

Written evidence from Joint Union Asbestos Committee (ASB0011)

Introduction

The response below is made by the Joint Union Asbestos Committee (JUAC) and mainly concerns the risk of school building occupants (staff and pupils) developing mesothelioma due to asbestos exposure in their former schools.

Founded in 2010, the JUAC is a non-party political group that seeks to protect education workers and pupils from the dangers of asbestos in educational buildings. The JUAC members are representatives from the following education trade unions: Association of School and College Leaders, GMB, National Association of Head Teachers, NASUWT, National Education Union, Unison, Unite, University and College Union and Voice

JUAC wishes to preface its comments below by acknowledging that the work of the HSE is hindered by a lack of funding and against a backdrop of a real terms cut of 50% to their budget since 2010. The HSE must be sufficiently funded and resourced to meet the challenges that lie ahead.

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

OVERVIEW: The latest figures from the Department for Education (DfE) estimate that **83.5% of schools in England contain asbestos**. Educational buildings are unlike other workplaces because the majority of their occupants are children who are known to be more vulnerable to asbestos exposure. Also, much of the asbestos in educational buildings is in locations accessible to staff and pupils. It is not just found around pipes and boilers. It is common in columns and wall and ceiling tiles in classrooms and gives off very small, fine fibres which can be breathed in and cause disease many years later. About half of all schools were system built between 1950 – 1980s. These schools include the CLASP type buildings that are known to have substantial amosite asbestos throughout. Most of them are still being used and they have now reached or passed their expected life span and are deteriorating together with the asbestos within. This makes management of asbestos more difficult than in other locations.

The United Kingdom has the highest mesothelioma rate in the world because of the extensive use of amosite asbestos between 1960-1980. Most victims were believed to be people who worked with asbestos. However, there is now increasing evidence from GB Mesothelioma Statistics and recent research that thousands of former teachers, support staff and pupils have also probably died from mesothelioma because they were exposed to asbestos in their schools between 1960-1980. The average time for developing mesothelioma after exposure is 30-50 years and that is why, only now, has the actual risk from asbestos exposure come to light. However, the potential risk was actually predicted three decades ago. About half of all schools were system built between the 1950s-1980s. These schools include the CLASP type system buildings that are known to have substantial amosite asbestos throughout and so are more likely to have been attended by former staff and pupil mesothelioma victims. The current GB Asbestos Regulations (2012) today require more stringent asbestos management of buildings. However, the available evidence suggests that not all schools are fully compliant with these regulations and there are concerns that the regulations do not take account of the known vulnerability of children or

prevent exposure to disturbed hidden asbestos that is prevalent within system-built school structures.

The Great Britain Occupational Mesothelioma Statistics are used to provide Government with a measure about the occupations most at risk of developing mesothelioma. However, they considerably underestimate the actual number of deaths and do not provide a measure of the current level of risk because of the long latency period between exposure and diagnosis. They also cannot include the children who occupy buildings like schools although estimates based on research findings in the UK and USA suggest that up to 20% of annual deaths each year are due to exposure of former pupils in their schools between 1960-1980s. Unfortunately, the current Asbestos Regulations do not provide a measure of the actual risk to building occupants during everyday exposure and the available evidence indicates that the current risk may be higher today than in 1960-1980s. See RECOMMENDATIONS 8A-8E.

The evidence and current concerns are outlined below:

- A.** The greatest risk from asbestos exposure for long term occupants (staff and children) of buildings like schools is mesothelioma.
- B.** The Great Britain (GB) Occupational Mesothelioma Statistics* provide a measure of the risk to GB occupational groups 30-50 years previously and so is not a measure of the current risk. According to these GB Statistics, the group of workers most at risk of developing mesothelioma are the jobs associated with skilled trades in the construction industry such as carpenters, plumbers and electricians and ship building job such as metal plate workers.

** It is important to note that this data is an underestimate because it only includes mesothelioma victims aged under 75 and their last occupation. This last occupation may not be the one where the asbestos exposure occurred.*

- C.** The recent HSE *Mesothelioma Mortality by Occupation Statistics in Great Britain in 2020 and 2021* indicate that the Proportional Mortality Ratio PMR for teaching and educational professionals (aged under 75 years) is significantly higher than the average PMR for all occupations from 2011 to 2019 and the trend is increasing. Those mesothelioma victims were likely to be exposed, on average, between 30 and 50 years previously. See response to Q4b for more information.

The observed increase in PMR presumably reflects the fact that a high proportion of system-built schools with substantial amosite asbestos were constructed between 1950 and 1980 and the latency period for developing symptoms of mesothelioma is 30-50 years after first exposure. See C Rake, C Gilham, J Hatch1, A Darnton, J Hodgson and J Peto, *British Journal of Cancer* (2009) 100, 1175 – 1183 & 2009 Cancer Research UK. See also response to Q1 Evii below.

- D.** Research including occupational histories and asbestos lung burdens of mesothelioma victims* suggests a minority of the general population may have unusually high environmental exposure to asbestos in buildings like schools and more work is planned to identify buildings where exposure is occurring.

**Rake, C Gilham, J Hatch1, A Darnton, J Hodgson and J Peto, British Journal of Cancer (2009) 100, 1175 – 1183 & 2009 Cancer Research UK; Gilham et al Past and current asbestos exposure and future mesothelioma risks in Britain: The Inhaled Particles Study (TIPS) International Journal of Epidemiology 2018 1–12 doi: 10.1093/ije/dyx276; Gilham, Rake, Burdett et al Occupational Environmental Medicine 2016; 73: 290-299.*

- E.** The GB Occupational Mesothelioma Statistics indicate that teacher mesothelioma deaths increased from 15 between 1980 to 1985 up to 85 between 2011-2015.

Altogether, 380 teachers (aged under 75) have died from mesothelioma between 1980 and 2010. However, this is an underestimate. In particular:

- i. The GB Occupational Mesothelioma Statistics do not include mesothelioma deaths in people aged 75 and over and teachers whose last occupation was not recorded as teacher on the death certificate. The recent JUAC report 2021* has estimated that a further 312 teachers aged 75 and over are likely to have died from mesothelioma. This means an estimated 692 teachers (all ages) have died from mesothelioma between 1980-2017 and so, as for all other occupations, this measure of 'risk' is potentially greatly underestimated. *JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? See section *Mesothelioma deaths among school staff 1980-2017* pages 8-11. See RECOMMENDATION 8A.
- ii. The data in the GB Occupational Mesothelioma Statistics for support staff is incomplete* but the JUAC report* has estimated that over 300 support staff (all ages) died from mesothelioma between 1980-2017. Thus, the total number of staff deaths (all ages) from mesothelioma could be nearer 1,000 but likely to be in excess of 1,000 as the statistics do not include the staff, whose last occupation was not listed as education on their death certificate. *JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? See section *Mesothelioma deaths among school staff 1980-2017* pages 8-11. See RECOMMENDATION 8A.
- iii. The GB Occupational Mesothelioma Statistics do not include children. However, up to 8 million children are taught in the same buildings as the teachers and support staff and it is known* that they are far more likely than an adult to develop mesothelioma after exposure to the same amount of asbestos. Professor Peto has referred to research** which indicates an estimated 200-300 former pupils die from asbestos each year because they were exposed to asbestos in their former schools between 1960-1980. The JUAC 2021 report has used that estimate to calculate that 8-12% of the total GB mesothelioma deaths each year are therefore due to exposure of former pupils in their schools. *Committee on Carcinogenicity of chemicals in food, consumer products and the environment CC/13/S1: Statement on the relative vulnerability of children to asbestos compared to adults; ** Professor Julian Peto at Education Select Committee hearing on Asbestos in Schools on 13th March 2013. See RECOMMENDATION 8B.
- iv. The United States Environmental Protection Agency EPA* has investigated the potential risk to children in school buildings with asbestos and has estimated that for every former staff member who dies from mesothelioma 9 former pupils will die. On that basis the JUAC 2021 report estimates that as 1,000 school staff in Great Britain have already died from mesothelioma between 1980-2017 then 9,000 former pupils may also have died from mesothelioma. *EPA report Health effects and magnitude of exposure of Asbestos containing materials in school buildings. 560/12-80-003; ** JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? See section *Mesothelioma deaths among school staff 1980-2017* pages 8-11. SEE ALSO RECOMMENDATION 8B.
- v. The JUAC report 2021 has used the EPA method (see response to Q1 Eiv above), to estimate that potentially up to 20% of the annual GB mesothelioma deaths each year are likely to be due to exposure of former pupils in their schools. Their mesothelioma deaths would, however, be recorded according to their last occupation and may well account for much of the HSE finding about the significant contribution of environmental exposure. This is because most schools contain asbestos and most children go to school. The available evidence suggests that calls for an audit of asbestos in the UK was turned down because 'Commissioning a nationwide survey might provoke unnecessary panic.' * Today there is still no systematic

audit of the mesothelioma risk for children and adults in schools and an estimated ten thousand school occupants have died because the Government has ignored the known risk to pupils in schools.** See RECOMMENDATION in response to Q8 B

* Ministerial brief: Meeting with Doug McAvoy. DfEE premises team/Minister for Schools R Squire MP 12th Dec 1994.

**JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? Pages 8-11

- vi. The apparent use of the current GB Occupational Mesothelioma Statistics as the main measure of the risk of developing mesothelioma in different occupations is retrospective because asbestos exposure occurred 30-50 years previously, on average. Moreover, this measure ignores the potential risk to children and there appears to have been no attempt by Government to develop an alternative measure although, under the Health & Safety at Work Act:*

Every employer has a *“duty to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety.”*

In particular, the Government has not required asbestos regulations that appropriately resource and enable Duty Holders to ascertain the current, actual level of risk to children and so take proportionate action to minimise it as far as reasonably practical. *Health & Safety at Work Act 1974 Part 1 General duties of employers and self-employed to persons other than their employees; HSE 2001 *Reducing Risks Protecting People*. See RECOMMENDATION in response to Q8 C.

The findings from the JUAC 2021 investigation of asbestos management in 60 CLASP schools suggest that the risk to pupils and staff is likely to be higher in CLASP-type schools today than between 1960-1980s. See response to Q2 below.

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

OVERVIEW: The Asbestos Regulations set out legal duties and give minimum standards for protecting employees from the risk of developing mesothelioma due to asbestos exposure.

However, the risk assessments in these regulations are not designed to provide a measure of the actual risk of developing mesothelioma and, in particular, ignore the risk to children from long-term exposure to asbestos.

They also cannot identify the potentially high risk from exposure to disturbed inaccessible asbestos in CLASP-type buildings.

See RECOMMENDATION 8C, 8D AND 8G.

In particular, for occupants of buildings like schools:

- A. the Asbestos Regulations do not take account of the actual risk from the different types of asbestos, the duration of cumulative asbestos exposure and the age of first exposure of the occupants.**
- B. The risk assessments are unable to measure the risk from inaccessible / hidden asbestos within the building structure.**

- C. Training for Duty Holders and their support staff is not mandatory, and the absence of an effective risk assessment criteria means that the funding for removal of unsafe asbestos and replacement of unsafe asbestos riddled schools is not informed by criteria which include the actual risk of school staff and, in particular, pupils developing mesothelioma after exposure.**

Evidence for each of the above concerns is outlined below:

A. The asbestos regulations and guidance do not enable school Duty Holders to identify the actual risk to pupils and staff from asbestos exposure in schools today. Thus:

- i. The risk assessments in the asbestos regulations are devised to enable Duty Holders to assess and prioritise the removal of unsafe asbestos according to the HSE response to the Asbestos in Schools proposal for a more effective risk assessment for the occupation of school buildings.* They are not a measure of the actual risk of adults and children developing mesothelioma after exposure to asbestos during normal occupation of buildings.

The HSE expert group that developed the algorithm wanted to steer the duty holder to take an active role in the prioritisation and management of the risk rather than subcontracting the entire assessment to a third party. The group concluded that only the duty holder would have adequate knowledge of the past, current and planned future use of the areas in a building, so as to properly prioritise management actions such as whether to maintain and monitor, encapsulate, enclose or remove asbestos containing material.

However, the available evidence indicates that Duty Holders are, in practice, failing to consult with the occupants about the level of disturbance in each area. Consequently, Risk assessments are underestimated and unsafe asbestos left in place. * Proposal for developing a revised algorithm for assessing asbestos in schools. HSE response. See response to Q2 C Examples 1 and 2.

- ii. Regulation 17 Approved Code of Practice Managing and working with asbestos. Control of Asbestos Regulations ACOP 2012 para. 453 regarding Clearance levels in buildings after work involving asbestos states: *“The threshold of less than 0.01 f/ml [10,000f/m³] should be taken only as a transient indication of site cleanliness ... and it is not an acceptable permanent level.”* However, in practice, pupils and staff are often required to reoccupy a school at asbestos levels just below the Clearance / Reassurance level of 10,000f/m³. This level is twenty times higher than the average level (500f/m³) found in schools with asbestos in a good condition and so is not a safe level according to the Courts. See response to Q2 Aiii below.
- iii. The Courts in 2009* accepted that levels of asbestos above that found in school with asbestos in a good condition (0.0005f/ml; 500f/m³) can materially increase the risk of mesothelioma developing. * High Court QBD Liverpool District [2009] EWHC 1831 (QB). Before the Hon Mr Justice Nicol. Dianne Willmore v Knowsley Metropolitan Borough Council 24 July 2009 Para 8, 57b
- iv. In 2013 the Committee on Carcinogenicity issued a statement* regarding the known increased vulnerability of children to asbestos exposure. This included: *“From the available, albeit limited, data it is not possible to say whether children are intrinsically more susceptible to asbestos-related injury. However, it is well recognised by this committee that, due to the increased life expectancy of children compared to adults, there is an increased lifetime risk of mesothelioma as a result of the long latency period of the disease. Because of differences in life expectancy, for a given dose of asbestos the lifetime risk of developing mesothelioma is predicted to be about 3.5 times greater for a child first exposed at age 5*

compared to an adult first exposed at age 25 and about 5 times greater when compared to an adult first exposed at age 30.” *Committee on Carcinogenicity of chemicals in food, consumer products and the environment CC/13/S1: Statement on the relative vulnerability of children to asbestos compared to adults

- v. In 1997 the Medical Research Council estimated* that “*Children attending schools built prior to 1975 are likely to inhale around 3,000,000 respirable asbestos fibres (roughly 10% of the higher estimate of the burden from ambient lifetime exposure or 1000% of the lower estimate). Exposure to asbestos in school may therefore constitute a significant part of total exposure.*” * Fibrous Materials in the Environment Institute for Environment and Health. P72 and p75. 1997
- vi. The HSE believes that an individual risk of death of one in a million per annum for both workers and the public correspond to a very low level of risk and should be used as a guideline for the boundary between the broadly acceptable and tolerable regions.* This risk as defined by the HSE is an excess death risk of one death/million people /year. As such it appears comparable to the socially acceptable number of deaths described by Howie. **8 million pupils were exposed to asbestos between 1960-1980s i.e., 30 years. The expected number of deaths would be 240 deaths. The actual number of deaths is estimated to be up to 9,000. This is quite evidently not acceptable.
*See Health and Safety Executive (2001), Reducing Risks, Protecting People, HSE Books, Sudbury. ** See 2Avii below.
- vii. Asbestos expert Robin Howie has estimated, using the Hodgson and Darnton (2000) reference text, the risk to children from cumulative asbestos exposure. For a child in a school for 5 years the socially acceptable number of deaths would be 5 deaths /million children / 5 years.* Howie found that the ‘socially acceptable’ ambient amosite asbestos concentration which should not be exceeded for children in schools for 5 years is 0.0001f/ml (100f/m³). Most of the 20 CLASP schools investigated by the HSL had levels much higher than this. * Robin Howie. Robin Howie Associates. Asbestos exposure in buildings-the risks. August 2005.
- viii. More recently, Howie estimated that as the average child and adult inhales about 5-10m³ of air per school day they will inhale about 2,500-5,000 fibres per school day if exposed to about 500 asbestos fibres/m³ from asbestos which is in a good condition. This means they will inhale and accumulate about 0.5-1million fibres per school year of 190 days. i.e., 2.5 -5 million in 5 years. * Robin Howie, Robin Howie Associates, Edinburgh. Mesothelioma deaths in teachers and nurses in Great Britain. Environmental Health Scotland, Volume 29 No 4 2017 pages 35-37.
- ix. The risk of developing mesothelioma after cumulative asbestos exposure from various historical data was reviewed and investigated by Hodgson and Darnton 2000.* Their findings suggest there is no safe level of exposure and that the risk depends on the type of asbestos fibre; cumulative exposure# to airborne asbestos and the victim’s age when exposed. Once fibres were inhaled, they were presumed to stay in the body and so fibres and the risk accumulate over time. *Hodgson and Darnton Annals of Occupational Hygiene, Vol. 44, No. 8, pp. 565–601, 2000. The quantitative risks of mesothelioma and lung cancer in relation to asbestos exposure. #The units of cumulative exposure are f/ml.years
- x. This proportionality regarding cumulative exposure is widely supported by the evidence, and according to the scientific judgement of WATCH in 2011*, in an extension of its 2008 position, there are risks of asbestos-induced cancer arising from work-related cumulative exposures* below 0.1 fibres/ml.years.
*Final WATCH position on asbestos risk assessment: February 2011

Thus in 2011 WATCH* stated:

‘The risk will be lower, the lower the exposure, but “safe” thresholds are not identifiable. Where potential exposures to amphiboles, particularly crocidolite, are below 0.1 fibres/ml.years (for example, 0.01 fibres/ml.years), the available scientific evidence suggests no basis for complacency, but rather a basis for active risk management.’ⁱ

*WATCH is a Government Science Advisory Safety Committee and is the scientific and technical subcommittee of HSC’s Advisory Committee on Toxic Substances (ACTS).

- xi. Howie* has estimated using the Hodgson and Darnton 2000 findings that the average cumulative amosite asbestos exposure (1960-1980) of the 125 former teacher mesothelioma victims, who were exposed for 30 years in their schools (1960-1980) and died between 2002 and 2010, was 0.15f/ml.years.*
*Robin Howie, Robin Howie Associates, Edinburgh. Mesothelioma deaths in teachers and nurses in Great Britain. Environmental Health Scotland, Volume 29 No 4 2017 pages 35-37.
- xii. The HSE has recently developed a Retrospective Risk Analysis (RRA) which shows the probability of harm from long latency diseases like mesothelioma and which can be used to aid sentencing where the offence is in creating a risk of harm.* It is based on cumulative asbestos exposure derived from risk models like Hodgson and Darnton. The HSE analysis shows the link between cumulative asbestos exposure to different types of asbestos and life time risk.* Asbestos Compliance and Retrospective Risk Analysis. BOHS Regional Meeting London June 2018. Dr Martin Gibson HSE. Agenda. Projected mesotheliomas. Factors reducing exposure. Factors which could inhibit future reduction. Retrospective Risk Analysis. Sentencing Guidelines.
- xiii. According to the HSE RRA (see copy of HSE Table1 below), the cumulative asbestos exposure estimated by Howie for the 125 former teacher mesothelioma (2002-2010) victims (see 2Axi) between 2002-2010 would be in the Medium-risk asbestos cumulative exposure band. This is a significant finding as the 2007 HSL report indicated remediated CLASP school columns in enclosures had an average background level of about 0.005f/ml; 5,000f/m³ during disturbance that simulated everyday activities. The JUAC 2021 report (see page 42) has therefore estimated that teachers in remediated CLASP schools potentially also have. On average, a Medium-risk asbestos cumulative exposure over 30 years of about 0.005f/m³ x 30 years = 0.15f/ml.years, especially if exposure to the other known asbestos sources outside the enclosure are also included.

Application of the boundaries using risk model exposure cumulative dose data*

Table 1: Cumulative exposure bands for which lifetime risks are High (H), Medium (M) or Low (L) by fibre type

Cumulative exposure(f/ml.yrs)	Crocidolite	Amosite	Chrysotile
10 or more	H	H	H
0.5 to <10	H	H	M
0.2 to <0.5	H	H	L
0.02 to <0.2	H	M	L
0.01 to <0.02	M	M	L
0.001 to <0.01	M	L	L
<0.001	L	L	L

*Table from HSE Asbestos Compliance and Retrospective Risk Analysis

- xiv. According to the HSE RRA, occupants of the 38 CLASP schools who provided no evidence for remediation may potentially have an average background level of 0.094f/ml; 94,000f/m³ and after exposure over 30 years could have a cumulative amosite asbestos exposure of 2.82f/ml.years. If so,

these occupants would be in the High-Risk cumulative exposure band and have a High-risk of developing mesothelioma.

Application of the HSE Retrospective Risk Analysis model to schools, suggests that the risk from cumulative amosite asbestos exposure in CLASP type schools is probably higher on average today than in schools between 1960 and 1980. See response to Q2E below.

B. The risk assessments in the asbestos regulations and guidance (Duty to Manage) rely on visual inspection and sampling of accessible asbestos plus the presumption of asbestos in areas not accessed unless there is clear evidence to the contrary. However, the recommended risk assessments cannot ascertain the risk from inaccessible asbestos located within the building structure.

- i. Shockingly since asbestos incidents in schools in 1987* and 2006**, the Government has known that asbestos levels in CLASP-type school buildings may exceed the Control level in schools during normal occupation. The HSE investigation and recommendations outlined how friable asbestos within the structure can be disturbed by everyday school activities and then pass via any gaps into occupied areas. That effect is known to be increased by damage to the building structure by renovation, maintenance and building deterioration and so clearly the risk of asbestos exposure potentially increases over time. *ILEA report LSS/AP/52 (1987) Investigation into fibre release from low level asbestos panels - Ernest Bevin school May 1987; ** HSE Asbestos in system buildings Control of Asbestos Regulations 2006 Guidance for duty holders Updated 18 September 2008
- ii. The HSE recommendations in 2008 for all Duty Holders of CLASP-type system buildings included the sealing of column gaps and replacement of damaged/missing ceiling tiles plus procedures for regular monitoring and appropriate awareness / training of all staff. However, the HSE investigated <0.5% of the approximately 6,000 system-built schools in England alone and it is known that there is a wide variation between the location and condition of asbestos in schools of the same make as well as between different makes. * Moreover, the HSL findings indicated that most CLASP schools investigated still had asbestos levels higher than those found in schools with asbestos in a good condition and so placed occupants at an elevated risk of developing mesothelioma.
* HSE Asbestos in system buildings Control of Asbestos Regulations 2006 Guidance for duty holders Updated 18 September 2008; See also Response to Q 7 regarding Government funding requirements.
- iii. Crucially the asbestos regulations do not require measurement of background asbestos levels during normal occupation of buildings and they provide no guidance on the long-term risk to all occupants from the asbestos levels commonly found in school buildings. Consequently, Duty Holders and staff are not aware if all gaps have been sealed and if there are other sources of disturbed asbestos passing into the occupied areas. See Response to Q6 Environmental Regulations.
- iv. According to the initial HSL review* of the evidence, based on <0.5% of CLASP-type schools - the average level of exposure to asbestos from disturbed unremediated columns within enclosures is 0.094f/ml; 94,000f/m³. Range 0.441 – 0.001f/ml; Range 441,000-1,000f/m³ so it is evident that occupants of school buildings with unremediated columns will be potentially exposed to levels about 200 times higher on average than found in schools

with asbestos in a good condition (0.0005f/ml; 500f/m³) and so have a greatly elevated risk of developing mesothelioma in future. Asbestos contractors are required to wear protective gear and reduce exposure time at levels above the Control level. Pupils and staff, unknowingly exposed, have no such protection. *HSL Summary of fibre concentrations in CLASP construction schools containing asbestos. HSL/2007/22; HSL Further measurements of fibre concentration in CLASP construction buildings AS/2007/14.

- v. The HSE 2008 guidance recommends that school Duty Holders seal all gaps in columns and replace missing or damaged ceiling tiles. After such remediation the average level of airborne asbestos from remediated columns within enclosures# is 0.005f/ml; 5,000f/m³. Range 0.058 - <0.001f/ml; Range 58,000f/m³ - <1,000f/m³. However, the average level of exposure in schools with remediated columns while many fold lower is not safe because it is, on average, 10 times higher than the average level of asbestos in a good condition.
*#The above airborne asbestos levels are measured within enclosures and so are higher than if the disturbed asbestos was able to dissipate into the classroom. However, that effect could be counteracted in practice by the potentially numerous other sources of asbestos in CLASP-type schools that would not be measured in the enclosure. It is known that there is considerable variability between the location and condition of asbestos in CLASP-type schools of the same make as well as between different makes. * Yet asbestos levels in <0.5% of such schools have been investigated.*
- vi. Robin Howie has estimated that the average level of asbestos in schools attended between 1960-1980 for 30 years by former teacher mesothelioma victims is also about 0.005f/ml; 5,000 f/m³.^{*} This is a concern because many of the remediated schools in 2006 had asbestos levels far higher than the Clearance level. See response to Q2Biv and 2Bv. This suggests that some asbestos is still passing into occupied areas from other inaccessible areas. However, there has been no guidance on routinely checking for and identifying other sources of asbestos exposure. ^{*}Robin Howie, Robin Howie Associates, Edinburgh. Mesothelioma deaths in teachers and nurses in Great Britain. Environmental Health Scotland, Volume 29 No 4 2017 pages 35-37.
- vii. The recent JUAC investigation of asbestos management in 60 CLASP-type schools^{*} found that 38 Duty Holders provided no evidence in their asbestos management plans for the required column remediation and 39 Duty Holders provided no evidence that staff had been made aware, as required, of the risk from unremediated columns and ceiling tiles. The occupants of those schools therefore potentially have a high risk^{**} of developing mesothelioma^{*}. JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? See Table 4A pages 20-21. ^{**}See response to Q2A xiv.

C. The Regulations do not require mandatory training of Duty Holders / support asbestos managers and the funding criteria awarded for removal of unsafe asbestos is not linked to an effective measure of the risk of children and staff developing mesothelioma after long term asbestos exposure in their schools.

Despite the increasing number of school staff mesothelioma deaths and the known vulnerability of children to asbestos exposure, schools in Great Britain since the Young review in 2011^{*} are considered a low risk by the Government and so regular HSE oversight and monitoring of asbestos management is not required. The

Asbestos in Schools group argued strongly against the low-risk status for schools.
*Lord Young review "Common Sense Common Safety 2010; Asbestos in Schools response to HSE's simplified classroom risk assessment February 2011

This Government policy change signals wrongly that asbestos in schools presents a minimal risk to occupants and leads to complacency by Duty Holders. Certainly, many Duty Holders are failing to comply with the detailed HSE guidance for schools and so placing pupils and staff at elevated risk of developing mesothelioma. See Examples 1 and 2 below:

Example 1: The HSE inspection of 153 Great Britain schools outside Local Authority control in 2013/2014 found that:

- about a quarter of those schools were not complying with all the asbestos regulations. Thus, 44 of the 153 schools were given written advice following the visit and enforcement action was taken against 20 of the 44 in the form of an Improvement Notice.

It has been recognised since 2006 that CLASP-type system buildings are likely to have substantial asbestos that is integrated into the structure throughout and the potential for asbestos exposure of occupants above the Control level is high. The 2008 HSE Guidance for Duty Holders of system buildings provides remediation guidance and checklist that aims to reduce asbestos exposure many times. * HSE Asbestos in system buildings Control of Asbestos Regulations 2006 Guidance for duty holders Updated 18 September 2008

However, the recent JUAC 2021 investigation of 60 CLASP schools found that a high proportion of Duty Holders did not provide evidence for compliance with the detailed asbestos management regulations and guidance. Consequently, children and staff potentially have an elevated risk of developing mesothelioma.* See RESPONSE TO Q1 VII, Example 2 below and RECOMMENDATION 8H.

Example 2: The JUAC investigation (2021) of asbestos management in 60 Mark 4/4b CLASP schools* found that:

- 55 of the 60 schools provided a management survey. However, only 10 of the 60 schools complied with all of the survey criteria and so ensured they had identified the location of all asbestos
- 40 of the 60 CLASP schools complied with all the Risk assessment criteria but only 3 schools provided evidence for procedures that ensure all staff were informed, as required, about the location and risk from asbestos disturbance in their work areas. Failure to have such a procedure would mean that risk assessments were underestimated, and unsafe asbestos left in place.
- Although 49 of the 60 CLASP schools provided evidence for asbestos clad columns, just 4 schools provided evidence they had complied with all the criteria that aim to prevent exposure to asbestos passing from columns and ceiling voids into occupied areas
- Just 31 of the 60 schools provided evidence of a specific Asbestos Management Plan for their school
- Only 22 of the 60 CLASP schools provided evidence of arrangements for staff training and just 21 schools provided evidence that the asbestos management plan was accessible to all staff.

* *CLASP and SCOLA system buildings and others where similar construction techniques have been used, built between 1945 and 1980, normally have amosite containing AIB around the steel columns (although other types of Asbestos containing materials (ACMs) and non-asbestos materials are also found). ACMs may also have been used as column packing and may be found in blind boxes to the window frames. ACMs may also have been used*

in these buildings as unrecorded substitute items where there were material shortages and/or poor supervision. In addition, excess or waste ACMs may have been left hidden inside columns or panels and ceiling voids. Consequently, asbestos may be found in some unexpected locations and the presumption should be that ACMs would be present in other concealed areas...

Finally, as further over-arching points:

- The role of the ‘Duty Holder’ has caused confusion, as it applies to different bodies across the education sector which can lead to non-compliance. In schools and colleges, employers, governing bodies and head teachers all have responsibilities under the legislation.
- There is *no requirement to inform parents* of asbestos risks at their child’s school.

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?

OVERVIEW: The UK has the highest incidence of mesothelioma deaths, but the Government has ignored the growing evidence about the significant risk to building occupants –particularly children (see response to Q1 Eiii) - from low level cumulative asbestos exposure in buildings. See Hodgson & Darnton 2000 (see Q2 Aix); the WATCH Committee 2011 (See Q2 Ax); World Health Organisation 2006, 2017 (See Q3 C); the United States Environmental Protection Agency 1986 findings (see 3D below). **The UK Government has ignored the JUAC request for Environmental Asbestos Regulations that measure the actual risk to building occupants in schools today (See Q1 Eiv). It is noted that Flanders has a high mesothelioma incidence but plans to remove asbestos from all buildings as part of long-term renovation strategies under the Energy Performance of Buildings Directive (EPBD) (2010/31/EU) by 2040.** SEE RECOMMENDATION 8E and 8F.

The available evidence suggests that the UK Government has ignored the approach taken in some other countries and disregarded requests for improve asbestos management. Thus:

- A.** The HSE* has informed JUAC that their asbestos regulation remit from the Government does not include Environmental Asbestos Exposure.* Proposal for an environmental level for asbestos exposure in schools. HSE comments. February 2015.
- B.** The available evidence suggests that the Government has ignored growing evidence of the risk from long term cumulative exposure (Environmental asbestos exposure) to asbestos in schools.* See response to Q 2 sections A, and B.
- C.** In so doing the UK Government has also ignored the implications of the World Health Organization (WHO) policy statement (October 2006) on the *Elimination of Asbestos-Related Diseases* which echoed the ILO's 2006 Resolution on Asbestos. This clearly recognised the cancer risk from exposure to relatively low levels and called on Governments to stop using all forms of asbestos.

Thus: “Recognizing the health hazard posed by continued asbestos use, the WHO is calling for a worldwide ban:

“Bearing in mind there is no evidence for a threshold for the carcinogenic effect of asbestos and that increased cancer risks have been observed in populations exposed to very low levels, the most efficient way to eliminate

asbestos-related diseases is to stop using all types of asbestos. Continued use of asbestos cement in the construction industry is a particular concern because the workforce is large, it is difficult to control exposure, and in-place materials have the potential to deteriorate and pose a risk to those carrying out alterations, maintenance and demolition. In its various applications, asbestos can be replaced by some fibre materials and by other products which pose less or no risk to health.”

On June 13, 2017, the World Health Organization released the English language version of its Asbestos Fact Sheet 4 at the 6th Ministerial Conference on Environment and Health in Ostrava, Czech Republic. The four-page text reaffirmed that:

“There is no evidence for a safe threshold for the carcinogenic effect of asbestos. As increased cancer risks have been observed in populations exposed to a very low level, the most efficient way to eliminate asbestos-related diseases is to stop using all forms of asbestos.”

- D.** The UK Government has also ignored and not acted to prevent the known and particularly high risk to children occupying school buildings with substantial asbestos. See response to Q1 Eiii. In contrast, the United States Environmental Protection Agency actually investigated and developed the Asbestos Hazard Emergency Response Act (AHERA).^{*} This became law in 1986 and amended the Toxic Substances Control Act (TSCA). It requires local educational agencies to inspect their school buildings for asbestos-containing material, prepare asbestos management plans, and perform asbestos response actions to prevent or reduce asbestos hazards. The law is meant to protect the more than 50 million students and 7 million teachers and staff who spend time in the nation’s schools.

After a proactive start, in 2018 the EPA inspector general report found showed that the school asbestos program at the Environmental Protection Agency had become a low-priority and underfunded federal initiative.^{**} The EPA argued that over time this was due, in large part, to increasing resource limitations, competing TSCA priorities and greater awareness of the asbestos management requirements than in the 1980s. However, the staff from the states and responsible EPA regions indicated that asbestos in schools might still be a significant problem and there was patchy evidence for asbestos management in some areas.

After consultation the EPA regions agreed to incorporate asbestos strategies into their TSCA compliance monitoring efforts and inform local educational agencies, in coordination with the regions, that they must develop and maintain an asbestos management plan, regardless of the presence of an exclusion statement, and monitor compliance. ^{*}EPA report Health effects and magnitude of exposure of Asbestos containing materials in school buildings. 560/12-80-003: EPA Support document for the proposed rule on friable asbestos – containing materials in school buildings. ^{**}EPA report 560/12-80-003 page 92. American Academy of Pediatrics. Asbestos Exposure in schools. Pediatrics vol 79, No 3 Feb1987 p301-5. Reaffirmed May 1994; ^{***} EPA Needs to Re-Evaluate Its Compliance Monitoring Priorities for Minimizing Asbestos Risks in Schools Report No. 18-P-0270 September 17, 2018. United States Environmental Protection Agency office of Inspector General.

- E.** Today, with limited and decreasing resources, it appears the HSE and EPA have focused predominantly on high-risk occupations working with asbestos. Neither country, despite the known risk to children, appears to have been required by their government to systematically investigate a more proactive measure of the current risk to children in schools from long term cumulative asbestos exposure.

- F.** The available evidence* indicates that the UK has the highest incidence of mesothelioma compared to other countries because during the 1960s-1980s it used substantial amounts of amosite asbestos used in the construction of buildings and building extensions. Australia and Flanders** also have substantial asbestos in buildings but Flanders plans to remove / make safe all asbestos by 2040 as part of its building renovation strategy.

*Rake, C Gilham, J Hatch1, A Darnton, J Hodgson and J Peto, British Journal of Cancer (2009) 100, 1175 – 1183 & 2009 Cancer Research UK; **Long term strategy for the renovation of Flemish Buildings. Further to Article 2a concerning long-term renovation strategies under the Energy Performance of Buildings Directive (EPBD) (2010/31/EU). May 2020.

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

OVERVIEW: The HSE states that it does not make any definite claims that the asbestos regulation changes have prevented a given number of deaths. It is evident that HSE annual statistics, do not indicate current risk to occupants of buildings like schools. See response to Q1. However, the Government deemed that schools were safe workplaces in 2010 and so just a few percent of schools have been inspected by the HSE since then although the findings suggest that many schools are not compliant with the Duty to Manage. The available evidence from HSE Mesothelioma Mortality by Occupation Statistics in Great Britain 2021 indicate that the Proportional Mortality Ratios for teachers were statistically significantly elevated between 2011-2019 above the average PMR for all occupations.

The HSE states that it does not make any definite claims that specific asbestos regulation changes have prevented a given number of deaths. This is presumably because of the long average latency period between exposure and diagnosis and the fact that most mesothelioma deaths currently occur in people exposed to asbestos prior to the current asbestos regulations. See Section 13 page 6 of Post Implementation review of CAR 2012 March 2017.

Epidemiology based on occupational statistics have been used to inform the HSE projections of future mesothelioma deaths but this practice ignores the current risk of developing mesothelioma, from long term cumulative asbestos exposure to children and adults occupying buildings like schools with substantial asbestos throughout. With over 8 million children, 0.5 million teachers plus all the support staff, a high proportion of the population could have an elevated risk of developing mesothelioma because they attended a CLASP-type school.

The HSE reports include:

- A. The Annual Occupational GB mesothelioma statistics** which detail the number of mesothelioma deaths in people aged under 75. However, they considerably underestimate the number of mesothelioma deaths as:
- i. They do not include the increasingly high proportion of deaths in people aged 75 and over or the number of school staff whose last occupation was not in schools.
 - ii. The current practice of comparing occupational mesothelioma deaths with the population average wrongly discounts teacher mesothelioma deaths as 'expected.' Howie's comparison of the number of mesothelioma deaths for a given occupation with a hypothetical population not exposed to asbestos appears to be a more meaningful comparison in view of the current concerns about asbestos exposure in buildings.* Howie estimated that teachers at

school in 1960-1980 were 5 times more likely to die from mesothelioma than a population not exposed to asbestos. * Robin Howie, Robin Howie Associates, Edinburgh. Mesothelioma deaths in teachers and nurses in Great Britain. Environmental Health Scotland, Volume 29 No 4 2017 pages 35-37.

- iii. The Occupational Mesothelioma Statistics still fail to identify the mesothelioma deaths due to occupational exposure in buildings although this scenario was demonstrated clearly in the research by Rake et al 2009.* That research found 62% of female mesothelioma deaths and 14% of male mesothelioma deaths were apparently due to exposure in buildings. *C Rake, C Gilham, J Hatch1, A Darnton, J Hodgson and J Peto, British Journal of Cancer (2009) 100, 1175 – 1183 & 2009 Cancer Research UK
- viii. The Occupational Mesothelioma Statistics are not designed to include the mesothelioma deaths arising from exposure of children to asbestos in buildings. Yet the JUAC report 2021* estimates that up to 9,000 former pupils and 1,000 school staff have died from mesothelioma since 1980 due to exposure in their former school buildings between 1960-1980s. School exposure appears to account for up to 20% of annual mesothelioma deaths and schools should be treated as unsafe workplaces, particularly for children. *JUAC 2021 Report: Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? Pages 8-11.

B. HSE Report: GB Mesothelioma mortality by occupation statistics, 2020.

This compares Mesothelioma mortality in Great Britain for 2011-2018 and 2001-2010 by occupation. They indicate that the Proportional Mortality Ratios for teachers and for teaching assistants were statistically significantly elevated between 2011-2018 above the average PMR for all occupations. See:

Page 6: For females three of the sub-major groups were statistically significantly elevated during the period 2011-2018. They included: **23 Teaching and educational professionals** (94 deaths, PMR=144.6, 95% CI: 116.9, 177.0). The PMR for the corresponding SOC2000 code for 2001-2010 was not elevated

Page 8. “For females, mesothelioma PMRs for four SOC minor groups were statistically significantly elevated for the period 2011-2018. They included **231 Teaching and Educational Professionals** (94 deaths, PMR = 144.6, 95% CI: 116.9, 177) ...The data shows an increasing trend amongst 231 (Teaching and educational professionals).”

Page 13. “For females, PMRs were statistically significantly elevated for six of the 20 SOC unit groups with at least 10 observed or expected mesothelioma deaths. They included: **2315 Primary and nursery education teaching professionals** (69 deaths, PMR = 216.1, 95% CI: 168.2, 273.5)” and **6125 Teaching assistants** (20 deaths, PMR = 183.7, 95% CI: 112.2, 283.7)

HSE Report: GB Mesothelioma mortality by occupation statistics 2021.

This compares Mesothelioma mortality in Great Britain for 2011-2019 and 2001-2010 by occupation. They indicate that the Proportional Mortality Ratios for teachers were statistically significantly elevated between 2011-2019 above the average PMR for all occupations. See

Page 10: For females three of the sub-major groups were statistically significantly elevated during the period 2011-2019. They included: **23 Teaching and educational professionals** (102 deaths, PMR=141.2, 95% CI: 115.1, 171.4). The PMR for the corresponding SOC2000 code for 2001-2010 was not elevated.

Page 13: For females, mesothelioma PMRs for four SOC minor groups were statistically significantly elevated for the period 2011-2019. They included: **231** Teaching and Educational Professionals (102 deaths, PMR = 141.2, 95% CI: 115.1, 171.4). The data showed an increasing trend amongst 231 (Teaching and educational professionals).

Page 19: For females, PMRs were statistically significantly elevated for six of the 32 SOC unit groups with at least 10 observed or expected mesothelioma deaths: They included:
2315 Primary and nursery education teaching professionals (75 deaths, PMR = 213, 95% CI 167.5, 2267)

C. HSE Post Implementation review of the Control of Asbestos Regulations 2012 S.I. 2012/632.

The HSE is required to regularly review the asbestos regulations. The HSE post implementation review in 2017 was published in 2017. The 2017 PIR found that: *Dutyholder analysis confirmed that there remained a lack of clarity around dutyholders' roles and responsibilities, particularly how to conduct a management plan. The enforcement data report at Appendix 4 further supports this view as the majority (60%) of Improvement Notices served between 2007 and 2016 were for breaches of CAR, regulation 4.*

The current 2021 HSE review of asbestos regulations by stakeholders is still being processed.

D. The HSE inspections of asbestos management in workplaces

The HSE inspection of asbestos management in schools has been reduced since 2011 when schools were designated as safe workplaces by the Young Review (Lord Young review "Common Sense Common Safety 2010). The HSE has since then checked compliance of Duty Holders with the Duty to Manage in inspections of several hundred schools outside local authority control in 2011 and again in 2014. A further investigation of schools in 2019 has not yet been published. See Response 2C

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

OVERVIEW: The HSE has an advisory, monitoring and enforcement role according to the Asbestos Regulations and findings appear to be published. Nevertheless, JUAC does not believe that it is the role of the HSE to keep records about asbestos in public buildings. As a regulatory body the HSE must evaluate sufficient evidence to satisfy itself that employers and workplaces (including education settings) comply with health and safety law through its inspections and investigations, particularly in the management of asbestos.

The Duty to Manage in the Control of Asbestos at Work Regulations places a duty on a defined "Duty Holder" to manage the risk from asbestos in non-domestic premises.

The Duty Holder is required to do an asbestos risk assessment and produce an asbestos management plan. This involves:

- Finding out and recording where asbestos might be.
- Deciding what is most important.
- Deciding what action to take and how to plan any work.

Findings of HSE investigations and reports into compliance with the Asbestos Regulations are made available, and the HSE publishes *Research Reports* and an *Annual Scientific Review* which, *inter alia*, contain updates on scientific matters pertaining to asbestos management and control.

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

OVERVIEW: The current risk assessments do not measure the actual risk of staff and pupils developing mesothelioma after long term cumulative exposure in buildings. The techniques used for counting asbestos fibres do not include all clinically active fibres or adequately compensate for the risk from the different fibre types and for dustiness. The number of former pupils and staff mesothelioma deaths is higher than socially acceptable, and pupils are at risk at levels below that found in schools with asbestos in a good condition. Recent research, moreover, indicates that cumulative asbestos fibre exposure measurements cannot be measured reliably or accurately at this low level and lung asbestos burdens may provide a more reliable indicator of exposure. SEE RECOMMENDATION 8 C, D AND E.

A. The development and investigation of appropriate technology and systems is presumably dependent on the Government remit and the funding made available by Government.

The HSE designed the current risk assessments for asbestos to facilitate Duty Holder prioritisation of the removal / encapsulation of unsafe asbestos but advises they do not measure the actual risk of developing mesothelioma. See response to Q2.

In response to the *Asbestos in Schools* request to the HSE in 2014 for the development of specific Environmental Asbestos Regulations for occupants of buildings like schools, the HSE has advised* that:

“The purpose and consequences of any environmental level will need careful consideration by all stakeholders and discussions must involve a number of Government Departments. Establishing an environmental level, as opposed to a workplace control level/limit, is outside HSE’s vires, and certainly outside the remit of DfE’s Asbestos in Schools Steering Group. HSE would suggest that other Government Departments and Agencies, such as the DEFRA, Public Health England, the EA and DH at least would have a significant interest and would need to be consulted on any proposal for an environmental level at a very early stage.” ⁱⁱ

The HSE also advised that:

“... environmental levels will first need to be established by gathering data on the current airborne asbestos fibre exposures across a range of exposure scenarios, including, but not restricted to, those involving pupils and teachers in schools.”

JUAC has therefore requested that the Government carefully considers, develops and implements environmental airborne asbestos levels for long term occupation of buildings and ensure that they comply with the European Convention on Human Rights Act when they do. In particular the Government should demonstrate that a fair balance has been struck between the risk to pupils and staff from asbestos and the measures taken to counteract it according to Article 8 of the European Convention on Human Rights. *Proposal for an environmental level for asbestos exposure in schools. HSE comments. February 2015

The underlined caveat is necessary because there is considerable evidence that the Government has historically favoured initiatives that prioritise cost reduction over a reduction in the risk of developing mesothelioma. Examples of Government cost cutting are shown in the response to Q7.

- B.** The current risk assessments do not adequately compensate for the risk from the different types of asbestos, duration of exposure, age at first exposure and in subsequent periods of exposure or the dustiness of the asbestos. * Robin Howie. Recommended Risk Algorithm for MDHS 100.
- C.** The Phase Contrast Microscope methods do not identify all the clinically active asbestos fibres and have false positives arising from some non-asbestos materials in the samples.
- D.** Disturbance during asbestos measurement during everyday activities requires information about the level of disturbance from occupants in each building location. This requirement in the Asbestos Regulations appears to often be ignored by Duty Holders. See Response to Q2C Example 2.
- E.** TEM and SEM methods can distinguish asbestos fibre types and clinically active fibres of all sizes. However, it is not clear how their findings relate to PCM data regarding the risk of developing mesothelioma after exposure.
- F.** There is no guidance in the regulations about the impact of long-term cumulative exposure to the school typical asbestos levels commonly and the risk of pupils and staff developing mesothelioma. This is probably partly because according to recent research by Gilham et al 2016*:

“A large amount of asbestos remains in many older buildings and there is continuing concern about environmental exposure to occupants and occupational exposure during maintenance, renovation and demolition in homes, schools and workplaces. The resulting mesothelioma risks cannot be calculated by extrapolation from historical occupational cohort studies because lifetime average airborne exposure levels in the breathing zone cannot be estimated even approximately either for the general public or for plumbers, electricians and other building or demolition workers. Asbestos lung burden is the only indicator of cumulative lifetime exposure that can be measured reliably in a population-based study. We have therefore developed a dose–response model in a population-based series of mesothelioma and resected lung cancer patients with occupational histories obtained by personal interview and measured lung burdens. This will enable future mesothelioma rates to be predicted from lung burdens in occupational groups and in the general population for people born after 1965 who began work after 1980 when asbestos use had virtually ceased in Britain.”

However, the current asbestos regulations are not preventing the unsafe exposure of occupants in CLASP-type system buildings and such schools should be demolished if it is not possible to ascertain the level of risk from current asbestos levels. The JUAC report estimated** that potentially tens of thousands of former pupils and staff may die from mesothelioma because they were exposed to asbestos in their schools after 1980.

* Gilham et al Past and current asbestos exposure and future mesothelioma risks in Britain: The Inhaled Particles Study (TIPS) International Journal of Epidemiology 2018 1–12 doi: 10.1093/ije/dyx276; Gilham, Rake, Burdett et al Occupational Environmental Medicine 2016; 73: 290-29;

** JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? See pages 34-35 Asbestos levels today; Consequences of Government failure pages 52-53.

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

SUMMARY: No, but as noted elsewhere, responsibility lies with the Government as funding to the HSE has been cut drastically over the past decade.

Risk assessments do not enable the government and school Duty Holders to identify the actual risk for pupils and staff from school asbestos exposure. This is

problematical because the available evidence indicates that the risk based on long term environmental cumulative asbestos exposure in schools with substantial amosite asbestos like CLASP-type schools is Medium to High for adults and High for children. However, current government funding presumes the risk is low for school staff and ignores the much higher risk to pupils. Consequently, the funding provided is not proportionate to the level of risk. See responses to Q1,2 and 6.

It also appears that there has been Government pressure on the HSE regarding asbestos risk assessments and the use of costly but effective methods for risk reduction in CLASP-type schools. SEE RECOMMENDATION 8F.

The available evidence suggests that Government pressure may have influenced the stringency and effectiveness of current risk assessments and restricted access to necessary funds to remove unsafe asbestos and asbestos riddled buildings. See below:

- A. The available evidence suggests that the DfE (and presumably successive Governments) actually argued against the introduction of risk assessments in the Asbestos Regulations on grounds of cost and disruption:
“A central government initiative to assess the risk to teachers and pupils would not only be inappropriate, given where the statutory duty lies, but would also lead to pressure for centrally funded initiatives to remove all asbestos and for other aspects of building work. That would be extremely expensive, as well as disruptive for the schools concerned.”ⁱⁱⁱ
- B. Moreover, while the HSE initially recommended a short term and a long-term method for reducing exposure to disturbed asbestos from within the building structure of CLASP-type schools in 2006, the latter – which required more funding and asbestos expertise – was not included in the HSE guidance to Duty Holders of system buildings a few years later. *HSE Asbestos in system buildings Control of Asbestos Regulations 2006 Guidance for duty holders Updated 18 September 2008
Consequently, the potential exposure from disturbed asbestos in wall and ceiling cavities and window/door frames was ignored, although the results from the initial investigation indicated that column remediation and replacement of damaged /missing ceiling tiles in enclosures did not, on average, reduce asbestos levels to that found in schools with asbestos in a good condition.
The reason for this change of HSE guidance was apparently not supported by the evidence regarding asbestos levels and there was no attempt by Government to require and finance investigation of all CLASP-type system buildings. Shockingly asbestos levels in less than 0.5% of system-built schools* have been investigated although there is known to be considerable variation in the location of asbestos even in schools of the same make, age and type. Duty Holders of over 6,000 system-built schools responded to the HSE questionnaire regarding their asbestos management of CLASP-type system buildings in 2010. * HSE. Questionnaire survey on asbestos management in local authority system-built schools – Alphabetical list of responses – July 2010.
- C. It appears that the Government is still failing to act and require the development of risk assessments that facilitate the identification and prevention of adults and children developing mesothelioma in CLASP-type buildings. It has also ignored the evidence that asbestos exposure in CLASP-type school buildings has been exacerbated by damage arising from building deterioration and renovation / maintenance work in ageing buildings. See response to Q2A and 4F below.
- D. The recent 2018 JUAC FOI investigation of CLASP* schools found that at the current rate of demolition they would still be here in the 2050s although most were already at the end of their expected life span with deteriorating buildings. 69% of

the 749 CLASP schools in 47 local authorities that kept records had received no funding for maintenance, renovation and demolition between 2010-2018. * JUAC Report: 2017 How fast is unsafe asbestos being removed from schools?

E. Capital funding for the school estate has experienced significant and damaging cuts over the last decade that are estimated by the Institute for Fiscal Studies (IFS) to be over 40% less in real terms between 2010-11 and 2019-20. Schools have suffered a cumulative cut of £26.5 billion to the Education capital budget since 2009-10. * JUAC Press Release March 9th 2020. Unions warn Treasury that capital spending cuts could increase asbestos risk in schools

F. The impact of inadequate Government funding for schools on the state of school buildings is confirmed by the recent DfE Condition of School Buildings Survey 2021 which stated that:

“23% of the [England school] estate’s condition need is in blocks from the 1960s, making it the highest source of condition need, followed by the two decades either side of it. In contrast the two decades from the 21st century represent a combined 15% of the condition need in the estate.”

The criteria used in the Condition Survey do not include asbestos although availability of evidence about the presence of asbestos is separately noted. Unfortunately, the failure of the asbestos regulations to provide an assessment of the actual risk of developing mesothelioma from background asbestos levels in each building means that the schools with the most unsafe levels of asbestos are not identified.

Consequently, the potential risk from asbestos exposure in deteriorating CLASP-type buildings is not being identified and the JUAC 2021 investigation suggests that tens of thousands of pupils and thousands of school staff in these schools since 1980 may now be at risk of developing mesothelioma. * JUAC 2021 Report. Continuing Government failure leads to rise in school mesothelioma deaths: Are pupils and staff any safer today? See pages 34-35 Asbestos levels today; Consequences of Government failure pages 52-53

G. 676 schools were referred to the HSE by the DfE in its Asbestos Management Assurance Process (AMAP) (2019) as causing concern, meaning that thousands of children and staff could be at risk from poor asbestos management. JUAC welcomes the fact that these schools have been identified as needing support but questions whether the HSE will have had the resources to investigate all these schools and help them to improve.

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?

OVERVIEW: Current risk assessments are not a measure of the actual risk from exposure to asbestos in buildings (see response to Q2A, 2B) **and the GB Occupational Mesothelioma Statistics is a measure of the risk 30-50 years ago and considerably underestimate the number of deaths** (see response Q4A). **None of these measures indicate the actual risk to children** (see response to Q1Eiii). **Meanwhile an estimated 10,000 former staff and pupils have already died from mesothelioma between 1980-2017 because they were exposed to asbestos in their schools between 1960-1980s** (see response to Q1Eiv)

The Recommendations below outlines what gaps in the evidence Government should fill to minimise the risk from asbestos exposure in buildings like schools that contain children.

- A. Evidence gap: The Annual Occupational GB mesothelioma statistics** considerably underestimate the risk of developing mesothelioma in different occupations.*

RECOMMENDATION: Annual Occupational GB mesothelioma statistics should record mesothelioma deaths (all ages) plus lifetime occupations and system buildings occupied by each victim. This information could be collected via a voluntary system upon diagnosis. * See response to Q1, Q4.

- B. Evidence gap: The Government has not required an investigation of the actual risk of children developing mesothelioma in schools today from asbestos exposure?**

The United States Environmental Protection Agency EPA*, unlike the UK Government, has investigated the potential risk to children in school buildings with asbestos and their findings indicated that for every former staff member who dies from mesothelioma 9 former pupils will die. See response to Q1 Eiv-v.

RECOMMENDATION: The Government should investigate if there is a similar relationship between staff and pupil mesothelioma deaths in the UK. A key difference may be the higher proportion of buildings with amosite asbestos in the UK plus other factors relating to building structure and size of classes and classrooms and whether that impacts on the ratio of staff to pupil mesothelioma deaths.

- C. Evidence gap: The current Asbestos Regulations do not enable Duty Holders to identify the actual risk to staff and children from asbestos exposure in schools.** See response to Q6 A and Q7.

RECOMMENDATION: The Government should carefully consider, develop and implement Environmental asbestos Regulations that include a measure of the actual risk to adults and children from long term cumulative asbestos exposure and ensure that they comply with the European Convention on Human Rights Act. In particular, the Government should demonstrate that a fair balance has been struck between the risk to pupils and staff from asbestos and the measures taken to counteract it according to Article 8 of the European Convention on Human Rights.

- D. Evidence gap: The current asbestos regulations do not measure the actual risk of developing mesothelioma in buildings like schools and so cannot enable Duty Holders to identify and remove all unsafe asbestos from buildings as recommended by the World Health Organisation.** See response to Q3 part C and Q6.

RECOMMENDATION: The Government should require the development of risk assessments that provide a more realistic measure of the actual risk to occupants.* In particular, they should:

- include a measure of long-term cumulative asbestos exposure
- take account of the age of occupant (children / adult) during each exposure period
- include the actual risk from each of the different types of asbestos and their dustiness
- use a method that facilitates the identification of all clinically active fibres.
- consider the development of the HSE Retrospective Risk Analysis* as the basis for an improved estimate of the risk from asbestos exposure.

E. Evidence gap: Research suggests that the measurement of cumulative asbestos exposure from low levels of unsafe asbestos may not be technically feasible. * However, that should not mean that the Government continues to ignore the problem because the 'socially acceptable' ambient amosite asbestos concentration which should not be exceeded for children in schools for 5 years is 0.0001f/ml (100f/m³). The latter level is much lower than that found in the 20 CLASP-type schools investigated by HSL and is lower than that found in schools with asbestos in a good condition (0.0005f/ml; 500f/m³). *See response to Q2 and Q6.

RECOMMENDATION: The Government should investigate if the measurement of cumulative exposure to asbestos levels around 0.0001f/ml; 100f/m³ is feasible.

If this is feasible the Government should:

- provide earmarked funding and guidance to enable Duty Holders, with guidance from asbestos consultants, to investigate and minimise the levels of asbestos to below 100f/m³ in all areas of their school during every day activities.
- prioritise and fund the removal of unsafe asbestos and the demolition / replacement of buildings with substantial asbestos which cannot be made safe.

If this is not feasible then the precautionary principle should prevail in order to safeguard the children from mesothelioma. Thus, all unsafe asbestos and asbestos containing buildings which cannot be made safe for young children should be prioritised for removal.

F. Evidence gap: The estimated number of former school staff and pupil mesothelioma deaths greatly exceed the socially acceptable level of risk as defined by the HSE i.e., *an excess death risk of one death/million people / year*. For example, up to 9,000 pupils, exposed between 1960-1980s (30 years), have died from mesothelioma between 1980-2017 because they were exposed to asbestos in their former schools. The socially acceptable number is 240 former pupil mesothelioma deaths. See response to Q2 Avii-vii and Q6.

RECOMMENDATION: The Government should ensure that funding provision for Duty Holders of schools should be increased to provide the necessary funding to remove the risk from asbestos exposure. See also Recommendations 8C, 8D and 8E.

G. Evidence Gap: The Regulations recommend mandatory training of Duty Holders/support for asbestos managers but the available evidence suggests that the recommended training is not completed and applied by all duty holders despite the potentially high level of risk from asbestos exposure for children. See Q2C Examples 1 and 2.

RECOMMENDATION: The Government should ensure that:

- appropriate training regarding asbestos management and awareness is mandatory and available for all school Duty Holders, appointed persons and staff. Duty Holders of CLASP-type schools should have Government resourced additional training and ongoing support.

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?

Yes. This is evident from the HSE's *Annual Science Review* publications in which there are examples of engagement with a wide range of research on asbestos matters such as

“Providing asbestos proficiency testing schemes” and *Research Reports* such as “Ventilation of enclosures for removal of asbestos containing materials”. There are fewer reports on asbestos topics than one might think, however, considering that asbestos continues to kill over 5,000 people each year in Great Britain.

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

The HSE website at <https://www.hse.gov.uk/asbestos/> contains a varied and accessible amount of information for different stakeholders including employers, employees, tradespersons (e.g. joiners, electricians, plumbers etc.) building owners, licensed contractors and members of the general public. Conspicuous by its absence, however, is any advice for safety reps, or any link to any such advice elsewhere. This is puzzling, because elsewhere the HSE is very specific about the importance of the role of trade union safety reps.

There is a DfE Asbestos in Schools Steering Group, which brings together stakeholders including the education unions and the HSE.

ⁱ Final WATCH position on asbestos risk assessment: February 2011

ⁱⁱ Proposal for an environmental level for asbestos exposure in schools. HSE comments. February 2015.

ⁱⁱⁱ Secretary of State for Education and Employment written reply to Mr Michael Clapham / June 1997.