Proposed RBQ Assessment for Dangerous Conditions

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Outline

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  - RBQ Requirements
- Part 3:
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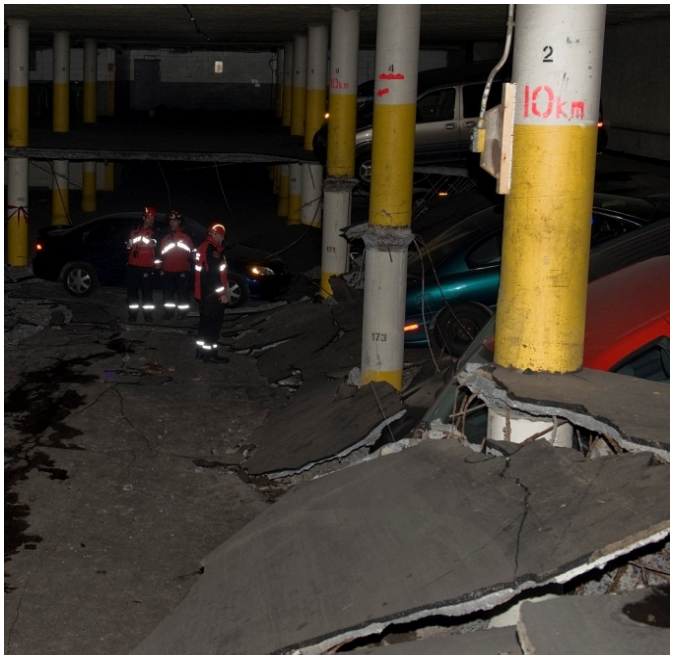
Legislation – Why?

Laval Overpass Collapse - 2006

- Inquiry Commission releases report in 2007.
- Although this was not a building, the death of five people brought the subject of inspections and construction defects to the attention of the public.

Legislation – Why?

Ville St. Laurent Parking Garage Collapse - 2008



- A 36-year-old man is killed when the floor slab of an underground parking garage located in Ville St-Laurent collapses.
- The building, 14 storeys high, has an identical one next door. Is it safe?

Legislation – Why?

Marriott Façade Panel Collapse - 2009

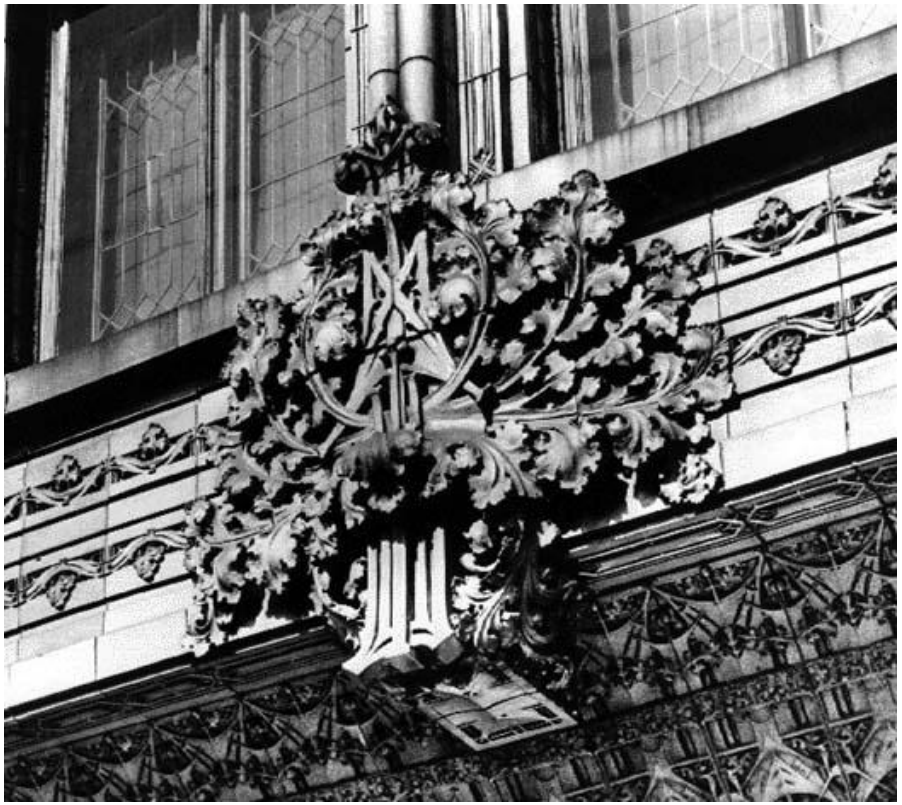
- A 33-year-old woman was killed by a fallen concrete panel.
- What about the rest of panels?

Legislation – Why?

- The RBQ:
  - Begins to develop legislation in response to the incidents.
  - Studies the existing American legislation as a reference and essentially, copies it for their own.

Case Study – Chicago

- 1974:
  - Pieces of terracotta fall and kill a pedestrian.



Case Study – Chicago

- 1975:
  - City “inspects” façades of 2,458 buildings with binoculars. Loose and potentially unsafe materials detected in 1,105 buildings (45%).

Case Study – Chicago

- 1978:
  - An ordinance is passed, without opposition. Buildings five storeys or higher are to be critically inspected hands-on and close-up from a suspended scaffold, under the supervision of an architect or structural engineer.

Case Study – Chicago

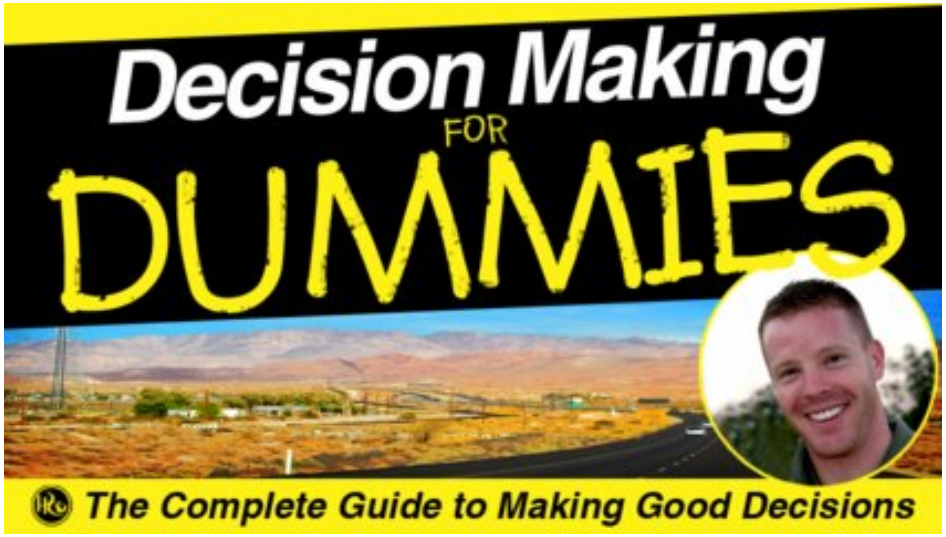
- 1979 to 1981:
  - 1979: The ordinance is rescinded without publicity.
  - 1981: A committee of building professionals was created to review the matter. The committee recommends an ordinance similar to 1978. These recommendations were never submitted to city counsel for consideration.

Case Study – Chicago

- 1996:
  - A new ordinance is passed – why?

Case Study – Chicago

- 1994:
  - A pedestrian was hurt by falling glass. Engineers recommended changing the glass of the entire building. Budget to replace glass in 1996 was $3.5M. The building management cancelled the project believing that the engineers were being over-conservative; afterall, the building had survived over 25 years with only one “minor” accident.



Case Study – Chicago

- 1999 to 2002:
  - 1999: A piece of glass falling from the 29th floor of the same building kills a 37-year-old woman.
  - 2002: The owner of the skyscraper pays $18M to the victim's family.
  - After the accident, the cost to replace the glass was $9M, $0.75M was paid to the city of Chicago, and legal costs were incurred with a dossier containing 65,000 pages of documents,
    (source: Chicago Tribune, February 14, 2002).

RBQ Requirements

- Requirements for buildings of five storeys or more
  - Keeping of a register
  - In-depth verification by an engineer every five years
  - Reporting of dangerous conditions

RBQ Requirements

- Register requirements
  - Contact details of the owner
  - Drawings, photographs, technical documents
  - Renovation details
  - Repair details
  - In-depth verification reports (by engineer)

RBQ Requirements

- Deadlines for the building owner to obtain a report produced by an architect or engineer
  - At the latest on the 10th anniversary of the construction of the building.
  - If the building is past 10 years old, the deadlines below apply:

Age of Building	Latest Date to Obtain Report
More than 45 years old	March 18, 2015
Between 25 and 45 years	March 18, 2016
Between 15 and 25 years	March 18, 2017
Between 10 and 15 years	March 18, 2018

RBQ Requirements

- Note:
  - It is the responsibility of the owner/manager and the engineer to advise the RBQ of any potential problems, together with the timeline for solutions.

The GCG Team

- GCG is an engineering firm specialized in building façade and parking garage assessments as per the requirements of the RBQ.
- Based in Montreal, but able to work anywhere in the province of Quebec, it has comprehensive experience in building envelopes, building structures, and building construction.

The GCG Team

- GCG is able to perform accurate inspections and submit appropriate technical reports for buildings of all sizes and categories.
- GCG has its own logistics, equipment rental, and construction department. It is therefore one of the few firms that can offer either “à la carte” or “one-stop shop” services for RBQ assessments.

The GCG Team

- GCG works with building owners and building managers to provide reports and notices that comply with the RBQ legislation, as well as knowledgeable advice to control problem situations.
- GCG's response is rapid, collaborative and pro-active. Its solutions are founded on the benefits of many years of experience and the use of value engineering.

The GCG Team

- GCG's evaluations are performed in a multi-step process that is tailored to meet the specific requirements of each building.
- Due to the importance of public safety, it is GCG's mission to ensure that the appropriate evaluation is executed by qualified professionals, while considering the short and long term economic constraints of its clients.

The GCG Team

- Roger Bartosh, Director, Structural Engineering

Roger Bartosh is a senior structural engineer with over 30 years experience. He has a comprehensive knowledge of building design and construction and has been the project structural engineer of record for over 5,000 projects. His expertise includes: concrete, steel, and wood structures; low-rise, medium-rise and high-rise construction; value engineering, building façade assessment, evaluation and rehabilitation of concrete structures, building codes and design standards as well as expert evaluation and testimony for litigations. He is a licensed professional engineer in all Canadian provinces and territories.

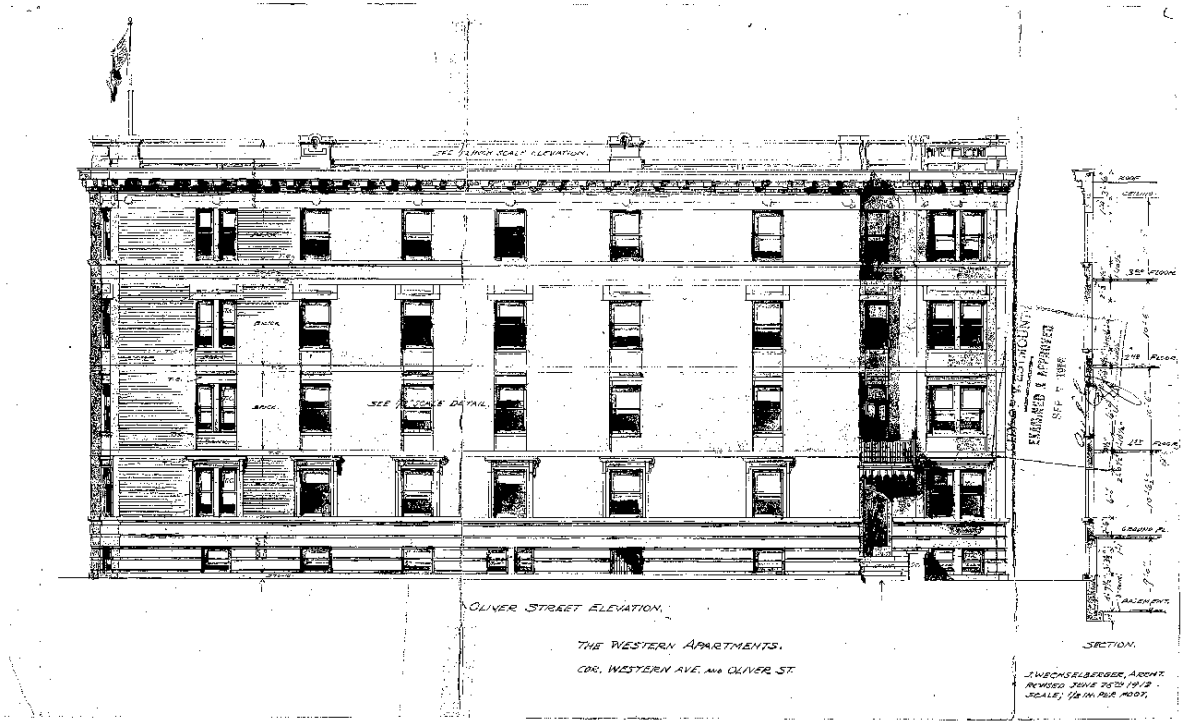
The GCG Team

- Domenic Chiovitti, Director, Building Envelop Engineering

Domenic Chiovitti is a building engineer with over 25 years experience in building envelope consulting services. He has extensive experience with: various wall compositions (solid masonry, contemporary, aluminum and glass curtain), in-situ testing and inspection of building components, pre-purchase inspections and condition surveys, tender specifications and review of repair work, building codes for exterior envelopes for new construction and legal expertise for building envelop failures. He has written several published technical articles and lectured on specialized building envelope issues.

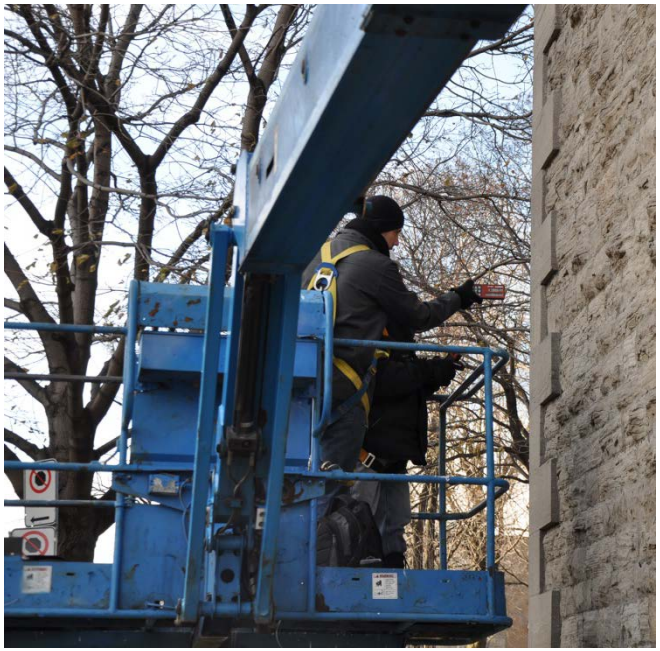
Methodology

- Step 1
  - Study existing documentation to understand building history and composition.



Methodology

- Step 2
  - Perform a detailed visual review of the building. This is done from street level and by accessing roofs, balconies and terraces. High power binoculars and photographic equipment are used. Any anomalies are noted for further investigation during the tactile inspection.



Methodology

- Step 3
  - On site tactile inspection.
  - Equipment rental, permits, traffic control.
  - Probe openings as required.

Methodology

- Step 4:
  - Report preparation and presentation of findings.

That's all folks!

- Any questions or comments?