

WINDOW FALLING OFF A HIGH-RISE BUILDING

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The image of a large window caught as it fell, suspended precariously on an eighth-floor apartment balcony, was beamed into living rooms on the News last October. While not as devastating as the fire at the Lacrosse Building in Melbourne or the structural fiascos of the Opal and Mascot Towers in Sydney, it again highlighted the need for all the components of a building to meet Australian Standards, the National Construction Code and, importantly, to be correctly installed.

The day the window fell, Sydney experienced high winds of 90 km/h. These strong winds were a factor in the incident. NSW Fire and Rescue used their ladder truck to move the 500 kg window, so it was less likely to fall any further and hurt anyone below. The glass in the window had also broken and fallen but luckily no one had been below.

AGWA became aware of the incident and immediately began to investigate the cause of the failure and to determine any information regarding the incident that could provide lessons for the industry. Our first port of call was to the relevant council, Woollahra Council, who, surprisingly, had not been notified. The Council asked AGWA to provide them with more information so they could follow up the incident further.

The detective work then began to locate the building in Paddington. Using Google Maps, we were able to identify the address of the building and, from that, the name of the Strata Manager. This information was passed on to the Council with a request for them to investigate.

AGWA contacted the Strata Manger who, after being convinced of the urgency of finding and rectifying



the cause, engaged an engineer to conduct a forensic investigation to determine the contributing factors. The Strata Manger shared the Engineer's Report with AGWA. It indicated that insufficient fixings had been used in securing the window frame and that, together with the excessive wind load on the day, had caused the window to fall.

In addition, the wind direction and elevation of the apartment, meant that the failed window was being subjected to an external negative wind load. This was exacerbated by an open window on the other side of the apartment, which created an internal positive wind load on the window. These two pressures together created excessive forces on the window which, combined with the inadequate fixings, led to it being dislodged.

To make the building safe, AGWA believes the fixings and the windows needed to be checked for structural integrity. Wind pressures can play havoc with windows that have not been adequately secured using the required number and method of fixing them in place.

This incident is not the only one of its kind. The lower picture illustrates a second example of window structural failure in recent months and the potential risk to the community that issues like this can pose. Window suppliers must ensure they meet the wind load requirements requested by the customer, while the installer needs to ensure that the number of fixings is in line with the manufacturer's instructions or use the AGWA Window and Door Fixing Guide for the required minimum number of fixings.

This is an illustration of the importance of taking all factors into account, as well as the use of the correct number of fastenings.