

NRC-CNRC

From **Discovery**
to **Innovation...**

2010 NATIONAL MODEL CONSTRUCTION CODES

Secondary Suites

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National Research
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Canada



Introduction

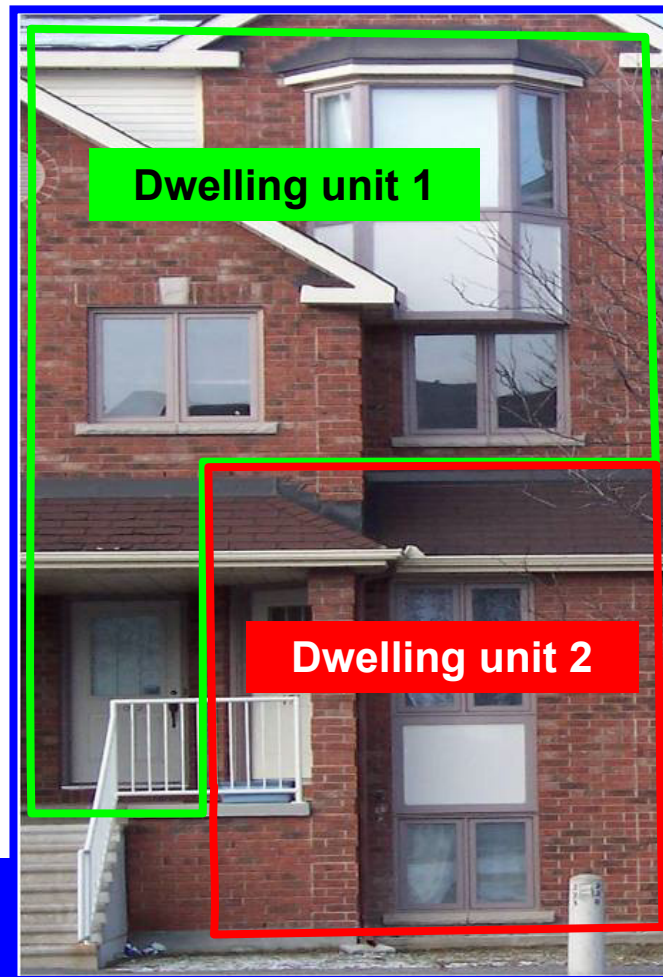
- Presentation is part of a series on the 2010 National Model Construction Codes
- Model codes developed by Canadian Commission on Building and Fire Codes
- These codes must be adopted by provincial/territorial authorities to become law



Secondary Suites – 2005 NBC

- 2005 NBC
 - Secondary suites
 - Not addressed in NBC
 - Addressed by provisions for multi-unit buildings
 - Multi-unit requirements
 - Onerous when compared to single family dwelling units
 - Often too costly
 - Inconsistencies among P/T regulations

**Multi-unit
building**





Secondary Suites

- Goals for 2010 NBC
 - Provide uniform, model requirements
 - Accommodate construction of secondary suites in houses at reasonable cost
 - Do not compromise health and safety of occupants
 - Use mostly requirements for single dwelling units



Single
dwelling unit
= "house"



Secondary Suites – Approach

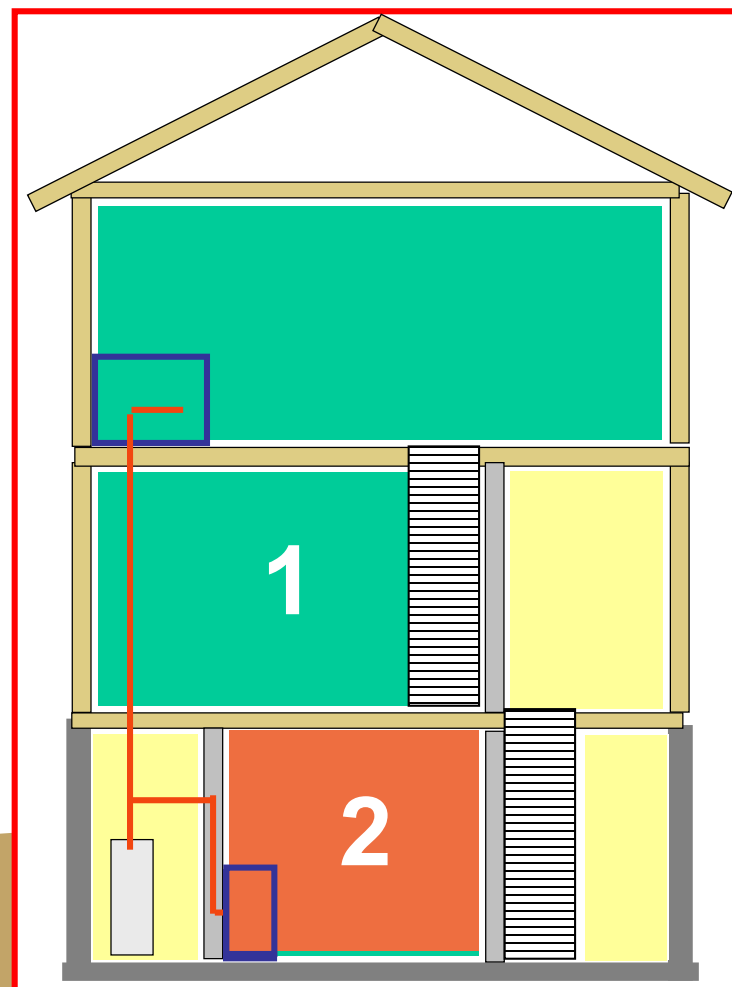
- Add concept of secondary suite throughout Part 9
- Define “secondary suite”
- Limit size of secondary suites
- Address requirements for:
 - Fire separation
 - Smoke tightness
 - Sound transmission
 - Heat and ventilation
 - Fire detection
- Set adequate level of performance





Secondary Suites – Definition

- A secondary suite is a dwelling unit located in a building or portion of a building of residential occupancy that is a single real estate entity containing not more than two dwelling units and common spaces one of which has a prescribed floor area





Secondary Suites – Definition (Appendix Note)



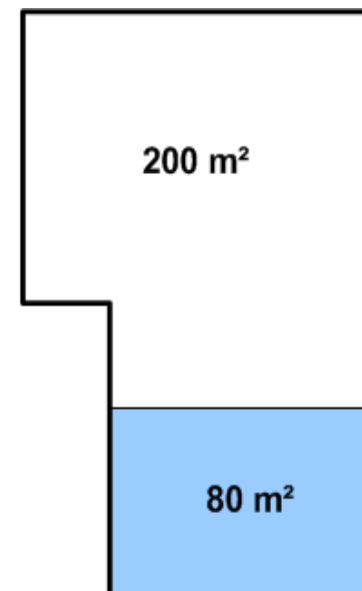
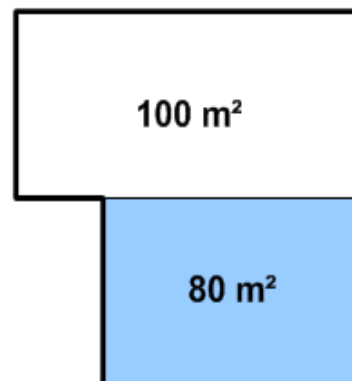
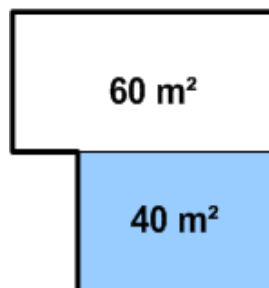
- Secondary suites may
 - be created within an existing dwelling unit (typically in houses)
 - have more than one storey
 - be on same level as principal suite or
 - be above or below principal suite
- Houses are:
 - individual detached houses
 - semi-detached houses
 - freehold row houses
 - townhouses





Secondary Suites – Floor Area

- Floor area of secondary suites limited to
 - up to 80% of total floor area of principle suite**and**
 - not more than 80 m²
- Rationale
 - Not increase occupant or fire load
 - Be consistent with current practice
 - Address affordable housing





Level of Performance

- Based on existing requirements
 - Treat house with secondary suite
 - as single dwelling unit
 - as multi-unit building
- Develop new requirements
 - Treat house with secondary suite
 - between single dwelling unit and multi-unit building





Single Dwelling Unit

- Treat house with secondary suite as single dwelling unit

Level of hazard for house with secondary suite
=
Level of hazard for single dwelling unit



Single Dwelling Unit – Examples

- Examples of requirements
 - Structure and building envelope
 - Door size, doorway opening height and width
 - Stair, ramps, handrails and guards
 - Principal entrance
 - Minimum dimension in exits and access to exits
 - Spatial separation and construction of exposing building face
 - Exemption from exit sign requirements

1) Except as provided in Sentence (2) and Articles 9.5.5.3., 9.9.6.2. and 9.9.6.3., doorway openings within *dwelling units* and within houses with a *secondary suite* including their common spaces shall be designed to accommodate at least the door sizes given in Table 9.5.5.1. for swing-type and folding doors.



Multi-Unit Building

- Treat house with secondary suite same as multi-unit building

Level of hazard for a house with a secondary suite

=

Level of hazard in a building with two dwelling units

- A multi-unit building could be
 - Apartment building
 - Duplex
 - Stacked townhouse



Multi-Unit Building

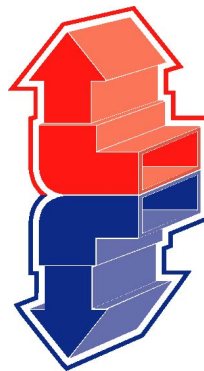
- Examples of requirements
 - Protection of openings in means of egress
 - Separate plumbing facilities
 - Ducting for HVAC systems to serve only one suite
 - Protection of soffits





Multi-Unit Building – Examples

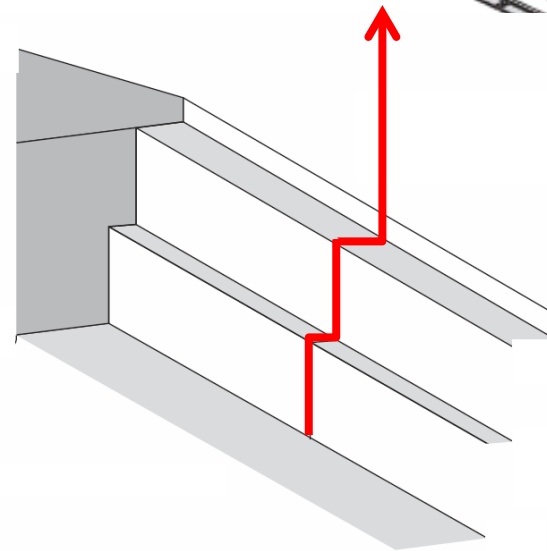
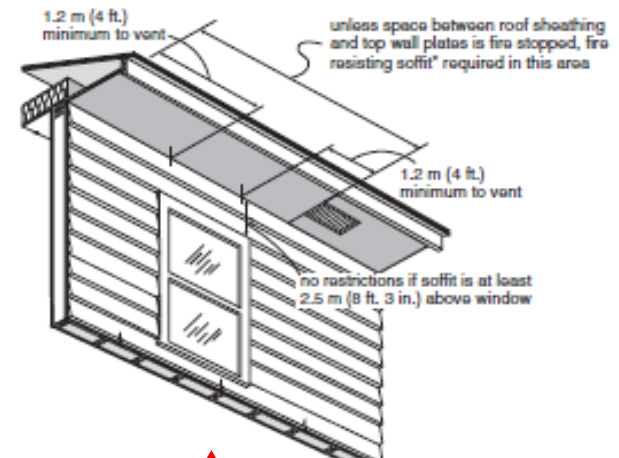
- Ducting for HVAC systems to serve only one suite
 - Hazard
 - Smoke spread by ducted systems: same as a multi-unit building
 - Requirement:
 - No interconnection of ducts between units





Multi-Unit Building – Examples

- Protection of soffits
 - Hazard:
 - Fire spread same as multi-unit
 - Requirement:
 - Minimum distance to vents
 - Fire stop in attic, or
 - Fire resistant soffits





New Requirements

- Examples of requirements where house with secondary suite treated somewhere in between single dwelling unit and multi-unit building
 - Exemption from providing two separate exits
 - Permission to have non-ducted heating system
 - Exemption for party wall on property line to be fire wall
 - Room ceiling height
 - Sound transmission rating (STC) between suites
 - Ventilation for shared/common spaces
 - Smoke alarm in dwelling units
 - Smoke-tight barrier in lieu of fire separation



New Requirements – Examples

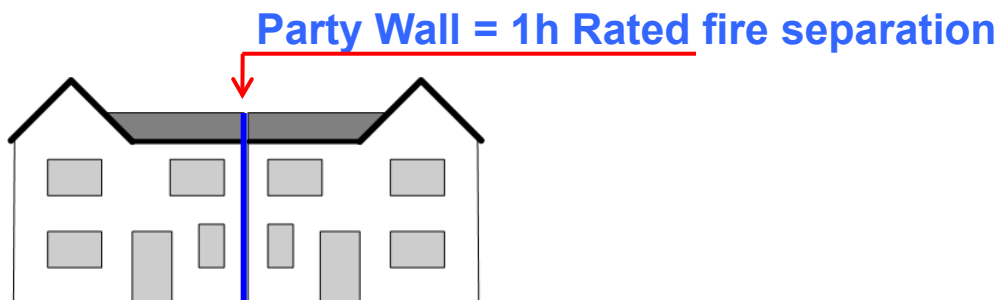
- Single common exit permitted where:
 - exit separated with smoke-tight barrier
 - solid-core wood doors, 45 mm thick, and
 - in addition to existing requirements:
 - window or balcony required as means of egress in each unit
- Non-ducted heating systems
 - Installation same as for one dwelling unit
 - Individual temperature controls in suites and common areas





New Requirements – Examples

- Party wall on property line build as 1h-rated fire separation in lieu of fire wall
 - Where it separates:
 - two dwelling units with no dwelling unit above another

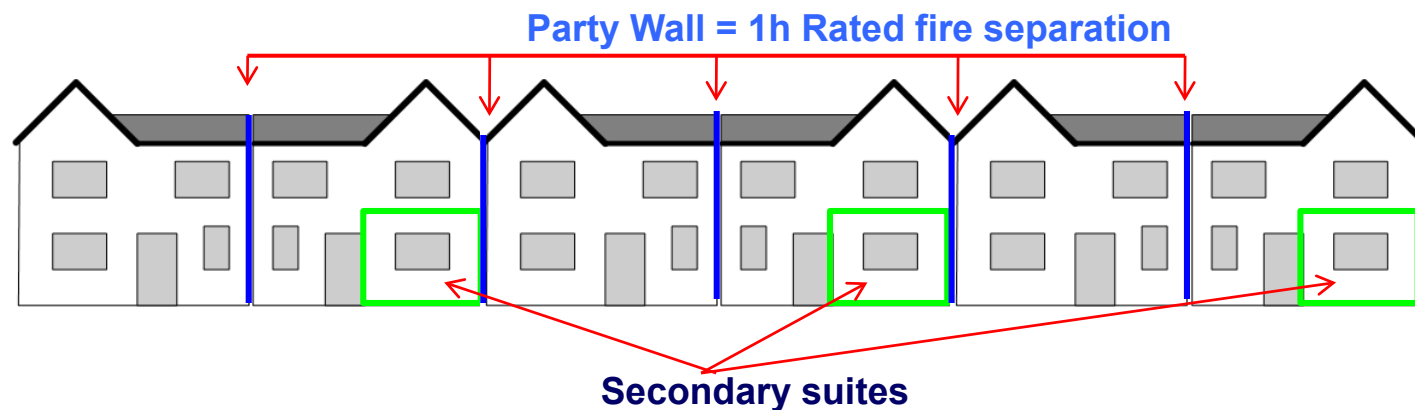




New Requirements – Examples

- Party wall on property line build as 1h-rated fire separation in lieu of fire wall
 - Where it separates:
 - two dwelling units with no dwelling unit above another
 - a dwelling unit and one house with a secondary suite and their common spaces, or

**New
Exceptions**

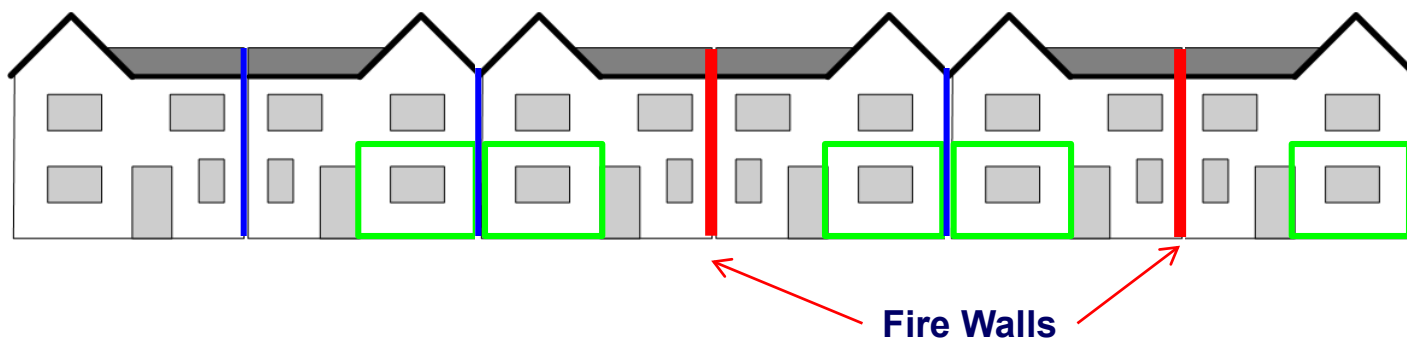




New Requirements – Examples

- Party wall on property line build as 1h-rated fire separation in lieu of fire wall
 - Where it separates:
 - two dwelling units with no dwelling unit above another
 - a dwelling unit and one house with a secondary suite and their common spaces, or
 - two houses with secondary suites where no more than two such houses are located side-by-side without a fire wall

**New
Exceptions**





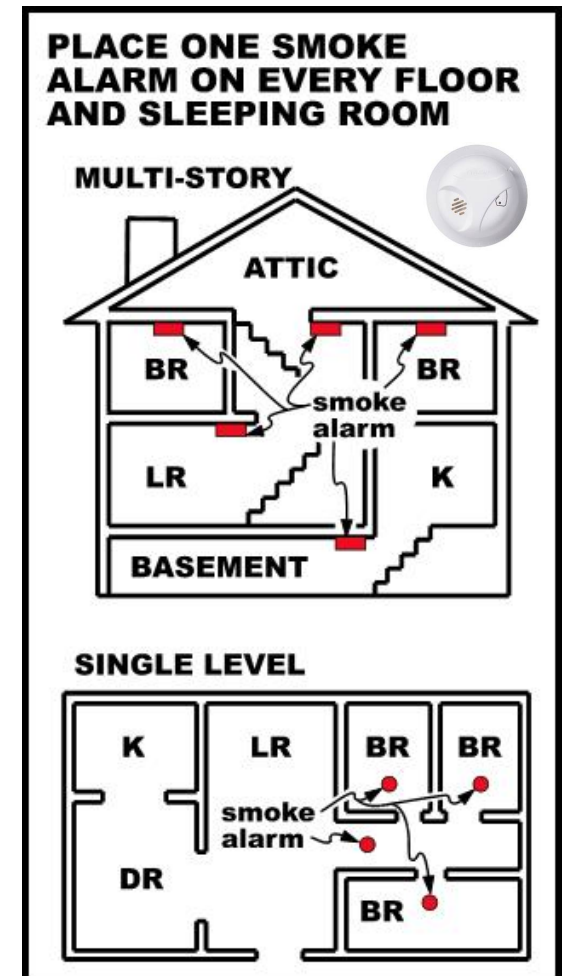
New Requirements – Examples

- Room ceiling height
 - Ceiling height 1.95 m (2.1 m for dwelling units)
 - Ceiling height under beams 1.85 m (2.1 m for dwelling units)
- Sound transmission rating (STC) between suites
 - STC Rating of 43 for walls and floors (normally STC 50)
OR
 - Prescriptive construction requirement (insulation filled cavities, resilient channels, gypsum board on both sides)
- Ventilation for shared/common spaces
 - Not required (normally design to Part 6)



New Requirements – Examples

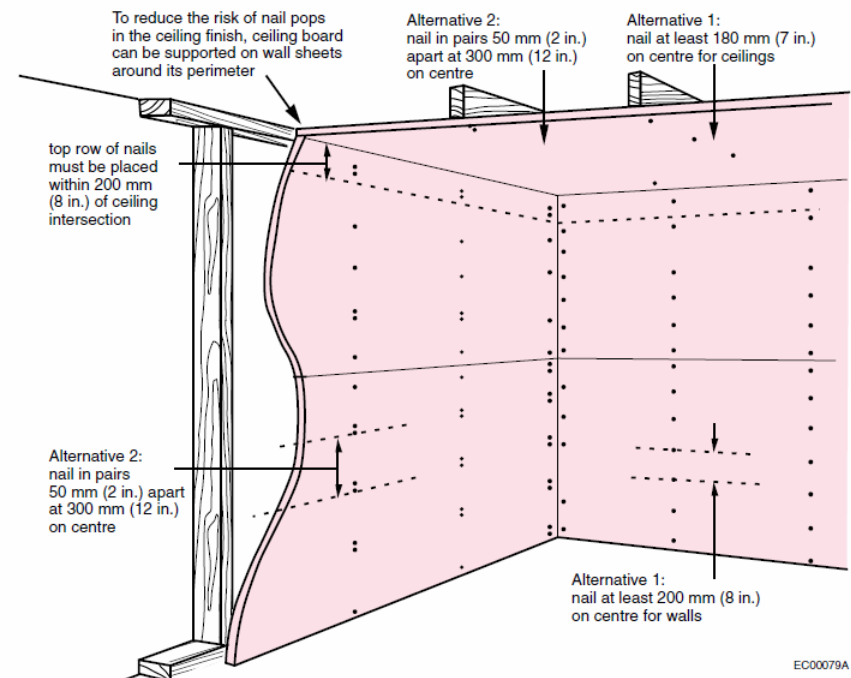
- Smoke alarm shall be installed in all dwelling units
- New**
 - In sleeping room
 - In each storey including basement
 - Between sleeping rooms and remainder of storey
- New for houses with secondary suites
 - Smoke alarms in ancillary spaces and common spaces not in dwelling units
 - Interconnected smoke & CO alarms between suites





New Requirements – Examples

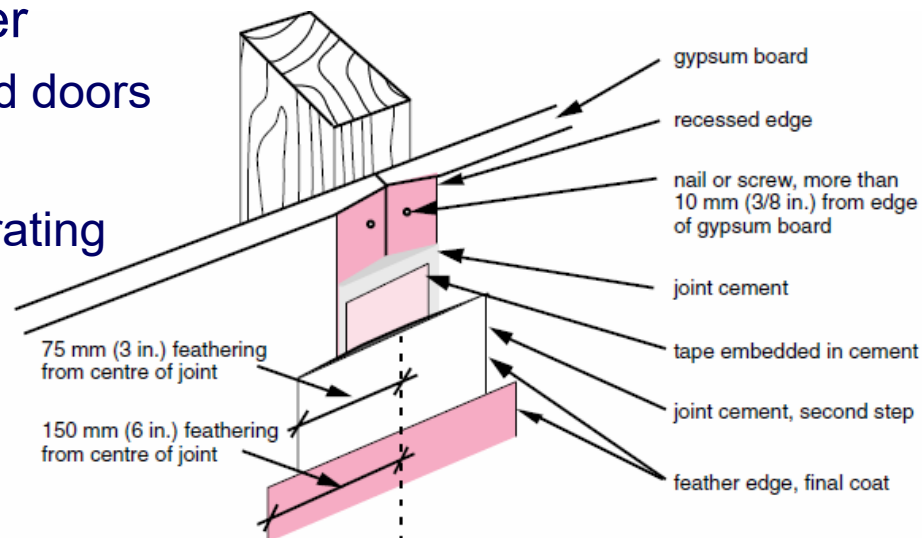
- Smoke-tight barrier in lieu of fire separation
 - Applies to walls and floor/ceiling assemblies separating:
 - Two dwelling units
 - Two dwelling units and common spaces (e.g. public corridor)
 - Two dwelling units and common exit
 - Two dwelling units and service room





New Requirements – Examples

- Smoke-tight barrier in lieu of fire separation
 - Required construction for smoke tight-barrier
 - 12.7 mm gypsum board on both side of walls and underside of floor-ceiling assemblies
 - Finished (mudded, taped, etc)
 - Continuity (sealed at junctions and penetrations)
 - Doors in a smoke-tight barrier
 - 45 mm thick solid-core wood doors
 - Self-closing device
 - Deemed to provide 20 min rating





Summary – Approach

- Determined
 - NBC 2005 requirements
 - Key issues to be addressed
 - Provincial/territorial and municipal requirements for “key issues”
- Compared to NBC 2005 as a baseline
- Assessed
 - Performance level relative to risk and NBC 2005 requirements
 - Costs relative to NBC 2005 requirements



Summary – Technical Requirements

- Areas of requirements
 - Heights of spaces
 - Means of egress
 - Stairs, ramps, handrails, guards
 - Spatial separation
 - Heating, ventilation
 - Sound transmission
 - Definition (secondary suite)
 - Area limits
 - Party walls
 - Smoke-tight barriers
 - Smoke and CO alarms





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- **Definition (secondary suite)**
- **Area limits**
- **Party walls**
- **Smoke-tight barriers**
- **Smoke and CO alarms**





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Questions?

Send them to us at codes@nrc-cnrc.gc.ca

Thank you!