



Australian Government
Asbestos Safety and Eradication Agency

ASEA REPORTS



Return on Investment to enable Safe Prioritised Asbestos Removal in Australia

DISCUSSION PAPER

Title of report

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1. Overview

Use of asbestos (amosite and crocidolite) was phased out of Australia during the 1980s and on the 31 December 2003 a ban was placed on importation and use of all forms of asbestos (ASEA, 2017). This ban does not apply to legacy asbestos containing material (ACM) in place, and as result an estimated 44% of consumed asbestos is still contained in the built environment (Donovan and Pickin, 2016). Due to the ongoing legacy of ACM in Australia, the risk of exposure continues in both occupational and non-occupational settings where building materials and other asbestos containing materials are deteriorating or undergoing renovation, maintenance or demolition. According to the World Health Organization (2015), there is no safe level of exposure to asbestos because no threshold level of asbestos exposure has been established below which all individuals would be risk free of contracting asbestos-related diseases. Between 700 and 800 people are diagnosed with mesothelioma each year in Australia, with symptoms typically appearing 20 to 40 years after a person has been exposed (ASEA, 2019).

Where ACMs are in poor condition and present a risk to health and safety, they need to be removed to prevent the risk of exposure to asbestos fibres. Organising asbestos removal works requires careful planning, budgeting and the development of schedules and processes for prioritised removal according to risk, and then safe transport, storage and disposal. Safe prioritised asbestos removal means considering the material type, condition and location of ACMs and prioritising removal according to the potential risk to human health.

A number of businesses and organisations in Australia (such as Ergon Energy (now Energy Queensland), AusGrid, CSBP, BOC, Tas Paper (PaperlinX)) have proactively sought to remove asbestos from their buildings and facilities to provide net savings to the organisation over the fullness of time. This suggests that, for many organisations, there may be a robust business case to encourage safe prioritised asbestos removal. But, there is currently limited information available on what factors are influential in a positive business case for safe prioritised asbestos removal.

To enhance the evidence base for the business case for removal of asbestos, Adept Economics, in conjunction with Queensland Economic Advocacy Solutions (QEAS) have undertaken a review of the emerging business case for the safe prioritised removal of asbestos. The review involved a literature review and summary of findings from stakeholder consultations on the topic. A checklist was also developed to capture all the information required for businesses and government to calculate the Return on Investment (ROI) from safe prioritised asbestos removal, that is, how many dollars of benefits are obtained per dollar of costs. If lifecycle benefits exceed costs, then the upfront investment in asbestos removal, which can be substantial, would be worthwhile.

2. Literature review findings

There is only a small amount of literature on the ROI of asbestos removal. The literature comprises various case studies, including for Ergon Energy (Tunny and Windle, 2016) and for 11 sites across Australia (Genever et al., 2017). The literature identified a number of factors as highly relevant to decision making on asbestos removal, including:

- avoided audit, inspection and training costs
- morale and productivity

- avoided cost of eventual removal/replacement of ACM
- avoided emergency removal costs (e.g. following natural disasters, hailstorms, etc.)
- land value uplift.

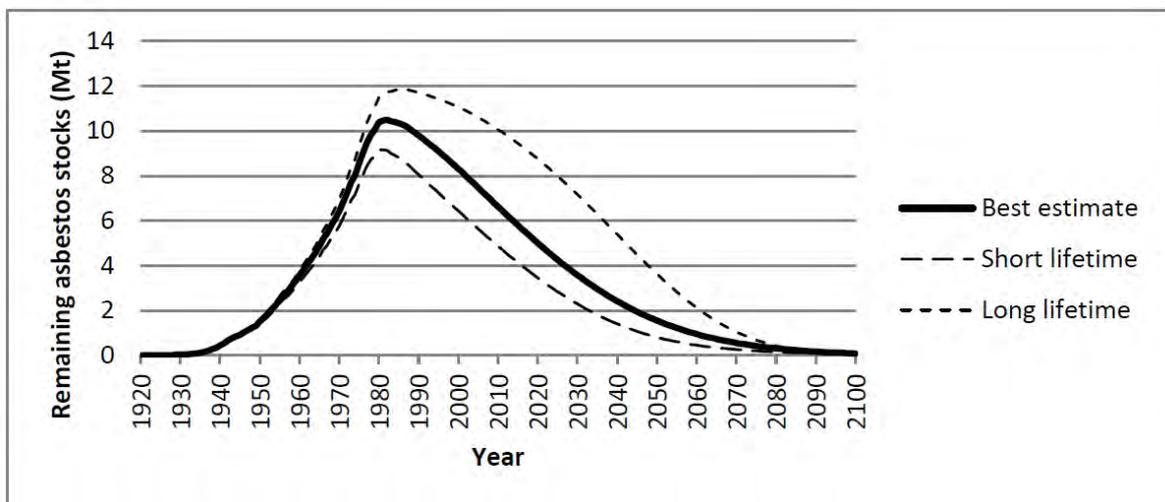
The most relevant pieces of literature for the current study include case studies of asbestos removal over the last few years at the Queensland government-owned regional electricity distribution business Ergon, which is now part of the statewide Energy Queensland. Details on the asbestos management measures taken by Ergon Energy, including a broad range of systemic and control measures, are provided by the Ithaca Group (2015a and 2015b). Measures included, among others:

- having a single point of accountability by way of a dedicated company Asbestos Manager
- ensuring a systematic approach to identifying and removing asbestos (by skilled and reputable contractors)
- creating and maintaining detailed asbestos registers
- using Work, Health and Safety (WHS) control measures such as purchase and use of Powered Air Purifying Respirators
- having clear and concise Safe Work Methods Statements
- educating and training staff in asbestos risks and management.

In 2019, Energy Queensland committed to remove asbestos from all buildings that they own or manage by 2030, so far as reasonably practicable.

Academic literature that is relevant to establishing the baseline for the building stock with asbestos-containing materials was also examined. In a recent Australian study, Donovan and Pickin (2016) built a statistical model of historical asbestos consumption to estimate and project current and future asbestos stocks. It was found that a large amount of ACM is still in use and it will remain in the built environment for decades to come. Donovan and Pickin (2016) note that “Under the best estimates, asbestos stocks peaked in 1981 and waste quantities in 2014, and in 2016, 44% of consumed asbestos remains in use” (Figure 1).

Figure 1: Remaining asbestos stocks in Australia



Source: Donovan and Pickin, 2016

3. Factors influencing the return on investment for asbestos removal

3.1 Cost factors

Managing asbestos containing materials in situ is not cost neutral. These costs can be significant and are important elements for developing an ROI for safe prioritised asbestos removal. Cost factors were identified as important in both the literature review and stakeholder consultations.

Under the current Model WHS Regulations, an asbestos management plan and asbestos register must be reviewed at least once every five years and more regularly if asbestos is removed from, or disturbed, sealed or enclosed at, the workplace. Anecdotal information gathered from stakeholder consultations suggests that the majority of businesses were auditing asbestos registers and asbestos management plans internally on an annually basis and engaging an external consultant for the five-year review. Quick Response (QR) codes have also been used by businesses and governments as tool to identify ACMs in workplaces, and link employees directly to the appropriate asbestos register and asbestos management plan.

The following cost factors were identified during stakeholder consultations*.

Avoided costs

- Avoided cost of review of asbestos management plan and asbestos register, at least once every five years (\$60 to \$100 per hour)
- Avoided cost of audit/inspection of the asbestos register and locations of ACM, this may be annually or less frequent (\$60 to \$100 per hour)
- Avoided cost of eventually having to replace asbestos in the future (i.e. current cost vs future inflated cost) (\$60 to \$85 per hour)
- Avoided or reduced cost of maintenance and repair (\$70 to \$100 per hour)
- Avoided cost of training staff in asbestos risks and management
- Avoidance of potentially higher insurance premium
- Avoided cost of service interruptions (i.e. lost gross value added) due to asbestos issues
- Reduction in risk of litigation
- Lower workers' compensation premium

Land value

- Improved value of property
- Reduced exposure to storm or fire damage
- Enhanced public profile of building

Productivity

- Enhanced desirability of leasing building (as per council incidence of leasing)
- Likelihood of upgrading in Property Council of Australia 'Office Building Quality'
- Improved productivity and reduced absenteeism and staff turnover due to higher morale
- Long-term reduction in asbestos-related diseases (including risk of future litigation)

- Reduction in legal compliance requirement (e.g. no longer required to complete asbestos register or maintain an asbestos management plan).

**Source: Stakeholder consultation and survey*

4. Benefits of a removal program

4 (a) Benefits of avoided service interruption and emergency asbestos removal costs

By bringing forward asbestos removal, there are avoided costs from future unplanned service interruptions due to asbestos issues on site. This was considered significant in the Ergon case study (Tunny and Windle, 2016). Asbestos removal companies highlighted a median 20% cost difference between planned asbestos removal and urgent removal of asbestos, indicating significant cost savings if early intervention occurs against unplanned and accordingly urgent removal.

4 (b) Productivity gains

Also considered significant in the Ergon Energy case study (Tunny and Windle, 2016) was the productivity gains, which occur from higher morale as workers feel more appreciated by their employers.

The impact on property values was considered significant in the Genever et al (2017) study. There is an observed reduction in the property value that occurs as a result of having ACM in the property.

Property value uplift calculations can be made based on the assumption of \$5/m² uplift in annual rental value for a property once asbestos is removed. Based on consultations suggesting the absolute preference for tenants is to take properties without ACMs over those with ACMs, this is considered a relatively conservative assumption.

Stakeholder consultations and surveys found that insurance premiums are slightly higher for buildings containing asbestos, all else equal, by around 3 to 5%.

4 (c) Reduction in contingent liabilities

Post asbestos removal, there is a theoretical reduction in contingent liabilities (e.g. the present value of damages if the entity was successfully sued in the future for mismanagement of asbestos) associated with potential asbestos exposure. The liability for future asbestos exposure is one of the major liabilities considered in the McGregor et al. (2018) report.

4 (d) Precautions when considering removal

When developing a business case for removing asbestos, it is highly recommended you engage an occupational hygienist to test and positively identify asbestos at your site to determine the scope of asbestos removal required. Before considering asbestos removal, it is also important to assess and manage risks of asbestos removal at each particular property, including if asbestos removal is appropriate for your business or situation. There may be some situations where asbestos removal is not reasonably practical.

Another precaution is that the cost of asbestos removal is site dependent and can escalate rapidly depending on what techniques need to be applied, the type of asbestos products used (friable or non-friable) and the location of the ACMs in the building. Some types of ACMs are much harder to remove than others. Costs will also be higher if areas have to be contained within a plastic airtight bubble, if grinding to remove ACM is required, if work needs to be done after-hours or if air

monitoring is required. In some cases ACMs may be hidden behind walls, some demolition/destructive works may be required in order to test and removal any asbestos. All asbestos removal should be conducted by licenced asbestos removal professionals and removed according to the code of practice. Because of these potential risks and precautions it is important to build in some contingency into any asbestos removal costs.

5. Factors that influence in situ management

The significant upfront costs of asbestos removal appear to be the main deterrent to many businesses, with most businesses opting for in situ management. In many instances, asbestos removal appears to occur only when allowed for by existing building works, included in building refurbishment budgets, or in response to a disturbance event (that exposes asbestos fibres) or in response to a natural disaster (e.g. a cyclone, fire, hail or flooding).

The research informing this report has highlighted that the ultimate cost savings from safe prioritised asbestos removal may be higher than many previously realised, and that in numerous cases there is a business case and net benefit for removal.

6. Factors that influence the decision to remove asbestos

Based on survey responses, a reduction in long-term asbestos related diseases is the key influencer in accelerating asbestos removal. That is, businesses appear to be suggesting they could be motivated to bring forward asbestos removal if they believed it would result in reduction in long-term asbestos-related diseases. This is a positive finding. Other key influencers cluster around cost avoidance, in the areas of: avoided cost of eventually having to replace asbestos in the future (i.e. current cost vs. future inflated cost); avoided cost of shutdowns due to asbestos issues; avoided cost of regular audits; and reduction in risk of litigation from asbestos exposure.



Source: Stakeholder consultation survey 2017

7. Conclusions

The research informing this report has highlighted that the ultimate cost savings from safe prioritised asbestos removal may be higher than businesses and governments may have previously realised, and that in many cases there is a strong business case for bringing forward asbestos removal. That said, significant barriers still exist to the safe prioritised asbestos removal by the business sector, particularly for small businesses, which are deterred by the significant up-front costs of removal compared with the ongoing benefits of removal.

Key messages conveyed in the stakeholder surveys found that private sector and government were also deterred by an absence of information on how to consider, in commercial terms, the removal of ACMs. Two major influencers for accelerating asbestos removal in the private sector and government were found to be a potential reduction in long-term asbestos-related diseases and reduced risk of future litigation from asbestos exposure.

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Appendix A: In situ cost management checklist

Managing ACMs in situ is not cost neutral. When assessing the costs associated with the in situ management of ACMs the following factors must be taken into account.

Before considering asbestos removal it is important to positively identify the presence of asbestos through a NATA (National Association of Testing Authorities) accredited laboratory. It is also important to assess and manage risks of asbestos removal on a site-by- site basis, including if asbestos removal is appropriate for your business or situation.

Avoided costs			
Factor	Cost considerations	Value	Total
Review of Asbestos Management Plan and Asbestos Register	Cost of review of asbestos management plan and asbestos register (at least once every five years) <i>(industry advice (\$60–\$100/hr))</i>		
Audit/inspections	Cost of audit/inspection of the asbestos register and locations of ACMs (this may occur annually or less frequent) <i>(industry advice (\$60–\$100/hr))</i>		
Maintenance	Cost of maintenance and repair to maintain ACMs <i>(industry advice (\$70–100/hr))</i>		
Staff and contractor asbestos awareness training	Costs associated with providing annual training to staff regarding location of ACMs and behavioural expectations <i>(include time of both trainer and trainee)</i>		
Contractor asbestos awareness training	Costs associated with inducting trade contractors onto site in relation to location of ACMs and behavioural expectations <i>(include time of both trainer and trainee)</i>		
Higher insurance and workers' compensation premiums	Costs associated with increased insurance and work cover premiums following a claim and/or insuring a building with ACMs <i>(estimated annual insurance bill saving of 3–5%, obtain quote from insurance company regarding the reduction in premiums from removing asbestos from the property)</i>		
Litigation costs/contingent liabilities	Costs associated with processing and/or defending a claim for compensation following exposure to ACMs <i>(note any building insurance you have may not cover an asbestos exposure incident)</i>		
Business/service interruption	Costs associated with having to respond to an emergency or unplanned disturbance of ACM <i>(include clean-up cost, lost staff hours and business losses)</i>		

Future removal and material replacement	Increased costs associated with undertaking the removal in the future eg consumer price index and removal cost inflation (industry advice cost of asbestos removal ~\$6,500/ tonne)		
Land value			
Factor	Cost considerations	Value	Total
Improved property value	Cost of removal of all ACMs (estimated property value uplift of \$5/m ² in annual rental value)		
Reduced exposure to increased cost of storm or fire damage	Cost to clean-up land and potentially neighbouring properties following a fire or storm emergency		
Enhanced public profile of building	Reputational value and staff/visitors recommending building as a place to live or work		
Enhanced desirability of leasing building	Likelihood of upgrading in Property Council of Australia 'Office Building Quality'		
Full use of asset and Increased asset flexibility	Cost benefit of improved asset efficiency. Reduction in time lost when undertaking capital works		
Productivity			
Factor	Cost considerations	Value	Total
Improved productivity and reduced absenteeism and staff turnover due to higher morale	Fewer days lost		
Other compliance costs (not captured elsewhere)			