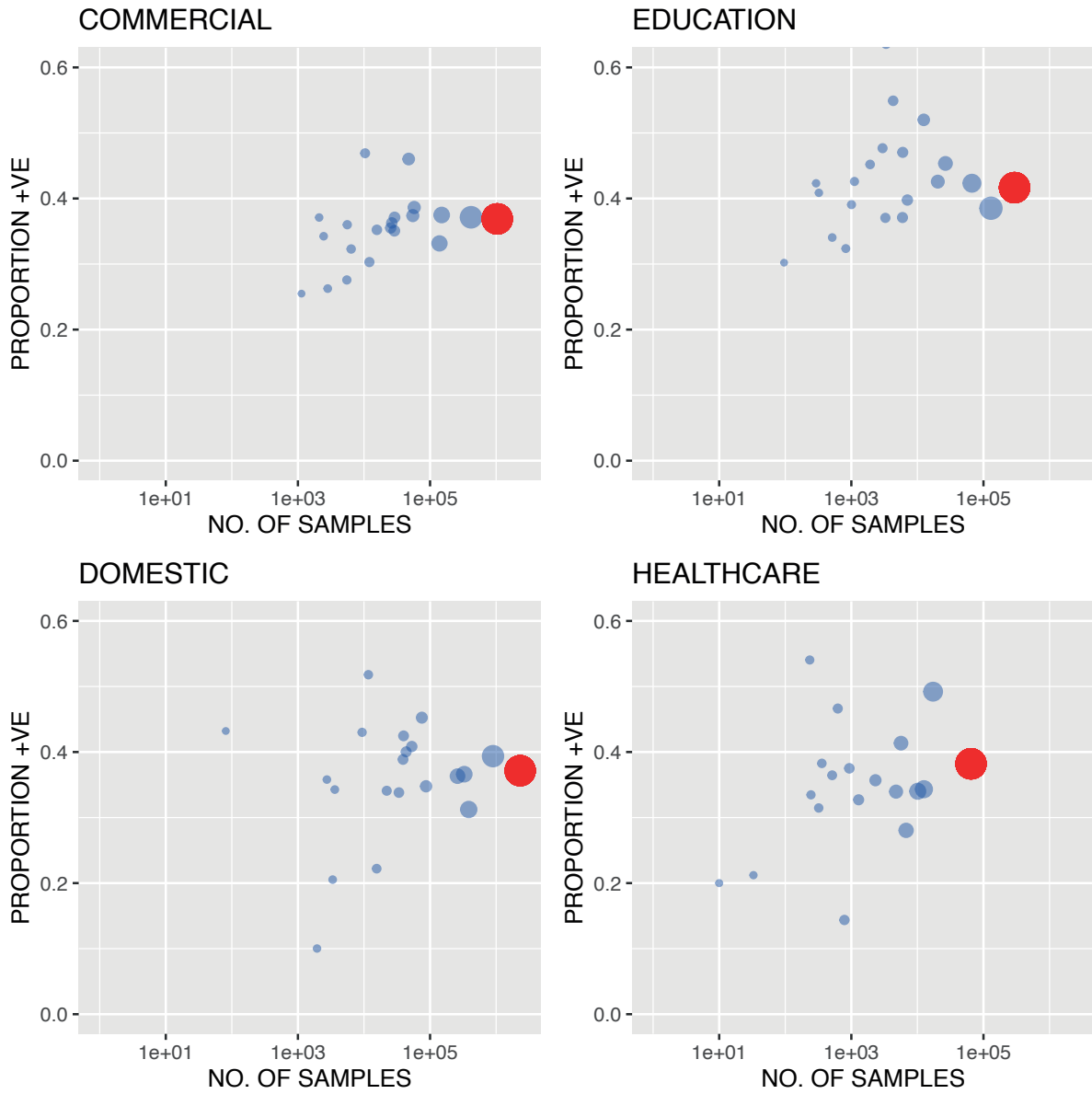
Figure 1. The proportion of positive samples recorded by each company over the 4 sectors. The size of the circle corresponds to the number of samples made by the company. The red circle is the proportion over all companies.

Figure 2. The proportion of positive samples with the 4 damage levels recorded by each company over the 4 sectors. The size of the circle corresponds to the number of samples made by the company. The red circle is the proportion over all companies.

Figure 3. The proportion of positive samples that are damaged and of asbestos types 1, 2 or 3, by each company over the 4 sectors. The size of the circle corresponds to the number of samples made by the company. The red circle is the proportion over all companies.
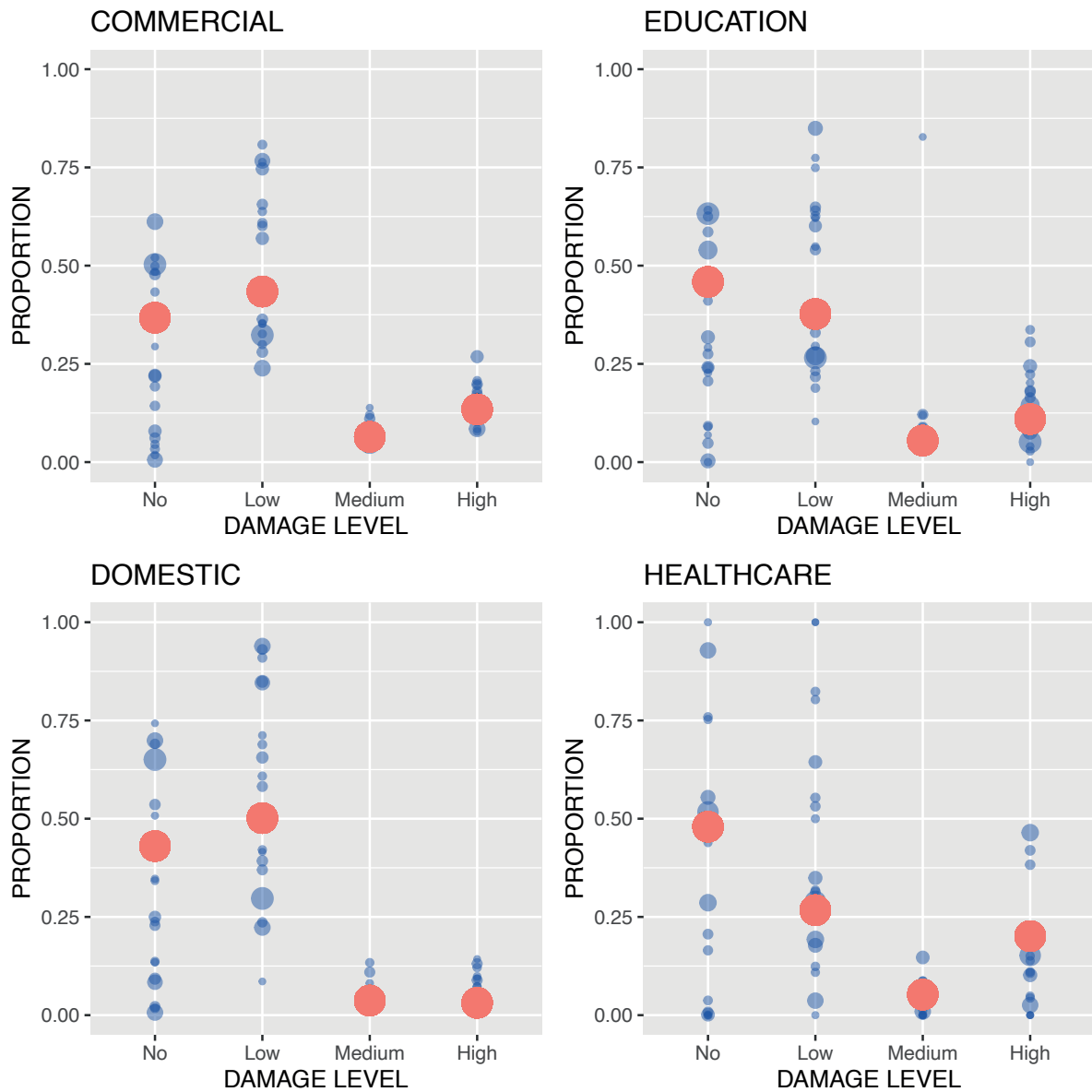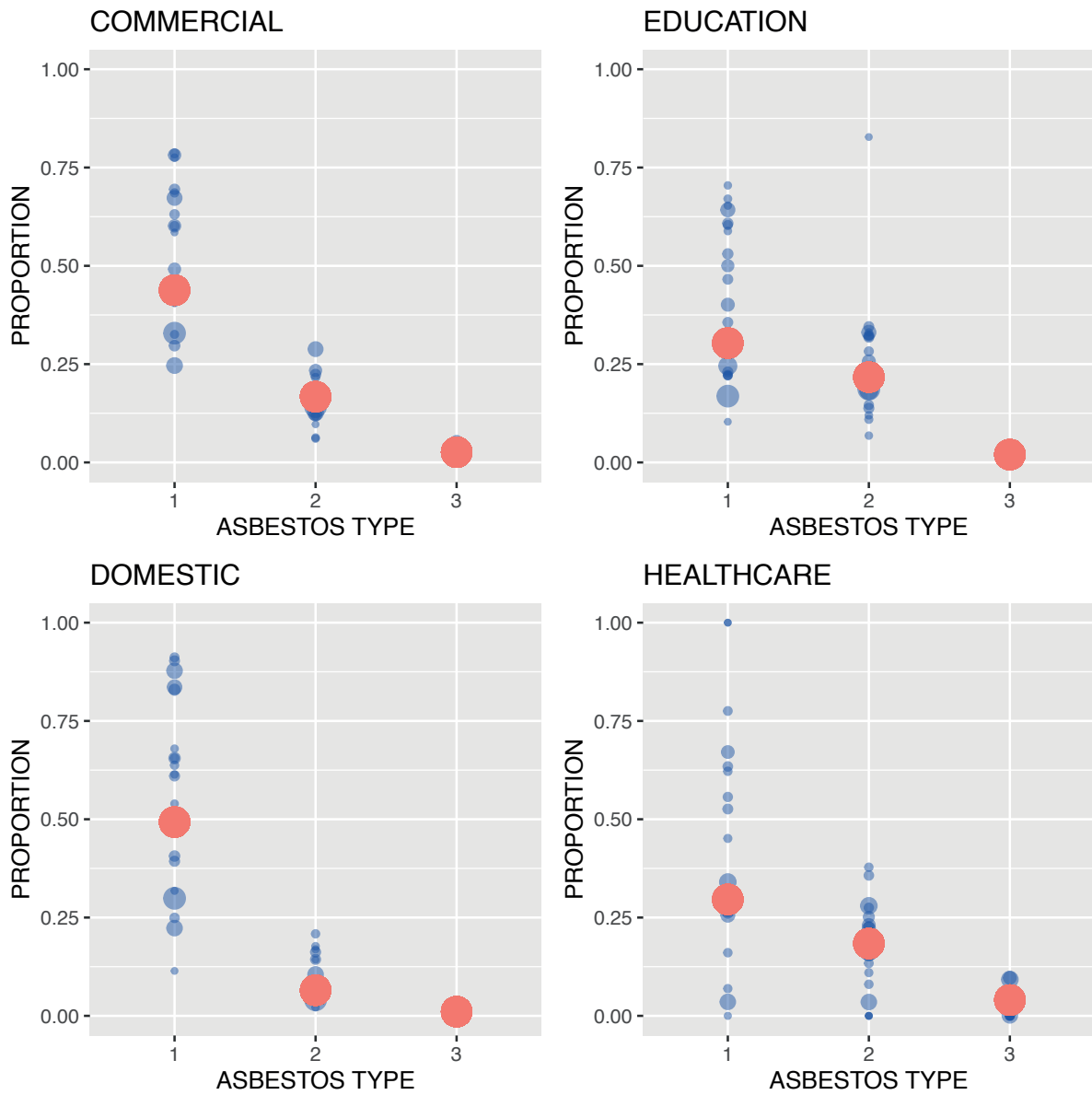
POSTSCRIPT

The findings of this report are broadly consistent with the analysis conducted by ATAC and NORAC. Taken together both these studies indicate that there is a high proportion of asbestos, with signs of damage, currently in UK buildings. This is alarming and suggests that the current policy, to leave asbestos in-situ, is ineffective. It also suggests that the HSE's oversight of the 'Duty to Manage' is as Professor Kevin Brampton told the Select Committee, "insufficient to ensure that we know just how much asbestos is being disturbed and how well it is being managed."

The findings of this report also highlight the benefits of a data-driven approach to understanding the condition of asbestos in buildings and how a centralised register would help to better manage asbestos in-situ. Electronic data is already collected, via asbestos surveys, by consultancies and industry bodies. The task of compiling a central register does not involve the duplication of existing data collection. Nor does it require significant, or unaffordable resources.

It is necessary to bring all existing datasets into a single format to enable the totality of data to be analysed and updated. This is not without difficulty, but it is undoubtedly achievable and should be undertaken with immediate effect by the Government Digital Service in consultation with the industry, as the Select Committee rightly recommended.

[1] House of Commons Work and Pensions Committee, The Health and Safety Executive's approach to asbestos management, Sixth Report of Session 2021–22, March 2022

[1] https://hansard.parliament.uk/commons/2023-04-19/debates/35AD7922-57BB-4501-835C-F7864128E12E/AsbestosInWorkplaces

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Allium CREATING SAFER SPACES
www.allium.uk.net

HSL Compliance An SGI Company
www.hslcompliance.com

Tetra
www.tetraconsulting.co.uk

Other useful links:

NORAC
www.norac.org.uk

MESOTHELIOMA UK
www.mesothelioma.uk.com

OpenAsbestos®
www.openasbestos.org

UKNAR UK National Asbestos Register
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