Indecent Exposure to the Risks of Building Failures and Lawsuits—Case Studies

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ABSTRACT

Residential building failures worldwide represent over a $1 billion risk exposure to building owners and others. In Canada alone, it is estimated that premature residential building failures represent a $300 million/year risk exposure to building owners. In Canada and other countries, warranty programs have been established to help protect the public from shoddy construction. Unfortunately, significant degradation of building envelope materials, components, and systems still occurs, often within the first five years of building occupancy. In coastal regions such as British Columbia, Canada, the high incidence of building failures has led to the insolvency of the BC Warranty Program.

Moisture from condensation and uncontrolled air leakage can promote mold and mildew growth, decay, and corrosion of structural building components. These conditions will be exacerbated by water leakage problems. Owners of most new condominiums are protected by government mandated warranty programs. In Ontario, one-, two-, and seven-year warranty coverages are provided by the Ontario New Home Warranty Program (ONHWP). Owners of conversion projects are usually covered by builder warranties. In some cases, manufacturer warranties are provided for expensive components such as windows. To minimize the risk of failures, prudent owners are having performance audits completed before the milestone warranty expiration periods. This approach reduces the likelihood of special assessments of condominium owners to pay for required repairs. Many owners have successfully recovered the costs of repairs that are required to correct building envelope failures. The audits are used in negotiations and resolution of technical deficiencies with responsible parties.

We will review case studies of projects where moisture damage has caused significant problems and costly repairs. We will provide highlights of failure trends completed for Canada Mortgage and Housing Corporation (CMHC), based on analysis of 15 audits provided to ONHWP with a focus on frequency (weighted for premature leaks or health issues) and estimated costs of component failures (adjusted for degree of difficulty to correct). The root causes of damage will be discussed and corrective actions identified. A leakage incidence form will be provided to help build your claim for damages.

According to the CMHC research study, the top six most frequent and costly deficiencies based on weighted frequency and estimated cost factors are:

- *Walls—precast (26%)*
- *Windows/doors (18%)*
- *Walls—masonry veneer (18%)*
- *Walls—EIFS (14%)*
- *Balconies (8%)*
- *Parking garages (8%)*

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The building failure trends were compared with the 1990 period (see chart) and it was found that other walls, including pre-cast concrete and EIFS, account for over 40% of building failures in the 2000 period. Most of the problems in the 1990 period related to masonry wall problems. In the 2000 period, masonry wall failures have increased slightly from 16% to 19%. Window/door failures have increased from 9% to 18%. A correlation of deficiencies with CMHC best practice guides revealed the need to develop new best practice guides and consider minor updates to existing guides. Best practices need to be offered as an upgrade package on a pilot basis and owners should receive a better building certificate.

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To continue to improve the envelopes of residential buildings, we recommend the following steps.

- *Building failure trends in Ontario need analysis in five years for new buildings and within a year for conversion buildings to assess owner protection levels.*
- *A demonstration program should be implemented for better walls, windows, and doors in buildings, and an analysis should be completed of performance improvements and costs.*
- *Condominium owners should have performance audits completed for existing buildings less than seven years old.*
- *CMHC should develop best practice guides on pre-cast concrete, window/doors, and face-sealed EIFS.*
- *ONHWP and its partners should update key sections of the* 1995 High Rise Condominium Construction Guide *to reflect current codes and good practices.*