Building Code & Bushfire Hazard Solutions

(Pty. Limited) ABN 19 057 337 774
PO Box 124, Berowra NSW 2081
Telephone: (02) 9457 6530 Facsimile: (02) 9457 6532
www.bushfirehazardsolutions.com.au

FPA AUSTRALIA
Certified Business
Bushfire Planning & Design
BPD-BA-02354

PBS Building (NSW) Pty Ltd
Unit 18, 11 – 21 Underwood Road
HOMEBUSH NSW 2140

9th December 2015
Our Ref. 130164c

Attn: Mr Roi Cifti
Email: roi.ciftci@pbsbuilding.com.au

Re: APPROVED SENIORS LIVING / AGED CARE COMPLEX
STAGE 4 ANGLICAN RETIREMENT VILLAGE
MACPHERSON STREET, WARRIEWOOD NSW
BUSHFIRE OCCUPATION CERTIFICATION COMMENT

Dear Roi,

Thank you for allowing us to undertake this assessment for you.

The purpose of this certification comment is to ascertain compliance or otherwise of the completed works with condition 25 of the Conditions of Approval issued by Warringah Council dated 20th February 2014, ref N0267/13 for Stage 4 which involved the demolition, earthworks, and construction of a seniors housing development consisting of 33 self-contained seniors dwellings with a community building, landscaping and car parking at 6-14 Macpherson Street, Warriewood (Lots 1, 2, 3, 4 and 5 DP 1161389).

I have inspected the subject site and retain any certificates relied upon for this assessment on file.

As a suitable qualified bushfire consultant (FPAA BPAD Scheme No 9399 L3) it is my opinion that the completed works comply with condition 25 of the Conditions of Approval issued by Warringah Council dated 20th February 2014, ref N0267/13.

Should you have any enquiries regarding this project please contact me at our office.

Prepared by,

Prepared by
Building Code & Bushfire Hazard Solutions

Wayne Tucker
G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Ass Dip Applied Science
Manager - Bushfire Section
Building Code and Bushfire Hazard Solution
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Certification number – BPD – 9399

BPAD

Building Code & Bushfire Hazard Solutions

(Pty. Limited) ABN 19 057 337 774
PO Box 124, Berowra NSW 2081
Telephone: (02) 9457 6530 Facsimile: (02) 9457 6532
www.bushfirehazardsolutions.com.au

FPA AUSTRALIA
Certified Business
Bushfire Planning & Design
BPD-BA-02354

Morgan Moore & Associates
Level 2, 4-10 Bridge Street
PYMBLE NSW 2073

23rd February 2016
Our Ref. 130164c

Attn: Mr Martin Moore

Re: APPROVED SENIORS LIVING / AGED CARE COMPLEX
ANGLICAN RETIREMENT VILLAGE – STAGE 5
6 – 14 MACPHERSON STREET, WARRIEWOOD NSW
BUSHFIRE ASSESSMENT COMMENT

Dear Martin,

Thank you for allowing us to undertake this assessment for you.

We understand that some of the approved Independent Living Units (ILUs) have had their layouts amended. We further understand that 800 x 800 skylights have been installed within certain ILUs in Stages 4 and 5 and will be installed in other ILUs in Stage 5, rather than polycarbonate sheet.

Following a review of documentation provided it is understood that:

- The following ILUs have similar layouts to that approved, these units are: 34, 35, 36, 37, 40, 43, 46, 49, 52, 56, 57, 58, & 59.
- The following ILUs have amended layouts to that approved, they are 38, 39, 41, 42, 44, 45, 47, 48, 50, 51, 53 & 54. ILU no 55 is a similar type to that approved however the location of the external deck has changed.

Condition 25 of the development consent relates to bushfire protection, and requires:

> 25. The proposal is to remain consistent with the requirements of the NSW RFS for the life of the development. These requirements are as follows;
>
> - At the commencement of building works, and in perpetuity a 24 metre asset protection zone along the northern boundary shall be managed as an inner protection area (IPA) as outlined within section 4.1.3 and Appendix 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document 'Standards for asset protection zones'.
> - Water, electricity and gas are to comply with sections 4.1.3 and 4.2.7 of 'Planning for Bush Fire Protection 2006'.
> - Property access roads shall comply with sections 4.1.3(2) and 4.2.7 of 'Planning for Bush Fire Protection 2006'.
> - New accommodation construction shall comply with section 5 (BAL 12.5) Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of 'Planning for Bush Fire Protection 2006'.

We have reviewed the plans prepared by Enviro Studio (project no 731, dwg no's 001-005, issue A) and are satisfied that the proposed modifications are consistent with the requirements of the NSW Rural Fire Service. Furthermore the proposed modifications can achieve compliance with the above conditions, and in actual fact the replacement of the polycarbonate with translucent glazing in the skylights is necessary to achieve compliance with the above.

It is also noted that the proposed modifications do not result in any additional ILUs.

We are therefore in support of the above mentioned modifications, in conjunction with the application of condition 25 as shown herein.

Should you have any enquiries regarding this project please contact me at our office.

Prepared by
Building Code & Bushfire Hazard Solutions

Stuart McMonnies
G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Certification number – BPAD9400

Reviewed by
Building Code & Bushfire Hazard Solutions P/L

Wayne Tucker
G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Ass Dip Applied Science
Manager - Bushfire Section
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Certification number – BPD – PA-09399

Disclaimer:

Quote from Planning for Bush Fire Protection 2006, '*Any representation, statement opinion, or advice expressed or implied in this publication is made in good faith on the basis that the State of New South Wales, the NSW Rural Fire Service, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above..*'

Similarly the interpretations and opinions provided by Building Code and Bushfire Hazard Solutions in regard to bushfire protection are also given in the same good faith.

MATERIALS SCIENCE & ENGINEERING
www.csiro.au

14 Julius Avenue, North Ryde NSW 2113
PO Box 310, North Ryde NSW 1670, Australia
T (02) 9490 5444 • ABN 41 687 119 230

6 July 2012

Our Ref: FCO-2075/4156

Natural Lighting Products Pty Ltd
Unit 1 / 28 Vore Street
SILVERWATER NSW 2128

Attention: Mr Doug Moore

GLASS SKYLIGHT SYSTEMS
Assessment Number FCO-2075
Your email dated 18 May.

INTRODUCTION

We have re-examined the information referenced by you on the likely compliance of your glass skylights in accordance with the requirements of the Building Code of Australia and AS 3959-2009. The information included

- your Natural lighting Products catalogue;
- your drawing entitled N.C.S.L. Glass Skylight Non Combustible", dated 8 February 2002;
- the Building Code of Australia; and
- AS 3959-2009: Construction of buildings in bushfire-prone areas.

We have retained these documents.

ANALYSIS

The proposed system is a galvanised or zincanneal steel framed skylight with external cladding of 0.08-mm gauge galvanised steel or 0.80-mm zincannealed steel. The skylight is glazed with a laminated glass sheet weather sealed with 3-mm thick PVC glazing tape.

The Building Code of Australia (BCA) requires that such constructions would be required to be non-combustible under certain exposure conditions. Such a requirement also applies to steel roof structures where the roof lining, i.e. the steel sheeting or tiling, is required to be non-combustible.

With regard to the proposed construction the roof lining, or external face of the skylight, is the laminated glass and steel sheeting. All of these components are non-combustible or deemed non-combustible as required in the BCA and defined in AS 1530.1. The weatherproofing seals, which are combustible, are also protected externally so as to form less than 0.4% of the exposed face. A similar situation would exist for any steel roof sheeting that is fixed with screws that incorporated weather seals.

With regard to AS 3959-2009, Section 5 Construction for **Bushfire Attack Level 12.5 (BAL – 12.5)** Clause 5.6.5 Roof Penetrations:-

The following subclauses of AS 3959-2009 Clause 5.6.5 apply:

(a) Roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be adequately sealed at the roof to prevent gaps greater than 3 mm. The material used to seal the penetration shall be non-combustible;

(c) All overhead glazing shall be Grade A safety glass complying with AS 1288; and

(e) Flashing elements of tubular skylights may be of a fire-retardant material, provided the roof integrity is maintained by an under-flashing of a material having a flammability index no greater than 5.

With regard to AS 3959-2009, Section 6 Construction for **Bushfire Attack Level 19 (BAL – 19)** Clause 6.6.5 Roof Penetrations:-

The following subclauses of AS 3959-2009 Clause 6.6.5 apply:

(a) Roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be adequately sealed at the roof to prevent gaps greater than 3 mm. The material used to seal the penetration shall be non-combustible;

(c) All overhead glazing shall be Grade A safety glass complying with AS 1288; and

(e) Flashing elements of tubular skylights may be of a fire-retardant material, provided the roof integrity is maintained by an under-flashing of a material having a flammability index no greater than 5.

With regard to AS 3959-2009, Section 7 Construction for **Bushfire Attack Level 29 (BAL – 29)** Clause 7.6.5 Roof Penetrations:-

The following subclauses of AS 3959-2009 Clause 7.6.5 apply:

(a) Roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be adequately sealed at the roof to prevent gaps greater than 3 mm. The material used to seal the penetration shall be non-combustible; and

(c) All overhead glazing shall be Grade A safety glass complying with AS 1288.

(e) Flashing elements of tubular skylights shall be non-combustible. However, they may be of an alternative material, provided the integrity of the roof covering is maintained by an under-flashing made of non-combustible material.

(f) External single plane glazed elements of roof lights and skylights, where the pitch of the glazed element is 18 degrees or less to the horizontal, shall be protected with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.

OPINION/CONCLUSION

Based on the factors detailed above it is the opinion of the Division that the proposed Natural Lighting Products glazed steel skylight system would fulfil the intention of the BCA in providing a non-combustible external lining to the roof structure for those applications where the BCA stipulates non-combustible roofing.

Additionally with regard to AS 3959: Construction of buildings in bushfire-prone areas – 2009, the proposed Natural Lighting Products glazed steel skylight system would comply with the requirement for:-

- Bushfire Attack Level 12.5 (BAL – 12.5):
- Bushfire Attack Level 19 (BAL – 19):
- Bushfire Attack Level 29 (BAL – 29) if the external single plane glazed elements of roof lights and skylights (where the pitch of the glazed element is 18 degrees or less to the horizontal), shall be protected with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium; and
- Bushfire Attack Level 40 (BAL – 40) **if the laminated glass was replaced with wired glass**.

TERM OF VALIDITY

This assessment report will lapse on 31 May 2017. Should you wish us to re-examine this report with a view to the possible extension of its term of validity, would you please apply to us three to four months before the date of expiry. This Division reserves the right at any time to amend or withdraw this assessment in the light of new knowledge.

Yours sincerely

For Russell Collins
Fire Testing and Assessments
Russell.Collins@csiro.au
61 2 9490 5444

Building Code & Bushfire Hazard Solutions

(Pty. Limited) ABN 19 057 337 774
PO Box 124, Berowra NSW 2081
Telephone: (02) 9457 6530 Facsimile: (02) 9457 6532
www.bushfirehazardsolutions.com.au

FPA AUSTRALIA
Certified Business
Bushfire Planning & Design
BPD-BA-02354

Morgan Moore & Associates
Level 2, 4-10 Bridge Street
PYMBLE NSW 2073

6th April 2016
Our Ref. 130164c

Attn: Mr Martin Moore

Re: APPROVED SENIORS LIVING / AGED CARE COMPLEX
STAGES 4 & 5 – ANGLICAN RETIREMENT VILLAGE
6 – 14 MACPHERSON STREET, WARRIEWOOD NSW
BUSHFIRE COMMENT – SHADE STRUCTURES FOR BOWLING GREEN

Martin,

It is understood that the proposed shade structures are not located within 6 metres of a building that is required to comply with Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2009. Shade structures are not specifically addressed in Planning for Bush Fire Protection 2006 or AS3959 – 2009.

We would consider that must appropriate method of assessing these structures is by likening them to an 'adjacent structure'. In the regard AS3959 – 2009 states:

> *3.2.3 Adjacent structures*
> *Where any garage, carport, or similar roofed structure is not attached to a building required to comply with this Standard, the entire garage, carport, or similar roofed structure on the subject allotment shall comply with the construction requirements of this Standard.*
>
> *Alternatively, the adjacent structure shall be separated from the subject building by one of the following:*
> *(a) A distance of not less than 6 m from the building required to comply with this Standard.*

In accordance with the above the proposed shade structures would not require consideration under AS3959 – 2009.

As a matter of best practice we would encouraged that the proposed shade structures consist of metal posts and cross supports and fire retardant fabric.

Should you have any enquiries regarding this project please contact me at our office.

Prepared by
Building Code & Bushfire Hazard Solutions

Reviewed by
Building Code & Bushfire Hazard Solutions P/L

Stuart McMonnies
G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Fire Protection Association of Australia BPAD – L3 Certified Practitioner
Certification number – BPAD9400

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Wayne Tucker
G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Ass Dip Applied Science
Manager - Bushfire Section
Fire Protection Association of Australia BPAD – L3 Certified Practitioner
Certification number – BPD – PA-09399

BPAD Bushfire Planning & Design Accredited Practitioner Level 3