

VBA External Wall Cladding Audit Report



17 February 2016

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Introduction

On 25 November 2014 the Lacrosse building in Latrobe Street, Docklands became the scene of a fire which required the evacuation of all residents.

This fire caused no loss of life. This was in part due to the response of the emergency services and in part due to the requirements of the Building Code of Australia (**BCA**) to design and construct buildings with a multi-layered approach to safety. These requirements address issues about how people get out of a high rise building quickly by limiting distances from an apartment front door to an exit; use of automated sprinklers and alarm systems; and choice of building materials.

In the case of the Lacrosse building fire, the Metropolitan Fire Brigade (**MFB**) identified it was the non-compliant use of the building's external cladding material that contributed most to the spread of fire.

The significance of the fire event, associated with the non-compliant use of an external wall cladding material, logically prompted the question, "How many buildings in Melbourne have utilised external wall cladding material in a non-compliant manner?".

The Victorian Building Authority (**VBA**) then initiated the External Wall Cladding Audit (**the VBA Audit**) which was the first of its kind in Australia. The Audit was designed to identify the extent of non-compliant use of external wall cladding materials in residential high rise buildings and public buildings. "Non-compliant use" means that the material was used in a manner that does not comply with the BCA.

The requirements of the BCA establish limits on the use of combustible materials on external walls of high rise buildings. On this basis, the VBA established audit criteria which resulted in the identification and audit of some 170 high rise residential and public buildings in central Melbourne and surrounds.

The Audit has been a significant and resource intensive task involving the acquisition and analysis of thousands of documents, including design drawings, specifications and permits. A key challenge in conducting the Audit was finding appropriate additional expertise to analyse the voluminous documents in a timely manner.

Where the VBA Audit identified non-compliant use of external wall cladding materials, the role of the relevant Municipal Building Surveyor (**MBS**) was to independently assess the building and then take any necessary steps to ensure the safety of occupants. Due to the location of the buildings, the relevant MBS was mainly the City of Melbourne's (**CoM**) MBS. The results of these actions have been progressively published on the VBA's website.

It is important to note that "non-compliant" does not necessarily mean the building is unsafe to occupy. A number of safety features in buildings protect occupants from fire. If a building has

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external wall cladding that does not comply with the BCA, it may still be considered safe to occupy because of the presence of these other safety features, which may include automatic fire sprinkler systems and construction of internal walls to prevent the spread of fire and smoke within the building.

As the VBA Audit has now been finalised, important lessons can be learned from the findings to inform future practices of the building industry, regulatory reform and consumer awareness. These findings include:

- The levels of non-compliance identified by the VBA are too high – however, they generally do not pose a risk to safety. Apart from the Lacrosse building, only one other building identified through the VBA Audit was deemed to pose a significant safety issue due to the non-compliant use of external wall cladding material;
- There are many types of external cladding material in use throughout the Victorian building industry but whether one is “fit for purpose” over another is not always properly understood by architects, designers, engineers, building surveyors and builders;
- The National BCA requirements for external walls, including the suitability of materials, are inconsistently applied and poorly understood; and
- No single category of practitioner involved in the design, approval or construction of those building projects audited is consistently responsible for the non-compliant use of cladding.

The VBA will share what it has learned with all Australian jurisdictions, interstate building regulators, MBSs, fire authorities, practitioners and consumers. Technical guidance for practitioners has also been developed by the VBA which clearly explains the BCA and building permit requirements.

The Victorian Government, supported by the VBA, has also been successful in getting this important issue on the national agenda with a review of the BCA and the Codemark building product certification scheme underway. The Victorian Government has also made changes to its regulations to ensure that all new multi-storey residential buildings, hotels, healthcare buildings and aged care buildings that are required to install sprinklers must extend that sprinkler protection to include all covered balconies, regardless of size. Simultaneously, the Senate commenced an Inquiry into Non-Conforming Building Products which will consider these issues.

The VBA will now commence a further audit which will cover:

- Other buildings of practitioners identified with significant non-compliance in the VBA Audit;
- Buildings that were outside the initial scope of the VBA Audit but which otherwise came to the VBA’s attention; and

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- A targeted sample of buildings in collaboration with local councils across all Victorian municipalities.

Buildings assessed under this audit will be prioritised, with the first priority being those buildings of practitioners identified with significant non-compliance in the Audit.

The VBA is committed to ensuring Victorian consumers can have confidence in the buildings they own and occupy.

I would like to acknowledge the ongoing cooperation and expertise provided by our partners in the audit, in particular the City of Melbourne and the Metropolitan Fire Brigade with whom we have worked very closely.

Prue Digby

Chief Executive Officer

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Background

Fire prevention and safe occupation of multi-storey buildings is complex and relies upon many materials and systems. In the case of the Lacrosse building fire, the Metropolitan Fire Brigade (**MFB**) concluded in its *Post Incident Analysis Report* in April 2015 that the rapid spread of the fire was exacerbated by the non-compliant use of aluminium composite panels (**ACP**) on the building's external walls¹.

ACPs are commonly used by designers and builders worldwide as feature panels or lining to provide a decorative finish to the external walls of buildings. ACPs are not part of a building's structural integrity. ACP is a multi-layered building material containing a core material sandwiched between aluminium sheets which are glued to form a laminated product. There are many different ACP brands.

The MFB report into the Lacrosse building fire identified the external wall cladding material as an ACP product, Alucobest, and that it had been used in a non-compliant manner. The Alucobest product contained a combustible polyethylene core material, which is common amongst many ACP products. ACP products are manufactured both locally and overseas. The core material of an ACP is the predominant contributor to combustibility, however the method of the ACP attachment to a building is also a factor in the rate of any fire spread.

The Building Code of Australia (**BCA**) outlines the requirements in the design and construction of new buildings (or new building work to existing buildings). ACP, or any other wall cladding materials used as a component of an external wall, should of course be used in a manner compliant with the BCA.

In the event the use of external wall cladding material is identified as not complying with the BCA, it does not necessarily mean the building is unsafe for occupation. It also does not necessarily mean the product is illegal or should not be used in Australia as it can be legitimately used for certain construction purposes.

Building practitioners make decisions during the design and construction of a building to ensure compliance with the BCA before it is then certified by the Relevant Building Surveyor (**RBS**).

Other considerations for building practitioners in the design and construction of a building include the location and orientation of material and whether there are other control measures (such as sprinkler systems) in place.

The VBA External Wall Cladding Audit

As a result of the fire, the VBA analysed the application of the BCA to the construction design of the Lacrosse building, in order to determine whether there was any regulatory failure.

¹MFB *Post Incident Analysis Report* pages 5 and 26

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The release of the MFB report informed the scope of the VBA Audit.

The VBA's first steps were to:

- Use its coercive powers to compel the builder of the Lacrosse Building to disclose any other buildings where it had used Alucobest;
- Initiate the complex task of investigating the conduct of the building practitioners involved with the Lacrosse building;
- Contact more than 20,000 building practitioners and registered architects requesting information about possible use of ACP cladding as a component of the external walls of buildings with which they had been involved;
- Use its coercive powers to require production of documents from builders and building surveyors relating to the type of external wall cladding used. The VBA Audit covered some 170 buildings relating to work on high rise residential and public buildings in central Melbourne and immediate surrounding suburbs in the past 10 years.

The VBA Audit has determined what external cladding was used (if any) and then considered whether its use complied with the BCA.

In addition to the VBA Audit, the VBA formed a working group to determine the level of risk posed by any non-compliance identified. This working group included the City of Melbourne's MBS, MFB representatives and the VBA.

The group:

- Developed a matrix of elements of buildings which contributed to risk of fire spread (e.g. balconies/no balconies, sprinklers/no sprinklers, window/door openings/no openings);
- Determined a risk level for the building (Low, Medium, High); and
- Provided this information to the City of Melbourne (**CoM**) to enable it to identify and prioritise its activities.

The VBA supported and continues to support the local MBS, predominantly at the CoM, to determine whether buildings are safe to occupy and whether any steps are necessary to bring a building into compliance with the BCA.

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The VBA has progressively published the outcomes of each audit on its website once residents have been informed of the MBS decision.

VBA Audit Findings and VBA Actions

Key findings from the VBA Audit and the VBA's proposed action to address the findings include:

Audit Finding

The rate of non-compliance was 51%.

VBA Action

Of the building permits audited, 51% of them were assessed by the VBA as non-compliant. Of these, 101 have been published to date on the VBA website. The remainder are with the relevant MBS to independently determine whether any other remedial action is required. These will be progressively published on the VBA's website as the relevant MBS completes their work. The VBA, CoM MBS and MFB working group have determined that none of these buildings posed a safety issue that required immediate action.

Audit Finding

In addition to the Lacrosse building, only one other building required an immediate emergency order to be issued by the MBS.

VBA Action

An emergency order was issued by the City of Port Phillip MBS in relation to the Harvest Apartments at 144-150 Clarendon Street, Southbank. Remedial action has already been undertaken to comply with the order.

Audit Finding

No single category of practitioner involved in the design, approval or construction of the buildings audited was consistently responsible for the use of cladding components of external walls that did not comply with the BCA.

VBA Action

Practitioners who were identified in the VBA Audit as being involved in multiple instances of non-compliance will be the subject of further investigation and audit activity.

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Audit Finding

Practitioner understanding of the BCA:

- Decisions made by different practitioners at different stages – during design, material specification, design approval and construction – appear to have contributed to cladding being used as a component of external walls in ways that do not comply with the BCA;
- The VBA Audit identified that practitioners have differing degrees of understanding of the requirements of the BCA and the specification for components of an external wall.

VBA Action

The VBA is publishing a technical document for use by practitioners that clearly explains BCA requirements. The advice provides guidance particularly in relation to when cladding is required to be non-combustible and when and in what circumstances a combustible material can be used as an attachment (such as a sign or lining) to an external wall.

Future audits will include a focus on the application of the technical advice published by the VBA.

Audit Finding

Permit documentation issues:

- In the VBA Audit, the VBA requested documentation relating to the external wall cladding, but overall noted that the nature and scope of design detail contained in drawings and specifications forming part of a building permit appears in some instances to be inadequate. The detail was occasionally ambiguous for the purpose of determining compliance with the BCA and for issuing a compliant building permit;
- The documentation received by the VBA to illustrate materials and methods of construction used by the builder was sometimes inconsistent with the approved building permit or inadequate to demonstrate the “as built” building complied with the building permit.

VBA Action

The VBA will:

- Assess the documentation provided as part of the building permit process to ensure that sufficient detail is provided. This will be done as part of the VBA’s ongoing audit program.
- Issue further information and guidance in relation to documentation that reflects the findings

of its audit.

- Work with industry bodies to inform relevant building practitioners of the requirements in relation to documentation.

Regulatory Reform

The issue of the use of non-compliant cladding was recognised as a national issue, not just an issue for Victoria. The matter of non-compliant use of ACP, as well as the use of other inappropriate building materials, was raised by the Victorian Minister for Planning, Richard Wynne, at the Building Ministers' Forum (**BMF**) in July 2015.

The BMF established a cross-jurisdictional Senior Officers Working Group which is considering other opportunities to limit the risks associated with non-conforming building products, including at import. The VBA is a member of this group together with the Department of Environment, Land, Water and Planning.

The VBA will continue to contribute directly to the Australian Building Codes Board (**ABCB**) on improving clarity and practitioner understanding of the BCA.

Regulators in other States and Territories are following the VBA Audit closely to guide how they should proceed in their own jurisdictions. The VBA is committed to sharing any learnings from the VBA Audit with other building regulators.

Changes to the Victorian regulations introduced by the Victorian Minister for Planning will ensure that all new multi-storey residential buildings, hotels, healthcare buildings and aged care buildings that are required to install sprinklers must extend that sprinkler protection to include all covered balconies, regardless of size.

Next Steps

Compliance & Enforcement

The VBA will now write to all relevant building practitioners whose work was audited. These letters will, where appropriate, contain information on areas where non-compliance has occurred and detail actions required by the practitioners and follow-up activities the VBA will be undertaking.

While only the Lacrosse building and the Harvest Apartments have been identified as having a safety issue, the VBA's Audit findings will be examined to assess whether there are practitioners who were involved in multiple instances of non-compliance. Those practitioners will be the subject of further investigation and audit activity which could result in disciplinary action.

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During the recently completed VBA Audit, a number of building projects outside of the existing scope were observed by the VBA to potentially involve the use of ACP. As the VBA conducted visual inspections as part of its audit process, these properties were generally adjacent to, or nearby, the buildings included in the audit. These building projects will now be included in the further audit.

Following the above audits, the VBA will commence further audits in collaboration with local councils across Victoria. The VBA will analyse what buildings in each municipality may have ACP and then work with the MBS to determine the next steps.

For those practitioners involved in non-compliant projects not subject to further audit or investigation, the VBA will work with them to educate and provide further information in relation to compliance.

Practitioner Education and Guidance

One of the recurring issues discovered through the VBA Audit is the need for building practitioners at all stages of design and construction to better understand how to achieve compliance with the BCA.

The VBA is also working with the ABCB to identify opportunities to clarify the BCA, as well as enhancing the voluntary building product certification scheme Codemark. The VBA is preparing information and guidance to improve the understanding of designers, architects, builders and inspectors about the requirements of the BCA, and the specification of components of external walls including cladding.