Written evidence from Airtight on Asbestos (ASB0016)

Executive Summary

This response is submitted by ResPublica on behalf of the Airtight on Asbestos campaign. The campaign, founded and supported by the independent asbestos campaigner Charles Pickles, aims to improve the UK's health and safety regime for the management of asbestos in buildings, to bring regulatory standards in line with the best international practice. Airtight on Asbestos provides a particular focus on the problems of asbestos in schools, because of the high level of risk these buildings present to workers and children.

1. What are the current risks posed by asbestos in the workplace? Which groups of workers are most at risk?

- The incidence of mesothelioma among those who do not work with or come into direct contact with asbestos – including teachers and nurses - suggests that the risks of 'secondary exposure' in the workplace needs to be reconsidered.
- System-Built Schools (e.g. CLASP-type) pose an especially high risk of exposure to amosite – a more toxic and harmful form of asbestos, that is more likely to become airborne. Many of these schools are old and in need of replacement.
- For the period 2011-2018 Primary school teachers, Teaching assistants, Nurses and Nursing auxiliaries counted among the highest ranked mesothelioma death rates respectively in a total of 368 female occupations. These rankings are much higher than would be expected in the general female population.

2. How effective is the current legislative and regulatory framework for the management of asbestos?

- The HSE's policy is not to remove but to manage asbestos in buildings. This starts with the presumption that the proper management of asbestos will result in minimum disturbance, and a remote risk of exposure. This works fine for most buildings, most of the time. However, it cannot assure safety in buildings that contain the most dangerous forms of asbestos and were building use is more likely to result in disturbance (e.g. schools).
- The current legislative and regulatory framework in the UK makes no provision for a safe environmental limit for asbestos, or routine air monitoring in buildings to assess levels of airborne asbestos. Airborne asbestos fibres are not visible to the eye, so those responsible for managing asbestos are unable to guarantee safety by ensuring fibre levels are being maintained at acceptable levels. This assumption is especially unsafe in CLASP-type schools.
- The management of asbestos is reliant on 'Duty Holders' and the assumption that they can effectively comply with HSE regulations. However, some duty holders are either unaware of their responsibilities or unable to fulfil them. In practice, confusion about the duty holder's responsibilities can contributes to problems of compliance and a lack of awareness among workers about the presence and precise location of asbestos in the workplace. The issue is particularly complicated in schools, where the duty holder can vary depending on whether the school is privately owned, or state funded, has academy status or is local authority controlled.

3. How does HSE's approach to managing asbestos compare to the approach taken in other countries? Are there lessons that the UK could learn from best practice elsewhere?

- The UK's approach to managing asbestos continues to lag behind the practice of many other developed countries including the Netherlands, Belgium, France, Italy, Poland. These have all

introduced more challenging standards including 'National Asbestos Plans' based on more rigorous data collection and data sharing, enhanced testing, and targets for the phased removal of asbestos.

- Following extensive campaigns to research the environmental risks presented by asbestos in buildings, both the Netherlands and France concluded that environmental exposure to asbestos presented a significant risk to public health and introduced a number of reforms, including: the introduction of environmental air limits for asbestos; the routine practice of mandatory periodic air monitoring using Transmission Electron Microscopy; a highly targeted approach to asbestos removal – based on improved asbestos audit and measurement and concentrating on the phased removal of asbestos roofing.

4. How does HSE measure and report its progress in mitigating the risks of asbestos?

- The HSE measure and report that duty holders are compliant with CAR12 and that there are no systemic failures in the management of asbestos. But this does not sit comfortably with the long list of incidents which the asbestos consultancy industry is well aware of and remain largely unreported by the HSE.

5. Does HSE keep adequate records of asbestos in public buildings?

- The HSE does not keep records of asbestos in public buildings. This duty is passed onto those responsible for buildings. These records are not collated or held centrally by the HSE in a way in which data can be usefully analysed and monitored. A centralised register, or national asbestos database, is needed to assure public safety. Other countries (e.g. Poland, the Netherlands) have proven systems for managing records more effectively. The application of new technology should be used to create and maintain adequate records.

6. Is HSE making best use of available technology and systems to monitor the safety of asbestos which remains in buildings?

- The HSE should update CAR12 to include the mandatory use of QR code signage and smart-phone technology for the management and control of asbestos in buildings. This is a simple innovation, which has become common practice in the hospitality sector through the use of the NHS Covid 19 app. All buildings known to contain asbestos should be given a unique QR Code that can be incorporated into a sign. This sign should be displayed in a public and accessible part of the building (e.g. Entrance / Reception). It should remind visitors to scan the code so they can download the building's asbestos register in seconds.
- The HSE should adopt the use of Transmission Electron Microscopy (TEM) for analysing asbestos in the air. TEM has a magnification 500 times greater than Phase Contrast Microscopy (PCM) which is used in the UK. TEM can therefore detect smaller and different types of fibres including thin asbestos fibres (TAF), which are proven to be carcinogenic.

7. Does HSE commit adequate resources to asbestos management in line with the level of risk?

- The HSE has experienced a funding reduction of 45 per cent and a fall of over 500 front line inspectors over the past decade. Annual death rates for asbestos related disease (10,000) far exceed those from road traffic accidents (1,472 in 2020) and fire (286 deaths in 2019/20). The level of resource committed to the control of asbestos completely underestimates the comparatively higher risks which this substance presents to human life.

8. How robust is the available data about the risks and impact of asbestos in the workplace? What gaps in evidence need to be filled?

- We have very little knowledge of the level of contemporary fibre concentration in UK buildings, just assumptions. The available evidence is clear in identifying the unacceptable level of risks to workers presented by “typical” concentrations of airborne fibres in buildings containing asbestos. It is not only those in the workplace that are at risk. The reality is that children in schools could be exposed from an early age.
- There are a number of gaps in the evidence base:
  - Building owners, agents or employers cannot demonstrate whether airborne asbestos fibres are present in their buildings, or whether they are being maintained below the defined level of ‘acceptable’ risk.
  - Not all employees know if their workplace contains asbestos or where precisely within the building asbestos can be found.
  - The number of adults that have subsequently died from exposure to asbestos as a pupil in school is unknown.
  - We do not know the occupation of all women who have died from mesothelioma.
  - Deaths due to mesothelioma do not record an occupation for those above the age of 75.
  - HSE statistics do not include deaths for support staff who work in schools (caretakers, cleaners and secretaries).

9. Is HSE drawing on a wide body of international and national regulatory and industry expertise to inform its approach to the management of asbestos safety in buildings?

- The HSE is duty bound to adopt best practice and write into Guidance the "best practicable techniques" under the Health and Safety at Work Act 1974. Yet practice in the UK is lagging other developed countries with lower levels of historical asbestos use and lower mesothelioma deaths. The international evidence should inform the policy road map for improving the management of asbestos in the UK.

10. How effectively does HSE engage with external stakeholders and experts about its approach to the regulation of asbestos?

- There is a deep founded concern among many asbestos experts (including asbestos consultants} about the HSE’s approach to the regulation of asbestos. But since all asbestos consultants and removal contractors are either accredited by UKAS or licenced by HSE, this effectively muzzles criticism of the regime. This is a source of frustration and a barrier to constructive dialogue.

1. What are the current risks posed by asbestos in the workplace? Which groups of workers are most at risk?

1.1 The ban on the use of all asbestos, enacted over 20 years ago, has limited the risks to those working in heavy industries traditionally associated with handling this substance. Although deaths from asbestos related disease, including mesothelioma, have continued to rise this is due to the long latency period between exposure and diagnosis. The HSE predict that these figures will fall over the current decade as the population previously employed in these industries declines.[1]

1.2 However, the presence of asbestos in buildings, built before the ban was introduced in 1999, continues to present a risk to those in the workplace. Many public buildings contain high levels of asbestos, including over 80% of all schools[2] and 90% of hospitals.[3] Much of this estate is aged and in a deteriorating condition. If asbestos is disturbed and released into the air it can be inhaled, resulting in chronic low-level exposure. Since mesothelioma can develop from exposure to a small concentration of asbestos fibres, those working in premises containing asbestos are at potential risk. The escalating incidence of mesothelioma among those who do not work with, or come into direct contact with asbestos, suggests that the risks of 'secondary exposure' in building needs to be reconsidered.

1.3 Schools are a particular work environment that can present specific challenges due to the nature of their use. Teachers and especially boisterous pupils might inadvertently disturb asbestos.

1.4 System-Built Schools (for example CLASP, SCOLA, SEAC, MACE, ONWARD) pose an especially high risk of asbestos exposure. These buildings contain structural columns fireproofed with large amounts of amosite – a more toxic and harmful form of asbestos, that is known to be more friable, more easily disturbed, and therefore more likely to become airborne. Between 1945 and 1980 about half of all schools were constructed in this way in the UK. They were originally meant to last just 40 years, but many, including around 3000 CLASP schools, remain standing long past their intended use and are now approaching 70 years old.[4]

Workers most at risk

1.5 It is recognised that trade workers, predominantly men, are most likely to be exposed to asbestos as part of routine maintenance and construction. But it is increasingly the case that other occupations are at risk. According to one study, teachers are five times more likely to contract mesothelioma, and nurses three times more likely, because of the locations in which they work.[5]

1.6 Analysis of HSE data (2020 a)[6] undertaken by Robin Howie (included in his letter to the Minister Mims Davies MP and Chair of the Work and Pensions Committee, Stephen Timms MP)[7] identifies that for the period 2011-2018 Primary school teachers, Teaching assistants,

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[1] https://www.hse.gov.uk/statistics/causdis/mesothelioma/mesothelioma.pdf Figure 1, page 3.
[2] Burcke, T., 2018. Asbestos in Schools. London: Iskaboo Publishing. P. 17.
[3] British Broadcasting Corporation (BBC), 2018. 'Nine out of 10 NHS trusts have asbestos in hospitals'. [online]. Available at: Accessed: 15 October 2019.
[4] HSE Asbestos in system buildings Control of Asbestos Regulations 2006 Guidance for duty holders Updated 18 September 2008
[5] Howie, R., 2018. 'Mesothelioma deaths in teachers and nurses in Great Britain', Environmental Health Scotland, 29 (4), pp.35-37. P. 36.
[6] Health and Safety Executive (2020 a) Mesothelioma mortality by occupation statistics in Great Britain, 2020. (www.hse.gov.uk/statistics/tables/mesooccupation.xlsx).
[7] Letter to Mims Davies MP and Stephen Timms MP dated 7th March 2021.

Nurses and Nursing auxiliaries accounted for the 3rd, 4th, 18th and 19th highest ranked mesothelioma death rates respectively in a total of 368 female occupations. These rankings are much higher than would be expected in the general female population. Yet the HSE, and Government, does not support the view that teachers and nurses are at particular risk, based on the "Expected" number of deaths in the general population.

1.7 Howie contests that the HSE's use of the Proportional Mortality Ratio (PMR) as an index of relative risk is deeply flawed because the calculation of the "Expected" number of deaths in all occupations can be strongly influenced by the number of deaths that occurred in heavily exposed occupations. This underestimates the real risk to females that have not, historically, worked in occupations with high mesothelioma rates.

1.8 For the period 2001-2018 mesothelioma accounted for about 0.03 per 1,000 of all causes of death, by all occupations. The observed rates over the period 2011-2018 is about 170 times greater than this background rate for both male and female teachers and about 120 and 90 times the background rate for male and female nurses respectively. This suggests that teachers, nurses, and their assistants, are at very much higher risk of developing mesothelioma than those in the general population and that HSE's estimation of risk among these groups is incorrect.

1.9 In this context it is likely that asbestos in schools presents a particular and significant risk, not only to staff, but also to pupils.

Unknown groups

1.10 Occupations are not recorded for mesothelioma deaths above the age of 75, yet more than half of all deaths occur above this age, with death rates increasing for this group despite falling for those aged below 70.[8] HSE statistics therefore under-represent the actual harm caused by asbestos exposure.

2. How effective is the current legislative and regulatory framework for the management of asbestos?

2.1 The HSE's policy is not to remove but to manage asbestos in buildings. The Control of Asbestos Regulations 2012 (CAR12) stipulates that it is 'usually safer to leave [asbestos] in place and manage it', provided it is in a 'good condition, well protected either by its position or physical protection'.[9]

The problem with 'Duty Holders'

2.2 Effective management of in-situ asbestos is reliant on the key assumption that 'Duty Holders' are aware of their responsibilities, can identify whether asbestos is in 'good condition', and are able to carry out their duties in compliance with HSE regulations.

2.3 These responsibilities include:

- The production of an asbestos register, identifying the location of asbestos within the building. This plan is to be held on the premises for referral by any third parties, such as maintenance workers.
- The regular updating of this plan, to assess the ongoing condition of asbestos, based on visual inspections.
- The remediation or removal of asbestos by a certified asbestos consultancy, in the event of a disturbance.

[8] Mesothelioma UK, 2018. 'National Mesothelioma Audit report 2018: for the audit period 2014-2016'. Available at: Accessed: 25 October 2019. P. 8.

[9] Health and Safety Executive (HSE), 2013. 'Managing and working with asbestos: Control of Asbestos Regulations 2012'. P.37.

2.4 However, responsibilities can be divided between different 'duty holders' depending on the building's owner or leaseholder. This complexity can mean that some duty holders are either unaware of their responsibilities or unable to fulfil them. This ultimately makes it 'more difficult for the government to effectively articulate universal responsibilities for such a role'.[10]

2.5 This problem is particularly apparent in schools, where the duty holder can vary depending on whether the school is privately owned, or state funded, has academy status or is local authority controlled. In 2019, Airtight on Asbestos issued a Freedom of Information (FOI) Request to all Local Education Authorities (LEA) in England, Scotland and Wales. Of 206 requests 158 responded. This identified that only 47.5% of LEAs were able to provide information about individual schools – including the location and types of asbestos - under their control as 'duty holder'.

2.6 In practice, confusion about the duty holder's responsibilities can contributes to problems of compliance and a lack of awareness among workers about the presence and precise location of asbestos in the workplace. In 2017, the National Union of Teachers (NUT) conducted an online survey with its members. The survey identified that nearly 50% of all teachers and school staff are not routinely informed by the duty holder about the presence and locations of asbestos in schools. Of those who had been told roughly 50% did not know where it was located.[11]

The limitations of managing asbestos in-situ

2.7 The UK's health and safety regime starts with the presumption that the proper management of asbestos in-situ will result in minimum disturbance, and a remote risk of exposure. This presumption works fine for most buildings, most of the time. However, it can not assure safety in buildings that contain the most dangerous forms of asbestos and were building use is more likely to result in disturbance.

2.8 The current legislative and regulatory framework in the UK makes no provision for:

- A safe environmental limit for asbestos
- Routine air monitoring in public buildings to assess levels of airborne asbestos.

So, how can duty holders demonstrate whether airborne asbestos fibres, that are not visible to the eye, are present in their buildings, or if these fibre levels are being maintained at acceptable levels?

2.9 The 'typical' concentration of airborne fibres inside buildings containing asbestos materials in good condition has been categorised at the mean level of 0.0005 fibres per cubic centimetre (0.0005 f/cm^3).[12] Based on the work of Hodgson and Darnton it has been calculated that a 25-year-old adult exposed to 0.0005 fibres/cm^3 of amosite for 1 year, would be at a 4 per million per year risk of contracting mesothelioma by age 80.[13] Yet the HSE has concluded that 1 per million per year is the limit of "acceptable" risk – exceeding the defined level of risk by four times.[14]

2.10 The only form of air monitoring currently undertaken in the UK is for the purpose of site clearance following the removal or remediation of asbestos. The current Clearance Indicator

[10] Burcke, T., 2018. Asbestos in UK Schools. London: Iskaboo Publishing. P.28

[11] National Union of Teachers (NUT), 2017. 'NUT 2017 Asbestos Survey Report'. [online]. Available at: Accessed: 11 October 2019.

[12] West JM (1997) Sources and uses of fibrous minerals. In: Fibrous materials in the environment. MRC Institute for Environment and Health: Leicester.

[13] Hodgson JT and Darnton A (2000) Quantitative risks of mesothelioma and lung cancer in relation to asbestos exposure. Annals of Occupational Hygiene, 44: 565-602.

[14] Health and Safety Executive (2001) Reducing risks, protecting people. HSE Books: Sudbury; Health and Safety Executive (1992, 1988) The tolerability of risk from nuclear power stations. HMSO: London.

of 0.01 fibres per cubic centimetre of air (0.01 f/cm^3) is 500 times greater than the 'typical' concentration of airborne fibres, in good condition, found inside buildings. The clearance level (0.01 f/cm^3) is determined by the capability of Phased Contrast Microscopy (PCM), the method used in the UK, which cannot detect fibres below this level.

2.11 The current legislative and regulatory framework in the UK assumes rather than assures safety and is simply not able to detect for environmental levels of airborne asbestos fibres in buildings. This assumption is especially unsafe in CLASP-type schools because:

- CLASP schools contain amosite asbestos, which is a 100 times greater level of risk than chrysotile;
- School children are likely to disturb the fabric of the building to a much greater degree than adults, and it is unreasonable to expect otherwise;
- The risk of contracting Mesothelioma is five times greater among children than a 35-year-old adult.

2.12 These factors mean that the starting presumption of "safety" in schools, need to be inverted, with the onus on the duty holder to prove safety through ongoing testing.

3. How does HSE's approach to managing asbestos compare to the approach taken in other countries? Are there lessons that the UK could learn from best practice elsewhere?

3.1 The Health and Safety at Work Act 1974 applies some broad duties and best practices to protect the workforce in so far as it is 'reasonably practicable'. Yet the UK's approach to managing asbestos continues to lag behind the practice of many other developed countries that have introduced more challenging standards including 'National Asbestos Plans' based on more rigorous data collection and data sharing, enhanced testing, and targets for the phased removal of asbestos.

3.2 Following extensive campaigns to research the environmental risks presented by asbestos in buildings, both the Netherlands and France have implemented reforms to improve the management of asbestos in buildings.

The Netherlands

3.3 Prof. Lex Burdorf undertook research on behalf of the Dutch Government to assess the risk of environmental and occupational exposure in the Netherlands.[15] Exposure levels, according to type and concentration of asbestos fibre were measured using Transmission Electron Microscopy (TEM) a far more accurate method than Phase Contrast Microscopy (PCM), which had previously been used in the Netherlands and is still used in the UK. (See Q6 for further commentary on the use of TEM technology).

3.4 Based on the findings of this research programme the Netherlands concluded that environmental exposure to asbestos presented a significant risk to public health and introduced a number of reforms, including:

- The introduction of environmental air limits for asbestos:
  - 0.002 fibres/cm^3 for chrysotile (2014) and
  - 0.0003 fibres/cm^3 for amphiboles (2015).
- The creation of the online tool to map 'Asbestos in schools'. This shows all primary and secondary school buildings known to the Ministry of Education. It enables any school to be

[15] Health Council of the Netherlands. Asbestos: Risks of environmental and occupational exposure. The Hague: Health Council of the Netherlands, 2010; publication no. 2010/10E.

found by location and contains information on the presence of asbestos based on evaluation and a simple risk category.

- A highly targeted approach to asbestos removal – based on improved asbestos audit and measurement and concentrating on the phased removal of asbestos roofing.

France

3.5 The French Government have conducted a research campaign to assess the risks of environmental exposure to asbestos.[16] Between November 2009 and October 2010 the campaign undertook air testing in 265 different worksites using TEM to determine the concentrations of asbestos fibres in individual samples taken from each setting. The findings of this campaign resulted in:

- A legislated environmental control limit (0.005 f/cm^3)
- The routine practice of mandatory periodic air monitoring using Transmission Electron Microscopy – which can measure of airborne asbestos fibres to the lowest level technically feasible (0.0005 f/cm^3)
- Mandatory removal of asbestos, where significant deterioration is identified.

3.6 Other European countries that have implemented reforms include:

- **Belgium:** The Flemish Government have developed a programme of phased removal of asbestos from buildings. This begins with rigorous data collection on the quantity and location of all asbestos and testing in schools to determine the threat in-situ asbestos is posing to pupils.
- **Italy:** The Italian Government has introduced tax relief to encourage the removal of asbestos in Tuscany and other regions. They are also exploring new technologies for disposing of asbestos, to ease the burden on landfill sites.
- **Poland:** The Polish Government is committed to removing all asbestos by 2032. Poland has taken a localised approach to asbestos removal, with many responsibilities resting on municipalities. However, there is collaboration across levels of government, with municipalities submitting data on asbestos to a national database.

4. How does HSE measure and report its progress in mitigating the risks of asbestos?

4.1 In 2014, the HSE published a report based on a survey from a sample of 153 schools (131 in England, 11 in Wales and 11 in Scotland), titled: 'Asbestos Compliance in non-LA Managed Schools'. This report determined the levels of compliance with CAR12 in both independent or fee-paying schools and those outside local authority control.[17] The results indicate that there are generally high levels of compliance with CAR12 in independent or fee-paying schools and those outside of Local Authority control.

4.2 In July 2019, the 'Asbestos Management Assurance Process (AMAP) report' was published. This also concluded that there is 'good practice in the majority of schools, but some gaps in the management of asbestos in some schools.' From this perspective the majority of schools are in fact compliant with CAR12, although the practice of 18% of schools surveyed were not in line with the guidance.

4.3 AMAP also suggests that there are no systemic failures in the management of asbestos. But this does not sit comfortably with the long list of incidents which the asbestos consultancy

[16] Boulanger G., Andujar P., Pairon J.C. et al. — Quantification of short and long asbestos fibres to assess asbestos exposure: a review of fibre size toxicity. Environmental Health, 2014, Vol. 13, p. 59.
[17] Health and Safety Executive (HSE), 2014. 'Asbestos Compliance in non-LA Managed Schools'. [online]. Available at: Accessed: 15 October 2019. P. 3

industry is well aware of and remain largely unreported by the HSE. One incident of asbestos exposure at a Sunderland school in 2017 resulted in pupils having to be hosed down in a decontamination van.

4.4 The HSE knows the environmental risks of asbestos fibres in the air but doesn't measure them. There is a fundamental disassociation between the law and practice, between what should be done and what is done.

5. Does HSE keep adequate records of asbestos in public buildings?

5.1 The HSE does not keep records of asbestos in public buildings. The regulations for the control of asbestos require individual duty holders to keep records of asbestos in buildings for which they are responsible. However, these disparate records are not collated or held centrally by the HSE in a way in which data can be usefully analysed and monitored.

5.2 For over a decade now, there have been calls for a centralised register, in effect a national asbestos database, to assure public safety.[18] We have called for Government to establish a central register of all asbestos currently in place in public buildings across the UK (including schools, hospitals and social housing). In response to this the Health and Safety Executive (HSE) stated:

'It is not clear what additional benefits a national database would have over [existing practice]. Given the number of buildings in Great Britain that contain asbestos; the amount of maintenance and refurbishment work that is done on buildings; and the degree of detail on each building required to make the data accurate; any such national system would be hard to achieve and very difficult to maintain.'[19]

5.3 There are proven systems for managing asbestos in-situ. Poland have introduced an 'Electronic Spatial Information System' (effectively a national database), to aid and monitor their commitment to remove all asbestos by 2032 (Ministry of Economy 2010: 24). Many responsibilities for completing this national database have fallen onto local authorities. The Dutch have also established a national database for all hazardous substances in buildings, including asbestos. The UK can learn from and build on these examples with the use of new technology.

We have argued that the application of new technology can be used to create and maintain a central source of data that can be accessed by anyone at any point of use (See Q6 (i) below).

6. Is HSE making best use of available technology and systems to monitor the safety of asbestos which remains in buildings?

6.1 There are two main applications of available technology which HSE could adopt with immediate effect.

(i) QR codes and smart phone apps

6.2 The HSE should update CAR12 to include the mandatory use of QR code signage and smart-phone technology for the management and control of asbestos in buildings. This is a simple innovation, which has become common practice in the hospitality sector through the use of the NHS Covid 19 app.

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[18] Taylor, J., 2008. 'Demand for national asbestos database as cancers deaths surge'. The Independent, [online]. Available at: https://www.independent.co.uk/news/uk/home-news/demand-for-national-asbestos-database-as-cancer-deaths-surge-980253.html

[19] This statement was provided by the HSE for the Shelagh Fogarty Show on LBC radio, quoted here at 8:37 minutes into the recorded broadcast about asbestos in the UK.

6.3 All buildings known to contain asbestos should be given a unique QR Code that can be incorporated into a sign. This sign should be displayed in a public and accessible part of the building (e.g. Entrance / Reception). It should remind visitors to scan the code so they can download the building's asbestos register in seconds.

6.4 Contractors and key personnel who need to know about the presence of asbestos can download an app and, by scanning the QR code, easily access a building's asbestos register and view this on their mobile phone.

6.5 The app will not compensate for the paucity of information contained in the asbestos register. However, it will make accessing this information easier. It will also take a record of when the QR code was scanned and by whom.

6.6 There are a number of products that have been developed and which are currently in use. One of these is Asbestos SMART developed by the social enterprise UKNAR CIC. It is possible that a network of different products could be established – similar to the development and roll out of different products for Electric Vehicle charging points – although the adoption of a single platform by HSE would simplify this process.

6.7 The additional benefit of such a system is that it can help to centralise all information contained in asbestos registers. Data can also be updated easily and accessed immediately by the different stakeholders. This would assist the HSE in auditing asbestos registers.

6.8 The costs associated with creating this system are minimal. Based on a small working prototype and market research the UKNAR CIC have estimated that it would cost less than £1 million to set up and develop a national asbestos register database, working with key stakeholders which would be suitable for up to 500,000 workplaces. This could be completed within one year.

6.9 Thereafter, it could be self-financed by duty holder subscriptions of between £100 and £200 per year for each premise or asbestos register on the system. The costs of establishing such a system pale in comparison to the costs of compensation claims and asbestos remedial work.

(ii) Transmission Electron Microscopy

6.10 Testing for airborne asbestos fibres is only undertaken in the UK in the event of a disturbance where removal or remediation is required. It is a mandatory part of the site clearance certification process.

6.11 The test requires a measured volume of air to be drawn through a filter which collects airborne particles for examination by a qualified asbestos analyst using Phase Contrast Microscopy (PCM). If the concentration of fibres is less than a legislated limit, then the site is declared safe to enter and a 'clearance certificate' is issued. The legislated limit for site clearance in the UK is 0.01 fibres per cubic centimetre of air (0.01f/cm^3). This is the limit at which PCM can detect airborne fibres.

6.12 Other countries including the United States, France and the Netherlands use Transmission Electron Microscopy (TEM) for analysing asbestos in the air. This is because TEM has a much higher capability and can measure particles up to 0.0005 fibres per cubic centimetre (0.0005 f/cm^3). This is a magnification 500 times greater than PCM. TEM can therefore detect smaller and different types of fibres including thin asbestos fibres (TAF), which are proven to be carcinogenic.

6.13 The HSE should adopt this technology as part of a reformed air monitoring regime, which we recommend should include routine air testing for priority buildings which are known to contain the most dangerous forms of asbestos.

7. Does HSE commit adequate resources to asbestos management in line with the level of risk?

7.1 The HSE has experienced a funding reduction of 45 per cent over the past decade. In 2009/10, the HSE received £231 million from the government. In 2019/20 it received £128 million. These funding cuts have hit jobs hard and led to a fall of over 500 front line inspectors. There are now more MPs in Westminster than there are front line inspectors at the HSE.

7.2 In this context it is clear that the HSE is not adequately resourced to manage the level of risk which asbestos presents. The HSE identify the risk of contracting mesothelioma at 1 per 1,000,000 (R2P2). Deaths rates from mesothelioma are more than 40 times greater than this.

7.3 Annual death rates for asbestos related disease (5,000 deaths under the age of 75, 10,000 including deaths over age 75) far exceed those from road traffic accidents (1,472 reported road deaths in 2020) and fire (286 deaths in 2019/20). The level of resource committed to the control of asbestos completely underestimates the comparatively higher risks which this substance presents to human life.

8. How robust is the available data about the risks and impact of asbestos in the workplace? What gaps in evidence need to be filled?

8.1 We have very little knowledge of the level of contemporary fibre concentration in UK buildings, just assumptions. This is precisely because we do not routinely conduct sensitive air monitoring. However, as we have stated above (see Q2) the HSE has concluded that the risk of a 25-year-old contracting mesothelioma by the age of 80 is 1 per million per year, [20] based on exposure to typical concentrations of airborne fibres, exceeds the defined level of 'acceptable risk' by four times.[21]

8.2 Further, the Committee on Carcinogenicity[22] accepted that the mesothelioma risk for 5-year-olds was even greater - about 3.5 times higher than for an equally exposed 25-year-old and 15 times higher than an "acceptable" risk.

8.3 A child inhales between 5 and 10 cubic metres of air per day, meaning the permitted levels of airborne asbestos in the UK for clearance testing (i.e. 0.01 fibres per cubic centimetre or 10,000 fibres per cubic metre) would expose a child to 50,000-100,000 cancerogenic fibres per school day. This compares to 10,000 fibres that would be inhaled by a child in Germany according to Germany's legislated environmental limit.[23]

8.4 The available evidence is clear in identifying the unacceptable level of risks – for teachers and pupils --presented by "typical" concentrations of airborne fibres in schools containing asbestos. It is not only those in the workplace that are at risk. The reality is that children in schools could be exposed from an early age.

Gaps

8.5 There are a number of unknowns in the evidence base:

- Building owners, agents or employers cannot demonstrate whether airborne asbestos fibres are present in their buildings, or whether they are being maintained below the defined level of 'acceptable' risk (0.0005 f/cm^3).

[20] Health and Safety Executive (2001) Reducing risks, protecting people. HSE Books: Sudbury; Health and Safety Executive (1992, 1988) The tolerability of risk from nuclear power stations. HMSO: London.

[21] Hodgson JT and Darnton A (2000) Quantitative risks of mesothelioma and lung cancer in relation to asbestos exposure. Annals of Occupational Hygiene, 44: 565-602.

[22] Committee on Carcinogenicity (2013) Statement on the Relative vulnerability of children compared to adults.

[23] Howie, R., 'Environmental Exposures to Asbestos – Risk Assessment'. P. 25

- Not all employees know if their workplace contains asbestos or where precisely within the building asbestos can be found.
- The number of adults that have subsequently died from exposure to asbestos as a pupil in school is unknown. A study in the USA has estimated that for every teacher's death nine pupils will subsequently die from exposure at school.[24]
- We do not know the occupation of all women who have died from mesothelioma.
- Deaths due to mesothelioma do not record an occupation for those above the age of 75.
- HSE statistics do not include deaths for support staff who work in schools (caretakers, cleaners and secretaries).

8.6 It should be noted that there are approximately 2,500 mesothelioma deaths below the age of 75 per year. If we include deaths over the age of 75 this increase to 5,000 per year. If we include all deaths from asbestos related diseases this figure reaches approximately 10,000 per year.

8.7 A recent report by JUAC estimates that between 5-10,000 school pupils and staff died from mesothelioma between 1980-2017 because they were exposed to amosite asbestos in their former schools between 1960-1980s.

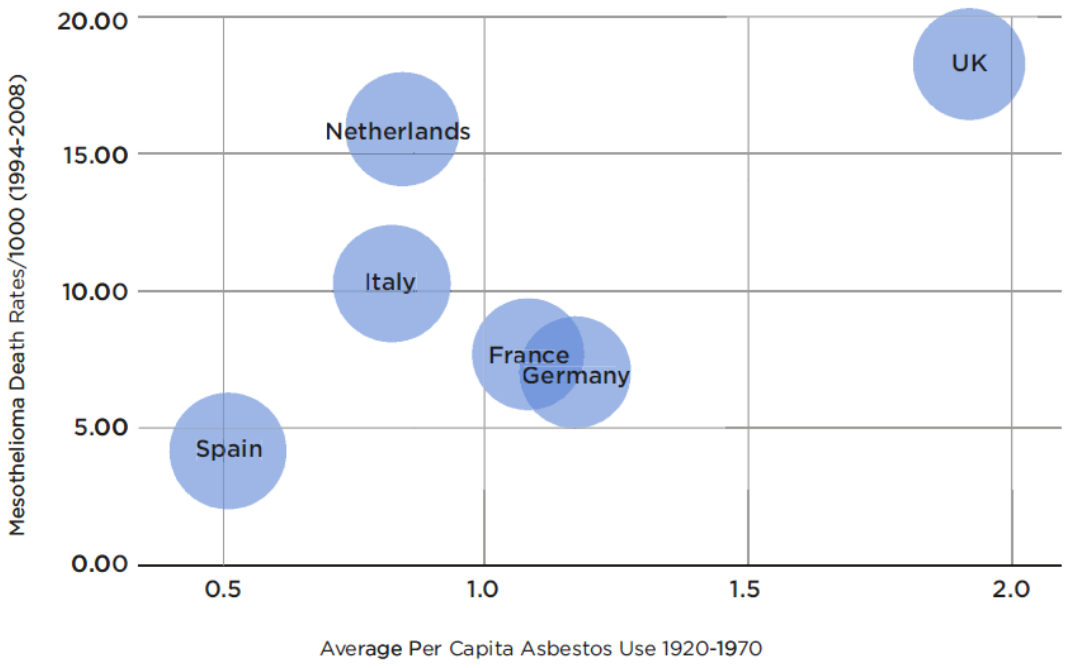
8.8 The fundamental accuracy of basic data about asbestos: where it is, how harmful it is, and who has been harmed by it, is questionable. This implies the scale of the problem, and its implications, remain unknown.

9. Is HSE drawing on a wide body of international and national regulatory and industry expertise to inform its approach to the management of asbestos safety in buildings?

9.1 The HSE is duty bound to adopt best practice and write into Guidance the "best practicable techniques" under the Health and Safety at Work Act 1974. Yet they have so far refused to acknowledge or incorporate the international evidence about the risks of environmental exposure or adopt the better practices for managing asbestos in situ, which can be found in other countries (see Q3). These include more sensitive air testing monitoring regimes and more advanced microscopy (see Q6).

9.2 Practice in the UK is lagging other developed countries with lower levels of historical asbestos use and lower mesothelioma deaths. See Figure 1, below.

Figure 1: International Comparison of Historical Asbestos Use and Current Mesothelioma Death Rate



Source: Charles Pickles[24] with data from World Health Organisation[25]

9.3 The international evidence should inform the policy road map for improving the management of asbestos in the UK.

10. How effectively does HSE engage with external stakeholders and experts about its approach to the regulation of asbestos?

10.1 There is a deep founded concern among many asbestos experts (including asbestos consultants, academics, trade unions, and campaign groups} about the of HSE's approach to the regulation of asbestos and the effectiveness of its engagement with external stakeholders.

10.2 Since all asbestos consultants and removal contractors are either accredited by UKAS or licenced by HSE, this effectively muzzles criticism of the regime. This is a source of frustration.

10.3 Airtight on Asbestos has sought to engage HSE in constructive dialogue about the aims of our campaign. However, this has proven to be a difficult task. We are aware that other campaign groups also struggle in this regard.

September 2021

[24] Pickles, C. Why the UK needs tighter asbestos controls, 2018.

[25] www.who.int/bulletin/volumes/92/11/BLT-13-132118-table-T1.html