



Mr. James Whelan  
Whelan Public Adjusters LLC  
2081 Burns Ave.  
St. Paul, MN 55119

Re: 363 King Street West, St. Paul, MN Observation Report

Dear James;

On September 9, 2015 we toured the house at 363 King St. W., which had experienced a fire in the front (south) portion of the house in April of 2015. The purpose of the site visit was to observe the extent of the fire damage, and in my role as a licensed architect, provide my opinion on the condition of on the non-fire damaged portion of the house and assess what steps would be necessary to rebuild the house. You were also informed by a building inspector from the City of St. Paul that the entire house would need to comply with the 2015 Minnesota Residential Code, which adopts by reference the 2012 International Residential Code (IRC), the Radon Provisions of the Minnesota State Building Code, and the 2015 Minnesota Energy Code.

#### Fire Damage

The fire started on the porch, which is on the south side of the house. It appears that the fire spread up the south face of the house, the entire attic and the southmost 20' of the first and second floor. There was also charring of the floor joist that was observed in the southmost 10' of the basement.

Because of the evidence of fire damage throughout the attic, all of the roof trusses would need to be removed in its entirety. The south most 20' of first and second floor joists and subfloor would need to be removed. All of the wood studs on the south elevation would need to be completely removed. The wood studs on the south most 20' of the east and west elevations would need to be completely removed.

Due to extensive smoke and water damage in the interior of the house all plaster and gypsum board would need to be removed from exterior and interior walls as well from ceilings. All interior floor finishes, with the possible exception of the bathroom floor tile, would need to be removed.

Mobilize Design and Architecture, LLC  
P.O Box 11093  
1108 W. Broadway Ave.  
Minneapolis, MN 55411

### Code Required Changes

Due to the fact that the City of St. Paul is requiring that all of the house be brought in to compliance with current codes there are portions of the house that would need to be rebuilt to meet the code.

**Exterior Walls** – The exterior bearing walls of the house are 2" x 4" wood studs, 16" o.c. The house is balloon framed, where the wall studs run continuously from the foundation wall to the roof and the floor joists are attached to the wall. While balloon framing is allowed in the current code, 2 x 4 wood studs are not allowed to support a habitable attic and two floors. 2 x 6 wood studs are required in this condition. All of the wall studs would need to be replaced by 2 X 6 studs or the 2 x 6 studs sistered on the existing studs.

**Floor Joists** – The existing floor joists are 2 x 8 wood joists, 16" o.c. with a span of 13'-6". With a live load of 30 psf and a dead load of 20 psf, most of the common lumber species and grades would be required to be 2 x 10 joists in order to span the 13'-6" dimension. The floor joists would need to be replaced.

**Window & Door Headers** – In areas where the fire damage exposed the exterior wall framing it was observed that none of the windows or doors had headers or jack studs. Headers would need to be installed. Headers would vary from 2 x 8 wood framing to 2 x 12 wood framing depending on the space of the opening. Jack studs would be required on all spans over 4' in length.

**Foundation Wall** – The existing foundation wall appears to be field stone. In addition, the floor joists are notched into the foundation wall. The current code requires that the floor joists set on a sill plate that is anchored to the foundation wall. The foundation wall would need to be removed to below the floor joists so that a sill plate could be installed.

**Footings** – The existing footings are not observable. Since the house would need to be reframed with thicker studs and deeper floor joists, the ability of the soils under the footings, the footings and the foundation wall to support the additional deadload. Additional investigation would be required to determine if they could support the new deadload.

**Energy Code** – All the windows, wall insulation, ceiling insulation and basement walls would need to be brought into compliance with the current energy code. The windows are of wood construction. It is assumed that the windows do not meet the 0.32 U-factor required by the code. The walls are required to be R-20 or if continuous R-5 insulation is used on the exterior wall, R-13 insulation can be used in the wall cavity. The R-values required by the code are not achievable in 2 x 4 wood stud wall cavity. At minimum, a 2 x 6 wood stud wall would be needed to meet the energy code. All of the attic insulation would need to be removed and R-49 insulation installed in the attic. Basement wall R-value of 15 is required. A furred out wall with insulation would need to be installed in the basement.

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These observations and recommendations are based on my best professional judgement as a licensed Architect. Building codes are often open to interpretations by the Authority Having Jurisdiction (AHJ) and my recommendations may or may not be supported by the AHJ based on their opinions.

Sincerely,

David J. Witt  
Minnesota Registration #22911

Mobilize Design and Architecture, LLC  
P.O Box 11093  
1108 W. Broadway Ave.  
Minneapolis, MN 55411



CITY OF SAINT PAUL  
Christopher B. Coleman, Mayor

375 Jackson Street, Suite 220  
Saint Paul, Minnesota 55101-1806

Telephone: 651-266-8989  
Facsimile: 651-266-9124  
Web: [www.stpaul.gov/dsi](http://www.stpaul.gov/dsi)

April 15, 2015

## Fire Report

### 363 King St. West

#### Details:

House type: Single Family Dwelling IRC-1  
Construction type: VB  
Structural damage: Entire roof, front porch, walls, joists  
Mechanical, Electrical and Plumbing systems affected, permits required

- Remove all fire and water damaged materials, wash and seal exposed surfaces.
- ✱ • Provide complete construction plans for building permit. Include structural details; joist and beam sizes, stud spacing, member spans, wall and ceiling R values.
- Insulate exposed open exterior walls and ceilings and provide vapor barrier.
- Install drywall on exposed walls and ceilings.
- Replace wood doors and trim, install kitchen cabinets.
- Repair/replace damaged window sash and storm windows, and replace broken glazing.
- Prepare, prime and paint paintable surfaces, stain and finish wood doors and wood trim.
- Install underlayment where necessary, and replace floor coverings.
- Install smoke detectors per state code.

Isaac Stensland  
Building Inspector