MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Submissions from NZFS

Sue Brown

From: Quinn, Stephen s 9(2)(a)
Sent: Thursday, 12 March 2015 3:40 p.m.
To: Determinations
Subject: RE: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [DLANZ-CLIENT.FID29467] [UNCLASSIFIED]
Attachments: 12032015153924-0001.pdf

Chris

I attach a further letter on behalf of NZFS on this matter.

Regards

Stephen Quinn
Partner

s 9(2)(a)

DLA PIPER

Please note we are now DLA Piper New Zealand. Our website has changed to www.dlapiper.co.nz

DLA Piper New Zealand is an independent law firm. It is associated with DLA Piper, a global law firm operating through various separate and distinct legal entities.

From: Chris Velvin [mailto:Christopher.Velvin@mbie.govt.nz] **On Behalf Of** Determinations
Sent: Friday, 6 March 2015 4:01 p.m.
To: Quinn, Stephen
Subject: FW: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Dear Stephen,

You may not have seen this so I am forwarding you a copy for information.

Regards

Chris Velvin

From: Louise Swann [mailto s 9(2)(a)
Sent: Monday, 23 February 2015 10:25 a.m.
To: Michelle Martin; Alan Farquharson; Determinations; John Gardiner
Cc: Steven May; Craig Mooney; David Macfarlane
Subject: Re: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Dear all

Please accept my apologies. I found an error in the submission that I provided to you this morning.

Please accept the attached (rev 2) as the final submission.

cheers and thanks

Louise

On 23/02/2015, at 9:02 am, Louise Swann <louise@thebuildingbusiness.co.nz> wrote:

Dear all

Please find our response to the draft determination.

Cheers and thanks

Louise

<Response to determination final.pdf>

Louise Swann
Director
The Building Business Ltd
3.10 The Axis Building
91 St Georges Bay Rd
Parnell,
Auckland 1052
s 9(2)(a)

Louise Swann
Director
The Building Business Ltd
3.10 The Axis Building
91 St Georges Bay Rd
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Auckland 1052
s 9(2)(a)

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Our ref: 1412287

12 March 2015

John Gardiner
Manager Determinations & Assurance
Ministry of Business, Innovation & Employment
WELLINGTON
By email

Dear John

FURTHER COMMENTS ON SECOND DRAFT DETERMINATION 2714

1 This letter provides further comment on the second draft determination 2714 dated 18 February 2015, which was sent to the New Zealand Fire Service (**NZFS**) for comment.

2 NZFS provided initial comment on the draft determination by letter of 5 March 2015. Following lodgement of that letter, NZFS received notice, on 6 March 2015, of a submission lodged by the applicant for the determination dated 23 February 2015 that provided additional comment. This letter addresses the comments made in that submission relating to the relevance of the exemption for a wharenui.

3 NZFS, in its letter of 5 March 2015, provided the following comment:

> The applicant has relied on a comparison to the exemption for a wharenui (paragraph 5.2). Paragraphs 6.3.9 and 6.3.10 of the draft determination confirm that reliance has been placed on this comparison. However, a wharenui is a different type of building, with different types of users. There is no expansion in the draft determination on the validity of this comparison. Significant caution needs to be taken before relying on a comparison with a different type of building which is exempt when dealing with a proposal that is clearly not exempt.

4 The NZFS position on the relevance of the exemption to this situation has not changed. However, in light of the applicant's submission, NZFS wishes to provide the following further comment:

4.1 The users of the proposed school hall will mostly be children. This is different from the users of a wharenui (although acknowledging that some children may also be present). This difference in users, particularly their awareness and experience, is vital to any fire safety assessment. That comparison has not been undertaken by the applicant. The suitableness of the comparison and applicability of an

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exemption needs to be considered with the users, and the purpose of the relevant requirement in the Building Code (here, to ensure a flashover of at least 10 minutes for reasons of fire safety) in mind.

4.2 A wharenui itself is a very different building to the proposed school hall. Its construction and design are often traditional or have roots in traditional practices. This is what drives the building and the exemption. A new school hall does not have these features.

4.3 The exemption for wharenui has a cultural basis. Some traditional materials or methods used would not meet the required standards set out in the Building Code However, the importance of such traditional practices is recognised and an exemption is available in certain circumstances from the requirements. The materials available to the school for construction of the school hall are not limited by cultural restrictions or practices. Caution should be exercised before relying on such a comparison without any direct links between the two building types and likely occupants, other than the proposed breach of the Building Code.

4.4 Stating that the exemption relates to all buildings used in some form or other by a defined community, that contain artwork and otherwise comply with the Building Code, is with respect an over simplification and misses the point. The exemption relates to matters of cultural and traditional significance. That is clear. To widen the exemption in the manner proposed by the applicant would have significant implications on the precedent effect regarding the application of this exemption to fire safety assessment of other buildings in the future. The implications need to be carefully considered. Insufficient justification to expand the application of the exemption has been provided.

4.5 Nothing in the applicant's submission validates the comparison sought to be relied on.

5 This letter is in addition to, and is not intended to limit the comments already provided on this point, or on any other point raised in the 5 March 2015 letter.

6 On the basis of the above comments, and the contents of the 5 March 2015 letter, NZFS does not support the conclusion reached in the second draft determination. We would be happy to clarify any of the matters addressed in this response.

Yours sincerely

Stephen Quinn
Partner
s 9(2)(a)

23 FEB 2015

Chris Velvin

From: Louise Swann s 9(2)(a)
Sent: Monday, 23 February 2015 10:25 a.m.
To: Michelle Martin; Alan Farquharson; Determinations; John Gardiner
Cc: Steven May; Craig Mooney; David Macfarlane
Subject: Re: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]
Attachments: Response to determination rev 2 final.pdf

Dear all

Please accept my apologies. I found an error in the submission that I provided to you this morning.

Please accept the attached (rev 2) as the final submission.

Cheers and thanks

Louise

On 23/02/2015, at 9:02 am, Louise Swann <louise@thebuildingbusiness.co.nz> wrote:

Dear all

Please find our response to the draft determination.

Cheers and thanks

Louise

<Response to determination final.pdf>

Louise Swann
Director
The Building Business Ltd
3:10 The Axis Building
91 St Georges Bay Rd
Parnell,
Auckland 1052
s 9(2)(a)

Louise Swann
Director
The Building Business Ltd
3:10 The Axis Building
91 St Georges Bay Rd

23 FEB 2015

Response to draft determination 2714

Regarding the authority's refusal to grant a modification of clause 3.4(a) of the building code in respect of materials used for internal surface linings at a new school hall at 90 – 98 Blake St, Greymouth

Introduction

The applicant to this determination accepts the decision as articulated in section 7, paragraphs 7.1 and 7.2.

However, we have a number of concerns in respect of the accuracy of the substantive document and have outlined them in the following table. It is our wish that these matters be addressed or where necessary discussed prior to the final determination being issued.

Analysis & Comment

Section/Paragraph number	Comment
2.0 Description of the building work paras 2.1 and 2.2	Our view is that this description is inaccurate. Construction comprises the 44mm Lockwood wall system that is used in the Initial building. The Lockwood wall system is a structural building element which is manufactured off site and then assembled on site, in accordance with the Lockwood installation manual. 90mm battens are installed enabling the installation of insulation and the fibre cement weatherboard. A number of walls are fire rated in accordance with the fire engineer's report. The original consent proposed installing plasterboard over the 40mm timber wall in order to achieve the material group 2S. The fire engineer's report specified a proprietary intumescent coating that would also achieve an appropriate material group. This is discussed later in paragraph 4.1.

Section/Paragraph number	Comment
	The ceilings are constructed from 19mm Lockwood sarking,
Para 2.3	Yes that is the correct assumption
Para 3.2 first bullet point	The last sentence reads, the applicant's internal lining uses a wood layer 40mm thick, therefore increasing the performance requirements when compared to other wall systems. I have reviewed the submission and cannot see where this has been stated in this way. Perhaps a more accurate statement should read. The internal linings of the walls comprise a 44mm structural timber wall, whilst the ceiling comprises 19mm sarking timber. It is assumed that these linings will perform better, ie it will take longer to reach the flashover point in comparison to the 9mm ply substrate. However, how much longer has not been established.
Para 3.2 second bullet point	The Determinations Manager advised that the objectives of the C clauses had not changed from the previous C clauses, which is supported when comparing the wording of the objectives of both the current and previous C clauses.
Para 4.1 third bullet points	It states that Lockwood do not wish to rely on the product because "the laboratory testing is not robust". This is not correct and should be amended to say "the laboratory is not third party accredited to carry out the specific tests related to establishing the material group". It is wrong to suggest that the claim was that the testing was not robust.
Para 4.1 bullet point 6	Refer to my comment in respect of para 3.2 second bullet point
Para 4.2 second bullet point	The impact evaluation formed part of the submission that was not considered in the preparation of the first draft. More correctly I think that this bullet point should read " submission in relation to the application for the determination, including an impact evaluation analysis for the school hall"
Para 4.3 second bullet	We advised the TA that given there was no methodology for

Section/Paragraph number	Comment
point	providing the necessary grounds upon which to apply for a site specific modification, we hoped that the two determinations would provide guidance in terms of methodology
Para 5.2 first bullet point	I think that this bullet point should more correctly read "there is no product available in NZ that when applied to wooden substrates will achieve a material group rating of 2S or lower and where the requirements of S14G of the Act have been met". There is a product available but the suppliers have not met s14G and that is the issue and that is probably a more effective way of summarises para 4.1 2nd and 3rd bullet points.
Para 5.2 3rd bullet point 4th sub-bullet point	I suggest that you include [sic] to show that the reference to 40mm as opposed to 44mm is my error
Para 6.2.2	This paragraph summarises some of the findings in previous determinations in respect of a TA granting a waiver or modification. This paragraph suggests that previous determinations have concluded that a waiver or modification should only be granted where: • It is explicitly or implied necessary for the granting of a building consent, and • compelling reasons must exist to support the view that a waiver is appropriate. • reasonable to grant In my view this paragraph does not adequately reflect the findings in the two cited determination[1] and 2006/085. a few included. I think that the findings of the previous determinations should be more correctly reflected and should include the following: • there is no process for seeking or granting a waiver or modification - no, as part of b/c process • It can only be issued in relation to plans & specifications in respect of a building consent • There are a number of circumstances where it might be

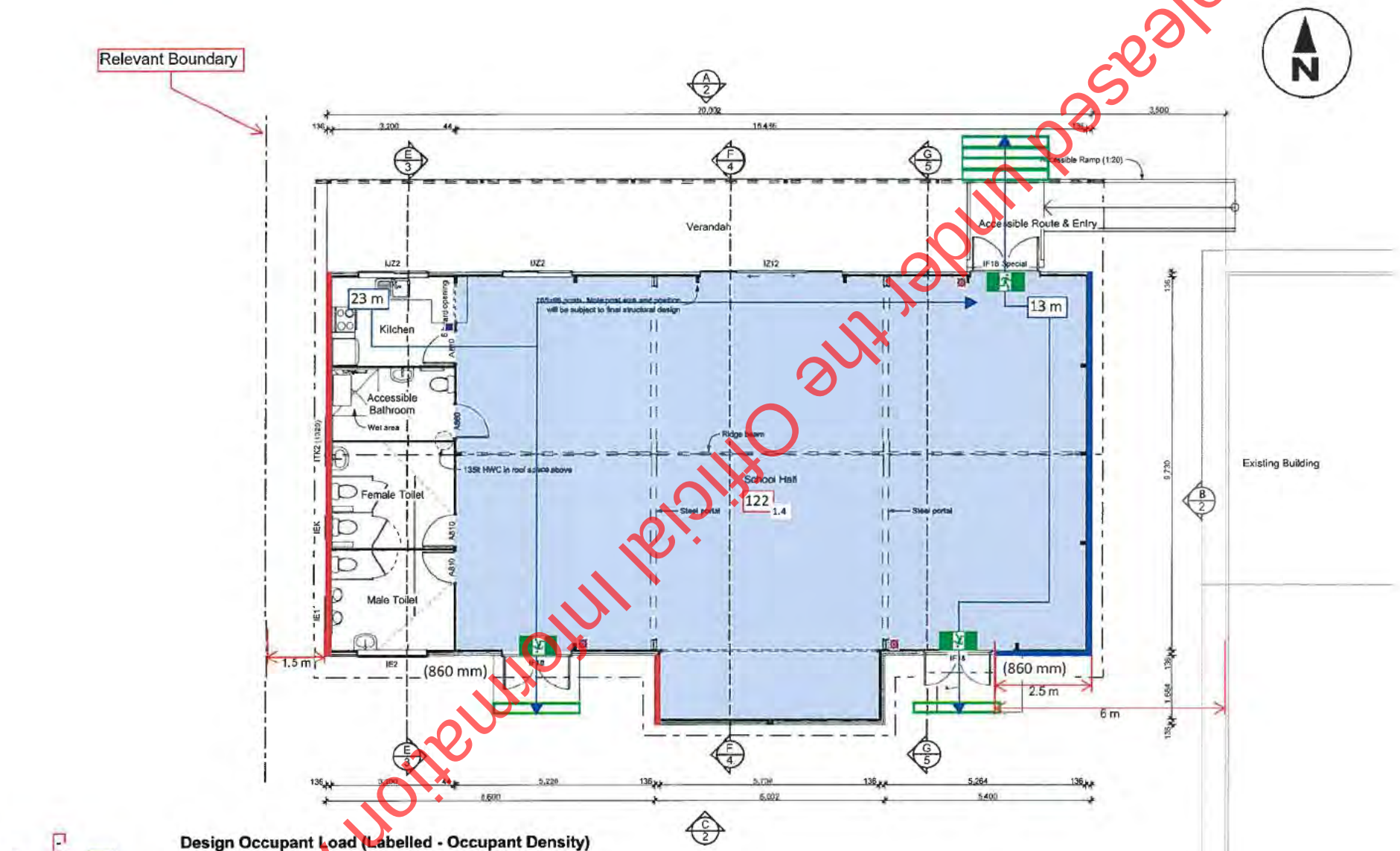
[1] 2007/110 and 2012/049

Section/Paragraph number	Comment
	reasonable to grant a waiver or modification, for instance where compliance with the building code is impracticable and whilst amenity value might be diminished there is no reduction in life safety. (It would appear from Det 2007/110 that of life safety may not be compromised as a result of the waiver or modification) The key point is that previous determinations have taken a great deal of time to accentuate the need for a TA to act reasonably. Having said that previous determinations have noted that ideally all buildings should comply with the code to the fullest extent.
Para 6.2.3	This section seems to introduce a new framework that has not been articulated in previous determinations. 2012/049 only specified that when considering a waiver or modification s4(2)(a)(i) & (ii) and s4(2)(b) should be taken into account – although I accept s4(2)(a)(i) & (ii) relate only to household units.. How has this new framework been arrived at given that it is accepted that there is no process for granting a waiver or modification
Para 6.2.4	This paragraph refers to the framework described in para 5.2.3 [sic] as a strict test and that each decision must ensure that these strict tests are met to the same extent. The framework has not been articulated objectively and so it follows that there is unlikely to be any consistency in terms of "strict test" and "same extent" between different TAs. This paragraph is misleading and inconsistent with earlier determinations.
Para 6.3.3	It is suggested that no information has been given to demonstrate compensating features to reduce time to evacuate. This statement is incorrect as the impact evaluation articulated the shortened pathway and increased door width (14mm as opposed to the required 7mm under C/AS4.
Para 6.3.5	No conclusion has been drawn as to whether the application for the modification provided adequate information in respect of evacuation time. For completeness I accept that no evacuation time (using

Section/Paragraph number	Comment
	C/VM2 was provided). An indicative time has since been calculated using the methodology outlined in section 3 C/VM2 and time to evacuate was calculated at 1min 55sec.
Para 6.3.9 6.3.11	The C Clause acceptable solutions refer to a "Marae building exemption using traditional Maori construction materials (eg tukutuku or toetoe panels)". As noted in the draft determination none of these terms are defined. It is also noted that the term wharenui is defined. In respect of this exemption I make a number of observations and from it draw a conclusion. In terms of the word Marae I note that it has a legal meaning as given to it under the Maori Land Act 1993 but only if it is registered as a reserve under this act. However, other ethnic groups such as Tahitian also use the term Marae. I am assuming that this exemption is not race based as that would contravene other legislation. The exemption then uses the term "traditional Maori construction materials eg tukutuku panels or toetoe panels. I understand that the installation of these panels occurs once the building has been constructed. That is their installation is akin to the installation of artwork and this would not be considered building work. Finally the exemption refers to traditional Maori construction materials. I have this to mean, buildings using materials and methods that otherwise comply with the building code. So I have concluded that this exemption relates to buildings used in some form or other by a defined community, that contains artwork and that the building otherwise complies with the building code. Given this view, the school hall at Blake St meets this test and is therefore exempt providing that the provisions of this exemption are met. These provisions were met once the third exit was noted.
Para 6.3.12	I have been advised that the quoted cost of applying this coating

Section/Paragraph number	Comment
	was $28,000. It must be applied by approved applicators and given that it is a hazardous substance the safety requirements during its application are onerous.
Para 6.3.14 – 6.3.15	I am unsure what is meant by special or unique circumstances and on that basis I think that it is confusing to be included as part of "the framework". I note that there was never an intention for it to be used as a precedent other than providing guidance as to how to apply for a modification given that there is no prescribed method. I think that this paragraph is less than helpful as it seems to suggest that a blanket modification was being sought which was most definitely not the case. It is understood that each decision regarding a modification would be site specific.
Para 6.4	This paragraph is not accepted. Previous determinations have noted that there is no process for granting a modification and that whilst all buildings should ideally comply with the code, the decision to grant a modification has to be reasonable considering the specific circumstances. In the event that a product exists then it may not be practicable because of the cost or other considerations.
Conclusions	I make the following comments: The Building Code is performance based apart from C3.4(a). It is impossible to comply with the code is anyway other than by achieving a prescribed Material Group number. That is there is only one way of complying with C3.4(a) albeit there are 2 tests that can be used. S19 of the Act provides a number of ways in which compliance with the Code may be achieved. In the case of C3.4(a) the code clause, the acceptable solutions and verification methods are more or less identical. There is no provision for an alternative solution. C3.4(a) falls more properly under s20 of the Act, in which case it should have been set under Regulation. The Marae exemption provides a useful avenue for many buildings

Section/Paragraph number	Comment
	that would typically be used by the community.



Design Occupant Load (Labelled - Occupant Density)
Egress Route (Labelled - TOP)
Minimum Door Width
Ecoglo Photoluminescent Exit Sign
60/60/60 Fire Resistance Rating
120/120/120 Fire Resistance Rating
Ecoglo Way Finding Products
Proposed Fire Extinguisher Location
Proposed Manual Call Point Location

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE

TM CONSULTANTS

FIRE DRAWING

BLAKETOWN SCHOOL HALL PROJECT

BLAKE STREET, BLAKETOWN
GREYMOUTH

TMCO.CO.NZ CONSULTING ENGINEERS
STRUCTURAL MECHANICAL CIVIL HYDRAULIC ELECTRICAL FIRE

Engineered by : Kevin Suen		Date :	05-02-15
Drawn by : Kevin Suen		Date :	05-02-15
Sheet No:	Job No:	Issue:	Scale:
F2	140695	C	1:100

2714

Chris Velvin

From: Louise Swann s 9(2)(a)
Sent: Monday, 9 February 2015 8:04 p.m.
To: Craig Mooney; Determinations; Steven May; Michelle Martin; John Gardiner
Cc: kevinsuen@tmco.co.nz
Subject: Fwd: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]
Attachments: 140695 F2 Issue C 05 Feb 2015 ks.pdf

Dear Michelle

In response to your question please find attached Kevin Suen's response.

The fire drawing F2 has been amended accordingly.

Craig will submit this drawing including the change in the door hardware as an amendment once the determination process has concluded. I am unsure if (procedurally) Craig could do that now, if he can could you let me know

cheers and thanks

Louise

Begin forwarded message:

From: Kevin Suen <KevinSuen@tmco.co.nz>
To: Louise BB <s 9(2)(a)
Date: 5 February 2015 3:25:03 pm NZDT
Subject: RE: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Hi Louise,

Yes, the existing accessible route could become an additional exit route (as per the attachment modified fire drawing F2) if necessary. It was not initially considered in this way to reduce the project cost and allow for the use of standard locking hardware rather than using the panic fastenings. If you have any further questions, please do not hesitate to contact me or John. Thank you.

Please find the fire drawing F2 showing three final exits and external steps at the north final exit.

TM CONSULTANTS

Kevin Suen, Fire Engineer
E. kevinsuen@tmco.co.nz C. 021 108 3225 P. 03 348 6066 F. 03 348 6065
A. 5 Burdale St, PO Box 8874, Christchurch 8440 TM Consultants Ltd **www.TMCO.co.nz**
CONSULTING ENGINEERS STRUCTURAL MECHANICAL CIVIL HYDRAULIC ELECTRICAL ENERGY FIRE

FINALIST 2014 HIGHLY COMMENDED | EECA **AWARDS**

From: Louise BB [mailto: s 9(2)(a)
Sent: Tuesday, 3 February 2015 3:07 p.m.
To: Kevin Suen
Subject: Re: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Hi Kevin

could the accessible route also be an exit door - does it meet the requirements to be an exit door?

cheers and thanks

Louise

On 3/02/2015, at 1:43 pm, Kevin Suen <KevinSuen@tmco.co.nz> wrote:

Hi Louise,

A minimum of two exit doors are required from the school hall to be occupied by 112 people. Although the third exit door is available, it is not proposed to be used as an egress door. Hence, exit sign is not indicated on the fire drawing F2. The most remote area within the building is the kitchen, where two direction of escape is followed by the death end open path from the kitchen as indicated on the fire drawing F2. Two directions of escape is also available from the primary area of the building. Since the building is protected by a Type 2 manual fire alarm system. The path length shown on the fire drawing F2 is well complied with C/AS4 (i.e. DOP 20 m and TOP 50 m).

<image001.gif>

Kevin Suen, Fire Engineer
E. kevinsuen@tmco.co.nz C. 021 108 3225 P. 03 348 6066 F. 03 348 6065
A. 5 Burdale St, PO Box 8874, Christchurch 8440 TM Consultants Ltd **www.TMCO.c**
CONSULTING ENGINEERS STRUCTURAL MECHANICAL CIVIL HYDRAULIC ELECTRICAL ENER

<image004.jpg>

From: Louise BB [mailto:louise@thebuildingbusiness.co.nz]
Sent: Tuesday, 3 February 2015 1:12 p.m.
To: Kevin Suen
Subject: Fwd: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Hi Kevin

I wondered if you could clarify as to whether the third exit way (titled accesible route and entry) could also be considered an exit way. And if it has not been marked as an exit way whether or not there was any reason for this

cheers and thanks

Louise

Begin forwarded message:

From: Michelle Martin <Michelle.Martin@mbie.govt.nz>
To: s 9(2)(a) s 9(2)(a)
Cc: Determinations <determinations@mbie.govt.nz>, Steven May <Steven.May@greydc.govt.nz>
Subject: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]
Date: 3 February 2015 1:01:44 pm NZDT

Dear Louise,

Upon review of the further submission (dated 28 November 2014) we are seeking clarification as to whether the Blaketown School Hall has three exits or two exits. In the submission two exits are discussed (for example 'two exit ways are 1620mm in width') however the drawings indicate a possible third exit way (titled 'accessible route and entry') although the exit symbol is not present. This is important to clarify in relation to the calculation of the total open path.

Please advise.

Kind regards

Michelle

Michelle Martin
Advisor, Determinations and Assurance, Building System Performance Branch
Infrastructure and Resource Markets Group
Ministry of Business, Innovation and Employment
DDI: (04) 901-8368 Extn 48368
Level 5, 15 Stout Street
PO Box 1473, Wellington 6140

Sue Brown

From: Louise Swann s 9(2)(a)
Sent: Wednesday, 4 February 2015 4:24 p.m.
To: Michelle Martin
Cc: Steven May; Determinations; John Gardiner
Subject: Re: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Hi Michelle

Thanks for this. I have gone back to the fire engineer to see if the third exit complies with the requirements to be an escape.

When I get the reply I will let you know.

I think I have answered the first part of the question with the reply from Kevin suen

Cheers
Louise

Mob: s 9(2)(a)
Sent from my iPhone

On 4/02/2015, at 4:11 pm, Michelle Martin <Michelle.Martin@mbie.govt.nz> wrote:

> Dear Louise,
>
> Our initial question was whether the 'third door' as shown on the building plans was designed to be used as an exit which you have clarified that it is not.
>
> Our second question is whether there are any operational or design reasons as to why the third door is not used as an exit (and therefore means of escape)? If the building has three exits it will comply with the Marae building exemption of paragraph 3.3.2 (j) and 3.4.2 (e) to support the application for modification.
>
> Kind regards
>
> Michelle
>
> **Michelle Martin**
> Advisor, Determinations and Assurance, Building System Performance Branch
> Infrastructure and Resource Markets Group
> Ministry of Business, Innovation and Employment
> DDI: (04) 901-8368 Extn 48368
> Level 5, 15 Stout Street
> PO Box 1473, Wellington 6140
>
> ---
>
> **From:** Louise BB [mailto s 9(2)(a)
> **Sent:** Tuesday, 3 February 2015 4:13 p.m.
> **To:** Michelle Martin
> **Cc:** Determinations; Steven May
> **Subject:** Re: Draft Determination 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]
>
> Hi Michelle

I have been pondering over what you are asking so here is my attempt at clarifying it.

Are you asking me to clarify whether or not the exit marked accessible route and entry complies with 3.3.2(c) of C/AS4.

I hope that is what you are asking because I have asked the fire engineer this question.

If I have not understood your request correctly could you please come back to me

cheers and thanks

Louise

On 3/02/2015, at 1:01 pm, Michelle Martin <Michelle.Martin@mbie.govt.nz> wrote:

Dear Louise,

Upon review of the further submission (dated 28 November 2014) we are seeking clarification as to whether the Blaketown School Hall has three exits or two exits. In the submission two exits are discussed (for example 'two exit ways are 1620mm in width') however the drawings indicate a possible third exit way (titled 'accessible route and entry') although the exit symbol is not present. This is important to clarify in relation to the calculation of the total open path.

Please advise.

Kind regards

Michelle

Michelle Martin
Advisor, Determinations and Assurance, Building System Performance Branch
Infrastructure and Resource Markets Group
Ministry of Business, Innovation and Employment
DDI: (04) 901-8368 Extn 48368
Level 5, 15 Stout Street
PO Box 1473, Wellington 6140

Director
The Building Business Ltd
3:10 The Axis Building
91 St Georges Bay Rd
Parnell, Auckland 1052
s 9(2)(a)
louise@thebuildingbusiness.co.nz

Sue Brown

From: Louise BB <s 9(2)(a)
Sent: Friday, 30 January 2015 4:10 p.m.
To: Sue Brown; John Gardiner
Cc: steven.may@greydc.govt.nz; Determinations
Subject: Re: Draft determination for 90 - 98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Importance: High

Dear Sue

thank you for the draft determination and we would like to request a hearing.

I note that in the draft paragraph 5.2.13 states that the applicant should justify the modification in terms of paragraph 5.2.3.

You will note that the submission which was attached to this and the Westlynn Gardens determinations addressed these factors as well as referencing the requirements for Wharenui.

It is therefore deeply disappointing that this has not been noted in paragraph 4.2 which makes me wonder if it was even considered.

Please feel free to contact me to arrange a suitable time and date as a matter of some urgency

regards

Louise

On 30/01/2015, at 3:46 pm, Sue Brown <Sue.Brown@mbie.govt.nz> wrote:

Dear All

Please find attached cover letter, draft determination and response form for 90 – 98 Blake Street, Greymouth. The period for comment will close on 16 February 2015.

A hardcopy will follow in the post.

Kind regards
Sue

Sue Brown
Administrator

Determinations and Assurance
Building System Performance Branch
Infrastructure and Resource Markets Group
Ministry of Business, Innovation and Employment
DDI: (04) 901 8363 Extn 48363 | fax: (04) 917 0190
Level 5, 15 Stout Street
Wellington 6011
PO Box 1473

Sue Brown

From: Sue Brown
Sent: Friday, 27 February 2015 1:36 p.m.
To: 'Alan Farquharson'
Cc: 'Louise Swann'; Determinations
Subject: RE: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Dear Alan

A party's response to a draft determination can be in any form and does not need to use MBIE's response form. Ms Swan's comments on the second draft were sent directly to you by Louise on 23 February 2015. You can respond to this, or any, submission as you wish. MBIE is required to receive submissions up until the time a determination is issued.

Kind regards
e

Sue Brown
Administrator

Determinations and Assurance
Building System Performance Branch
Infrastructure and Resource Markets Group
Ministry of Business, Innovation and Employment
DDI: (04) 901 8363 Extn 48363 | fax: (04) 917 0190
Level 5, 15 Stout Street
Wellington 6011
PO Box 1473
Wellington 6140

From: Alan Farquharson [mailto:Alan.Farquharson@greydc.govt.nz]
Sent: Friday, 27 February 2015 12:24 p.m.
To: Sue Brown
bject: FW: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Good morning Sue

I replied to Michelle Martin and the agent for Lockwood Homes Louise below regarding accepting the decision in the second draft determination for 90 – 98 Blake St Blaketown. My question is do we still need to fill out and return the form dated 19th February 2015 addressed to Chris Velvin, or, should we hold off as we are aware that Louise Swann from The Building Business has replied with some suggested changes to the 2nd draft?

Regards

Alan Farquharson

MAWHERA GREY DISTRICT COUNCIL

Alan Farquharson
Team Leader Building Control
Tel. 03 769 8608 | **Mob.** 027 222 2763

Email. alan.farquharson@greydc.govt.nz
www.greydc.govt.nz

2714

Chris Velvin

From: Michelle Martin
Sent: Friday, 20 February 2015 1:43 p.m.
To: John Gardiner; Determinations
Subject: FW: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Michelle Martin
Advisor, Determinations and Assurance, Building System Performance Branch
Infrastructure and Resource Markets Group
Ministry of Business, Innovation and Employment
DDI: (04) 901-8368 Extn 48368
Level 5, 15 Stout Street
PO Box 1473, Wellington 6140

From: Alan Farquharson [mailto:Alan.Farquharson@greydc.govt.nz]
Sent: Friday, 20 February 2015 10:59 a.m.
To: Michelle Martin
Cc: 'louise@thebuildingbusiness.co.nz'; Steven May
Subject: Second draft determination for 90-98 Blake Street, Greymouth (Ref 2714) [UNCLASSIFIED]

Michelle

Good morning

We accept the decision in the 2nd draft determination for 90 – 98 Blake St, Greymouth.

Regards

Alan

MAWHERA GREY DISTRICT COUNCIL

Alan Farquharson
Team Leader Building Control
Tel. 03 769 8608 | **Mob.** 027 222 2763

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Heart of the West Coast

Sue Brown

From: Alan Farquharson <Alan.Farquharson@greydc.govt.nz>
Sent: Wednesday, 11 February 2015 4:04 p.m.
To: Sue Brown; John Gardiner
Cc: s 9(2)(a) Steven May
Subject: Draft determination for 90 - 98 Blake Street, Greymouth (Ref 2714)

Sue

Good afternoon

With Phil Becks departure from his Team Leader role I have recently taken over the position of Team Leader Building Control and would like to thank you for the opportunity to reply to the draft determination. However, in light of the response from Louise Swann, The Building Business Ltd, acting as agent for Lockwood Homes dated 30th January 2015 and John Gardiner's reply dated 2nd February we will await the second draft determination before commenting.

Regards

Alan

MĀWHERA GREY DISTRICT COUNCIL
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12th December 2014

Val Ref: 25640 22700
Building Consent: 993773
Enquiries to: Mr P A Beck MBE, GDC

Ministry of Business, Innovation and Employment
Determinations and Assurance
PO Box 1473
Wellington 6140

Dear Sir / Madam

Application for determination – Mr P Wilkins – Blaketown School Hall – 90-98 Blake Street Blaketown, Greymouth – Modification to NZBC Clause G3.4(a)

Council acknowledges receipt on 3rd December 2014 of documentation in support of an application for determination to MBIE, by Mr P. Wilkins, under Sections 177(1)(b) and 177(3)(a) of the Building Act 2004.

The matter for determination relates to the Grey District Council (GDC) Territorial Authority's (TA) refusal to grant a modification to the New Zealand Building Code (NZBC) Clause 3.4(a) which was applied for under Section 67 (1) of the Building Act 2004 as a result of receiving a Building Consent application (reference number 993773).

The Building Consent application

We received Building Consent application 993773 on 17th November 2014 for a new school hall for the existing Blaketown School, Blaketown, Greymouth.

Copies of the relevant application forms (BAM 002 and BAM 002-I) are enclosed with this correspondence.

The Building Consent application was lodged with Grey District Council by 'AJ Mooney & Co Ltd', who is the nominated Agent acting on behalf of the Blaketown School Board of Trustees, Ministry of Education.

On the 18th November 2014 we received further information from the Agent in support of their application for a modification to NZBC Clause 3.4(a).

The information received on 18th November 2014 included:

1. A letter from Mr Craig Mooney ('AJ Mooney & Co Ltd') dated 18th November 2014, plus associated appendices.
2. "AWTA Product Testing" test report dated 13th August 2014, for "Z- Wattyl Estapol Speed Satin".
3. Product data sheet WA195 for "Wattyl Estapol Speed Clear" dated 21st August 2012.
4. "Fire ratings for Wattyl / Taubmans Paint Systems" table dated 19th August 2014.
5. E-mail from Mr Craig Mooney to GDC dated 18th November 2014 complete with an extract taken from MBIE's compliance document C/VM2.

Copies of each of the aforementioned documents are enclosed with this correspondence.

The building

The Building Consent application states that the proposed new building has a total floor area of 210.9m².

It's a single storey structure of specific engineer design ("Lockwood Wall System"). It's a 44mm thick solid timber system (reference drawing 3/15 enclosed with this letter), plus supplementary fibre cement weatherboard cladding, over building wrap on cavity battens with insulation between.

The building incorporates a large "School Hall", kitchen, accessible bathroom, female toilet and male toilet.

It's detached from the adjacent school buildings located on the same premises.

The design proposal relies on exposed timber internal surfaces.

Design drawings 1/15 – 5/15, plus associated "perspectives", we received with the application for determination on 3rd December 2014, give a good indication on the form of construction proposed.

Section 67 (1) of the Building Act 2004

> *"...A building consent authority that is a territorial authority may grant an application for a building consent subject to a waiver or modification of the building code...".*

After careful consideration of the information presented to the TA on 17th and 18th November 2014 the decision was taken not to grant the modification to the NZBC Clause 3.4(a) as requested by the Agent.

There were a number of reasons for this decision:

1. The Agent advised us that another Council (Auckland City) had also been approached with a similar request under Section 67(1) of the Building Act 2004 to modify NZBC Clause 3.4(a) which apparently they also declined.

2. The Agent made clear to us that whatever could be resolved for the internal surface finishes for both buildings (i.e. Blaketown School, Blaketown and West Lynn Gardens Function Centre, New Lynn) would be used as the model for any other future commercial developments of a similar nature across New Zealand. Due to the enormity of the potential consequences of granting any such modification, the TA considered it unreasonable for it to set a precedent that could have had a material effect of any other similar building works elsewhere (i.e. outside Grey District).

3. The "Protection from Fire Design Report" from TM Consultants (reference number 140695, Issue A), that the TA received with the Building Consent application, clearly states in Sections 6.0 and 8.6 that *"...the internal surface finishes of all walls and ceilings shall have a group number not greater than 2S..."*. This appears to align with the requirements of NZBC Clause 3.4(a) for a building not protected by a sprinkler system (which applies in the case of the new Blaketown School hall), and C/AS4 (section 4.17, table 4.1).

4. The proposed internal surface finish (Wattyl Estapol Speed Clear) for the new Blaketown School hall appears to only achieve a group number of 3 when tested on 9mm thick plywood to ISO 5660.1-2002. We acknowledge that the Lockwood Wall System is a solid timber construction of 44mm thick, and as such, it's reasonable to "assume" may provide for a more substantive substrate in the event of fire (as opposed to just 9mm plywood) in respect of any char rating. Regardless, without any proven test data, or detailed calculations and qualified assessment in respect of the Wattyl Estapol Speed Clear and how it will perform in conjunction with the Lockwood Wall System, the TA can't be expected to agree to modify the NZBC Clause 3.4(a) on the basis of just conjecture and assumption.

5. Since C/AS4 is the stated form of compliance (reference the "Protection from Fire Design Report" from TM Consultants, number 140695, Issue A), the TA was unable to ascertain or conclude if any aspects of items 4.17.6 or 4.17.7 could be applied in this case.

6. The TA considered that due to the reasonably high design occupant load (122), and the age and nature of the majority of the occupants (i.e. school children), even on an intermittent activity basis, the consequences of potentially granting a modification to lessen the minimum performance criteria currently stated in NZBC Clause 3.4(a) were too onerous. To that end, we agree with the statement made in a letter from Mrs Louise Swann (The Building Business Ltd), to the Principal of Blaketown School, dated 27th November 2014:

> *"...I can assure you that the process being adopted* [i.e. the application for determination] *is the correct approach to ensure that the safety of children and adults who will use the school hall are not compromised in any way...".*

Summary

Based on the design information submitted to the TA on 17th and 18th November 2014, in respect of Building Consent application 993773, we were unable to grant the application to modify NZBC Clause 3.4(a) under Section 67(1) of the Building Act 2004.

Yours faithfully

Mr P A Beck MBE
Building Control Team Leader

CC.
Mr Steven May, Environmental Services Manager, Grey District Council (letter only)
Mr Kevin Hebberd, Compliance Team Manager, Grey District Council (letter only)
Mr Craig Mooney, AJ Mooney & Co Ltd, 12 Nelson Street, Greymouth 7805
Mr Phil Wilkins, c/- AJ Mooney & Co, Ltd, 12 Nelson Street, Greymouth 7805
Mrs Louise Swann, The Building Business Ltd, 3:10 The Axis, 91 St George's Bay Road, Parnell, Auckland 1052

Attachments:
1. Building Consent application forms BAM 002 and BAM 002-1
2. GDC's letter to Mr Craig Mooney dated 19th November 2014.
3. Lockwood drawings 1/15 – 5/15, plus associated "perspectives" sheet 1/1.
4. Letter from Mr Craig Mooney, Lockwood, dated 18th November 2014.
5. AWTA Product Testing test report for 'Z-Wattyl Estapol Speed Satin' dated 13th August 2014.
6. Fire ratings for Wattyl / Taubmans paint systems spreadsheet dated 19th August 2014.
7. Wattyl Estapol Speed Clear product data sheet dated 21st August 2012.
8. E-mail from Mr Craig Mooney to Louise BB, copied to GDC, dated 18th November 2014.
9. Protection from fire design report from TM Consultants, Issue A, reference number 140695 dated 20th October 2014.
10. New Zealand Building Code C3, clause 3.4(a), dated 10th April 2012.
11. MBIE acceptable solution C/AS4 dated 1st July 2014, pages 87 – 89 inclusive.

PART 2 (TO BE COMPLETED BY EACH OF THE OTHER PARTIES)

I/we have received a copy of Form D1 and each of the attachments listed in section H of that form.

Name: GREY DISTRICT COUNCIL

Mailing address: 105 TAINUI STREET, P.O. Box 382, GREYMOUTH 7840

Phone: 03 769 8600 extn 816 Fax: 03 769 8660

Email: phil@greydc.govt.nz

Fill in this section if you want someone else to represent you. N/A

I/we appoint (full name)

of (mailing address

to act as my/our agent in this determination.

Please tick one of the boxes.

☑ I want to make a submission.

☐ I do not want to make a submission.

In most cases a determination is made on the basis of the written submissions. However, you can request a hearing to present your case to the Department and the parties. *Please tick one of the boxes.*

☐ I want to speak at a hearing. I will use English.

☐ I want to speak at a hearing. I will use te reo Māori.

☑ I do not want to speak at a hearing.

Signature: PBeck Date: 12/12/14

Description of party: (eg, Are you the builder, a neighbour, territorial authority etc?) TERRITORIAL AUTHORITY

Please return to:

Department of Building and Housing
Building Controls Determinations Team
PO Box 10-729
Wellington

C3—FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE

Provisions	Limit on application
FUNCTIONAL REQUIREMENT	
C3.1 *Buildings* must be designed and constructed so that there is a low probability of injury or illness to persons not in close proximity to a *fire source*.	
C3.2 *Buildings* with a *building height* greater than 10 m where upper floors contain sleeping uses or *other property* must be designed and constructed so that there is a low probability of external vertical fire spread to upper floors in the *building*.	Clause C3.2 does not apply to importance level 1 *buildings*.
C3.3 *Buildings* must be designed and constructed so that there is a low probability of *fire* spread to *other property* vertically or horizontally across a *relevant boundary*.	

C3—FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE (continued)

Provisions	Limit on application
PERFORMANCE **C3.4** (a) materials used as internal surface linings in the following areas of *buildings* must meet the performance criteria specified below:	Clause C3.4 does not apply to *detached dwellings*, within *household units* in *multi-unit dwellings*, or *outbuildings* and *ancillary buildings*.

Area of *building*	**Performance determined under conditions described in ISO 9705: 1993**	
	***Buildings* not protected with an automatic *fire* sprinkler system**	***Buildings* protected with an automatic *fire* sprinkler system**
Wall/ceiling materials in sleeping areas where care or detention is provided	Material Group Number 1-S	Material Group Number 1 or 2
Wall/ceiling materials in exitways	Material Group Number 1-S	Material Group Number 1 or 2
Wall/ceiling materials in all *occupied spaces* in importance level 4 *buildings*	Material Group Number 1-S	Material Group Number 1 or 2
Internal surfaces of ducts for *HVAC systems*	Material Group Number 1-S	Material Group Number 1 or 2
Ceiling materials in crowd and sleeping uses except *household units* and where care or detention is provided	Material Group Number 1-S or 2-S	Material Group Number 1 or 2
Wall materials in crowd and sleeping uses except *household units* and where care or detention is provided	Material Group Number 1-S or 2-S	Material Group Number 1, 2, or 3
Wall/ceiling materials in occupied spaces in all other locations in *buildings*, including *household units*	Material Group Number 1, 2, or 3	Material Group Number 1, 2, or 3
External surfaces of ducts for *HVAC systems*	Material Group Number 1, 2, or 3	Material Group Number 1, 2, or 3
Acoustic treatment and pipe insulation within airhandling plenums in sleeping uses	Material Group Number 1, 2, or 3	Material Group Number 1, 2, or 3

C3—FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE (continued)

Provisions	Limit on application
(b) floor surface materials in the following areas of *buildings* must meet the performance criteria specified below:	

Area of *building*	Minimum critical radiant flux when tested to ISO 9239-1: 2010	
	***Buildings* not protected with an automatic *fire* sprinkler system**	***Buildings* protected with an automatic *fire* sprinkler system**
Sleeping areas and exitways in *buildings* where care or detention is provided	4.5 kW/m²	2.2 kW/m²
Exitways in all other *buildings*	2.2 kW/m²	2.2 kW/m²
Firecells accommodating more than 50 persons	2.2 kW/m²	1.2 kW/m²
All other occupied spaces except *household units*	1.2 kW/m²	1.2 kW/m²

(c) suspended flexible fabrics and membrane structures used in the construction of *buildings* must have properties resulting in a low probability of injury or illness to persons not in close proximity to a *fire source*.

C3.5 *Buildings* must be designed and constructed so that fire does not spread more than 3.5 m vertically from the *fire source* over the external cladding of multi-level *buildings*.

C3.6 *Buildings* must be designed and constructed so that in the event of *fire* in the building the received radiation at the *relevant boundary* of the property does not exceed 30 kW/m² and at a distance of 1 m beyond the relevant boundary of the property does not exceed 16 kW/m².

C3—FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE (continued)

Provisions	Limit on application
C3.7 External walls of *buildings* that are located closer than 1 m to the *relevant boundary* of the property on which the *building* stands must either: (a) be constructed from materials which are not *combustible building materials*, or (b) for *buildings* in importance levels 3 and 4, be constructed from materials that, when subjected to a radiant flux of 30 kW/m^2, do not ignite for 30 minutes, or (c) for *buildings* in importance Levels 1 and 2, be constructed from materials that, when subjected to a radiant flux of 30 kW/m^2, do not ignite for 15 minutes.	
C3.8 *Firecells* located within 15 m of a *relevant boundary* that are not protected by an automatic *fire* sprinkler system, and that contain a *fire load* greater than 20 TJ or that have a floor area greater than 5,000 m^2 must be designed and constructed so that at the time that firefighters first apply water to the *fire*, the maximum radiation flux at 1.5 m above the floor is no greater than 4.5 kW/m^2 and the smoke layer is not less than 2 m above the floor.	
C3.9 *Buildings* must be designed and constructed with regard to the likelihood and consequence of failure of any *fire safety* system intended to control *fire* spread.	

Fire shutters

4.16.13 If a floor has a service opening (eg, for stairs, a conveyor, forklift access or similar installation) which is not used as part of an *escape route* and which is fitted with a *fire shutter*, the floor may be treated as a *fire separation*.

4.16.14 The *fire shutter* shall be automatically activated by a signal from a smoke detector.

4.16.15 A *fire shutter* shall include a device to retard the rate of closing to no more than 150 mm per second.

4.17 Interior surface finishes, floor coverings and suspended flexible fabrics

Surface finish requirements for walls, ceilings, ducts and insulation

4.17.1 *Surface finish* requirements shall be as specified in Table 4.1.

Table 4.1 Surface finishes

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
	Exitways All *occupied spaces* in importance level 4 *buildings*	Crowd spaces: wall linings	Crowd spaces: ceiling linings	All other *occupied spaces*: wall and ceiling linings	Ducts for *HVAC* systems – internal surfaces	Ducts for *HVAC* systems – external surfaces
	Maximum permitted *Group Number*					
Unsprinklered	1S	2S	2S	3	1S	3
Sprinklered	2	3	2	3	2	3

Note: Refer to exceptions in Paragraph 4.17.6.

Amend 3 Jul 2014

Amend 2 Dec 2013

Comment:
The method for assigning the *Group Number* to a material and for establishing the smoke production rate is specified in Verification Method C/VM2 Appendix A. Particular note should be made of the requirements for ducts. There are also instances of certain *surface finishes* being assigned *Group Numbers* without evaluation e.g. films and paint coatings.

Amend 2 Dec 2013

Foamed plastics and combustible insulating materials

Amend 3 Jul 2014

4.17.2 If *foamed plastics building* materials or *combustible insulating materials* form part of a wall or ceiling system, the completed system shall achieve a *Group Number* as specified in Table 4.1 and the *foamed plastics* shall comply with the flame propagation criteria as specified in AS 1366 for the material being used. This requirement does not apply to *building elements* listed in Paragraph 4.17.6.

Comment:

The completed system may or may not include a surface lining product enclosing any insulation material from any adjacent *occupied space*. If a surface lining is not included, then the *foamed plastics* or *combustible insulating materials* when tested alone shall achieve a *Group Number* of 3 (see Appendix A of C/VM2), otherwise a surface lining is also required such that the completed system achieves a *Group Number* of 3. This paragraph applies to *foamed plastics building* materials whether exposed to view from the *occupied space* or enclosed.

Amend 3 Jul 2014

Flooring

4.17.3 Flooring shall be either *non-combustible* or, when tested to ISO 9239-1, shall have a critical radiant flux of not less than that specified in Table 4.2.

4.17.4 Paragraph 4.17.3 shall apply to flexible finishes such as carpets, vinyl sheet or tiles, and to finished or unfinished floor surfaces.

Table 4.2 Critical radiant flux requirements for flooring

Area of *building*	Minimum critical radiant flux when tested to ISO 9239-1	
	Buildings not protected with a *fire* sprinkler system	*Buildings* protected with a *fire* sprinkler system
Exitways in all *buildings*	2.2 kW/m^2	2.2 kW/m^2
Firecells accommodating more than 50 people	2.2 kW/m^2	1.2 kW/m^2
All other *occupied spaces*	1.2 kW/m^2	1.2 kW/m^2

Wood and wood products in floors

4.17.5 In addition to the requirements of Paragraph 4.17.3, where floors in multi-storey *buildings* are *fire separations* and where the flooring material is made of wood products (wood products include boards manufactured from wood fibres or chips bound by an adhesive) the flooring material shall have either a thickness of no less than nominally 20 mm, or the floor assembly shall have an *FRR* of -/30/30 when exposed to *fire* from the flooring side.

Comment:

1. Nominal 20 mm thickness includes standard flooring products such as 19 mm particle board or 17 mm plywood. These are acceptable.
2. Paragraph 4.17.5 addresses potential *fire* spread from the upper to lower *firecell* by limiting *fire* spread down through the floor assembly. Protecting the upper *firecell* from a *fire* in the lower *firecell* is still also a requirement, achieved by use of *fire separations* as described in Paragraph 4.13.

Amend 3 Jul 2014

Exceptions to surface finish requirements

4.17.6 *Surface finish* requirements do not apply to:

a) Small areas of non-conforming product within a *firecell* with a total aggregate surface area not more than 5.0 m^2

b) Electrical switches, outlets, cover plates and similar small discontinuous areas

c) Pipes and cables used to distribute power or services

d) *Handrails* and general decorative trim of any material such as architraves, skirtings and window components, including reveals, provided these do not exceed 5% of the surface area of the wall or ceiling they are part of

Amend 2 Dec 2013

e) *Damp-proof courses*, seals, caulking, flashings, thermal breaks and ground moisture barriers

f) Timber joinery and structural timber *building elements constructed* from solid wood, glulam or laminated veneer lumber. This includes heavy timber columns, beams, portals and shear walls not more than 3.0 m wide, but does not include exposed timber panels or permanent formwork on the underside of floor/ceiling systems

g) Individual *doorsets*

h) Continuous areas of permanently installed openable wall partitions having a surface area of not more than 25% of the divided room floor area or 5.0 m^2, whichever is less, and

i) Marae *buildings* using traditional Māori *construction* materials (eg, tukutuku and toetoe panels), and

Comment:
Note that if this exception is applied, exit widths and *travel distances* for marae *buildings* as in i) must comply with the requirements of Paragraphs 3.3.2 j) and 3.4.2 e) respectively.

Amend 2 Dec 2013

j) Uniformly distributed roof lights where:

i) the total area does not exceed 15% of the ceiling area (in plan), and

ii) the minimum floor to ceiling height is not less than 6.0 m, and

iii) the roof lights achieve a *Group Number* not greater than 3.

Educational buildings

Errata 1 Feb 2013

4.17.7 Unsprinklered *firecells* containing classrooms, passageways and corridors of educational *buildings* need not comply with Table 4.1 (column 3) provided the following conditions are satisfied:

a) The *occupant load* is less than 250, and

b) The *firecells* are at ground floor level and are served by at least two *exitways* or *final exits*, and

c) The material *Group Number* (assigned as specified in C/VM2 Appendix A) is no more than 2–S for surfaces 1.2 m or more above floor level, and

Errata 1 Feb 2013

d) The material *Group Number* is no more than 3 for surfaces less than 1.2 m above floor level.

Comment:
This provision allows for materials such as painted particleboard to be used from floor level to a height of 1.2 m where rapid escape is possible.

Suspended flexible fabrics

4.17.8 When tested to AS 1530 Part 2, suspended flexible fabrics shall, within all *occupied spaces* including *exitways*:

a) Have a *flammability index* of no greater than 12, and

b) When used as underlay to roofing or exterior cladding that is exposed to view, have a *flammability index* of no greater than 5.

Membrane structures

4.17.9 The fabric of structures such as tents, marquees or canopies shall be tested to AS 1530 Part 2 and shall achieve a *flammability index* of no greater than 12.

4.17.10 The requirements for membrane structures need not apply to small *occupant loads* such as camping tents and horticultural applications.

Air ducts

4.17.11 Where air ducts are contained wholly within a *protected shaft*, provided the shaft does not also contain lifts, only the interior *surface finish* of the air duct is required to comply with Table 4.1.

4.18 Building services plant

Automatic activation

4.18.1 When any smoke detection system is activated, it shall automatically turn off all air-conditioning and mechanical ventilation plant which is not required or designed for *fire* safety.

Comment:
Paragraph 4.18.1 does not apply to non-distributed ventilation and air-conditioning such as typical domestic/commercial heat pump units.

Amend 3 Jul 2014

Air handling systems

4.18.2 Where smoke control in air handling systems is required to prevent the recirculation of smoke through an air handling system to other *firecells* in a *building*, these systems shall be as specified in Appendix A A2.1.

Phil Beck

From: Craig Mooney <s 9(2)(a)
Sent: Tuesday, 18 November 2014 4:10 p.m.
To: Louise BB
Cc: Phil Beck
Subject: FW: Fire ratings
Attachments: Link to Fire rating appendix.docx

Hi
This just arrived from the Wattyl guys.
Not sure if it is any use.
Regards
Craig

http://dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/c-vm2-protection-from-fire-amendment-3.pdf

A1.5 Determining a Group Number for some surface finishes

For the purposes of compliance with the *surface finish* requirements, the specified combinations of substrate and coating in Table A1 can be taken as having the performance indicated without the need for further evaluation using A1.2 or A1.3.

Table A1 Specified performance for some substrate and coating combinations

Coating (coating in good condition and well adhered to substrate)	Substrate	Performance (with or without coating)
Waterborne or solvent borne paint coatings ≤ 0.4 mm thick Polymeric films ≤ 0.2 mm thick	Concrete and masonry ≥ 15 mm thick Sheet metal ≥ 0.4 mm thick, or Fibre-cement board ≥ 6.0 mm thick Glass	G1-S
Waterborne or solvent borne paint coatings ≤ 0.4 mm thick	Gypsum plasterboard with or without paper facing ≥ 9.5 mm thick ≥ 400 kg/m^3 core density < 5% wt organic contribution to board	G2-S
Waterborne or solvent borne paint coatings, varnish or stain ≤ 0.4 mm thick ≤ 100 g/m^2	Solid wood or wood product ≥ 9.0 mm thick ≥ 600 kg/m^3 for particle boards, or ≥ 400 kg/m^3 for all other wood and wood products	G3

Wattyl Estapol Speed Clear

DESCRIPTION

- Wattyl Estapol Speed Clear is a water based, quick drying, low odour, clear finish, designed for use on interior timber.
- It is specifically formulated on a water based acrylic polymer system and provides a tough non-yellowing coating which dries to a completely crystal clear finish.
- Wattyl Estapol Speed Clear is suitable for interior timber wall paneling, joinery, doors, furniture etc.
- It is ideal for use on light coloured timbers such as Pine, Ash and Oak. It is also suitable for use on MDF board, or as a sealer on oily timbers for Wattyl Estapol Polyurethane Gloss, Satin or Matt.

PRINCIPAL CHARACTERISTICS

- Formulated on a urethane acrylic polymer system that produces a tough, non-yellowing coating which dries to a completely clear finish.
- Low odour makes interior clear finishing more pleasant.
- Also useful as a sealer for oily timbers and MDF where a turpentine thinned clear finish is to be used and drying problems are encountered.

COLOURS AND GLOSS

- Available in gloss and satin

BASIC DATA

Surface dry	30 minutes at 20°C and 65% Relative Humidity
Recoat	3 hours at 20°C and 65% Relative Humidity. Allow up to twice as long for cooler and more humid conditions
Fully cured	7 days at 20°C and 65% Relative Humidity.
Coverage per coat	10 – 14m²/L depending on porosity and texture of substrate
WFT per coat	85µ
DFT per coat	25µ
Thinning	Clean water
Clean Up	Water, away from drains
VOC	27g/L as per EC-07-09

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURE

- Recommended for architraves, skirtings and exposed beams
- Doors, timber window frames
- Furniture e.g. white wood, cabinet timbers
- Woodwork paneling, built-in furniture and tables
- Awkward areas e.g. louvre doors, turned legs
- Man made timbers e.g. MDF, particle board, hardboard
- **New Timber:** Ensure the surface to be coated is thoroughly dry, and free from dirt, grease and wax. Fill all nail holes and small cracks in timber sparingly with Wattyl Colourwood Timber Putty, in a matching timber colour, and allow to dry for at least 30 minutes then sand smooth. Stain with the desired colour in Wattyl Colourwood Dye Stain or Wattyl Colourwood Pigmented Stain. Allow 4 hours to dry before applying Estapol Speed Clear. If timber is not stained, seal with one coat of Wattyl Estapol Speed Clear before filling nail holes with Wattyl Colourwood Timber Putty. Allow to dry at least 30 minutes then sand smooth. Recoat with Wattyl Estapol Speed Clear.
- **Surfaces Previously Coated in Good Condition:** Before recoating, ensure the surface is properly prepared. Thoroughly sand with 240 grade sandpaper and dust off. Apply one or two coats of Estapol Speed Clear as required, lightly sand between coats.
- **Surfaces Previously Varnished in Poor Condition:** If the varnish is badly worn or peeling it must be completely removed by scraping, sanding or by use of paint stripper. Treat stripped timber as new timber.

INSTRUCTIONS FOR USE

- Sir thoroughly with a flat stirrer before and during use.
- Apply two to three generous coats with a good quality, fine bristled brush.
- On new timber thin the first coat 5% with water. No thinning is required for subsequent coats.
- Apply evenly over the surface, finishing with brush strokes along the grain.
- When covering large areas, take care to maintain a "wet edge" and do not go back over the clear finished surface once the film has set. Allow a minimum of 3 hours drying before lightly sanding and re-coating.
- Coat windows sparingly in contact areas.
- To avoid sticking move windows within 30 minutes.
- Do not apply by spray or roller

SAFETY DATA

- **Caution** Provide adequate ventilation during use.
- **Spills and Disposal** Do not allow spilt material to enter drains or other watercourses. Absorb spills with sand or other inert material. Unwanted paint should be kept in a sealed container, such as an empty paint can, and disposed of via special waste collection services. Check with your local Council regarding the disposal of empty paint containers.
- **M.S.D.S.** A Material Safety Data Sheet (M.S.D.S.) is available on request.
- **First Aid:**

If swallowed **do not** induce vomiting. Give plenty of water to drink. Contact a doctor or the Poisons Information Centre. Phone 0800 764766 (New Zealand).
If in eyes, hold eyes open and flood with water for at least 15 minutes. Contact a doctor if any irritation occurs.
If on skin remove contaminated clothing, wash skin thoroughly with soap and water or a proprietary skin cleanser. Do not use solvents.
If affected by inhalation remove person to fresh air. If breathing difficulties persist or occur later, contact a doctor.

ADDITIONAL DATA

- Wattyl Estapol Speed Clear is not suitable for exterior use and should not be used on high wear areas such as floors, bench tops, or surfaces subjected to direct heat or that are constantly wet such as bathrooms. For interior areas of high wear, use Wattyl Estapol Polyurethane or Wattyl Estapol Moisture Cured Polyurethane.
- Do not apply Wattyl Estapol Moisture Cured Polyurethane over Wattyl Estapol Speed Clear or vice versa.
- To avoid surface staining, clean up alcohol spills straight away. To increase the durability of Wattyl Estapol Speed Clear on frequently used surfaces, such as table tops, apply one coat of Wattyl Estapol Polyurethane Gloss or Satin.
- For product help and assistance telephone toll free 0800 735 551.

Wattyl (N.Z.) Limited, P. O. Box 1545, Auckland, 1. Phone 09 820 6700 Fax 09 820 6572
WATTYL (NZ) LTD
INFORMATION HELP LINE: 0800 735551 (New Zealand)

Fire Ratings for Wattyl / Taubmans Paint Systems

Substrate	Undercoat (1 Coat)	Topcoat (2 Coats)	Group No.
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans Living Proof Eggshell	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans Living Proof Silk	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans Living Proof Satin	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans Living Proof Ceiling	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans UltraProof Gloss	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans UltraProof Semigloss	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans UltraProof Satin	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans UltraProof Eggshell	1-S
Paperfaced Plasterboard Standard GIB	Wattyl Interior Design Acrylic Sealer Undercoat	Wattyl Interior Design Silk	1-S
Paperfaced Plasterboard Standard GIB	Wattyl Interior Design Acrylic Sealer Undercoat	Wattyl Interior Design Eggshell	1-S
Paperfaced Plasterboard Standard GIB	Wattyl Interior Design Acrylic Sealer Undercoat	Wattyl Interior Design Ceiling	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans UltraProof Gloss	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans UltraProof Semigloss	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans UltraProof Satin	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans UltraProof Eggshell	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans Living Proof Eggshell	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans Living Proof Silk	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans Living Proof Satin	1-S
Paperfaced Plasterboard Standard GIB	Taubmans UnderProof Primer Sealer Undercoat	Taubmans Living Proof Ceiling	1-S
Paperfaced Plasterboard Fyreline GIB	Taubmans Tradex Easysand Sealer Undercoat	Taubmans Living Proof Ceiling	1-S
Paperfaced Plasterboard Aqualine GIB	Taubmans Tradex Freesand Sealer Undercoat	Taubmans UltraProof Eggshell	1-S
Paperfaced Plasterboard Aqualine GIB	Taubmans Tradex Freesand Sealer Undercoat	Taubmans UltraProof Satin	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Freesand Sealer Undercoat	Taubmans Tradex Dead Flat Ceiling	1-S
Paperfaced Plasterboard Standard GIB	Taubmans Tradex Freesand Sealer Undercoat	Taubmans Living Proof Eggshell	1-S
Plywood	Wattyl Estapol Speed Satin Clear	Wattyl Estapol Speed Satin Clear	3*
Plywood	Wattyl Instant Estapol Polyurethane Satin	Wattyl Instant Estapol Polyurethane Satin	3*
The listed paint systems applied to the listed substrates have been tested to ISO 5660.1 - 2002 for Heat Release Rate (Cone Calorimeter Method) to determine Group Number Classification in accordance with New Zealand Building Code Verification Method C/VM2 Appendix A)			
* indicative result only			

19 AUGUST 2014

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Tuesday, 18 November 2014

DISTRICT
18 NOV 2014

Phil Beck
Grey District Council

Dear Phil

Re: Building Consent application number BC993773
Address of property: Blaketown School,
90 Blake Street,
Blaketown.

Accompanying this building consent application is an application for a modification to building code clause 3.4(a).

The fire report attached to the building consent application specifies a product which will, in their opinion, meet the requirements under clause 3.4(a).

A.J Mooney & Co does not wish to follow this specification as the product specified is not clear and the supplier of the intumescent paint coating has provided insufficient information in respect of the coatings compliance with F2.3.1 and B2.3.1(c).

As a result the building consent application does not include technical information in relation to the CAP product. Instead, the application includes technical information in relation to the coating that it is intended will be use Wattyl Estapol Speed Satin and the application for a modification to this code clause.

In the event that you are unable to agree to the modification application, I would be grateful if you could formally advise me, as soon as you are able, of your refusal to grant a modification. Once I have that refusal I intend to apply to MBIE for a Determination, the matter being your refusal to grant a modification (s177(1)(b), and s177(3)(b)

Regards
Craig Mooney

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Application for a modification to NZ Building Code Clause C3.4(a)

DISTRICT

18 NOV 2014

Details of building consent

Location of building	Blake St, Blaketown
Owner of building	Ministry of Education
Building consent number	BC993773
Use of building	School hall and toilet facilities
Relevant acceptable solution (with respect to C Clauses)	C/AS4
Supporting documentation	Protection from Fire Design Report TM Consultants Number 140695 (attached to this application)
Name of person making this application for a modification	Craig Mooney
Authority to make this application	Agent on the building consent application
Signature	
Date	18/11/2014

The issue

The NZ Building Code, Clause 3.4(a) requires that materials used as internal surface linings in the building described above achieve a material group rating of 2S.

The Acceptable Solution specifies two methods for establishing the material group number (ISO9705 and ISO5660). For each of these testing methodologies a 9mm wood substrate is specified. This does not replicate the specifics of the Lockwood Wall System where the internal lining comprises a layer of pine that is 40mm thick and the ceiling sarking is 19mm thick. As a result the obligations imposed on the Lockwood Wall System have the effect to increase the performance requirements when compared to other wall systems.

To achieve compliance with C3.4(a) an additional cost will be incurred. The modification being sought will not diminish the buildings compliance with Clause C1.

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18 NOV 2014

Appendix 1

Lockwood has used the following approach to arrive at the conclusion that the proposed modification to C3.4(a) will not compromise compliance with C1.

1. Lockwood compared the previous C clauses with the current and concluded that the objectives are largely the same
2. Lockwood compared C3.4(a) with its counterpart in the "old" C clauses (C3.3.1), and found whilst C3.4(a) is prescriptive and C3.3.1 is more performance based, both refer to the same fire related behaviours
3. Lockwood reviewed the means of compliance with respect to C3.4(a) and concluded that the Code and Acceptable Solution appear to be in conflict
4. Lockwood have documented the difference in performance between the material groups

Item 1: Comparing the objectives of the C clauses as articulated in the current and previous C clauses

Lockwood has been advised by MBIE, that the policy imperative associated with the C clauses was unchanged when the new provisions came into force in April 2012.

The objectives of the "old" and "new" C Clauses bares this out as follows.

C (Protection from Fire)	C Fire Safety) (now archived)
C 1 (a) safeguard people from an unacceptable risk of injury or illness caused by fire	C1.1 the objective of this provision is to safeguard people from injury or illness caused by fire
C 1 (b) protect other property from damage caused by fire	C2.1 the objective of this provision is to (a) safeguard people from injury or illness from a fire while escaping from a fire to a safe place, and (b) facilitate fire rescue operations
C 1 (c) facilitate firefighting and rescue operations	C3.1 the objective of this provision is to: a) safeguard people from injury or illness when evacuating a building during fire b) provide protection to fire service personnel during firefighting operations c) protect adjacent household units, other residential

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	units, and other property from the effects of fire d) safeguard the environment from adverse affects of fire
	C4.1 the objective of this provisions is to a) safeguard people from injury due to loss of structural stability during fire, and b) protect household units and other property from damage due to structural instability caused by fire

Lockwood agrees with MBIE's advice that the fundamental objectives of the C clauses have not changed

Item 2: Comparison between C3.4(a) and C3.3.1

The following is a comparison between (C3.4(a) and C3.3.1 for the superseded C clause)

DISTRICT

18 NOV 2014

C3—FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE (continued)

Provisions	Limit on application
PERFORMANCE C3.4 (a) materials used as internal surface linings in the following areas of *buildings* must meet the performance criteria specified below:	Clause C3.4 does not apply to *detached dwellings*, within *household units* in *multi-unit dwellings*, or *outbuildings* and *ancillary buildings*.

Area of *building*	Performance determined under conditions described in ISO 9705: 1993	
	Buildings not protected with an automatic *fire* sprinkler system	*Buildings* protected with an automatic *fire* sprinkler system
Wall/ceiling materials in sleeping areas where care or detention is provided	Material Group Number 1-S	Material Group Number 1 or 2
Wall/ceiling materials in exitways	Material Group Number 1-S	Material Group Number 1 or 2
Wall/ceiling materials in all *occupied spaces* in importance level 4 *buildings*	Material Group Number 1-S	Material Group Number 1 or 2
Internal surfaces of ducts for *HVAC systems*	Material Group Number 1-S	Material Group Number 1 or 2
Ceiling materials in crowd and sleeping uses except *household units* and where care or detention is provided	Material Group Number 1-S or 2-S	Material Group Number 1 or 2
Wall materials in crowd and sleeping uses except *household units* and where care or detention is provided	Material Group Number 1-S or 2-S	Material Group Number 1, 2, or 3
Wall/ceiling materials in occupied spaces in all other locations in *buildings*, including *household units*	Material Group Number 1, 2, or 3	Material Group Number 1, 2, or 3
External surfaces of ducts for *HVAC systems*	Material Group Number 1, 2, or 3	Material Group Number 1, 2, or 3
Acoustic treatment and pipe insulation within airhandling plenums in sleeping uses	Material Group Number 1, 2, or 3	Material Group Number 1, 2, or 3

PERFORMANCE

C3.3.1 Interior surface finishes on walls, floors, ceilings and suspended *building elements*, shall resist the spread of *fire* and limit the generation of toxic gases, smoke and heat, to a degree appropriate to:

(a) The *travel distance*,

(b) The number of occupants,

(c) The *fire hazard*, and

(d) The active *fire safety systems* installed in the *building*.

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In the case of C3.4(a) the Material Group number is a measure of total heat released over a period of time given a time dependent exposure to a specified energy. In the case of Material Group Number 1S and 2S, this also includes the maximum average smoke production rate over a given period of time.

In respect of C3.3.1 the same performance requirements are considered but the evaluative approach allowed is less prescriptive and performance based. That is when considering the interior finish, consideration must be given to

- the travel distance
- number of occupants
- fire hazard, and
- the presence of active fire safety systems.

Item 3: Establishing compliance with clause C3.4(a)

There is a paradox between clause C3.4(a) and the acceptable solutions (C/AS1 to C/AS7, para C4.1.2 and Appendix A of C/VM2):

1) Clause 3.4(a) stipulates the test method for determining a lining's number as ISO9705:1993. This is a full scale test and does NOT adequately predict the smoke production rate, denoted by the suffix "S"
2) The Acceptable Solution (C/AS1 to C/AS7, para C4.1.2 and Appendix A of C/VM1) allows for determination of a material group to be established using the full scale test of ISO9705:1993 or the bench-scale cone calorimeter tests of ISO5660.1:2002 and ISO5660.2:2002
3) The bench scale tests predict the smoke production rate.

It would appear that compliance with this provision of the code (as required under s17 of the Act) is impossible, unless ISO9705:1993 is used and in that case only Material Group Numbers 1 and 2 can be established.

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Item 4: Comparison between the performance achieved for different Material Group Numbers

Material Group Number	Performance[1]
1	ISO9705 & ISO5660 **Group Number 1** material has total heat release not greater than 1 MW following exposure to 100 kW for 10 minutes then 300 kW for 10 minutes
1S	ISO9705 **Group Number 1–S** material has total heat release not greater than 1 MW following exposure to 100 kW for 10 minutes then 300 kW for 10 minutes and the average smoke production rate over the period 0–20 min is not greater than 5.0 m^2/s ISO5660 **Group Number 1-S** material: as predicted in accordance with Paragraph A1.3 and an average *specific extinction area* less than 250 m^2/kg
2	ISO9705 & ISO5660 **Group Number 2** material has total heat release not greater than 1 MW following exposure to 100 kW for 10 minutes
2S	ISO9705 **Group Number 2–S** material has total heat release not greater than 1 MW following exposure to 100 kW for 10 minutes and the average smoke production rate over the period 0–10 min is not greater than 5.0 m^2/s ISO5660

[1] Refer C/VM2 Appendix A

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	Group Number 2-S material: as predicted in accordance with Paragraph A1.3 and an average *specific extinction area* less than 250 m^2/kg
3	ISO9705 & ISO5660 **Group Number** 3 material has total heat release not greater than 1 MW following exposure to 100 kW for 2 minutes, and

Appendix 2

Fire Report

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Description of modification

A modification in respect of C3.4(a) is being sought so that, for this building, material group 3 will achieve compliance with C3.4(a).

Additional analysis with respect to compliance with Clause C1-C7

In applying for a modification to C3.4(a) consideration has been given to fire related risk to occupants and any associated mitigation. This analysis in based on the approach used under the former Clause 3.3.1 and uses information included in the fire report attached to this application.

Maximum travel distance & means of escape	The maximum travel distances comply with C/AS4 with a dead end open path of less than 20m and total open path of less than 50m. All doors open out in the direction of escape. Final exit doors are not less than 860mm in width and internal doors are no less than 760mm in width. Both comply with C/AS4
Number of occupants	The hall may accommodate a maximum of 122 people
Fire hazard	It is recognized that heavy timber often performs well in fires and only chars. The Lockwood wall system incorporates a 40mm layer of pine for the internal surface.
Presence of active fire safety systems	Type 2 fire alarm

Conclusion

Lockwood is satisfied that the finished Lockwood wall system that achieves a material group number 3 will meet the objectives articulated in Clause C1.

DIST
18 NOV 20

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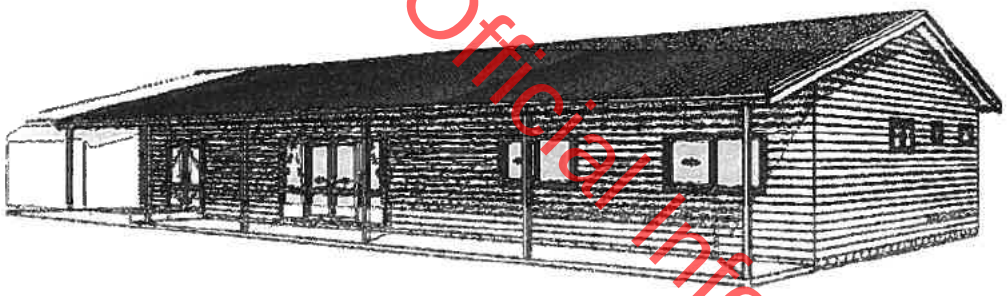
140695

PROTECTION FROM FIRE DESIGN REPORT

BLAKETOWN SCHOOL HALL PROJECT
BLAKE STREET, BLAKETOWN, GREYMOUTH



ISSUE A

EXECUTIVE SUMMARY

This project includes the construction of a new school building at Blaketown School in Blaketown, Greymouth. The location of this building is indicated on the attached site plan (fire drawing F1).

A Type 2 manual fire alarm system (with supplementary smoke detection) and Ecoglo exit signs and way-finding strips are proposed to be provided as part of this project.

Doors located on egress routes shall be provided with adequate width and locking hardware. Wall and ceiling surface finishes shall meet the specific group number requirements to meet surface finish requirements.

The external walls of the project building located next to the boundary shall have a 120/120/120 fire resistance rating. To meet the additional property protection requirement of the Ministry of Education (MOE), the external walls of the project building located within 6 m of the existing school building shall have a 60/60/60 fire resistance rating. External fire walls shall also be designed to meet post fire structural stability requirements.

Compliance with C1-6, D1, F6 or F8 is established using the applicable compliance documents	☑
A modification or waiver to C1-6, D1, F6 or F8 is not required	☑
The project does not involve an alteration, change of use or subdivision which affects a 'specified' system (except where the effect on the fire safety system is minor)	☑

The New Zealand Gazette, 3rd May 2012, No. 49, page 1406 states that the building consent application for these pods need not be issued to the New Zealand Fire Service DRU.

Issue	Date	For	Designer	Qualification	Approved for Issue
1	13.10.14	Draft - For comment	Kevin S	BE (Civil)	John Collie
A	20.10.14	Building Consent	Kevin S	BE (Civil)	John Collie

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1.0 PHILOSOPHY

This project includes the construction of a new school building at Blaketown School in Blaketown, Greymouth. The location of this building is indicated on the attached site plan (fire drawing F1).

The new building is proposed to comprise of a large school hall area in support of other school buildings on the site.

The project building has been assessed in full against C/AS4 (Acceptable Solutions for achieving compliance with C1-C6 of the New Zealand Building Code). In addition to the above, the additional requirements of the Ministry of Education (MOE) have been considered.

2.0 FIRE SAFETY SYSTEMS

Primary Risk Group:	CA
Design Occupant Load:	122

The above occupant load is calculated using the most appropriate values from Table 1.2 of C/AS4 and is indicated (including the associated density) on the attached drawings.

This includes the school hall space having an occupant density of 1.4 m^2/person. It allows the main school hall space for community use outside of school hours such as school fair etc. No occupant load has been allocated to the supporting areas as these will be used by those present in other areas of the building.

C/AS4 section 2.2 states the following:

> Given the total design occupant load is greater than 50 (but less than 250), no less than a Type 2 manual fire alarm system shall be installed throughout the building. This will include manual call points and sounders all complying with NZS 4512. In addition to the above, as required by the school, supplementary smoke detection shall be provided throughout the building. These detectors shall be connected to the fire alarm system (detector type shall comply with NZS 4512); however specific coverage shall not comply with NZS 4512. This system need not automatically notify the NZFS.
>
> Given fire service hose run distances are less than 75 m, a fire hydrant system is not required within the buildings.

In addition to the above fire safety system required by the C Clauses of the New Zealand Building Code; illumination of egress routes shall be assessed in accordance with F6/AS1.

> Illumination of exit routes, in accordance with F6/AS1, shall be provided on the external steps (as indicated on fire drawing F2) to illuminate the changes in level. This is proposed to be achieved using Ecoglo way-finding strips (i.e. step nosings, contrast strips and handrail guide as necessary) in lieu of emergency lighting.

3.0 MEANS OF ESCAPE

Given the total design occupant load from the building is greater than 50 but less than 500 people, two directions of escape are required.

The number of available egress routes complies with C/AS4 as indicated on the attached fire drawings.

3.1 Lengths

The Dead End Open Path (DOP) and total open path (TOP) lengths have been calculated from the most remote locations of the building to a safe place (as indicated on the attach fire drawings).

Path lengths meet the requirements of C/AS4, noting the maximum allowable DOP and TOP lengths are 20 m and 50 m respectively.

3.2 Doors

Given the final exit doors are used by greater than 20 people, the MOE requires them to swing in the direction of escape.

The final exit doors (these with exit signs above) shall have a clear width not less than 860 mm (allowing for 7 mm per person as required by C/AS4). All internal doors shall have a clear width not less than 760 mm.

All egress doors shall include hardware that always allows an easy escape from the inside (i.e. keyless and not include tower bolts). Take note also, the final exit doors shall include panic fastenings that always allow the door to release and swing open when the bar (or panel) is pushed using one hand.

3.3 Signs

Ecoglo photoluminescent exit signs shall be provided over the final exit doors as indicated on the attached fire drawings.

4.0 FIRE SPREAD

4.1 Internal Fire Spread

The building shall form a single firecell (this complies with the requirements of C/AS4 and the MOE). As a result internal spread of fire need not be considered.

4.2 External Fire Spread

The applicable 'Property Rating' applying to any walls that need to be fire rated to meet compliance with Part 5 of C/AS4 shall have no less than a 120/120/120 fire resistance rating. As per MOE requirement, the applicable 'Property Protection' applying to any walls located less than 6 m from other school buildings shall have no less than a 60/60/60 fire resistance rating. All external fire walls shall also be designed to resist a 0.5 kPa face loading during post fire conditions (as required by the NZBC for post fire structural stability).

The building is located 1 m from the west boundary and 3.5 m (to the east) from an adjacent school building on the site. Spread of fire shall be assessed in these directions.

The building is located remote from all other boundaries and school buildings. As a result, spread of fire need not be considered further.

Consider Spread of Fire toward the West Boundary:

The building is located between 1 and 2 m from the boundary. It has an enclosing rectangle length greater than 10 m and an area of approximately 44 m^2. As a result, the maximum percentage of unprotected area permitted in this wall is 20% (equating to 9 m^2). Note however, the maximum size of the largest permitted single unprotected area is 1 m^2 and the minimum distance between adjacent unprotected areas is 0.5 m.

With the exception of the three windows (which need not be fire rated but shall have an area of less than 1 m^2), the wall shall be 100% fire rated.

Consider spread of fire to the East Boundary of other school building:

The east wall and part of the south wall is located less than 6 m from the adjacent school building. These walls shall be 100% fire rated (as indicated on the fire drawings). No unrated penetrations or openings are permitted on this wall.

5.0 HAND HELD FIRE FIGHTING EQUIPMENT

Although not required by C/AS4, it is recommended that fire extinguisher be provided in the kitchen as indicated on the attached fire drawing F2.

6.0 SURFACE FINISHES

Take note that the following surface finish requirements do not apply to door sets, structural elements, joinery, general decorative trims, electrical fixtures and fittings and small areas of non-conforming product with a total area less than 5 m^2.

Internal Walls and Ceilings:

The internal surface finishes of all walls and ceilings shall have a group number not greater than 2S.

In addition, the MOE requires the internal surface finishes of all walls and ceilings to have a SFI ≤ 2 and a SDI ≤ 5.

External Walls:

There is no limitation as the walls are located greater than 1.0 m from relevant boundaries and the building height is less than 7.0 m.

Floors:

Flooring shall either be non-combustible or when tested to ISO 9239-1, shall have a critical radiant flux not less than 2.2 kW/m^2.

Other:

Suspended flexible fabrics shall have a flammability index (FI) less than 12.

Any expanded plastics (i.e. polystyrene insulation) used in the building shall be protected from ignition by 10 mm Standard GIB Board or other approved flame barrier.

7.0 FIRE SERVICE ACCESS AND FIRE FIGHTING FACILITIES

7.1 Evacuation Plan

As required by the MOE, the existing evacuation plan for the school site shall be updated to allow for the construction of the new building.

7.2 Vehicle access

Vehicle access to the school is available from Blake Street. This meets the necessary NZFS vehicle access requirements of C/AS4.

8.0 SUMMARY OF WORK

This section shall be read together with the attached fire drawings (Appendix A).

8.1 Alarms

At the conclusion of the project, the new building shall have a Type 2 manual fire alarm system complying with NZS 4512 and F7/AS1. In addition, supplementary smoke detection shall be provided throughout the building. Given these are to be provided for property protection rating, the coverage of this detection need not comply with NZS 4512, including the fact that heat detector need not be provided throughout the ceiling voids and other risk areas in lieu of smoke detection (unless specifically requested by the school/ architect).

If the school is equipped with a site wide fire alarm system or another system capable of supporting these new devices, it shall be extended into the new building. Where this is not practicable, the new building shall be provided with a standalone fire alarm panel to support the building.

Interfacing of the fire alarm and class change systems (as necessary) shall ensure the necessary notifications to staff and students occur as is required to achieve compliance with NZS 4512 while maintaining the normal operation of the school and continuing to comply with the requirements of the NZFS approved evacuation plan.

The fire alarm contractor shall consider the locations of fire rated walls as part of their design. Fire alarm components shall not be located in fire rated building elements unless there are no alternatives.

Cabling shall be concealed in wall and ceiling cavities where possible. Any cabling that cannot be concealed shall be run neatly, enclosed within a suitably coloured neat cap and shall be approved firstly by the project architect before installation occurs.

The contractor shall coordinate the location and appearance of all new fire alarm components with the architect prior to installation on site.

The fire alarm contractor shall provide a producer statement (PS3) at the conclusion of the project stating that the existing fire alarm system within the remainder of the school remains compliant with NZS 4512 (to the year it was installed). FPIS (or another suitably qualified person) shall certify the fire alarm system installed within the new building upon completion of its installation.

8.2 Emergency Lighting

Illumination of exit routes complying with F6/AS1 is required in the positions indicated on the attached fire drawings (Appendix A).

Ecoglo way-finding products (i.e. step nosing, contrast strips and handrail guides) shall be provided on the external steps forming part of the escape route from this space. These shall be located in the positions indicated on the attached fire drawings (in accordance with the Ecoglo *'Designers Handbook for Ecoglo Markings'* and shall be installed in accordance with the appropriate Ecoglo *'Installation guide'*.

8.3 Signs

Ecoglo photoluminescent exit signs shall be located above the two final exit doors, as indicated on the attached fire drawings (Appendix A). They shall be installed in accordance with the appropriate Ecoglo *'Installation guide'*.

8.4 Doors

Doors shall swing in the direction indicated on the fire drawings.

They shall include hardware that always allows an easy escape from the inside (i.e. keyless and not include tower bolts). In addition, the final exit doors shall include panic fastenings that always allow the door to release and swing open when the bar (or panel) is pushed using one hand.

The final exit doors have a clear width not less than 860 mm. All other internal doors, shall have a clear width not less than 760 mm.

8.5 Fire Rated Construction

Fire Rated Walls – 120/120/120 FRR

The walls required to be fire rated (as indicated on the attached fire drawings, in red) need only provide a one way rating. As such, they shall have a timber frame lined on the inside with two layers of 19 mm GIB Fyreline. The GIB Fyreline linings shall be installed in accordance with certified GIB Fire Rated System 'GBUW 120' and the GIB Site Guide. They shall include all sheet joints terminating over solid timber blocking and all sheet joints and fasteners being stopped. The walls shall extend to the underside of the roof above. Note that, the use of glue (for fixing, even in addition to mechanical fixings) is not permitted. With the exception of the windows (as indicated on fire drawing F3), no unrated penetrations or openings are permitted through these walls.

The structural engineer for the project shall confirmed that the structural system proposed for these walls will resist a 0.5 kPa face loading during post fire conditions (as required by the NZBC for post fire structural stability).

Fire Rated Walls – 60/60/60 FRR

The fire rated walls, as indicated in the fire drawings in blue, require a two way rating. They shall have a timber frame lined on both sides with one layer of 13 mm GIB Fyreline. They shall be constructed in accordance with certified GIB fire rated system GBTL 60 and the GIB Site Guide. James Hardie Linea Weatherboard cladding, insulation, building paper, cavity battens and etc, shall be provided as detailed in the architectural drawings to meet other building consent clauses as necessary. No unrated penetrations or openings are permitted through these walls.

The GIB linings shall include all GIB sheet joints occurring over solid blocking and all exposed sheet joins and fasteners being stopped. The walls shall extend to the underside of the roof above. Seal, as necessary, between the wall linings and roof cladding above to ensure the smoke and fire rating of the wall system is maintained. Note that, the use of glue (for fixing, even in addition to mechanical fixings) is not permitted.

The structural engineer for the project shall confirmed that the structural system proposed for these walls will resist a 0.5 kPa face loading during post fire conditions (as required by the NZBC for post fire structural stability).

Penetrations and Fire Stopping:

All cables and pipes penetrating through the fire rated walls shall include fire collars, fire wraps and intumescent sealant as appropriate to maintain the fire resistance rating.

All flush boxes penetrating the fire rated walls shall be fire rated using an appropriate certified steel flush box, intumescent block and intumescent sealant.

Take note that additional solid blocking and Fyreline linings may be necessary to maintain the fire resistance rating of the fire rated building elements being penetrated (refer to penetrations in GIB Fire Rated System for guidance).

All fire stopping shall be completed in accordance with the manufacturer's instructions for the materials used. The products used shall maintain the fire resistance rating (both fire and smoke ratings) of the fire rated building elements through which they penetrate and comply with C/AS4 and AS 1530.4.

8.6 Surface Finishes

Internal Walls and Ceilings:

The internal surface finishes of all walls and ceilings shall have a group number not greater than 2S.

In addition, the MOE requires the internal surface finishes of all walls and ceilings to have a SFI ≤ 2 and a SDI ≤ 5.

The proposed painted GIB linings will meet this requirement. In addition, the proposed exposed timber surfaces (1.2 m above the floor level) shall be treated with CAP508 intumescent mould coating to meet the above requirements. The contractor responsible for applying the CAP coatings shall issue a PS3 at the conclusion of the project stating that it was installed as specified by the CAP manufacturer and will meet the necessary surface finish.

Floors:

Flooring shall either be non-combustible or when tested to ISO 9239-1, shall have a critical radiant flux not less than 2.2 kW/m^2.

Exposed concrete flooring proposed throughout the building meets the above requirements.

Take note that no floor coverings (on top of the concrete flooring) are proposed at this stage anywhere in the building. However, if any coverings are installed in the future, these shall meet the above requirement.

Other:

No expanded plastics (i.e. polystyrene insulation) are proposed to be used as part of this project.

9.0 COMPLIANCE SCHEDULE

The following elements relate to elements discussed within this report. Note that other systems may also be required.

The following specified systems are existing, being altered, added to, new, or removed in the course if the building works.	Existing	New	Altered	Removed
2. Automatic or manual emergency warning systems for fire or other dangers (Type 2 manual fire alarm system with supplementary smoke detection)		☑		
14. Emergency power systems for, or signs relating to, a system or feature specified in any of the clauses 1 to 13				
14.2 Signs (applying to how to operate mcp and signage, etc)		☑		
15. Other fire safety systems or features				
15.2 Final exit		☑		
15.4 Signs for communicating information intended to facilitate evacuation (applying to Ecoglo exit signs and way-finding products)		☑		

The Ecoglo exit signs and way-finding products shall be installed, inspected and maintained in accordance with the Ecoglo installation and maintenance guide.

All other systems shall be installed, inspected and maintained in accordance with the standard requirements listed in the 'Compliance Schedule Handbook'.

The above requirements are elaborated further in Appendix B.

10.0 CONSTRUCTION MONITORING

It is recommended that construction monitoring of the project be completed to a CM2 level.

This will include inspections to check the construction of fire rated walls (to check the correct installation of GIB Fyreline, solid blocking of sheet joints and the number and location of GIB fastenings), the application of any fire stopping, the door widths and locking hardware, and the installation of the fire alarm system, Ecoglo exit signs and Ecoglo emergency way-finding products.

It is recommended that the necessary inspections are carried out by the local building inspector responsible for issuing the code of compliance certificate.

It is recommended that the correct installation of the fire alarm system be based upon a PS3 from the fire alarm contractor responsible for completing the installation of these systems and the presentation of an FPIS certificate (or certification from another suitably qualified person).

11.0 EVACUATION PLAN

The existing evacuation plan for the school site shall be modified as necessary to allow for the new proposed buildings.

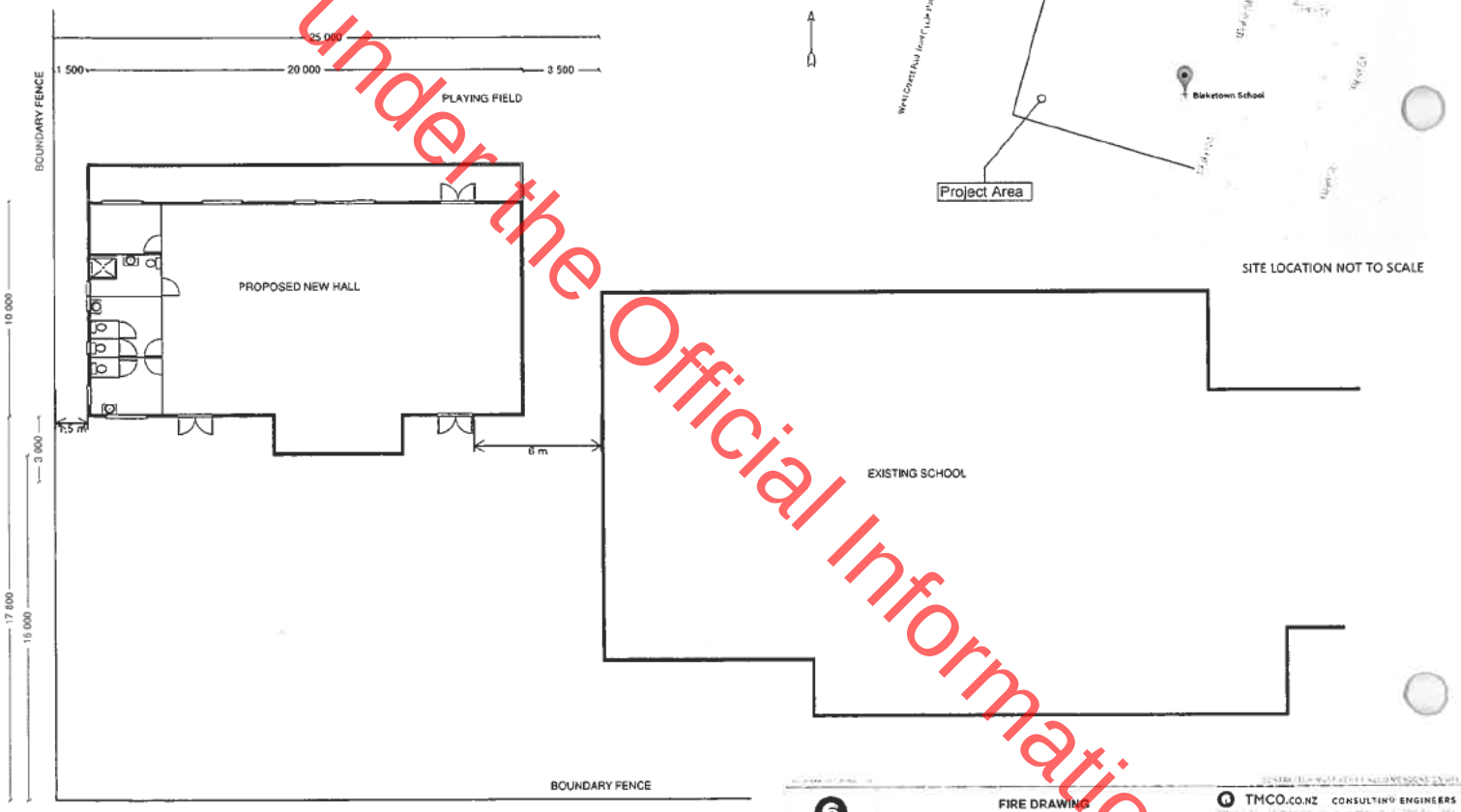
Kevin Suen
Fire Engineer

TM Consultants Limited

APPENDIX A

Fire Drawings

- F1 – Site Plan
- F2 – Floor Plan
- F3 – Elevation Plan



SITE LOCATION NOT TO SCALE

TM CONSULTANTS

FIRE DRAWING

BLAKETOWN SCHOOL HALL PROJECT

BLAKE STREET, BLAKETOWN
GREYMOUTH

TMCO.co.nz CONSULTING ENGINEERS

Kevin Suen			20-10-14
Kevin Suen			20-10-14
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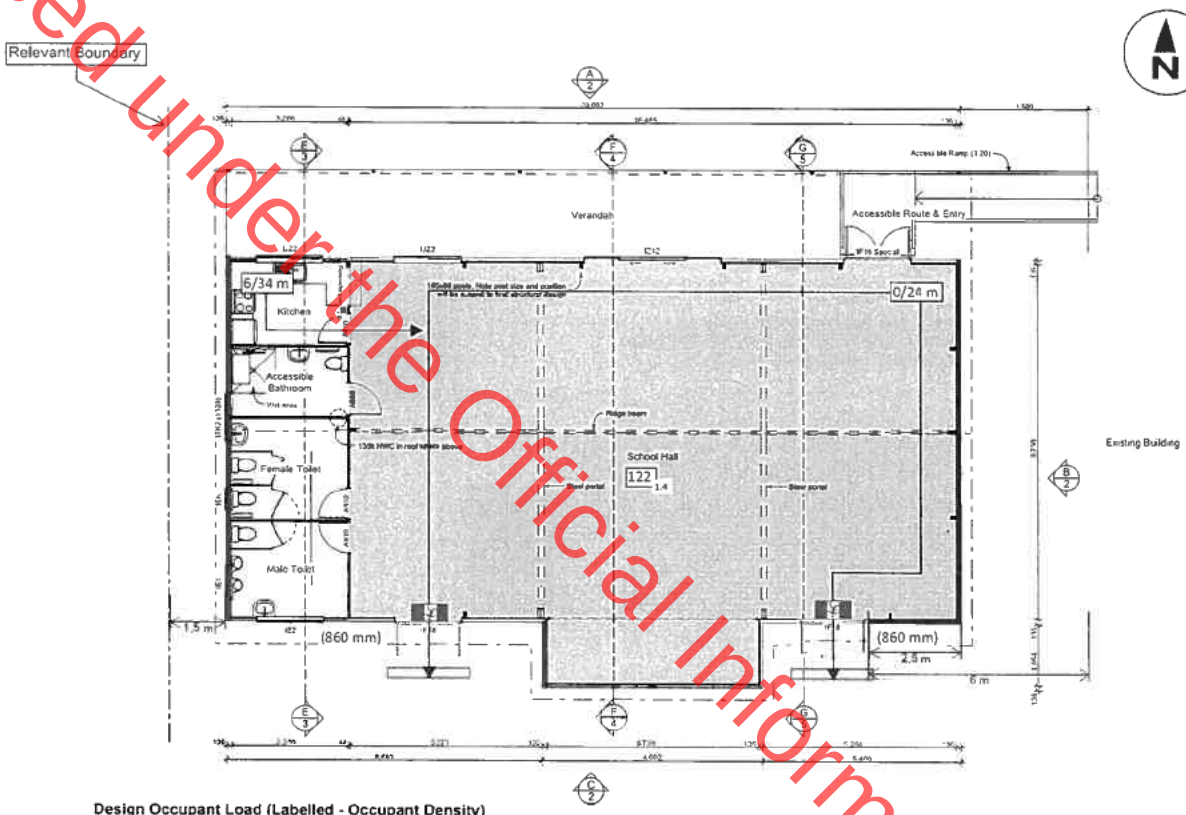

Design Occupant Load (Labelled - Occupant Density)
Egress Route (Labelled - DOP/TOP)
Minimum Door Width
Ecoglo Photoluminescent Exit Sign
60/60/60 Fire Resistance Rating
120/120/120 Fire Resistance Rating
Ecoglo Way Finding Products
Proposed Fire Extinguisher Location

TM CONSULTANTS

FIRE DRAWING
BLAKETOWN SCHOOL HALL PROJECT
BLAKE STREET, BLAKETOWN
GREYMOUTH

TMCO.CO.NZ CONSULTING ENGINEERS

Drawn	Kevin Suen	Date	20-10-14
Check	Kevin Suen	Date	20-10-14
F2	140695	A	1:100