

***BIC Regular Meeting
of
September 20, 2023***

Agenda Item 9

Window Study & Façade Inspections

September 20, 2023

Agenda

- Introduction/Context
- Findings
- Recommendations
- Next steps

Introduction

- Broken glass from 7 high rises were reported after the March 2023 storms
- Legislation was passed to allow DBI to require buildings 15+ stories post 1998 to perform a façade inspection and submit a report within 6 months of DBI notification
- Structural Subcommittee and Code Advisory Committee recommended investigation for more targeted actions

Findings

- DBI hired Wiss, Janney, Elstner Associates, Inc. (WJE) to investigate the glass failures and provide recommendations for potential inclusion in the Façade Inspection program
- WJE investigated 7 buildings; 31 panes of broken glass investigated
- Their findings showed that 30 breakages were likely caused by issues that could have been identified and mitigated prior to the storms

Table 1. Summary of Likely Cause of Breakage

Address	Broken Glass Pane	Broken Panes	Likely Cause	Confidence
50 California	1/4-inch partially heat-strengthened spandrel glass	1	Thermal Stress Likely broken before the storms	Moderate
555 California	3/8-inch annealed vision glass	2	Thermal Stress Broken before the storms	High
580 California	1/4-inch annealed vision glass	6	Debris Impact	High
1390 Market	7/32 to 1/4-inch annealed spandrel glass (Level 28) and vision glass (Level 12)	2	Thermal Stress (Level 28, broke before storms) Debris Impact or Wind Load (Level 12)	Low
301 Mission	1/4-inch annealed vision glass	2	Window Hardware (Level 49) Debris Impact (Level 47) Root cause predated storms	High
350 Mission	1/4-inch heat-strengthened vision glass	17	Debris Impact	High
1400 Mission	5/16-inch tempered spandrel glass	1	Glass Contamination Broken before the storms	High

Findings

Five likely causes of breakage

- Thermal Stress – High confidence
- Debris Impact – High confidence
- Window Hardware – High confidence
- Wind Loads – Very low probability
- Glass Contamination – High confidence

Key Recommendations

Facade designers/contractors: Avoid the use of spandrel glass, tempered glass, insulation against glass.

Building Owners: To reduce risk to public, there is a need for better detection, review, documentation, and prompt action by building owners.

City: Update the Facade Inspection and Maintenance Program (FIMP) to require a supplemental visual inspection of all glazed openings at the 5-year point between periodic facade inspections for:

- 15+ stories
- With spandrel glass or history of breakage in past 5 years
- Un-repaired issues which may result in a falling hazard

Recent Legislation

- Requires façade inspection for buildings 15+ stories, post 1998
- Six months to complete inspection once notified by DBI

Proposed approach based on recommendation:

- 100 percent visual inspection of the exterior glazing
- Process detailed in a DBI Information Sheet

Next Steps

- Code Advisory Committee reviewed WJE report and recommendations
- Publish Information Sheet & notify owners of 6-month deadline
- Consider broader changes to Façade Inspection and Maintenance Program (legislative changes to program would be required)



THANK YOU