

COMPENDIUM OF FIRE RISKS IN MULTI-STORY WOOD FRAME BUILDINGS

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Project Name / Location: Lindell Avenue Apartments, St. Louis, MO

Date of Incident: July 18, 2012

Project Description: 4 story, 197-unit, wood framed apartment building.

Summary of fire event: A massive 5-alarm fire that gutted a four-story apartment building in St. Louis was built with a wood frame system that significantly added to the speed and extent of the damage.

A spokeswoman for St. Louis Mayor Francis Slay pointed out that the structure was built to code, had working sprinklers and "draft stops" to slow the spread of fire in the attic. However, each walled-off section of attic contained an abundance of joists, plywood and other combustible building materials.

"What we're looking at is all new, light weight construction where you have wood that's basically glued together, lam(inated) beams, you have lightweight trusses with gusset plates in the roof and attic area where this fire obviously started," said St. Louis Fire Chief Dennis Jenkerson. "In between each draft wall, there was basically a lumberyard." He added that these construction materials helped accelerate the spread of the fire.



This same building was also the scene of a 2007 fire that caused \$12 million in damage while construction was underway.

Links: http://www.stltoday.com/news/local/metro/fast-racing-flames-at-apartments-highlight-construction-debate/article_3424df86-6dcd-51ee-b89f-5c14c0c251c4.html

Video: <http://www.youtube.com/watch?v=vvwMOGhBdyg&feature=related>

Project Name / Location: Monroe Apartments, Portland, OR

Date of Incident: August 8, 2013

Project Description: 46-unit, wood frame apartment building

Summary of fire event: The Monroe Apartments were reduced to rubble Thursday in an early morning fire, is one of a surge in mid-sized projects popping up across the Portland area. The \$5 million project had been in the works for 2 1/2 years, said Chris Rogers, owner of Phase Two Development. Construction started in November 2012 and was expected to finish in November of this year (2013). Portland Fire & Rescue put the damage at \$4 million.



"It was at its most vulnerable point," Rogers said. "It was framed and not Sheetrocked yet, baking in the hot sun."

http://www.oregonlive.com/portland/index.ssf/2013/08/mlk_fire_apartment_building_wa.html

Lt. Rich Chatman, a spokesman for Portland Fire and Rescue, said under-construction buildings like the one that was destroyed are particularly vulnerable to fire. "Any time you have exposed studs and floor joists, it doesn't take much," he said. "Those can ignite and the fire can travel quickly."

http://www.oregonlive.com/portland/index.ssf/2013/08/three-alarm_fire_in_northeast.html#incart_m-rpt-2

Links: (above)

Video: <http://www.youtube.com/watch?v=u49zZq7ZE5U>

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Project Name / Location: Student Apartments, Kingston, Ontario, CAN

Date of Incident: December 17, 2013

Project Description: The 144-unit student apartment complex in Kingston, Ont., was massive – 4,559 square metres (49,072 square feet). The mayor called the wood-framed building a tinderbox, even though, once completed, it would meet building and fire-code specifications.

Summary of fire event: In all, 10 stations and 113 Kingston firefighters were on scene with 27 apparatuses; 11 Kingston fire personnel helped in communications; 11 mutual-aid departments were called and brought 160 firefighters and 19 trucks. Fifty Kingston firefighters provided coverage to the rest of the city. There were 22 other 911 calls during the fire fight – normal call volume is 12 to 14 for that time of day but flames and ash were falling on nearby buildings. The Emergency Operations Centre (EOC) was activated.

Two workers on the top floor of the building had to be rescued by firefighters after the call came in at 2:15 p.m. on Dec. 17.

While there are proposals to amend both the national and Ontario building codes to allow six-storey wood-frame construction (which is already permitted in British Columbia), the focus has been on measures such as sprinklers and pressurized stairwells to protect residents and firefighters once the buildings are complete. That isn't enough, said Kingston Fire-Rescue Chief Rheaume Chaput. <http://www.firefightingincanada.com/content/view/17976/210/>

Under construction, they're (wood framed structures) vulnerable to massive fires like the one that consumed the apartment building, threatened a nearby gas station, and trapped a crane operator on the tip of his crane until he was plucked off by a rescue helicopter sent from Trenton.

But especially after Kingston, the disadvantage of wood-framed buildings is obvious: Wood burns. <http://www.ottawacitizen.com/news/Ottawa+likely+more+wooden+buildings+like+that+burned+Kingston/9301476/story.html>

Links: (above)

Video: <http://www.youtube.com/watch?v=NOUZOGTAYg0>



Project Name / Location: 550 East and 500 South, Salt Lake City, UT

Date of Incident: February 9, 2014

Project Description: Four story, wood frame apartment complex

Summary of fire event: The building is a four-story apartment complex that was under construction and had a lot of exposed wood, which officials said contributed to the size of the fire.

“Because the wood is exposed, the fire quickly spread and this became a defensive fire—which means we surrounded with our engines and firefighters and trucks and our main concern was to make sure the fire did not spread to any of the close, nearby structures,” Jason Asay of the Salt Lake City Fire Department said. <http://fox13now.com/2014/02/09/crews-respond-to-3-alarm-fire-in-downtown-slc/>

The inferno Sunday evening did not cause any injuries, but caused \$2.5 million in damage. The apartment complex was under construction, and U.S. Development told the fire investigators that the building did not have any utilities or heat source yet. The fire spread quickly through the exposed lumber and siding, creating a spectacular orange glow visible in the Salt Lake Valley darkness.

<http://www.sltrib.com/sltrib/news/57551293-78/bowman-fire-lake-salt.html.csp>

Links: (above)

Video: http://www.youtube.com/watch?v=9ezdT_yDBFM



Project Name / Location: Commercial Building, Roxbury, MA

Date of Incident: March 3, 2014

Project Description: 3-story wood frame building under renovation

Summary of fire event: A seven-alarm fire destroys a vacant three-story wood frame building in Roxbury, MA. The building was under renovation and no one was inside at time of the fire, but several buildings nearby were evacuated, including a home.

The acting fire chief told WBZ-TV's David Robichaud if buildings in the neighborhood were wood instead of brick "we would have lost the whole block."

Links: <http://boston.cbslocal.com/2014/03/03/7-alarm-fire-destroys-vacant-building-in-roxbury/>

Video: <http://boston.cbslocal.com/2014/03/03/7-alarm-fire-destroys-vacant-building-in-roxbury/>



Project Name / Location: Mission Bay Project, San Francisco, CA

Date of Incident: March 11, 2014

Project Description: The projects, supported by piles, consist of 4 and 5-story wood framed residential buildings over 2 levels of parking. The levels above the podium slabs are Type III and V. The 172 unit building was one half of the Mission Bay Project owned by BRE Properties.

Summary of fire event: The wood-frame, 172-unit building that caught fire just before 5 p.m. The building is part of the 360-unit apartment project, dubbed Mission Bay 360.



By nightfall, the roof and other parts of the structure had collapsed. Firefighters said they expected the remainder of the building to collapse. Since early in the fire, firefighters realized that attempts to save Block 5, where sprinklers had yet to be installed, were probably fruitless, and shifted their focus to preventing it from spreading to its Mission Bay 360 neighbor or other nearby buildings. Embers set the roof on fire at the UCSF Helen Diller Cancer Center, but were quickly extinguished.

<http://www.bizjournals.com/sanfrancisco/blog/real-estate/2014/03/five-alarm-fire-breaks-out-at-bre-properties.html>



The six-story, largely wood-frame Mission Bay apartment building that was under construction when it went up in flames wouldn't have been permitted in California just a few years ago. Until 2008, buildings six stories or higher were required to have "noncombustible" exterior walls - typically, concrete and steel studs - from top to bottom. <http://www.sfgate.com/bayarea/matier-ross/article/Burned-Mission-Bay-building-was-vulnerable-under-5321063.php>

Links: .(above)

Video: <http://www.youtube.com/watch?v=lgtsBxalxzs>
http://www.youtube.com/watch?v=Vx_G7G1R6Cg

Project Name / Location: Axis Apartments, Houston, TX

Date of Incident: March 25, 2014

Project Description: 5 story, 396 unit wood-framed apartment building.

Summary of fire event: The inferno began as a 3-alarm fire at 12:30 p.m. but was upgraded to a 5-alarm in less than an hour. As walls began to collapse inside the complex, swells of black smoke permeated the Montrose area. More than 400 HFD personnel responded. All construction workers and firefighters were accounted for during the fire, and there were no injuries reported, although one rescue was made from the building's third story via a truck ladder.

http://www.yourhoustonnews.com/cypresscreek/news/source-of-five-alarm-montrose-area-fire-still-under-investigation/article_ed585570-b559-11e3-8aac-0019bb2963f4.html

"The fire started on the northeast corner of the roof," said David Byers, the building superintendent for an adjacent complex under construction by the Finger Company at 2900 West Dallas. "I was on an upper floor and I had a good view."



Byers said he could see construction workers on the roof where the fire supposedly started, and attributed the swiftness of the spread of the fire to the fact that the complex was a wood-frame building.

<http://www.chron.com/news/houston-texas/houston/article/Fire-official-speculates-on-cause-of-Montrose-5347617.php>

The worker became trapped on an unfinished balcony on the fourth floor as the entire building was consumed by flames. As the heat became too much, the worker lowered himself to the balcony below and made a ninja-style leap to the lower platform. But he was not safe yet. As flames licked around him, a ladder from a fire engine approached and he clambered on. They began to move away from the building when the entire fourth floor collapsed spilling debris onto the area they had been seconds before. <http://www.dailymail.co.uk/news/article-2589212/Houston-firefighters-battle-large-apartment-fire.html#ixzz2zAmaLnWa>



Links: (above)

Video: <http://www.youtube.com/watch?v=Cg9PWSHL4Vg#action=share>

Project Name / Location: Beacon Street, Boston, MA

Date of Incident: March 27, 2014

Project Description: Many of the buildings in the area have brick facades but are actually wood-frame structures that are often abutted against each other so that the walls of adjacent buildings are actually touching.

Summary of fire event: Boston fire fighters were rocked today by a nine alarm blaze that killed two firefighters and injured 18 fire and police officers in the densely populated Back Bay section of the city. The blaze broke out shortly before 2,45 p.m. today in a nine unit, four-story building on fabled Beacon Street, between Exeter and Fairfax Streets in the city's blue stocking district of multi-million dollar condominiums and posh brownstones.



Links: <http://guardianlv.com/2014/03/boston-fire-two-dead-18-injured-in-back-bay-brownstone-blaze/>

Video: <http://www.youtube.com/watch?v=t9kThbiavVc>

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Project Name / Location: Gables Upper Rock, Rockville, MD

Date of Incident: April 1, 2014

Project Description: The Type III 300 unit apartment complex was a five story project, with a two story cast in place parking structure and amenity deck, with three stories of apartment units built with wood framed walls, joists and roof. Gypsum & plywood shear walls were used for lateral support. The foundations are cast in place concrete.

Summary of the fire event: More than 200 firefighters were called to the scene of a three-alarm fire on, April 1, that burned through an unoccupied apartment building at the Gables Upper Rock complex in Rockville. The fire started around 4:15 a.m. at Building G at the Gables Upper Rock Apartments on Upper Rock Circle. Montgomery County fire officials say the three-acre complex was 90 percent complete and expected to be finished in two to three weeks before this fire ripped through 150 units. The apartment complex is a total loss, an estimated \$15-\$20 million.



Links:

<http://www.nbcwashington.com/news/local/Crews-Battle-Massive-2-Alarm-Fire-in-Gaithersburg-253337021.html>

<http://www.emstructural.com/gables-upper-rock-rockville-md/>

Video: <http://www.youtube.com/watch?v=69P1wwfV6iI>

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