

# FUS CLASSIFICATION DECLARATION FOR MULTI-STOREY BUILDINGS

Project Name and Civic Address: 30-48 Chamberlain Ave Number of Floors: 16

Development Review PM: Mohammed Fawzi, P.Eng. City File No. D07-12-23-0069

The building's FUS calculation has been determined using the following criteria: (check one of the following).

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| <p>C = 1.5    <input type="checkbox"/></p>  | <p><b>Type V Wood Frame Construction</b></p> <p>A building is considered to be of Wood Frame construction (Type V) when structural elements, walls, arches, floors, and roofs are constructed entirely or partially of wood or other material.</p> <p>Note: Includes buildings with exterior wall assemblies that are constructed with any materials that do not have a fire resistance rating that meets the acceptance criteria of CAN/ULC-S114. May include exterior surface brick, stone, or other masonry materials where they do not meet the acceptance criteria.</p> <p>Total Effective Area (A) = 100% of all Floor Areas</p>   |
| <p>C = 0.8    <input type="checkbox"/></p> <p>C = 0.9    <input type="checkbox"/></p> <p>C = 1.0    <input type="checkbox"/></p> <p>C = 1.5    <input type="checkbox"/></p> | <p><b>Type IV Mass Timber</b></p> <p>Mass timber construction, including Encapsulated Mass Timber, Heavy Timber and other forms of Mass Timber are considered as one of the following sub-types relating to the fire resistance ratings of assemblies as follows:</p> <ul style="list-style-type: none"> <li>• Type IV-A Mass Timber Construction (Encapsulated Mass Timber)</li> <li>• Type IV-B Mass Timber Construction (Rated Mass Timber)</li> <li>• Type IV-C Mass Timber Construction (Ordinary Mass Timber)</li> <li>• Type IV-D Mass Timber Construction (Un-Rated Mass Timber)</li> </ul> <p>*Refer to Water Supply for Public Fire Protection, latest revision, for further Mass Timber Construction definitions and how to calculate Total Effective Area (A).</p> |
| <p>C = 1.0    <input type="checkbox"/></p>  | <p><b>Type III Ordinary Construction</b></p> <p>A building is considered to be of Ordinary construction (Type III) when exterior walls are of masonry construction (or other approved material) with a minimum</p>   |

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|   | <p>1-hour fire resistance rating, but where other elements such as interior walls, arches, floors and/or roof do not have a minimum 1 hour fire resistance rating.</p> <p>Total Effective Area (A) = 100% of all Floor Areas</p>  |
| <p>C = 0.8    <input checked="" type="checkbox"/></p> | <p><b>Type II Noncombustible Construction</b></p> <p>A building is considered to be of Noncombustible construction (Type II) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 1-hour fire resistance rating and are constructed with noncombustible materials.</p> <p><b>Total Effective Area (A) = 1362.7 + 0.25*(947.7 + 1362.7) = 1940.3 m<sup>2</sup></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> if any vertical openings in the building (ex. interconnected floor spaces, atria, elevators, escalators, etc.) are unprotected**, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight; or</li> <li><input checked="" type="checkbox"/> if all vertical openings and exterior vertical communications are properly protected* in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.</li> </ul>                                   |
| <p>C = 0.6    <input type="checkbox"/></p>            | <p><b>Type I Fire Resistive Construction</b></p> <p>A building is considered to be of Fire-resistive construction (Type I) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 2-hour fire resistance rating, and all materials used in the construction of the structural elements, walls, arches, floors, and roofs are constructed with noncombustible materials.</p> <p><b>Total Effective Area (A) =</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> if any vertical openings in the building (ex. interconnected floor spaces, atria, elevators, escalators, etc.) are unprotected**, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight; or</li> <li><input type="checkbox"/> if all vertical openings and exterior vertical communications are properly protected* in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.</li> </ul> |

Note: If a building cannot be defined within a single Construction Coefficient, the Construction Coefficient is determined by the predominate Construction Coefficient that makes up more than 66% of the Total Floor Area.

\*Protected openings:

- a) Enclosures shall have walls of masonry or other limited or non-combustible construction with a fire resistance rating of not less than one hour.
- b) Openings including doors shall be provided with automatic closing devices
- c) Elevator doors shall be of metal or metal-covered construction, so arranged that the doors must normally be closed for operation of the elevator.

\*\*Unprotected openings:

- a) Any opening through horizontal separations that are unprotected or otherwise have closures that do not meet the minimum requirements for protected openings, above.

The building's FUS calculation has been determined using the following criteria: (check all that apply)

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| <p>30%    <input checked="" type="checkbox"/></p> | <p><b>Automatic sprinkler protection designed and installed in accordance with NFPA 13</b></p> <p>The initial credit for Automatic Sprinkler Protection is a maximum of 30% based on the system being designed and installed in accordance with the applicable criteria of NFPA 13, Standard for Installation of Sprinkler Systems, NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies, or NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes and being maintained in accordance with the applicable criteria of NFPA 25, Standard for the Inspections, Testing and Maintenance of Water-Based Fire (see Recognition of Automatic Sprinkler Protection).</p>   |
| <p>10%    <input checked="" type="checkbox"/></p> | <p><b>Water supply is standard for both the system and Fire Department hose lines</b></p> <ul style="list-style-type: none"> <li>a) Sprinkler system is supplied by a pressurized water supply system (public or private) that is designed and built with no major non-conformance issues (i.e. water supply system is designed in accordance with Part 1 of the Water Supply for Public Fire Protection to qualify for fire insurance grading recognition).</li> <li>b) Calculated demand for maximum sprinkler design area operation in addition to hose stream requirements are below the available water supply curve (at the corresponding flow rate and pressure). An appropriate safety margin is used to take into account the difference between the available water supply curve at the time of hydrant flow testing as compared to the available water supply curve during Maximum Day Demand.</li> <li>c) Volume of water available is adequate for the total flow rate including the maximum sprinkler design area operation plus required hose streams plus Maximum Day Demand for the full duration of the design fire event.</li> <li>d) Residual pressure at all points in the water supply system can be maintained at not less than 150 kPa during the flowing of the sprinkler and required hose streams (plus Maximum Day Demand).</li> </ul> |
| <p>10%    <input checked="" type="checkbox"/></p> | <p><b>Fully supervised system</b></p> <ul style="list-style-type: none"> <li>a) a distinctive supervisory signal to indicate conditions that could impair the satisfactory operation of the sprinkler system (a fault alarm), that is to sound and be displayed, either at a location within the building that is constantly attended by qualified personnel (such as a security room), or at an approved remotely located receiving facility (such as a monitoring facility of the sprinkler system manufacturer); and</li> </ul>   |

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|  | b) a water flow alarm to indicate that the sprinkler system has been activated, which is to be transmitted to an approved, proprietary alarm-receiving facility, a remote station, a central station, or the fire department. |
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Note: Where only part of a building is protected by Automatic Sprinkler Protection, credit should be interpolated by determining the percentage of the Total Floor Area being protected by the automatic sprinkler system.

- Fully Supervised sprinkler system (per above description)

**PROFESSIONAL SEAL APPLIED BY:**

Civil Consultant: Lance Erion, P.Eng.  
Consultancy: Arcadis IBI Group Inc.  
Phone Number: 613 225 1311  
Address: 500-333 Preston Street



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| <u>LE</u><br>(initial) | The FUS design parameters will be carried into the building's design |
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**PROFESSIONAL SEAL APPLIED BY:**

Architect or Building Engineer: Marc Thivierge, B.Arch, OAA  
Consultancy: Hobin Architecture Inc.  
Phone Number: 613-228-7200  
Address: 63 Pamilla Street, Ottawa



Architect's or Building Engineer's Seal

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| <u>M</u><br>(initial) | The FUS design parameters will be carried into the building's design |
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