## Meuser, Teegan SG:EX

**From:** Nicol, John SG:EX
**Sent:** Monday, June 13, 2011 11:12 AM
**To:** Henderson, Jeff SG:EX; Meuser, Teegan SG:EX; Jensen, Jun'ichi SG:EX
**Cc:** Rotgans, Trudy SG:EX
**Subject:** FW: Discussion on 6 storey wood frame construction for FSLG meeting

And another...

*John*

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**From:** Rotgans, Trudy HSD:EX
**Sent:** Tuesday, October 14, 2008 4:27 PM
**To:** Nicol, John HSD:EX
**Subject:** FW: Discussion on 6 storey wood frame construction for FSLG meeting

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**From:** Steve Gamble [mailto:gambles@portcoquitlam.ca]
**Sent:** Friday, October 10, 2008 12:43 PM
**To:** Rotgans, Trudy HSD:EX; Denlinger, Becky SG:EX
**Cc:** Vasey, Jeff HSD:EX; Lam, Roger HSD:EX
**Subject:** RE: Discussion on 6 storey wood frame construction for FSLG meeting

I'm interested in both but I will be unavailable for the the November 13th date s.22 s.22 can you send me additional info on the presentation when you have more details?

**Stephen R. Gamble, CFO, MIFireE**
**Fire Chief**
**Port Coquitlam Fire & Emergency Services**

**1725 Broadway Street**
**Port Coquitlam, BC**
**604.927.5466 (office)**
**604.927.5472 (direct line)**
**604.927.5406 (fax)**

**gambles@portcoquitlam.ca**



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**From:** Rotgans, Trudy HSD:EX [mailto:Trudy.Rotgans@gov.bc.ca]
**Sent:** Friday, October 10, 2008 11:53
**To:** Steve Gamble; Denlinger, Becky SG:EX
**Cc:** Vasey, Jeff HSD:EX; Lam, Roger HSD:EX
**Subject:** Discussion on 6 storey wood frame construction for FSLG meeting

Hello Steve and Becky,

I'm writing to offer a presentation by the Building and Safety Policy Branch to the FSLG on the 6 storey wood frame construction issue. If you are interested, we could provide a project status presentation and engage the committee members in a discussion on the key fire safety issues.

We can also invite your committee members to our next large stakeholder meeting on November 13th.

Please let me know.

Regards,

Trudy Rotgans, MAIBC
Manager, Building & Safety Policy Branch
Office of Housing and Construction Standards

Tel: (250) 387-2241

http://www.housing.gov.bc.ca/building/wood_frame/index.htm

## Meuser, Teegan SG:EX

**From:** Nicol, John SG:EX
**Sent:** Monday, June 13, 2011 11:06 AM
**To:** Henderson, Jeff SG:EX; Meuser, Teegan SG:EX; Jensen, Jun'ichi SG:EX
**Cc:** Rotgans, Trudy SG:EX
**Subject:** FW: 6 Storeys Residential Wood Buildings Project

And another...

*John*

---

**From:** Steve Gamble [mailto:gambles@portcoquitlam.ca]
**Sent:** Friday, October 31, 2008 3:03 PM
**To:** Nicol, John HSD:EX; Doug Wade
**Cc:** Fire Chiefs Assoc.
**Subject:** RE: 6 Storeys Residential Wood Buildings Project

Thanks John.

**Doug** are you available to attend a meeting on the 13th of November for me (see below)?

**Stephen R. Gamble, CFO, MIFireE**
**Fire Chief**
**Port Coquitlam Fire & Emergency Services**

**1725 Broadway Street**
**Port Coquitlam, BC**
**604.927.5466 (office)**
**604.927.5472 (direct line)**
**604.927.5406 (fax)**

**gambles@portcoquitlam.ca**



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**From:** Nicol, John HSD:EX [mailto:John.Nicol@gov.bc.ca]
**Sent:** Friday, October 31, 2008 14:51
**To:** Steve Gamble
**Cc:** Fire Chiefs Assoc.
**Subject:** RE: 6 Storeys Residential Wood Buildings Project

I can assure you that we will have a near-final draft to show you when we come next Friday. That's not to say though that there wouldn't be value in having a Fire Chiefs' rep there on the 13th, since there might be one or two new wrinkles. I'm guessing it would also be instructive to hear the Q&A.

John

**From:** Steve Gamble [mailto:gambles@portcoquitlam.ca]
**Sent:** Friday, October 31, 2008 2:06 PM
**To:** Nicol, John HSD:EX
**Cc:** Fire Chiefs Assoc.
**Subject:** RE: 6 Storeys Residential Wood Buildings Project

I have another meeting scheduled on the 13th which is why I asked the question. Hopefully you will have the "near final draft" ready for the 7th. If you could let me know ASAP if you don't feel you are going to make the 7th I would appreciate it. I will then try and have someone from our Association attend on my behalf.

SRG

---

**From:** Nicol, John HSD:EX [mailto:John.Nicol@gov.bc.ca]
**Sent:** Friday, October 31, 2008 13:21
**To:** Steve Gamble
**Subject:** RE: 6 Storeys Residential Wood Buildings Project

By next friday, we hope to be able to share a near final draft. The version we present at the meeting on the 13th may evolve a bit from there.

JIN

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**From:** Steve Gamble [mailto:gambles@portcoquitlam.ca]
**Sent:** Friday, October 31, 2008 12:57 PM
**To:** Nicol, John HSD:EX; dbell@fpoa.bc.ca
**Subject:** RE: 6 Storeys Residential Wood Buildings Project

John will this be the same information that you will be providing to us next Friday (7th)?

SRG

---

**From:** Nicol, John HSD:EX [mailto:John.Nicol@gov.bc.ca]
**Sent:** Friday, October 31, 2008 09:41
**To:** Steve Gamble; dbell@fpoa.bc.ca
**Subject:** Re: 6 Storeys Residential Wood Buildings Project

October 31, 2008

Greetings,

Re: 6 Storeys Residential Wood Buildings Project

The Province of British Columbia is approaching the point in the process to allow the construction of 6 storey residential wood buildings when we will be sending out our proposed Code change language for public comment.

I am writing to thank you and the many stakeholder organizations that have shared their perspectives and experience, which has helped us ensure that all the potential issues involved in this change are carefully considered. I would also like to invite you to a stakeholder information meeting in Vancouver on the afternoon of November 13th, where we would like to:

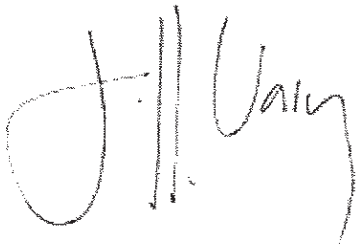
- present our proposals to you,
- clarify the next steps in the process and
- answer your questions.

The meeting will take place in the Pan Pacific Hotel, Canada Place in Oceanview Suites 6 and 7. Refreshments will be served beginning at 1:30 pm and the meeting will run from 2 to 3:30pm.

Please forward to us contact information for the person who will represent your organization by return email to John.Nicol@gov.bc.ca.

We look forward to hearing from you.

Sincerely,



Jeff Vasey
Executive Director, Building and Safety Policy Branch
Office of Housing and Construction Standards

## Meuser, Teegan SG:EX

**From:** Nicol, John SG:EX
**Sent:** Monday, June 13, 2011 11:03 AM
**To:** Henderson, Jeff SG:EX; Meuser, Teegan SG:EX; Jensen, Jun'ichi SG:EX
**Cc:** Rotgans, Trudy SG:EX
**Subject:** FW: Request re: 6 Storey Wood Buildings Public Review
**Attachments:** Public Review promo for stakeholders websites.doc

Another missive from FSLG.

*John*

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**From:** Nicol, John HSD:EX
**Sent:** Monday, November 17, 2008 9:13 AM
**To:** 'Steve Gamble'; Fire Chiefs Assoc.
**Subject:** RE: Request re: 6 Storey Wood Buildings Public Review

Hi Steve and Ann. There was an glitch in my previous notice about the public review website. Please forward the attached version.

Regards,

***John Nicol***
Office of Housing and Construction Standards
Building and Safety Policy Branch
Senior Policy Analyst
4th floor - 609 Broughton Street
Victoria, BC
Phone: 250-387-9737
Fax: 250-387-3765

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**From:** Steve Gamble [mailto:gambles@portcoquitlam.ca]
**Sent:** Thursday, November 13, 2008 5:28 PM
**To:** Fire Chiefs Assoc.
**Cc:** Nicol, John HSD:EX
**Subject:** FW: Request re: 6 Storey Wood Buildings Public Review

Ann can you forward this information to our members as well as the FSLG members as requested (see below)?

**Stephen R. Gamble, CFO, MIFireE**
**Fire Chief**
**Port Coquitlam Fire & Emergency Services**

**1725 Broadway Street**
**Port Coquitlam, BC**
**604.927.5466 (office)**
**604.927.5472 (direct line)**
**604.927.5406 (fax)**

**gambles@portcoquitlam.ca**

"This message and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by telephone and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal. Thank you."

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**From:** Nicol, John HSD:EX [mailto:John.Nicol@gov.bc.ca]
**Sent:** Wednesday, November 12, 2008 16:10
**To:** Building and Safety Policy Branch FOR:EX
**Cc:** Godfrey, David B HSD:EX
**Subject:** Request re: 6 Storey Wood Buildings Public Review

I would like thank you for your organization's involvment in the development of Code change proposals to allow 6 storey wood buildings. I would also request your assistance and cooperation to encourage the participation of your members/colleagues in the online public review of these Code change proposals. Attached is an explanatory blurb and a 'button' for placement on your organization's website. *[Information on how to do this are in bracketed italics after the button.]* Please feel free to adapt the explanatory piece as you see fit.

We would very much appreciate your efforts to involve people throughout the Province in the review of this initiative.

If you have any questions, please don't hesitate to contact me.

Thanks again,

***John Nicol***
Office of Housing and Construction Standards
Building and Safety Policy Branch
Senior Policy Analyst
4th floor - 609 Broughton Street
Victoria, BC
Phone: 250-387-9737
Fax: 250-387-3765

<<Public Review promo for stakeholders websites.doc>>

BRITISH COLUMBIA
www.gov.bc.ca

**Building & Safety Policy Branch**
Office of Housing and Construction Standards
PO Box 9844 Stn Prov Govt
Victoria BC V8W 9T2
Email: building.safety@gov.bc.ca
Website: www.housing.gov.bc.ca/building

November 13, 2008

## Public Review of Residential Mid-Rise Wood-Frame Code Change Proposals

Plans for new BC Building Code requirements to increase the maximum height for wood-frame residential construction from four to six storeys were announced in May of this year by Minister Rich Coleman. These new code requirements are scheduled to be in place in January 2009.

The Province is committed to ensuring the proposed changes to the code receive a high level of scrutiny and due diligence. As part of this commitment, the Province is conducting research, working with leading experts and a wide variety of stakeholders, and conducting technical analysis to address issues related to the proposed BC Building Code requirements.

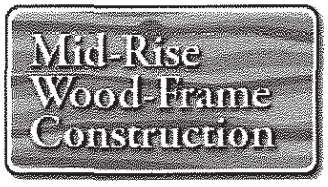
Technical advisory groups were established including representatives from local governments, the provincial government, the construction industry, engineers, architects, developers, contractors, building officials, fire officials, insurers, consumer advocacy representatives and others. These groups examined and provided advice on technical and implementation issues related to:

- Fire safety (during and after construction);
- Wood shrinkage and building envelope integrity;
- Seismic and structural design; and
- Administrative issues and education and training needs.

Consultants with expertise in fire, structural, seismic and building envelope engineering provided advice to the Province on risks, mitigation strategies and appropriate code language. Their advice informs the basis of the proposed code changes.

Throughout this process, the Province has also received a number of useful suggestions for general improvements to the regulation of construction in BC. These suggestions will be helpful to inform future code development. The review will close on December 15, 2008, and all feedback will be considered in the preparation of the amendments to the BC Building Code.

**We Want to Hear From You**
You can provide your comments on the proposed code changes to allow mid-rise wood-frame construction for residential buildings by clicking on this button:




*[ Your webmaster can link the button to: http:// www.housing.gov.bc.ca/building/wood_frame/index.htm*

*For an example of how the icon looks online, please visit http://www.housing.gov.bc.ca/*

*If you have any technical questions relating to this button, please contact David Godfrey at: (250) 387-4469 or David.B.Godfrey@gov.bc.ca .]*

## Meuser, Teegan SG:EX

**From:** Nicol, John SG:EX
**Sent:** Monday, June 13, 2011 10:55 AM
**To:** Henderson, Jeff SG:EX; Meuser, Teegan SG:EX; Jensen, Jun'ichi SG:EX
**Cc:** Rotgans, Trudy SG:EX
**Subject:** FW: Building Code changes for 6 storey wood frame construction
**Attachments:** BldgCode changes reply Lam Feb 2009.doc

Here's Roger's correspondence from Steve Gamble.

*John*

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**From:** Lam, Roger HSD:EX
**Sent:** Monday, February 2, 2009 3:52 PM
**To:** Nicol, John HSD:EX
**Subject:** FW: Building Code changes for 6 storey wood frame construction

FYI

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**From:** Fire Chiefs Assoc. [mailto:fcabc@shaw.ca]
**Sent:** Monday, February 2, 2009 1:52 PM
**To:** Lam, Roger HSD:EX; 'Steve Gamble'
**Cc:** bcpffa@telus.net; s.22 dbell@fpoa.bc.ca s.22 Denlinger, Becky SG:EX; s.22
**Subject:** Building Code changes for 6 storey wood frame construction

Attached please find a reply letter from FSLG Chair Stephen Gamble on the issues you raised in your phone conversation last week after the Public Eye Online and the Vancouver Sun newspaper articles.

A paper copy will be mailed to your office.

Ann Hancock, Administrator
Fire Chiefs' Association of BC
Unit 9 - 715 Barrera Road
Kelowna, BC V1W 3C9
Phone: 250 862 2388 Fax: 250 862 2391
Cell: 250 812 5760
email: fcabc@shaw.ca
website: www.fcabc.bc.ca


**Fire Services Liaison Group**
#9 – 715 Barrera Road
Kelowna, BC V1W 3C9
Phone: 250-862-2388
Email: fcabc@shaw.ca

February 2, 2009

Roger Lam, Senior Policy Analyst
Building and Safety Policy Branch
Ministry of Housing and Social Development
Box 9844, Stn Prov Govt
Victoria, BC V8W 9T2

Dear Mr. Lam:

Further to our conversation last week on the changes made to the BC Building Code to allow six storey wood frame construction, the Fire Services Liaison Group feel that after providing your branch with our concerns and attending the various meetings that were held, there are outstanding issues that we have not had a reply on.

The new Code requires sprinklering to NFPA 13, but the local governments have not been given the authority to implement sprinkler bylaws in their jurisdiction. There is no requirement for mandatory inspection of buildings in Regional Districts. The public should be assured safety no matter where the building is situated. We are awaiting a response to our request for consideration in the Code to the capability of the local/responding fire department. Fire services are a local government service and as stated previously, local governments have not been able to enact sprinkler bylaws. Therefore, who will be responsible for the costs of firefighter training, materials, and resources particularly in unorganized areas where buildings are not inspected?

The fire-resistant exterior cladding, NFPA 13 standard sprinklers, and height limitation of 18 meters are a great start for public safety, but the FSLG would like your branch to advise if you are considering our other recommendations such as non-combustible exit stair shafts, smoke control measures, and emergency generators to name a few.

Yours truly

Stephen Gamble, CFO, MIFireE
Chair, FSLG
President, FCABC

Cc: Office of Fire Commissioner
BC Professional Fire Fighters Association
Volunteer Firefighters Association of BC
BC Training Officers Association
Fire Prevention Officers Association of BC
Union of BC Municipalities

## Meuser, Teegan SG:EX

**From:** Rotgans, Trudy SG:EX
**Sent:** Monday, June 13, 2011 11:03 AM
**To:** Meuser, Teegan SG:EX
**Subject:** FW: 6 Storey Wood - Fire Services Capacity
**Attachments:** Fire Services Liason Group Comments BC Bldg Code Amendments.pdf

No doubt you have this already.....
Trudy

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**From:** Nicol, John SG:EX
**Sent:** Monday, June 13, 2011 10:51 AM
**To:** Henderson, Jeff SG:EX; Meuser, Teegan SG:EX; Jensen, Jun'ichi SG:EX
**Cc:** Rotgans, Trudy SG:EX
**Subject:** FW: 6 Storey Wood - Fire Services Capacity

I missed this in what I have sent previously. It appears to pertain to FOI: HOU-2011-00020

*John*

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**From:** Nicol, John HSD:EX
**Sent:** Thursday, February 12, 2009 3:09 PM
**To:** Lam, Roger HSD:EX
**Subject:** FW: 6 Storey Wood - Fire Services Capacity

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**From:** Nicol, John HSD:EX
**Sent:** Thursday, October 16, 2008 10:14 AM
**To:** 'Doug Bell'; dbell@fpoa.bc.ca; Steve Gamble; Watt, Stephen SG:EX
**Subject:** RE: 6 Storey Wood - Fire Services Capacity

This is very helpful Doug. After I get more clarity on the approach of neighbouring U.S. jurisdictions that have 6-storey wood, I will also involve the FUS folks to help interpret the US requirements in terms of BC circumstances.

regards,

***John Nicol***
Office of Housing and Construction Standards
Building and Safety Policy Branch
Senior Policy Analyst
4th floor - 609 Broughton Street
Victoria, BC
Phone: 250-387-9737
Fax: 250-387-3765

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**From:** Doug Bell [mailto:Doug.Bell@nanaimo.ca]
**Sent:** Thursday, October 16, 2008 8:44 AM
**To:** Nicol, John HSD:EX; dbell@fpoa.bc.ca; Steve Gamble; Watt, Stephen SG:EX
**Subject:** RE: 6 Storey Wood - Fire Services Capacity

Hi John

Below are our thoughts for now.

**1. Local firefighting capacity**

Specific examples and benchmarks would help a local fire dept in evaluating whether they have the capacity and capability.

Examples
Aerial truck requirement
Pumping and water flow capacity?
Manpower - Need to have X number of fire fighters on scene within X minutes
Mutual aid availability and agreement
Wildfire interface issues

Two NFPA standards that give information on firefighting capabilities are:

**NFPA 1720** Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments 2004 Edition

**NFPA 1710** Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2004 Edition

For example;
Volunteer fire departments, they should have 10 firefighters on scene within 10 minutes 80% of the time and start fire operation within 2 minutes of arrival 90% of the time.
Career fire departments One minute (60 seconds) for turnout time and Four minutes (240 seconds) or less for the arrival of the first arriving engine company at a fire suppression incident and/or 8 minutes (480 seconds) or less for the deployment of a full first alarm assignment at a fire suppression incident 90% of the time.

- Keep in mind this is for a normal response times to a normal fire situation. Additional resources are required for many types and sizes of buildings within the fire departments response area. Many occupancies and sizes of buildings put additional measures in place knowing that the capability and resources of the local fire department is limited and in many cases the construction of the building is not worth the risk and is not built. This is especially true if we are going beyond the building code.
- 6 storey wood frame the issues are different as well. If all the safety features were included as for any building over 4 stories that would normally be built out of non-combustible materials, the response capability of fighting still could not be met. The thought process would be not only being easier for the fire departments to make that determination but would also be consistent throughout the province.
- Leadership from the province in establishing these guidelines for consideration would be welcomed especially since this is going beyond the building code.
- The final say should still rest with the AHJ but good and accurate information in which to evaluate is necessary.

1. **Occupancy** - Evaluation on what type of occupancy should not be allowed to occupy the building.
   6 storey, wood frame should not be used for what is referred to as assisted living (which is really a boarding or lodging house)

2. **Construction phase** - One of the most vulnerable times is during the construction phase. As even the largest fire departments in the province have had very little success with a fire in a 4 storey wood frame under construction (or a 3 storey for that matter).

- There needs to be in place is a standard province-wide template for a fire safety plan for a wood framed building 3 stories or higher under construction.
- Measures in place to limit fire spread in building under construction – fire stops, firewalls etc.

- Measures in place to control a fire during construction. Fire extinguishers, standpipes and hose, phasing in of sprinklers in portions of the building etc.
- Phased construction so that at any one time only a portion of the building is unprotected with fire stops etc.
- Exposures of adjacent buildings and occupancies.

The capacity of most fire departments that are able to review and know what a good fire safety plan is very limited. Provincial direction would go a long way to take that burden of time and expertise off of the individual fire departments by "re-inventing the wheel".
This would provide useful and high quality plans that work and that can make a difference and that is standard throughout the province.
Very few fire departments have the resources to spend the time in getting a fire safety plan that works but most don't.

The OFC - Interpretation Bulletins, Safety Advisory Bulletins and Information Bulletins have been very useful and provide province wide clarity. Extending this to larger issues such as Fire Safety Plan guidelines for example would be of great help by all fire departments in the province.

Doug Bell

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**From:** Nicol, John HSD:EX [mailto:John.Nicol@gov.bc.ca]
**Sent:** Friday, October 10, 2008 15:59
**To:** dbell@fpoa.bc.ca; Steve Gamble; Watt, Stephen SG:EX
**Subject:** 6 Storey Wood - Fire Services Capacity

Hi guys,
At Wednesday's Local Government Implementation meeting, there was considerable discussion of providing guidance and or explicit requirements for local governments when they consider approval of applications for 6-storey wood building projects. Options discussed included offering an 'opting in' arrangement, an 'opting out' arrangement, or including a detailed list of mandatory prerequisites. All these options would take into account local fire fighting capacity, which is something we need more clarity about in the absence of a provincial 'rating' system. I'm wondering Steve and Doug if you could share your thoughts on what some sensible criteria would look like for some reasonable level of assurance that a local fire fighting department could deal with a six storey wood building in their turf, including things like response time, equipment (including built-in equipment in the buildings themselves), personnel and training. You may also wish to comment on or propose what would be useful to see in terms of a fire safety plan during construction and a fire plan for the occupied building.

At the same time, I'me going to ask Steve Watt if OFC could contact their counterparts in Washington and Oregon and see if they have a set of system capacity criteria that have been applied where mid-rise wood buildings have gone up in Portland and Seattle.

In getting this information, we need to bear in mind that local governments are likely to require some subject property protection that is over and above the building code requirements for life safety and protection of adjacent structures. Presumably that would be a basis for whatever requirements our southern neighbours have developed for their mid-rise wood buildings.

This was an important discussion that ocupied quite a bit of our time. Once we have finished working up our notes from the meetings this week, we will share them with all of you, and I will likely be contacting you in the next week or so about our education and training advisory groups that are planned for the end of the month.

Thanks again for your valuable contributions to our advisory process.

Regards,

***John Nicol***
Office of Housing and Construction Standards
Building and Safety Policy Branch

Senior Policy Analyst
4th floor - 609 Broughton Street
Victoria, BC
Phone: 250-387-9737
Fax: 250-387-3765

**FIRE SERVICES LIAISON GROUP**
Unit 9 – 715 Barrera Road
Kelowna, BC V1W 3C9
Office 250-862-2388

## *Fire Service Liaison Group comments re: Amending BC Building Code to allow for 6 storey wood-frame construction*

This report has been prepared by the Fire Services Liaison Group, which is comprised of the five associations whose members are directly involved in fire service delivery in the Province of BC – Fire Chiefs' Association of BC; Volunteer Firefighters Association of BC; BC Fire Training Officers; Fire Prevention Officers of BC; Professional Fire Fighters Association of BC and a representative of the Union of BC Municipalities.

At a recent conference of Mayors in May of 2008, Premier Gordon Campbell stated that he wants to support the province's forest industry by allowing the construction of wood-framed condominiums above the current four-storey limit.

Housing Minister Rich Coleman advised the Canadian Home Builder's Association that he wants to see wood-framed buildings up to six storeys high. He also indicated that the necessary building code changes could be accomplished through regulatory change and could be in place by September 2008. Forests Minister Pat Bell supported the Premier's and Minister Coleman's position to change the building code to allow more height which will help revitalize the forestry industry.

Canadian Wood Council VP Etienne Lalonde has stated they have been lobbying for a change in the BC Building Code the past year and in a struggling forest industry, mid rise construction is a new and viable market.

Under the National Building Code wood framed construction has been limited to three storeys, whereas in BC, builders are allowed to go to four storeys. Architects have said that BC is already pushing the limit under the National Building Code by going as high as four storey's in wood specifically because any shrinkage in the thickness of floor joists tends to compound with each additional storey.

Recently in the PublicEyeonline.com, interim president David Davey of the Structural Engineers Association of BC, recommended that the government

conduct a "proper study on the effects of increasing the construction height of wood buildings" in BC.

The PublicEyeonline.com article goes on to say that "coincidentally, the government quietly announced it was looking for a consultant to review its planned code amendments". The RFP states

> "In May, 2008, the Minister announced plans to change the Building Code to allow for wood-framed residential occupancy buildings of up to and including six storeys. By late September, 2008, the Minister will announce details of the proposed changes."

The RFP goes on to state,

> "the project is divided into three phrases, all of which are included in this RFP." The first phase (to be completed by September 5, 2008) is a research phase, reviewing and identifying technical literature and risks associated with increasing the maximum number of storeys. The second phase (to be completed by October 31, 2008) will focus on developing a technical proposal for changing the Building Code to meet the government's objective. The third phase (to be completed by November 30, 2008) is to prepare a presentation to multi-stakeholder workshops in conjunction with Building Safety and Policy Branch.

All of the above is not making the BC fire service comfortable.

A major concern for the fire service is the response capabilities many fire departments in BC. Most fire departments do not have the training or resources to respond to a high rise fire incident. Additionally, outside of municipal boundaries, there is no mandatory requirement for building inspections, so many small or rural fire departments end up responding to an incident where they have not conducted a pre-fire plan nor have they been consulted with as to the whether they have the capability to mitigate the incident.

UBCM has stated in a staff report that six storey structures require hi-rise firefighting tactics which are much different than those used for low-rise structures (1-4 storeys). The current 3 and 4 storey wooden structures provide for demanding challenges when fighting fires from an external upper floor access perspective as it is. Most fire departments are able to access 3rd floor balconies with ground ladders, but are challenged if they need to reach any higher. The more floors a building has, the longer it takes to escape and with our aging population more time will be needed in the future for occupants to safely exit a structure during a fire.

UBCM's Executive indicated cautious support for the proposed six storey wood framed construction based on the following measures:

- Phased implementation – from four storey, to five storeys on top of one story non-combustible construction;

- Informed evidence based decision making – need to consider construction techniques, fire protection issues, enforcement/regulation issues, and potential liability concerns;
- Education/training and best practice guidelines for building industry, building officials and firefighters;
- Public review of proposed Building Code changes.

The Martin Lofts project in Kelowna is technically a four storey wood frame building but looks like a six storey structure. The under building concrete parking is mostly above ground, forming the first floor. There are four storeys of condominiums with a fifth storey of lofts, accessible only by stairs from the fourth storey units. Without corridor access, lofts are allowed and are not counted as an extra storey under the building code. Conceivably, if the building code starts to allow six storey wood buildings, they could stretch to eight storeys if exposed under building concrete parking and lofts are added. Assistant Fire Chief Bryan Collier, Kelowna stated that it is an issue of more property loss and greater risk for occupants and firefighters in the event of fire, as wood is more combustible than concrete and steel.

A recent paper by Sean Tracey, Canadian Regional Manager, NFPA, *(Comments regarding BC Proposal to Increase Lightweight Frame Construction to 6 Storeys)* raised the concern that expected building performance criteria must be established. Currently in the codes, the expectations for continuous structures above three storeys, is to require 2 hour fire resistive construction. This is intended to prevent the structure from collapse; to provide adequate time for occupants to safely evacuate; and to allow time for the fire service to conduct an interior search and rescue as well as fire attack. Tracey maintains if a combustible structure is to be permitted it should not go below the requirements of:

- Provide structural sufficiency for occupant evacuation and firefighter operations
- Minimize damage to the structure
- Limit or prevent damage to adjacent structures.

Tracey goes on to indicate that BC has a wide variety of fire department response capabilities and approvals of such structures must consider the fire department response capabilities. The Codes in BC make certain assumptions already on the adequacy of the fire department response, in regards to limiting distances, but does not define these.

Tracey references the TF2000 project in England where a concern about fire entering into wall cavities and thus spreading beyond the room of origin to other floors was raised. How many BC fire departments have infrared cameras to detect hotspots in wall cavities? He goes on to warn that if an Authority Having Jurisdiction permits such construction in their area, they will need to consider what resources their fire departments will need and at what level of service their firefighters are capable of providing, to properly address such fires. The National

Building Code does not define what an adequate fire department response capability is, so if the fire department does not perform interior fire attack, are they exposing their communities to increased civil litigation? Should a community such as Sechelt allow high rise construction without their fire department having the training, equipment, or sufficient number of firefighters to respond to a fire in that structure?

Tracey feels there is a serious potential disconnect in BC between the minimums in the building code and community expectations. He feels that a worst case scenario in analyzing the fire scenarios must be used. The building proposal must assume that the building will be constructed in a community with a volunteer response with limited resources and training.

NFPA 13R Sprinkler Systems are intended to cover residential occupancies up to 4 storeys. These new proposed structures would no longer be acceptable under NFPA 13R and therefore would be required to be designed to NFPA 13 throughout the structure. This means that all rooms and spaces would need to be sprinklered including attic spaces, all rooms, all closets, exterior balconies, etc. These would be areas that would have been excluded in residential construction up to and including four storeys. NFPA 13 R systems are considered life safety systems and are not installed for property protection.

Timber framed buildings are not resistant to fire until completed. The risky period is during the construction phase, because the timber frame goes up first and the fire protective cladding, plaster board and fire stops are added later. Two recent examples of timber frame fire destruction in New Westminster and Penticton, where fire not only destroyed the condo buildings under construction, but also impacted neighbouring structures and residences. Penticton Fire Chief Wayne Williams stated that, "the drywall wasn't in yet, so it was a fast moving fire, which also required evacuation of neighbouring structures and residences."

FCABC Building Codes & Life Safety Committee Chair, Deputy Chief Mike Helmer recommends that in additional to the current requirements for a 4 storey wood frame buildings the following items should be considered in a five or six storey wood frame building:

1. Fully sprinklered, including eaves and/or soffit area and attic space
2. Minimum 2 hour rated non-combustible exit stair shafts, minimum of two shafts (one for exiting and one for operations)
3. Non-combustible exterior cladding to prevent vertical fire travel
4. Fully addressable high rise type fire alarm system including firefighter telephones and voice communication systems
5. Smoke control measures to pressurize exit corridors and shafts
6. Emergency generators to supply emergency power for a 2 hour minimum
7. Ceilings rated for minimum 1 hour
8. Hose connections (minimum 1 ¾") in corridors adjacent to exit doors and additional locations if travel distance exceeds 30m.

Captain Doug Bell, President of the Fire Prevention Officers Association of BC has also raised the following concerns that need to be addressed:

1. Building to be sprinklered to NFPA 13 – no equivalencies – all balconies to be sprinklered
2. Stand pipes to be NFPA 14
3. Buildings to be classed as Ordinary Hazard Class 1
4. Hallway pressurization – NFPA has recently reviewed the requirements for hallway makeup air and fusible links – further research should be considered
5. Control room for fire department operations
6. Roof access on all stairways
7. Addressable alarm systems
8. Emergency lighting on standby generators
9. Firefighter elevators with elevators large enough for stretchers to fit, without using chair cots.

Smaller or rural fire departments will be challenged to provide higher building protection. The more protections built-in and/or installed, will allow the fire service to better protect BC residents.

Items that the FSLG feel need further consideration include:

1. Fire Department access to site
2. Are there any occupancy classification limitations/restrictions? (e.g. 6 storey assisted living facilities)
3. Does BCBC 3.2.6. high building requirements apply?
4. What are the increased occupant load impacts on evacuations?
5. Will there be a limited use of vinyl siding and other combustible materials used on the exterior of buildings?
6. Will the passive and active fire protection system be increased?
7. How will emergency power be addressed?
8. Will consideration be given to increase fire resistance of corridors and stairwells?
9. Will the jurisdiction where the building is built have adequate water supplies? Will fire pumps be required?
10. What effect will pre-engineered wood assemblies have on structural integrity in a fire? Will they be fire and load tested? Will the fire service have to change their current practices for this type of structure?
11. What are the impacts to existing neighbouring structures in the case of a fire in a wood frame structure still under construction?
12. Will there be a standard grade for height measurement? What are the impacts to height measurement standards if wood frame storeys are built over concrete storeys?
13. Will alternative solutions or performance design be allowed under "objective-based codes"?

14. Who will be responsible for the costs of firefighter training; materials; and resources?
15. If changes are made to allow higher wood frame buildings, will the insurance industry raise rates to property owners for increased risk?
16. Will there be consideration made in the Code to the capability of the local/responding fire department.
17. What methods/assurances will be made to ensure protection for openings and penetration of fire-rated membranes during the initial construction and later when the building is occupied?
18. How will the Building Code address the issue of 5 to 6 storey buildings becoming 7 & 8 storey buildings (over above ground non-combustible parking garages and the addition of lofts?
19. Will the Building code changes be restricted to Group C, D, and E occupancies or are others groups being considered?

Two key items that the Fire Services Liaison Group would like to have considered before any changes are made to the BC Building Code are the mandatory inspection of buildings in Regional Districts and the ability for local governments to implement sprinkler bylaws in their local jurisdictions.

The FSLG would also like to see research on impacts done and then consultations with fire service providers and their Authorities Having Jurisdictions before any changes are made to the BC Building Codes and BC Fire Codes to accommodate any amendments.

The FSLG would like to leave the reader with one final thought – most fire deaths and injuries occur in residential wood frame construction – we need to ensure that the safe guards are in place **before** these residences are occupied.

Stephen Gamble, CFO, MIFireE
Chair, Fire Services Liaison Group
President, Fire Chiefs' Association of BC