

Building By-law Upgrades for Existing Buildings

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Presentation Outline

- Building By-law Policy
- Previous Upgrade Mechanism Model
- Why a new model?
- Objectives of Current Upgrade Model
- Current Upgrade Mechanism Model (Concept Only)
- How is the model working?
- Next Steps
- Questions



Building By-law Policy



- Vancouver Charter
- City may adopt any Code Considered Appropriate by Council
- Harmonization
- Council Policy reflected in Div. B, Part 10 of the Building By-law
- Mandate reasonable fire & life safety upgrades while maintaining public Safety



Building By-law Policy

- By-law upgrades provided in buildings as they are rehabilitated over time
- 2005 - Council approval for New Model
- Environmental objectives to be considered in the future
- 2009 - Updates & Revisions to By-law





Previous Upgrade Mechanism Model

Table A

- Developed in 1978
- As buildings are altered they must be upgraded to an “*acceptable level*”.
- “*Acceptable Level*” based on monetary values.
- Proposed value of construction as a percentage of the building’s assessed value.



Previous Upgrade Mechanism Model

Ratio of Project Costs to Assessed Value (%)	Items to be Upgraded	Location of Upgrading			Notes for Upgrading Work
		Project Area	Public Area	Entire Bldg.	
Up to 25%	Exits	X			Number, Capacity, and fire separations to public street
Over 25% and up to 50%	Including Item above				
	Alarm/detectors	X	X		
	Emergency Lights	X	X		
	Exits			X	
	Exit Lights & Signs			X	
	Flame Spread Rating	X	X		



Previous Upgrade Mechanism Model

Difficulties with Previous Upgrade Mechanism

- Unduly onerous for buildings with low assessment values.
- Does not encourage the re-use & rehabilitation of existing buildings.
- Codes typically oriented towards new construction.
- Uneven & un-equitable impact.



Why a New Model?

Many By-law Issues for Existing Buildings

- Dimensional requirements
- Building height and area limitations
- Requirements to upgrade functional fire protection, plumbing and/or electrical systems.
- Type of construction
- Structural requirements
- Accessibility requirements
- Environmental protection issues



Why a New Model?

Existing Building Study Identified a Need to:

- Develop a new trigger mechanism to determine the appropriate level of Building By-law upgrade for an existing building, and
- Develop amendments to the Building By-law to provide greater flexibility and discretion.



Objectives of Current Upgrade Model

- Safety in buildings is paramount.
- Upgrade level should consider existing and proposed hazard risks.
- Construction and assessment values should not be used as an upgrade factor.
- Building By-law should provide greater flexibility and discretion.
- Renovations to individual tenant spaces should not generally extend to other tenant spaces.



Objectives of Current Upgrade Model

- Incremental upgrade levels for fire & life safety, structural, and accessibility.
- An addition, change of use or alteration should not create or increase the level of non-conformance of the building.
- Where a building's life is significantly increased over the original design life, an acceptable upgrade level should be provided.



Objectives of Current Upgrade Model

- Upgrades should be limited to requirements having health, safety and accessibility objectives.
- Environmental protection objectives should be considered in the future.
- No upgrading other than correction of unsafe conditions should be required for buildings which have been constructed or fully upgraded with the Building By-law within the past 25 years of the building permit application date.



Current Upgrade Mechanism Model



Basis for New Model:

- New Jersey Rehabilitation Code
- Ontario Building Code
- International Existing Building Code
- National Fire Protection Association Code for Existing Buildings



Current Upgrade Mechanism Model

Four Concepts for New Model:

- Public Safety Paramount
- Predictability
- Incremental Upgrade Levels, and
- Flexibility





Current Upgrade Mechanism Model

- Based on “Categories of Work” rather than monetary values.
- Upgrade level solely based on actual work.
- Considers the “hazard risk” associated with the proposed and existing use of a building. (Uses Ontario Building Code Hazard Index Tables)
- Provides for incremental increase in Code requirements.
- Incremental increases for fire & life safety, accessibility and structural objectives of the Code



Current Upgrade Mechanism Model “Fire & Life Safety Upgrade Levels”

Level	Objective Statement
F1	Exiting to be reviewed to ensure that the exits do not present an unsafe condition.
F2	Existing building to meet the fire & life safety requirements of the Building By-law within the project area and have conforming exits leading from the project area to an acceptable open space.
F3	Existing building to meet fire, life & health safety requirements of the Building By-law within the project area. Existing building to meet fire & life safety requirements of the Building By-law within the project areas.
F4	Entire building to substantially meet the intent of health, fire & life safety requirements of the Building By-law as well as provide protection to adjacent property.



Current Upgrade Mechanism Model “Structural Upgrade Levels”

Level	Objective Statement
S1	Proposed work must not have an adverse effect on the structural capacity of the existing structure.
S2	Limited structural upgrade required in order to provide minimum protection to building occupants during a seismic event within the project area.
S3	The building structure shall be upgraded to an acceptable level in order to provide a minimum level of property and life safety to unreinforced masonry or other building having less than 30% of the current required seismic resistance. Falling hazards over exits and sidewalks must be addressed.
S4	The entire building structure shall be brought up to an acceptable level in order to meet seismic requirements of the By-law.



Current Upgrade Mechanism Model “Accessibility Upgrade Levels”

Level	Objective Statement
A1	The proposed work must not adversely affect the existing accessibility level of the building.
A2	A limited level of upgrade shall be provided within the project area to ensure access for persons with disabilities.
A3	The existing building shall be upgraded to an acceptable level in order to ensure complete access within the project area as well as access to the remainder of the building.
A4	The existing building shall be upgraded in order to provide the minimum accessibility requirements of the Building By-law.



Current Upgrade Mechanism Model

“Example of Fire & Life Safety Acceptable Solutions”

Level	Acceptable Solution
F1	<u>Project Area</u> - Exits to be upgraded with respect to number, capacity, and fire separations only.
F2	<u>Project Area</u> - Alarms and detectors (only where existing devices are provided), emergency lights, access to exit, exits, exit signs, and exit lights. <u>Public Area</u> (leading from project area to an acceptable open space) - emergency lights, exit signs, access to exit, exits, and flame spread ratings.



Current Upgrade Mechanism Model

Example Cont'd:

Level	Acceptable Solution
F3	<p><u>Project Area</u> - Alarms & Detectors (only where existing devices are provided), emergency lighting, access to exit, exits, exit signs, exit lights, flame spread rating, floor assemblies & supports, occupancy separation, standpipes and sprinklers, and washrooms.</p> <p><u>Public Areas</u> - Alarms & Detectors (only where existing devices are provided), emergency lighting, access to exit, exit, flame spread ratings, occupancy separation, exits signs, and exit lights.</p> <p><u>Entire Building</u> - Fire fighting access</p>



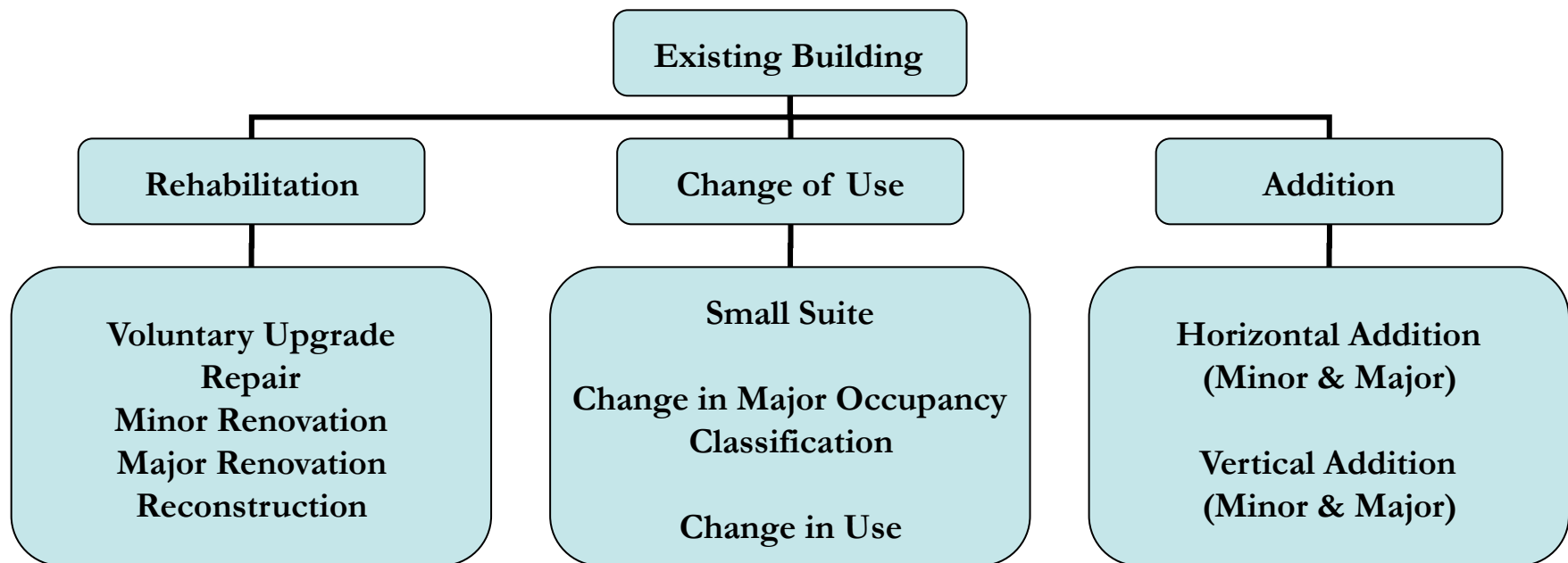
Current Upgrade Mechanism Model

Example Cont'd:

Level	Acceptable Solution
F4	<p><u>Entire Building</u> - Alarms & Detectors, emergency lighting, access to exit, exits, exit signs, exit lights, flame spread ratings, fire fighting access & water supply, floor assemblies & support, spatial separation, occupancy separation, standpipes & sprinklers, washrooms, high building requirements, lighting levels, sound transmission classifications, ventilation, and building envelope review.</p>



Current Upgrade Mechanism Model





Current Upgrade Mechanism Model

What are Voluntary Upgrades?

- Fire Alarm Systems
- Accessibility Upgrades
- Seismic Upgrades
- Exit Upgrades
- Building Envelope

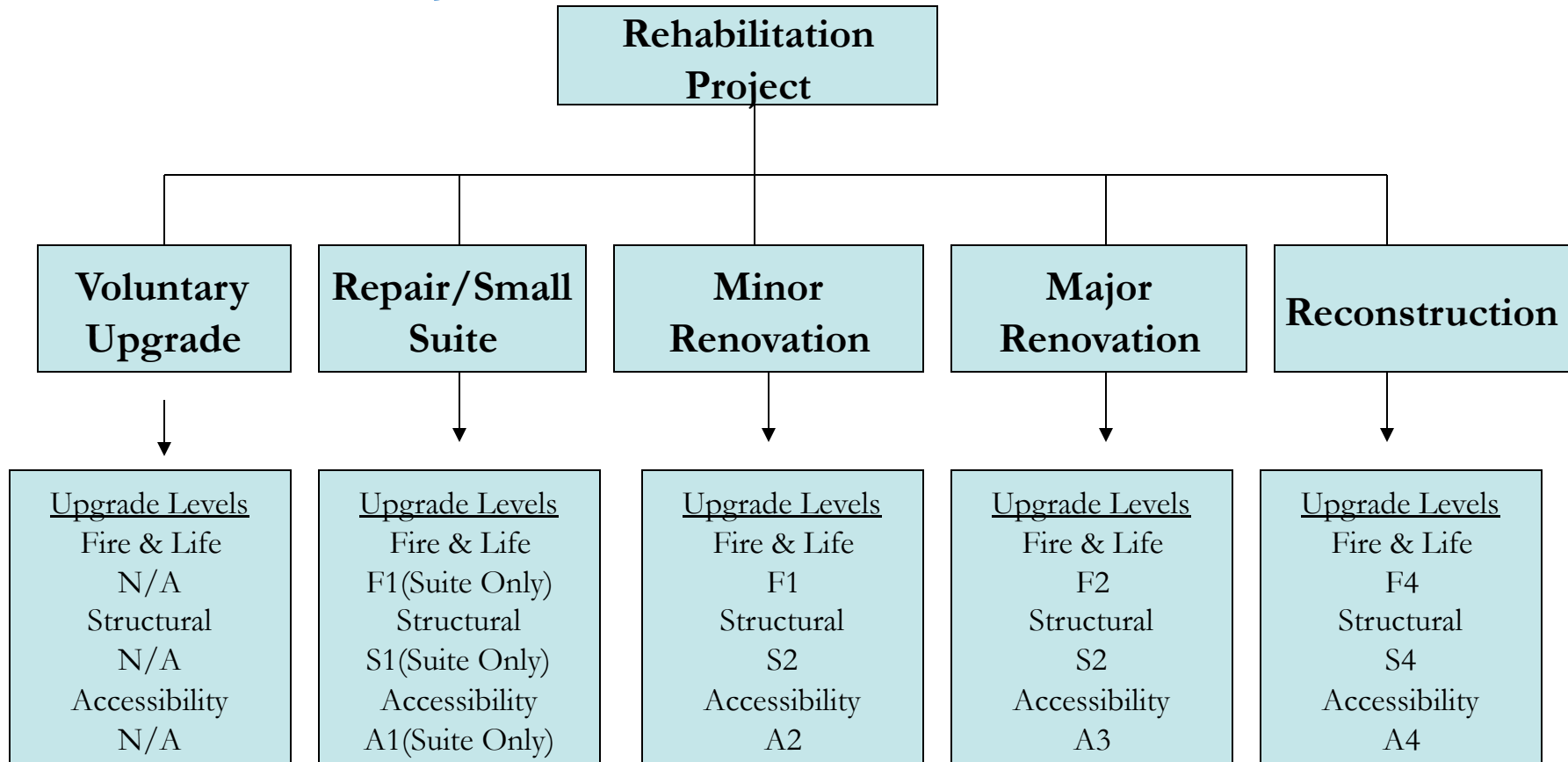
What is a Small Suite?

- Occupancies = A2, D, E, F2, & F3
- Maximum Occupant Load = 60 persons



Current Upgrade Mechanism Model

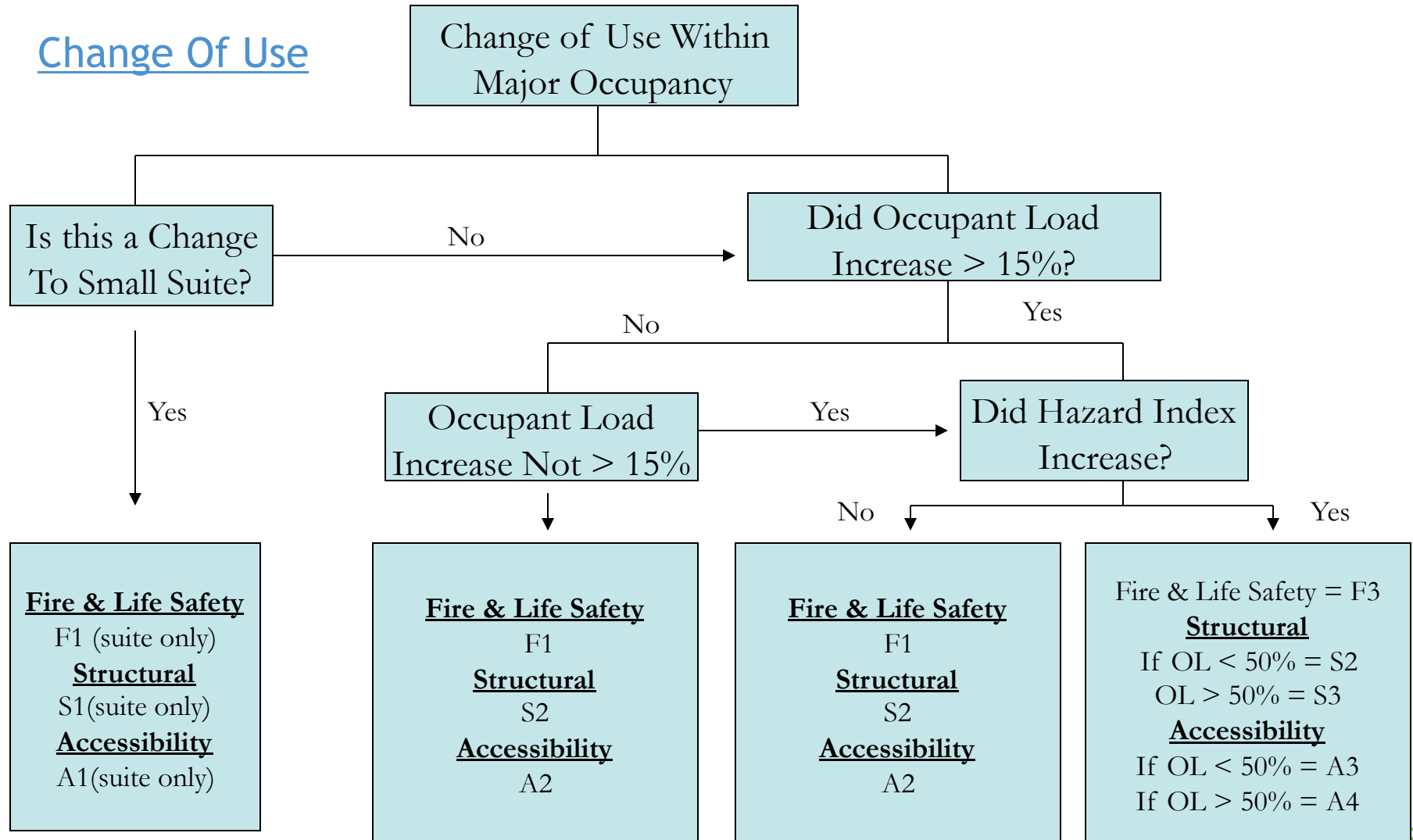
Rehabilitation Projects





Current Upgrade Mechanism Model

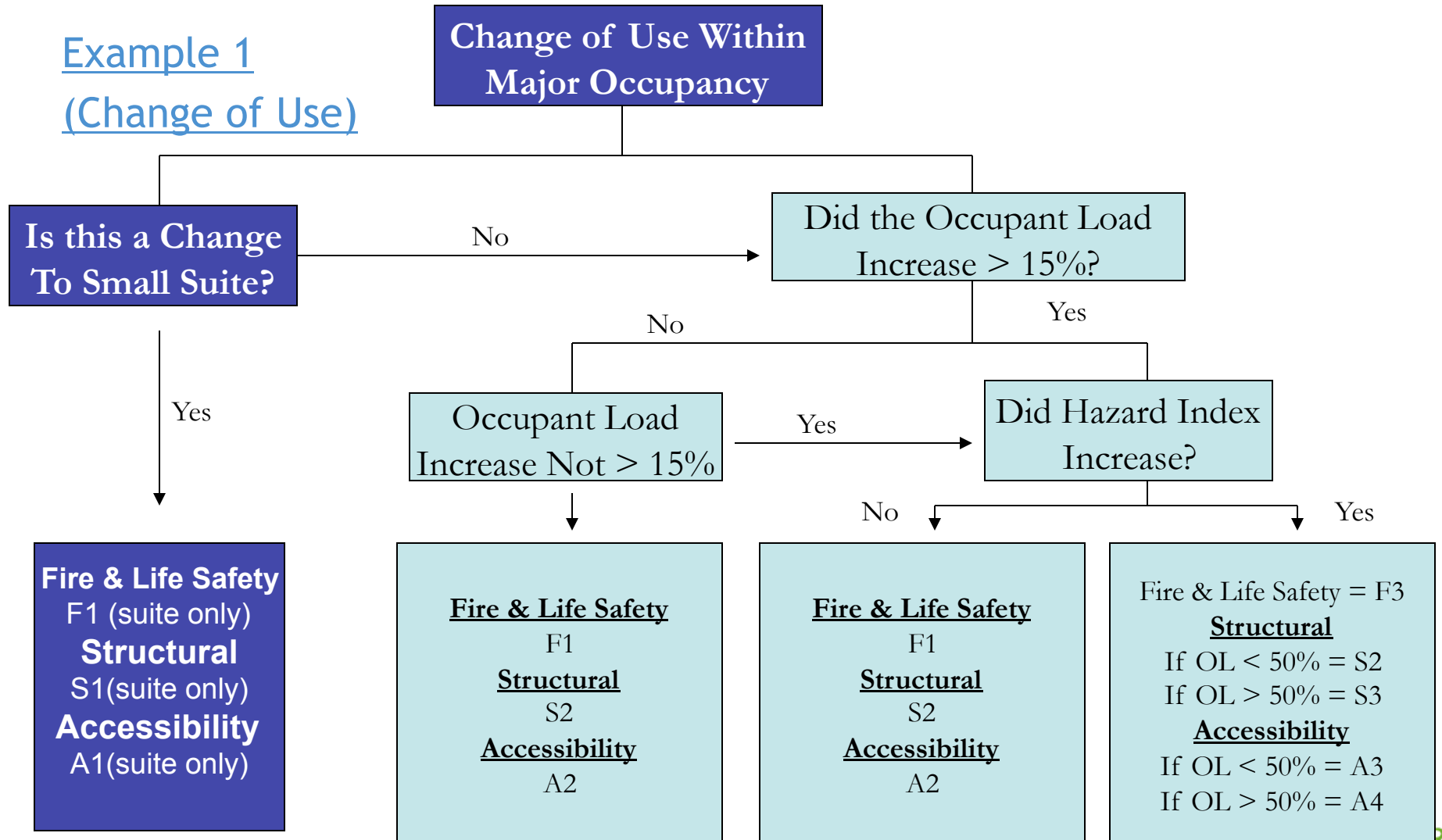
Change Of Use





Current Upgrade Mechanism Model

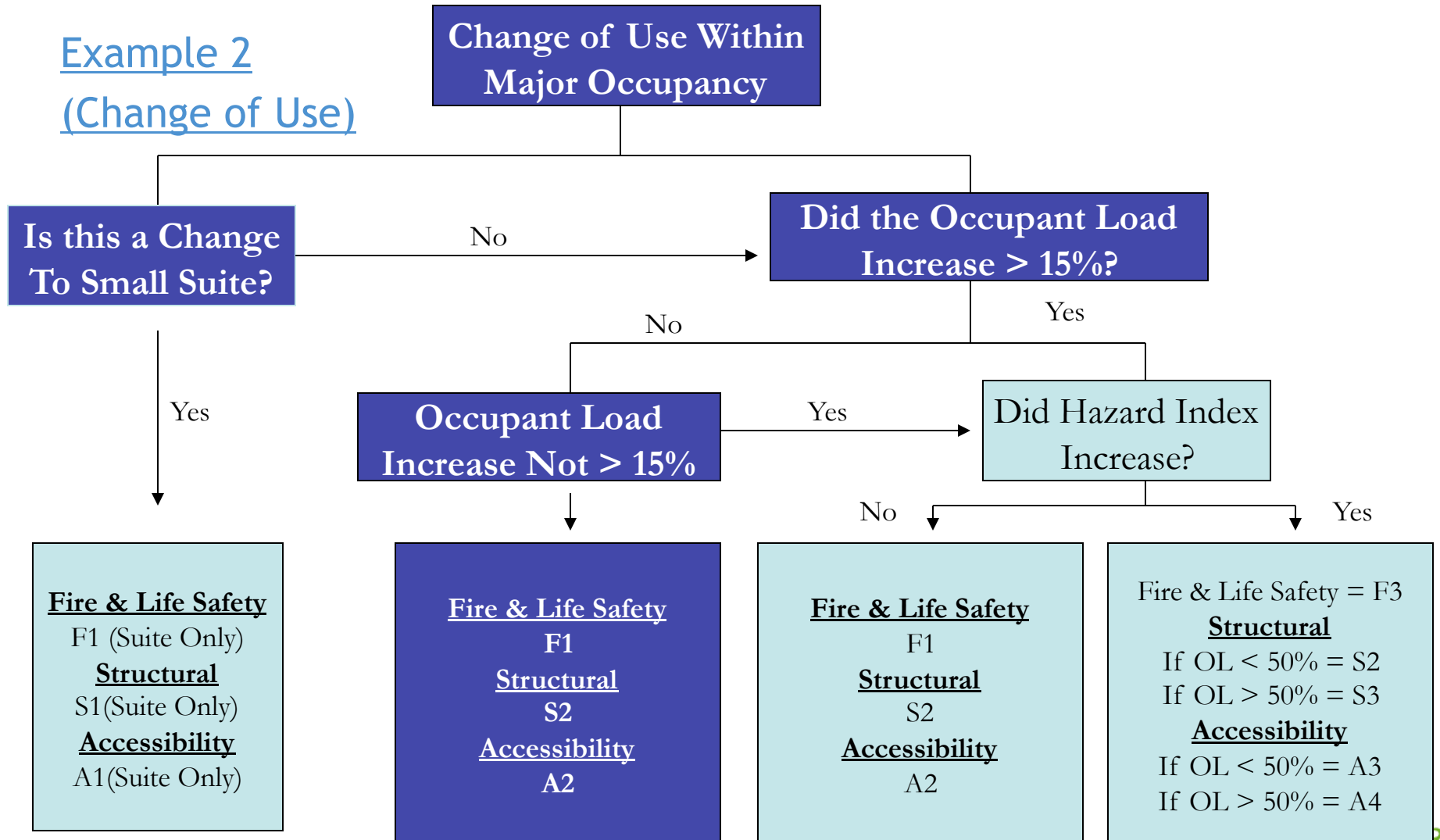
Example 1 (Change of Use)





Current Upgrade Mechanism Model

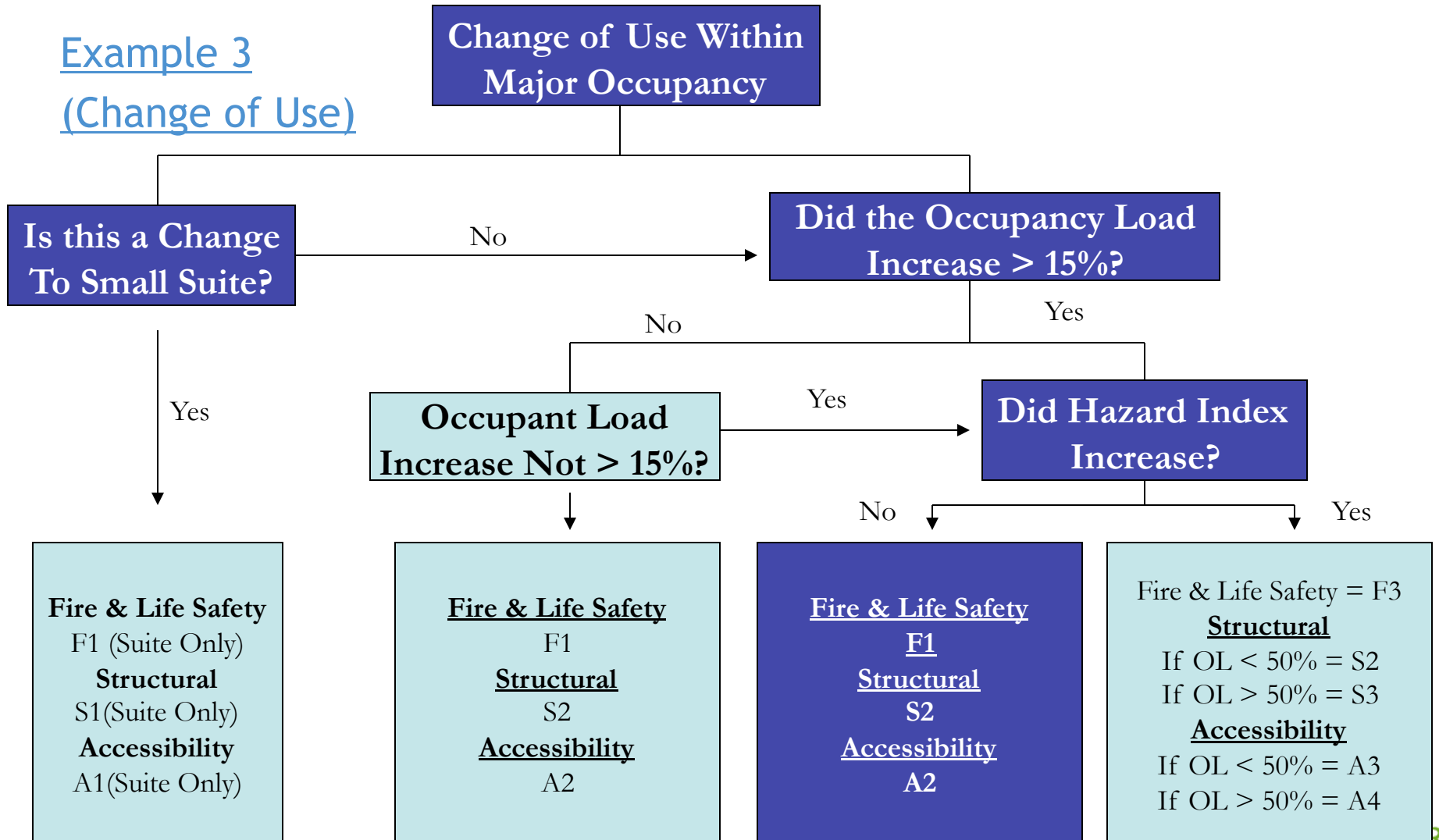
Example 2 (Change of Use)





Current Upgrade Mechanism Model

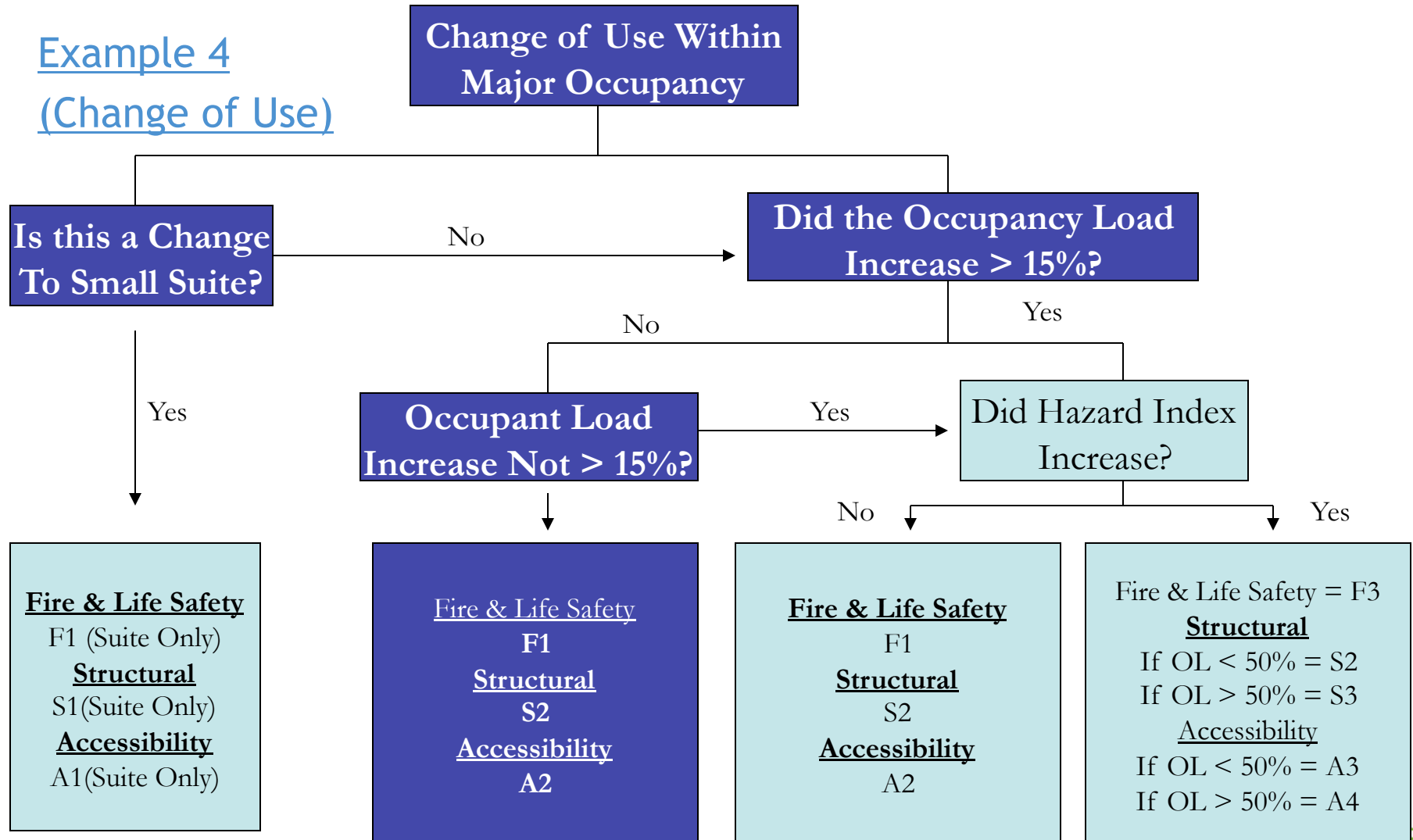
Example 3 (Change of Use)





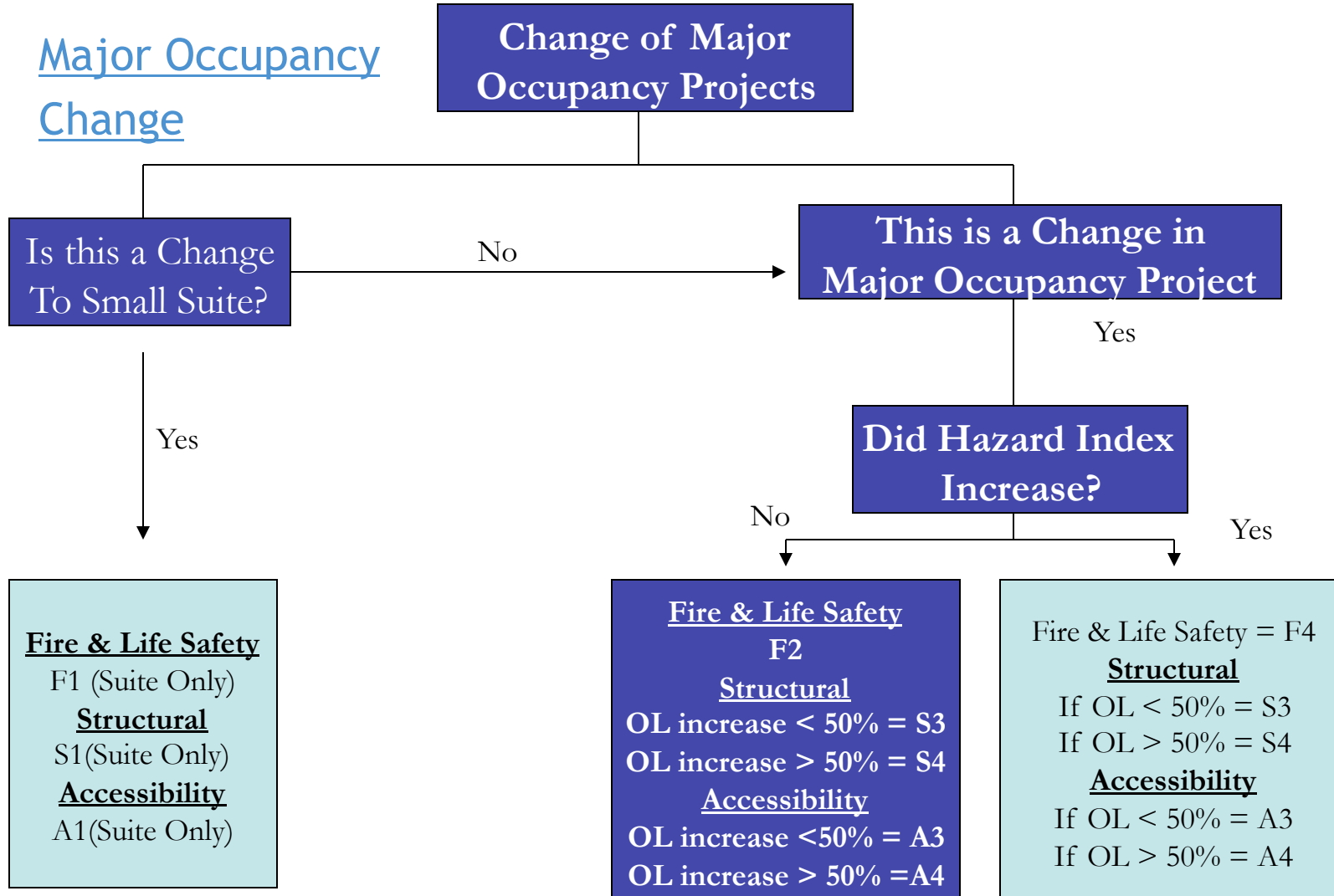
Current Upgrade Mechanism Model

Example 4 (Change of Use)





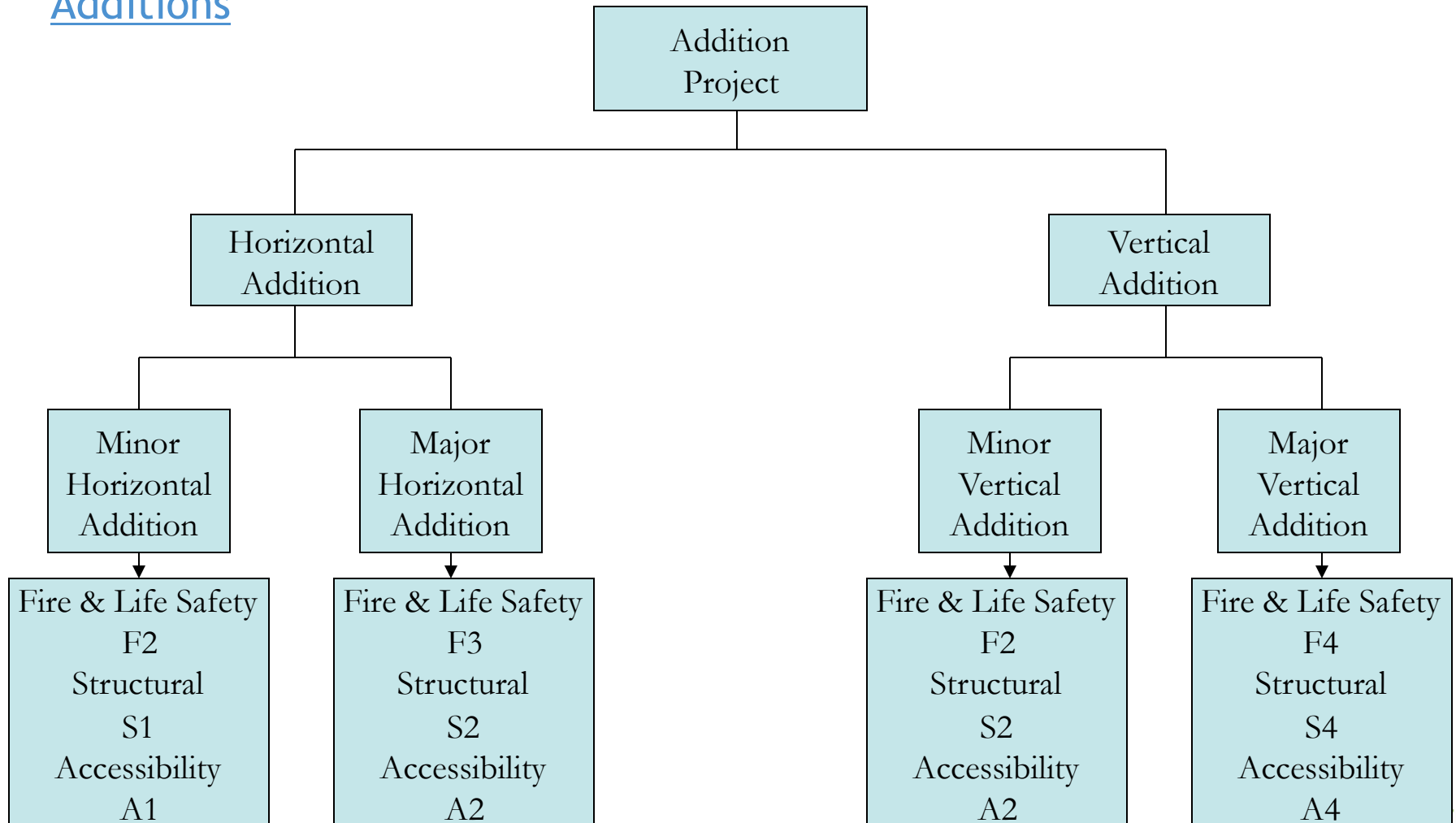
Current Upgrade Mechanism Model





Current Upgrade Mechanism Model

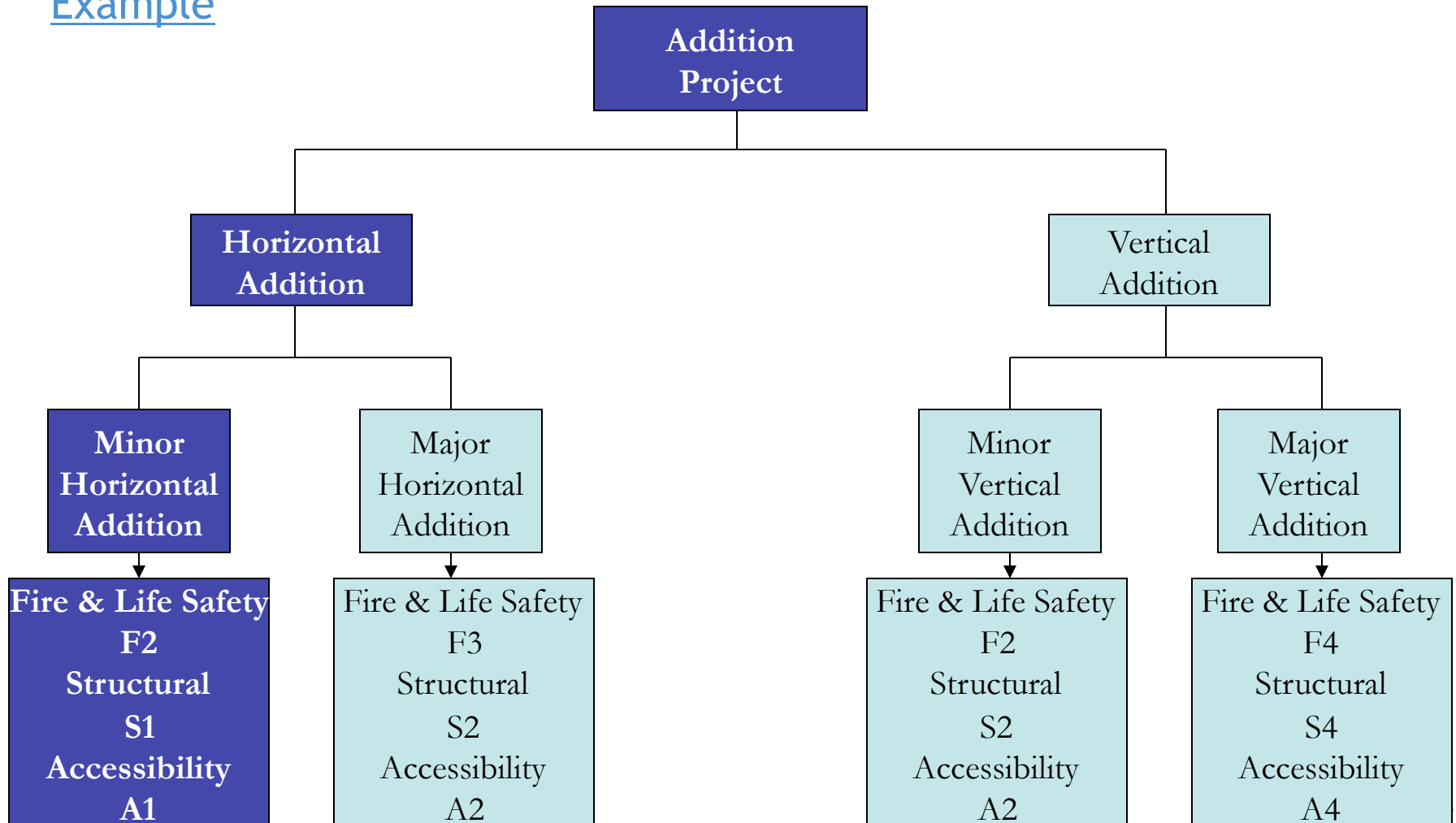
Additions





Current Upgrade Mechanism Model

Example





How is the New Model Working?

Positive Results:

- Monetary based model rarely used
- Ensures safety
- More predictable for building owners
- Even & equitable upgrade levels across city

Challenges:

- More clarity - especially seismic & accessibility
- By-law language needs to be re-written
- Environmental Objectives not recognized

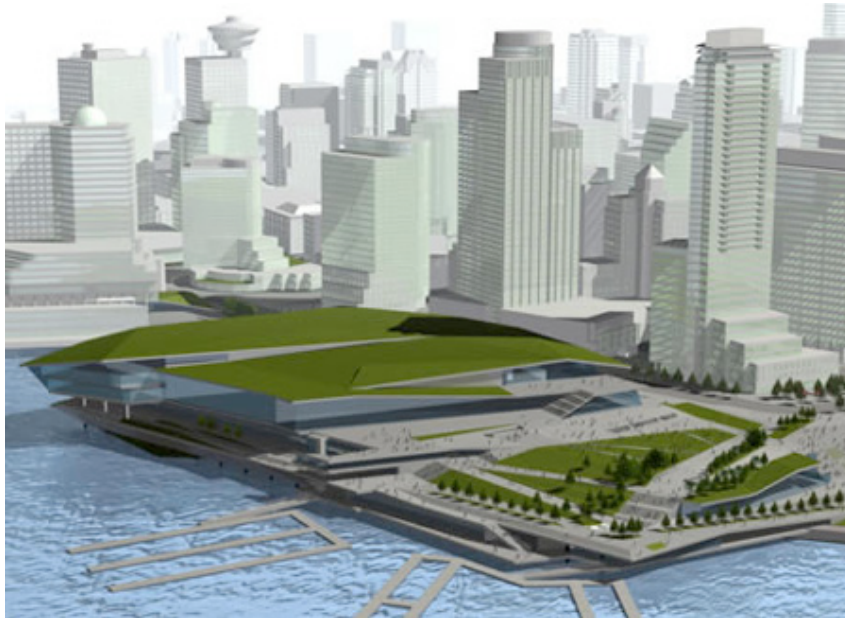


Next Steps

- Inclusion of Environmental Objectives
- Review current definitions
- Revisit breakdown of “categories of work” & “project/public area”
- Re-write of technical requirements (more alternatives)
- Develop Examples of “categories of work”
- Review of Province of BC Model
- Public Consultation
- Council Adoption



Next Steps



Environmental Objectives

- Energy Efficiency & GHG Reduction
- Building Water Conservation
- Rain Water Management
- Transportation Demand Management



QUESTIONS?

Additional Information:
vancouver.ca/cbo