Asbestos cement roof hotspots study

Asbestos National Strategic Plan
Implementation 2019–23

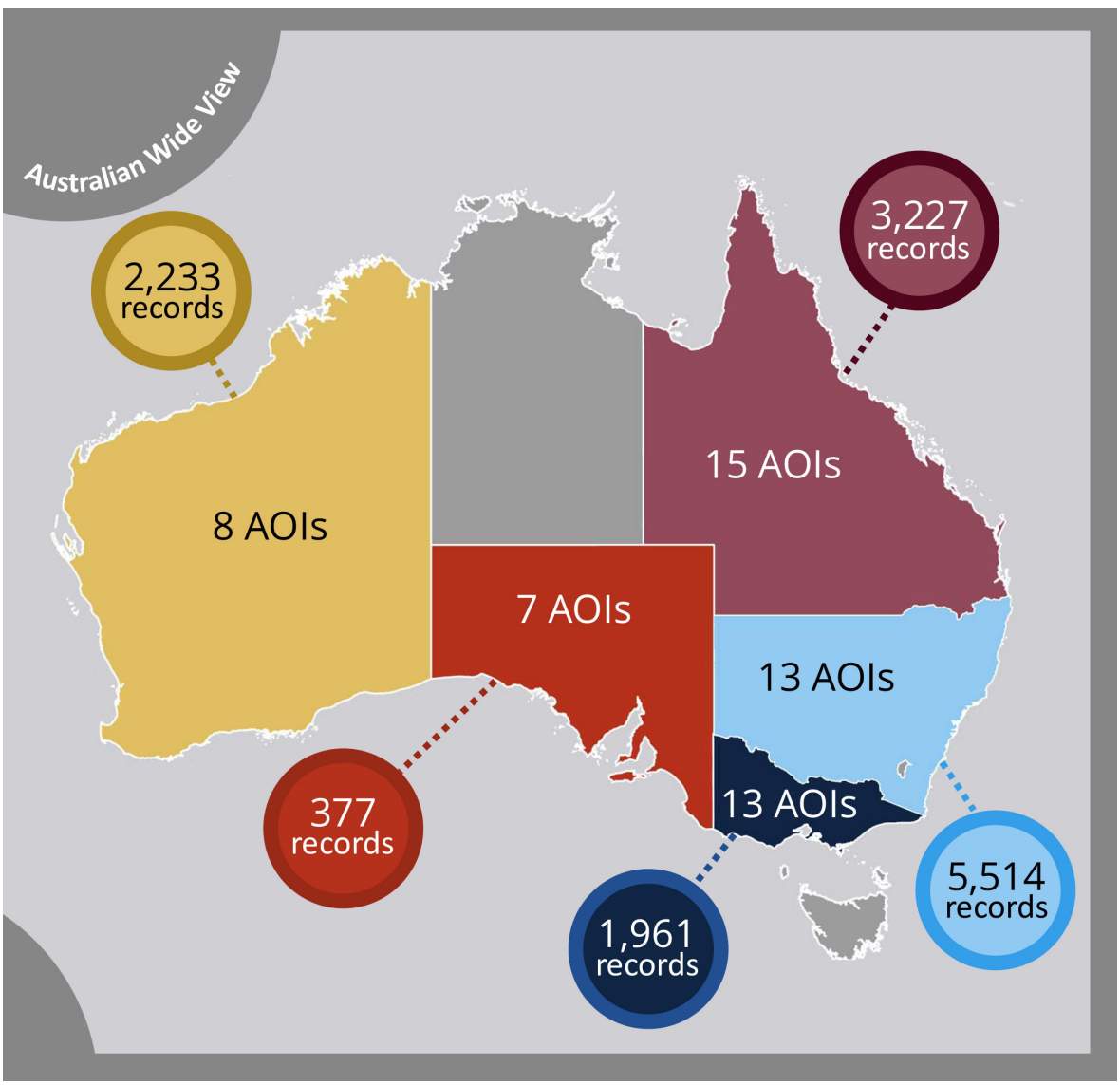
The asbestos cement roof hotspots project was commissioned to better understand the residential asbestos cement roofing legacy.

We tested and validated a mixed methods approach, combining urban analytics, high-resolution imagery, and machine learning to detect asbestos cement roofing in specific study localities.

Analytics allowed for the entire of Australia to be scanned (at the Statistical Area 2 or SA2 level), to rank localities for the predicted presence of ACMs anywhere in the home and the potential for disturbance, based on various socio-economic and property development factors.

Coverage

In this study, the highest ranked localities in NT, ACT and TAS did not reveal significant amounts of asbestos cement roofing and so these jurisdictions were excluded from further analysis.



Asbestos cement roof hotspots – summary

RESULTS

asbestos cement roof count = 13 312
estimated waste volume = 23 105 t
estimated waste area = 1 481 190 m²
estimated waste in football fields = ~207

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COVERAGE

113 hotspots (by SA2)

56 areas of interest (AOIs) (by geographical proximity)

15 in QLD
13 in NSW
13 in VIC
7 in SA
8 in WA

44 LGAs
QLD: 9 (out of 80)
NSW: 9 (out of 131)
VIC: 10 (out of 82)
SA: 8 (out of 73)
WA: 8 LGAs (out of 139)

1.7 million people or ~7 % of the population

771 km² total study area, covering 792 245 dwellings

QLD: 198 km² (210 820 dwellings)
NSW: 188 km² (192 153 dwellings)
VIC: 143 km² (157 895 dwellings)
SA: 104 km² (74 885 dwellings)
WA: 138 km² (93 492 dwellings)

RESULTS

	QLD	NSW	VIC	SA	WA
ROOFS DETECTED	3227	5514	1961	377	2233
AVG ROOF FOOTPRINT	144 m²	84 m²	126 m²	143 m²	113 m²
DENSITY RANGE (average)	0.4–6.0 % (1.5 %)	0.7–5.9 % (2.9 %)	0.4–2.8 % (1.2 %)	0.2–1.6 % (0.5 %)	0.2–6.6 % (2.4 %)
VOLUME	7249 t	7225 t	3854 t	841 t	3936 t
AREA (football fields)	464 688 m² (~65)	463 176 m² (~65)	247 086 m² (~35)	53 911 m² (~7.5)	252 329 m² (~35)
AI MODEL ACCURACY	98 %	99 %	99 %	100 %	96 %

Asbestos cement cladding – preliminary insights

COVERAGE

qualitative trends about external wall cladding for 29 SA2s

external wall asbestos cement cladding prevalence estimates in 19 SA2s

- 6 in QLD
- 3 in NSW
- 3 in VIC
- 3 in SA
- 4 in WA

observations in ~0.8 km² of each SA2, covering a total of ~15 km² and 1505 dwellings

RESULTS

Most commonly found in CBD fringing or coastal areas, with a double-pitched non-ACM roof

Commonly associated with:
- iron roofing
- vertical cladding cover strips

Commonly associated with:
- tile roofing
- horizontal cladding cover strips

ESTIMATED DENSITY

ACM roofing only : ACM roofing and cladding : ACM cladding only

3 : 1 : 6

for every 3 homes with asbestos cement roofing only, there is 1 more home with both asbestos cement roofing and cladding, and 6 more homes with external wall asbestos cement cladding only