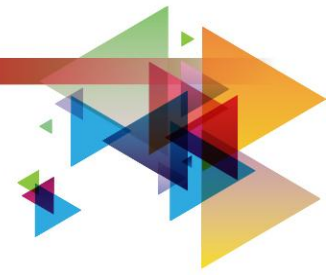


# Building Maintenance Bylaw

Bylaw Development Engagement – What we Heard, What we Did

Report date: June 12, 2015



## Project overview

In recent years, there have been several (sometimes high-profile) incidents of debris falling off of buildings in Calgary, particularly in the downtown core. Similar incidents in Montreal and Elliot Lake, Ontario have led to reports, recommendations and in the case of Montreal, a bylaw in regards to the facade of buildings. In order to increase public safety, The City of Calgary wishes to provide a proactive program of routine inspections with consistent enforcement and compliance. The Maintenance Bylaw would also be accompanied by an implementation guidebook.

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## Engagement overview

Engagement was conducted through face-to-face meetings with a group of internal stakeholders and a group of external stakeholders as well as with email feedback. The internal stakeholders included Fire, Bylaw, Corporate Properties. The external groups included stakeholders who would be highly impacted by the bylaw (i.e. lawyers representing condo boards), likely required as assessors (i.e. Consulting Engineers Association), or had been involved in past foundational work creating initial guides for building maintenance and safety (i.e. BOMA, CHBA). There was an initial introductory phase with each group where the general idea of a bylaw was presented and general input was captured. The second part involved a more technical and detailed input asking participants to review draft content for the bylaw both individually via email and with in-person small-group discussion.

This report focuses on the feedback from the external stakeholders in the verbatim but combines internal stakeholder questions and suggestions in the themes/questions summaries on pages two and three.

## What we asked

In Part 1 we asked:

- *What are the key components of a Building Maintenance Bylaw? (consider the Table of Contents, Scope)*
- *What should enforcement/penalties look like?*
- *What benefits/concerns do you anticipate? Other general thoughts and ideas.*



# Building Maintenance Bylaw

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In Part 2 we asked:

- *Participants to review and comment on the draft content for the bylaw, such as:*
  - *What kind of professional(s) should conducting assessments require? What are the qualifications?*
  - *What (in whole or in part) standards or guidelines should be considered with this bylaw?*
  - *How frequently should aspects of building envelope be assessed after the first assessment?*
  - *What do you think about the proposed terminology, language, definitions?*
  - *What other areas of this bylaw needs to be discussed with the group?*

## What we heard

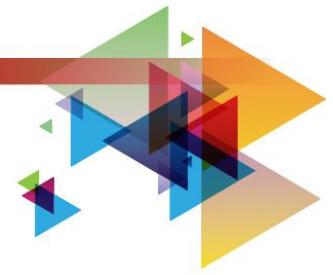
### What we heard

Qualifications of assessors need to be consistent and professionals who are knowledgeable and held liable
This should be a “Building Exterior Hazard Assessment”
Scope should be based on risk
Needs to be a simple process or part of current processes for building owners
Flexible timelines with minimum requirements for re-assessment and repairs need to consider risk and history of negligence

- ▶ For a detailed summary of the input that was provided, please see the [Summary of Input](#) section.
- ▶ For a verbatim listing of all the input that was provided, please see the [Verbatim Responses](#) section.



## Summary of Input



### Part 1: General Input into Concept of a Bylaw

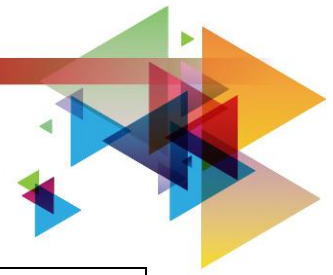
Theme/Idea/Question	Explanation or example (verbatim comments in quotation marks)
<b>Scope</b>	
<b>Scope of the bylaw should be wider and include more building sizes/types/age</b>	“add 4 storey wood frame”, “+15s”, “can be significant failures in first 5 years”, add community halls or other public buildings based on occupancy, usage or size, age is not a factor, “foundations”
<b>Scope of the bylaw should target highest risk</b>	“focus on implementing the bylaw where there were problems/failures”, “develop a list of risk and where is the risk. Resource to address risk.”
<b>Many elements of the building facade/envelope should be considered specifically</b>	“cladding”, “roof safety anchors”, “furniture (attached or added over time)”, beyond ‘exposed elements’ but with a visual assessment such as anchorage (eg. concrete panel ‘hooks’, face brick ties), critical mechanical and electrical
<b>Could this assessment be part of other, current documents or processes?</b>	“is the Building Assessment Report enough?”, “build it into the condo act”, “12 Year Warranty Review”
<b>Enforcement</b>	
<b>What will need to be submitted to the City?</b>	“Audits submitted to City?”, “City will need to ramp up resources/staff”,
<b>Who will do the audit/assessment?</b>	“City must identify who does audit & the risk associated with it”, “The definition of “professional” will be of key concern in striving to achieve quality audits.” “Who does the inspection?”
<b>Questions:</b>	
How will this impact the requirement for getting building permits to do necessary improvements? If public safety is the primary concern should there be more building permits or safety plans?	
What is the ultimate goal of this initiative? What does The City want to achieve?	
Could this be tied into condo registration or business licenses?	
What will builders need to leave behind for owners that will have to follow this bylaw?	
Consider experience from 1983/84 where The City relied on industry/private sector to increase awareness about building maintenance.	

### Part 2: Technical/Specific Input on Draft Content

Theme/Idea/Question	Explanation or example (verbatim comments in quotation marks)
<b>Frequency</b>	
<b>Assessments should be done every five years.</b>	If found in very poor condition or suspicion of neglect then increase frequency until there is action taken for improvement. “Frequency – every 5 years”, “make sure follow up is set...preferred 5 years (max)”, “if significant issues were noted, then increasing frequency. Not necessarily immediate”
<b>Timelines for repairs should vary depending on</b>	(stakeholder suggestion via email) consider a range of 3 months to 1 year



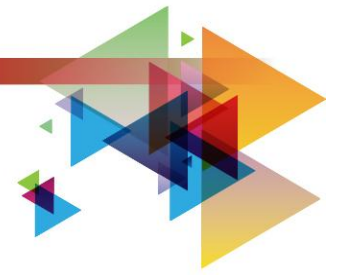
## Summary of Input



severity/risk	
<b>Qualifications/Who conducts assessment?</b>	
<b>Introduce a course to accredit assessors</b>	“introduce a 1 year course to give a designation”, “qualification with a registered body”, between post-secondary institution and the City
<b>Engineers licensed in Alberta (or Architects)</b>	“APEGA/AAA licensed in the province of Alberta”, needs “liability insurance”, “qualifications with a registered body”, “architects may not understand building hazards... as an engineer would”, “if ‘bad’ work is done by assessors, professional association can take action”, “if APEGA or AAA are the only Qualified Assessors, checklist is not required”
<b>Simplify and look for efficiencies</b>	Especially considering condominiums “best to have same person able to do assessment and other related reports (reserve fund study)”, “consider costs associated...in terms of smaller buildings”
<b>Consistency and ability to take responsibility is critical</b>	One kind of qualification standard needs to be applied to all building types. If there is a checklist will it be possible that someone else, non-qualified, will perform an assessment but not be held to the same standards in the case of negligence? “assumption of liability of who is signing the report”
<b>Language/Terminology</b>	
<b>Use “Building Exterior Hazard Assessment”</b>	Is most close to addressing the intent of this bylaw and was agreed upon by the group. Clear definition of hazard is required. “Should be Exterior Hazard Assessment, not Building Envelope Assessment”
<b>Standards or Guidelines</b>	
<b>Establish a numerical code that identifies risk/hazard</b>	(stakeholder suggestion via email)
<b>Both NRC and ASTM are too broad as they are currently</b>	May require edits to fit within bylaw’s scope and some participants thought this was feasible while others said “Engineer’s report should be good enough”
<b>No reference to interior or HVAC systems</b>	As per comments and edits in the NRC checklist document
<b>Other Discussion/Input</b>	
<b>Parkades should be treated separately</b>	Have different considerations and hazards
<b>Enforcement and penalties are required</b>	“Fine has to be more than cost of inspection”
<b>Complexities could cause inconsistency</b>	“remove foundation walls and subs”, “eliminate graduated times to do initial assessment... (i.e. all done in 3 years)”, “it’s too broad. Define what structural components the City is concerned about”
<b>Questions:</b>	
If a risk is identified but the exact problem can’t be identified without a further investigation beyond the assessment should the subsequent investigations be part of this assessment process?	
If an assessment identifies an ‘life safety’ risk (such as fire alarms or emergency lighting) how will this be flagged and brought the attention of the appropriate people if it is out of scope of this bylaw?	



## Verbatim Comments



### External Meeting – March 19, 2015

#### Scope & Table of Contents Conversation:

- Furniture – attached or added over time (e.g. signage)
- Roof safety anchors
- Should include snow + ice
  - o +15's & other building/structure
- Insect screens

Scope: \*Buildings over 5 storeys will miss lots of buildings in Calgary

- consider adding 4 storey wood frame
- even commercial/industrial is too limited

Scope: regarding age of building, phase (of bylaw implementation), timing

- can have certain issues from new construction + rely on professional who sign-off building permits
- can have significant failures in first 5yrs
- cladding component as category (e.g. BC schools, RE: seismic events)

Scope: regarding Public Safety Aspect (5 storey is a place to start)

#### Enforcement & Penalties Conversation:

What are the penalties? What will enforcement look like?

- Assume:
- 5 years to expect adherence
  - The City charges for this
  - City will need to ramp-up resources/staff

“carrot + stick” – Alignment of Interests (e.g. help building owners understand the benefits for them in having this bylaw)

- building owners don't like un-programmed repairs
- it is in the building owners' interest to be pro-active + prevent failures
- Audits submitted to City?
  - like Fire code inspections + must be available upon request by The City
- Can there be a checklist with recommendations
- City must identify who does audit & the risk associated with it
  - stipulate parameters of who conducts audit

#### General Comments & Questions:

Context from 1983/84 – City of Calgary responded by informing public & relied on APEGA to:

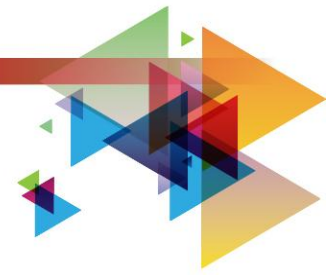
- deliver session(s)
- articles by/in APEGA to professionals

And overall: relied on industry (including: insurance, real estate, financial industries and CMHC to help lead)

- 10yrs or so & most buildings were audited (but it does takes some time)



## Verbatim Comments



- not taking time = risk of lack of professionals (to do audit)
- develop a list of risk + where is the risk, & resource to address risk
  - for Builders – what do they need to leave behind for owners?
    - template for this to fit a standard or the needs of the bylaw?
- is the Building Assessment Report enough? (the BAR is provincial jurisdiction) Can the requirements for this bylaw match with report requirements?
- Context from someone who was part of developing the standards for the Province of Quebec (2013): from hazard/risk perspective – taking a pragmatic approach
  - All buildings in cities + age/type of construction
    - e.g. 4 stories or less is nearly impossible to manage
  - focus on implementing the bylaw where there were problems/failures
  - blanket applicability to all structures, would have been less feasible politically
  - responsibility of building owner & professionals to be responsible for work/building quality

### Context: City of Vancouver

- When Vancouver set out to develop and as they make revisions, the key drivers for their maintenance requirements have been environmental/sustainability/reduction of energy consumption due to the City of Vancouver's commitment to become the greenest City by 2020. The City of Calgary's key driver is public safety.
- operation maintenance manual + 12 Year Warranty review
  - At the time of building-construction with building permit approval
- clarity of when building permits are required?
  - when doing repairs & maintenance
  - how these two work together
    - impact to public safety
    - washing windows?
- public protection site safety plan
  - could be stand-alone document
  - could be spurred by this bylaw
- The definition of “professional” will be of key concern in striving to achieve quality audits. Even within a definition that includes architects, engineers, building envelope specialists, etc. there may be a wide range in the quality of the audits and types of recommendations.
- Will the City consider providing a list of approved or recommended auditors? This may help in maintaining a certain degree of quality and assist owners in knowing who to turn to depending on how prescriptive the City is wanting to be.
- What is The City's intention?
  - tracking incidents before + after bylaw get a baseline
  - ideally get to zero incidents?
  - undocumented change in construction can still lead to failures or incidents
  - align expectations of this bylaw. It won't get us to zero incidents



## Verbatim Comments

- will more building permits be required for under this bylaw?

### Condominiums:

- build into BAR (Building Assessment Review), condo act
- HUGE component for condo perspective
- could be tied to condo registration
- use the same categories as in the reserve fund studies (which are typically \$5-10K to carry out)  
it will be easier for condo boards (e.g. reporting, inspections – including: Building Assessment Report, New Warranty requirements (used for 5-10 year warranty, Bio Protection Act)
  - for example: if condo boards could send this integrated audit into Reserve Fund Study to City & get professional to submit to The City
- how to deal with underlying soils/foundations (who does the inspection? Is the condo board required to do the inspection?)
  - This would be a technical inspection and technical inspections require a professional to conduct audit
  - tie to Reserve requirements and condo act in order to ensure the requirement for a professional to conduct them
  - tying to Reserve Fund is complex – probably over 500 different ones – and these inspections are not always done by same kind of professionals (e.g. accountancy firms, engineers, etc)
  - regarding fire sprinklers/inspection? Could we learn anything from this process or include something of this bylaw into the fire inspection?
    - already conducted annually by property managers
    - but this bylaw is more comprehensive and complex which would increase the cost
  - if a fire/sprinkler inspection is more of a yes/no then it is easier than an audit that requires an assessment on the “condition” of the structure or component, (it is more complex to assess “condition” rather than just “presence”)
    - user-friendly (e.g. fire, elevator inspection)
  - Bio. Prot. Act requirements used for this audit (5+10yr warranty)

### Who Else Should be Included?

- Alberta Building Envelope Council South
- Alberta Association of Architects
- Realtors, Finance, Insurance, CMHC members
- Can The City of Calgary share who is part of the working group and the background these people are bringing to the process (eg. planners, building envelope expertise, etc.)?

## Verbatim Comments



### External Meeting – May 13, 2015

#### Terminology/Language/Definitions

- Building exterior hazard assessment?
  - What a hazard is to be defined
- Building exterior facade assessment
  - Through conversation name/scope has changed
- Exterior safety hazard assessment
- Define ‘hazard’
  - Things that are attached to the building and can fall
  - Things that become detached from the building
  - Above grade issues from face of building footprint
  - Visual review
- Parkades should be treated separately, not sure of issues
- What is the definition of success? Does not seem clear that the bylaw changes actions of those already doing maintenance.
- First question required is: What is going to be required from a review perspective?
  - Masonry veneer
  - Aluminum frames
  - Cladding
  - Swing stage/floor anchor systems
  - Caulking/sealants
  - Louvers
  - Flashing
  - Etc
- Unanimous choice: Building Exterior Hazard Assessment
  - Seems to most closely address intent of the bylaw
- Exterior hazard assessment (right name)
  - Illustrates what is required. Would include:
    - Signs
    - Antennas
    - Debris
    - Green roof
    - Above grade
- Fine has to be more than cost of inspection
  - Fine related to size (i.e. \$/sq ft)
- Should be Exterior Hazard Assessment, not Building Envelope Assessment
  - Define exterior, falling from
  - Building itself, not exterior plaza, paving stones, d..., etc.
- Parkades to be addressed under the bylaw?
- Building condition assessment
  - Remove foundation walls and subs
  - Eliminate graduated times to do initial assessments. Too confusing. Chose one period for all ages of building (i.e. all done in 3 years)





## Verbatim Comments

- It's too broad. Define what structural components the City is concerned about only. I.e. parkades, post-tensioned slabs
- Structural checklist does not work. Engineers report should be good enough

## Qualifications of Assessor

- Qualified professional
  - Need to determine who a qualified professional is
- Licence to practise in this
  - Local climate, conditions of BR
- Assumption of liability of who is signing the report
- Normally
- Professional engineer and architects
- Concern is unqualified, inexperienced engineers would be doing the inspections
- Can the City work with a post-secondary institution (SAIT) to introduce a 1 year course to give a designation to perform these inspections?
- NOT an accountant
  - Architects, engineer (APPEGA/AAA), licensed in province of Alberta
    - Discipline
    - Building envelope specialty?
    - Normally engaged in this type of work
    - Millions of dollars (\$) in liability insurance
- Pre-qualifications with City?
- Concerns on costs and availability of qualified people
- SAIT? Educational program?
- Best to have same person able to do assessment and other related required reports (i.e. reserve fund study) from same perspective
- Require some level of expertise and make it consistent – qualifications with a registered body? Consider cost associated with this in terms of smaller buildings (i.e. condos)
- Those performing RFS's provide financial documents, and would not be appropriate
- Architects or engineers would be required, with architects *not* preferred as they may not understand building *hazards* from a safety perspective as an engineer would
  - Professional engineers preferred
    - Would/should it be limited to civil engineers? - Likely not
- If a prescriptive checklist is provided, it's possible that someone else (other than a professional) may be able to perform the review, but there would be no ramifications in the event of negligence.
- If blatantly obvious hazard is missed by assessor, what would the fallback be? Could you pursue the individual personally 5 years after the report when something happens?

## Verbatim Comments

- Commercial side seeks out engineers, architects
- If “bad” work is being done by assessors, the professional association can take action
- Could the assessor be an internal person; reasonably qualified within the scope of the review (condo/rental side)

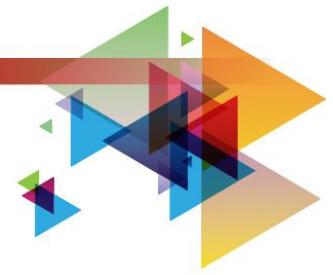
## ASTM & NRC Checklist

- The 2 referenced standards have too wide of a scope
- NRC Checklist
- A full .... for a checklist for assessments

## Frequency of Audits – frequency after first audit

- Frequency – 5 years
- Provide checklist for visible exterior components
  - Retaining walls
  - Balconies
  - Guards
  - Windows
- Degree of visual review:
  - Ground and roof level review
  - # of drops down face
  - How do you review balconies (guards), which are obvious hazards, 25 stories up?
- In checklist, if there’s a checkbox for **crack in exterior wall**, is that crack a serious concern, or can it be ignored
  - Who could provide that opinion?
    - Wouldn’t want student freshly trained to provide that opinion, would want engineer
  - If checkbox provided, comments would be necessary
    - Would this crack be considered a hazard or future hazard?
- 1<sup>st</sup> audit – as documented
  - After first audit – as documented
- Keep 2 audit cycles
- Fines:
  - More than cost of inspection
  - No permits until business licence
- Depends on risk level
- Qualifying – if significant issues were noted, then increasing frequency. Not necessarily immediate
- Based on results of Reserve Fund Studies, certain components of older building are being repaired/replaced.

## Verbatim Comments



- Even with an old building, if the first assessment passes with flying colours, a longer duration to the next required assessment may/should be permitted
- Make one duration such as 4 years for when bylaw kicks in
- Phase-in period shouldn't be based on City staffing but instead based on Public Safety is that is the reason for the bylaw
- Make sure follow-up is set at 1 duration, preferred at 5 years (max)
- Should not eliminate buildings less than 10 years old. Change to 5 years old and have inspections every 5 years

\*There were also a few (3) electronic copies of "Building Structure, Building Envelope" NRC protocol/checklists submitted by participants with some 'tracked changes'. Typically this included specific items crossed out and a few items expanded upon, as well as some written comments. However, these documents are each 27 pages long and the comments in all three were very similar to each other and to previous verbatim comments (see above). Those comments, suggestions that have not yet been identified are as follows:

- if APEGA or AAA are the only Qualified Assessors, checklist is not required

\*All references in all sections to anything internal or HVAC related.

- as components to be assessed (in building structure) remove: soils, footings, foundations, columns, resistance to earthquakes

- remove or substantially edit the scope, 'audit methodology', 'design document review', and 'project briefs and specifications' and 'post-occupancy document review'. Specifically:

- removing reference to soil tests and appropriateness of structural layout
- edit to reflect appropriate codes/standards
- to focus on this assessment being a visual review

Edits/deletions in the rest of the 'Building Structure' checklist include:

- Removal of 'framework, patches and visible repairs, ties, column fasteners'
- Edit 'mortared-in gap below angle shelf' to be *sealant*, not mortar
- Roofs/Structural Slabs suggested to delete all but 'Roof Deck'. All visual acceptability criteria, vibration acceptability were supported while "ceilings and flaking paint" were deleted
- Steel Joist Structures category was deleted

For Building Envelope scope, 'components to be assessed', 'evaluation criteria' and 'audit methodology' all was suggested to be deleted or substantially edited to "deal only with exterior safety hazards".

In the 'Building Envelope' checklist the following changes/edits were suggested:

- Remove references to 'changes since construction of the building' and all internal or HVAC elements
- Add to roof surface/membrane: "ballast size, mechanical attachments"





## Verbatim Comments

- Summary Evaluation of Wall, Floors, Windows and Doors was also edited to remove interior elements but also to add “window & door duplacement, glazing, cracks”, “mullion caps: secure? Missing?”, “Sealant in joints: missing? Bulged, stretched?”
- Exclude/delete soffits