

Summary of Changes to Chapter 5, “Buildings and Building Regulations”

The following list designates which pages have been changed, from the original draft ordinance dated 1/20/2010, to reflect the changes requested by the Public and Mayor and Council during the Discussion and Instruction on April 5, 2010.

Page 8 (Per Mr Mayl’s comments)

(6) Those having light, air and sanitation facilities which are inadequate to protect the health, morals, safety or general welfare of human beings who live or may ~~live-occupy~~ therein;

Page 22 & 23 (Per Mr Mayl’s comments)

A written Fire Protection Engineering Design Evaluation (FPEDE) concerning these items shall be submitted with the plans accompanying the application for a building permit. It shall be in a format established by the Fire Marshal and shall be signed and ~~sealed-stamped~~ by the preparer. If, in the course of performing the FPEDE, the evaluating fire protection engineer determines that there are fire related code deficiencies in the drawing or specifications, all such deficiencies shall be remedied prior to the submittal of the FPEDE and the building permit application and drawings. The FPEDE must include a signed and sealed statement by both the evaluating fire protection engineer and the engineer or architect of record attesting: "In my professional engineering opinion these"~~These drawings-drawings~~ and specifications are in ~~full~~ compliance with the fire safety provisions of all adopted State and local Building Code, Fire Codes, Mechanical Codes, local amendments and referenced codes and standards to the best of their knowledge and belief”.

107.2.6.1 Shop Drawings. All fire protection shop drawings prepared by sub-contractors shall be reviewed, signed and ~~sealed-stamped~~ by the fire protection engineer who performed the FPEDE prior to submittal to the City of Rockville. Shop drawings include, but not limited to, fire sprinkler plans, non-aqueous fire protection systems, fire alarm submittals, smoke control systems, ~~etc.~~ The fire protection engineer shall review the plans for coordination of components and the performance of integrated systems. The fire protection engineer will also verify that the systems are designed in accordance with the appropriate standard, all fire protection systems are coordinated together to work in concert, and that all information is presented for a review.

The fire protection shop drawings must have a signed and ~~sealed-stamped~~ statement attached to the plans by the evaluating fire protection engineer attesting: "In my professional engineering opinion t~~These-drawings~~ and specifications have been reviewed, coordinated with other applicable fire protection systems, and are in ~~full~~ compliance with the fire safety provisions of all adopted State and local Building Code, Fire Codes, Mechanical Codes, local amendments and referenced codes and standards to the best of their knowledge and belief.

NOTE: Underlining indicates language added after introduction
~~Strikethroughs indicate language deleted after introduction~~

Page 24(Per Mr Mayl's comments)

414.1.2.2 Laboratory ~~liquids~~chemicals. Upon application for construction permit, any structure with a laboratory shall provide a listing of liquids to be stored and used. The applicant is responsible for the preparation and submittal of the chemical list, the quantity to be stored of each individual chemical, the Material Safety Data Sheets and the container storage type and arrangement for review.

Page 25 (Per Mr Mayl's comments)

Fire Rated Wall Identification. All walls that are rated for fire resistance or smoke barriers shall be marked at the highest point of the wall with six inch tall red, stencil paint letters, with a minimum of 3/4" stroke width, stating the type of wall it serves as according to the International Building Code and "Protect all Penetrations". Such identification shall be above any decorative ceiling and in concealed spaces. If a wall transverses multiple floors, then the wall shall be marked at each level. The signage shall be repeated every 20 linear feet.

903.1.2 Sprinkler Zones. Each floor shall be zoned separately. ~~Where the building is equipped with a fire alarm system in accordance with Section 907, the area of the sprinkler zone shall coincide with the allowable area of the fire alarm system.~~ Atriums shall be separately zoned to work in concert with the fire alarm zone to activate the exhaust fans.

Exceptions:

- (1) Where the building is not protected throughout by a fire alarm system in accordance with Section 907, a zone shall not exceed 52,000 square feet (2,090 m²) for light hazard occupancies and 40,000 square feet for ordinary and extra hazard occupancies.
- (2) Single unit dwellings designed in accordance with NFPA 13D.

903.3.1.4 Manner for Calculation of Residential Bathroom Square Footage. When calculating the area of a residential bathroom for the purpose of determining if sprinkler coverage is ~~warranted~~required, any separate rooms with doors opening into the larger room contained within the larger footprint shall be counted. The area that a shower stall or bathtub uses shall also be incorporated into the overall area calculation. Rules governing smaller rooms shall continue to apply when determining if those smaller rooms need independent sprinkler heads.

NOTE: Underlining indicates language added after introduction
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Page 27 & 28(Per Mr Mayl's comments)

Section 916 is added to the IBC to read as follows:

Section 916**Fire Hydrant**

Sections 916.1, 916.2, 916.3 and 916.4 are added to the IBC to read as follows:

916.1 Fire Hydrant Spacing. For all newly constructed buildings, fire hydrants shall be spaced at no greater than 300 feet from all points of the structure as the fire hose would lay on the ground. The perimeter distance shall be measured, as a hose line would be laid along paved streets, through parking lot entrances, and around obstructions, in accordance with the determination of the authority having jurisdiction. If publicly maintained hydrants do not meet this spacing, then privately owned and maintained hydrants shall be provided.

Exception: Fire hydrant perimeter spacing may be increased to 500 feet for a structure equipped with an automatic fire suppression installed completely throughout. The distance from a fire hydrant to the fire department connection shall remain 100 feet.

916.1.1 Fire Hydrant location. Structures equipped with a sprinkler system and/or a standpipe system shall have a fire hydrant located within 100 feet of the fire department connection. The distance shall be measured along a path accessible to foot travel.

~~Exception:~~ ~~Fire hydrant perimeter spacing may be increased to 500 feet for a structure equipped with an automatic fire suppression installed completely throughout. The distance from a fire hydrant to the fire department connection shall remain 100 feet.~~

Page 29 (Per Mr Mayl's comments and Mayor & Council direction)

Section 1009.6.4 is added to the IBC to read as follows:—

~~1009.6.4 Stair Construction Method.~~ ~~All stairs serving as a means of egress shall be constructed as a self-supporting structure independent of the floors of the building to which it serves. Connections to the floors shall be with breakaway connectors capable of detaching when the floors collapse.~~

1209.2.1 Dedicated Attic Walkways. When a commercial or multi-family residential structure is provided with an attic, dedicated and permanent walkways shall be installed to provide an easy manner for maintenance personnel to transverse the structural spans. The walkway shall be of materials consistent with the construction of the building. The walkway shall be a maximum of 18 inches wide or meeting required widths as designated by other Codes and shall not be used for storage. ~~The walkway shall be a minimum of 18 inches wide but not wide enough to permit storage.~~ The walkway shall be arranged so to prevent any contact with sprinkler piping or the insulation that protects the piping.

NOTE: Underlining indicates language added after introduction
~~Strikethroughs indicate language deleted after introduction~~

Page 31 (Per Mayor & Council direction to be in line with Montgomery County)**Section 3111****Radio Amplification System for Emergency Service Personnel**

3111.1 General. The provisions of this Section shall apply to all newly constructed below ground floors of a building, all floors in buildings greater than 25000 ft² per floor, and to all floors of buildings greater than 3 stories in height of ~~Type I and II constructions.~~

~~**Exception:** The requirements of this section shall not apply to areas within an individual dwelling unit.~~

3111.2 Where Required. Every floor area in a building or structures which can not achieve the required level of radio coverage as established by Montgomery County Department of Technology Services (DTS) shall be provided with in-building public safety radio enhancement system in accordance with the Montgomery County Fire Safety Code. ~~signal amplification system.~~

3111.3 Inspection and Testing. ~~Radio~~ Emergency responder radio coverage and in-building ~~signal amplification~~ public safety radio enhancement systems must be tested, and inspected by approved individuals. The results of the testing and inspection shall be certified to the code official and Montgomery County prior to issuance of an occupancy permit.

Page 39(Per comments received from Ms. Ginsberg and Citizens Forum)

ADDITION. A modification to an existing building which increases the gross floor area by ~~up to 110% of the existing gross floor area, but not to exceed 1,500~~ not more than 1,500 gross square feet. Any increase in building height or lot coverage is subject to current zoning standards.

Page 42 & 43 (Administrative change)

Section R311.2.1 of the IRC is amended to read as follows:

R311.2.1 Exit door required.. Exit access from a townhouse loft to the exit door must not require vertical travel of more than two stories. Access to habitable levels not having an exit in accordance with this section shall be by a ramp in accordance with Section R311.~~6-8~~ or a stairway in accordance with Section R311.~~57~~.

NOTE: Underlining indicates language added after introduction
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Sections R312.1.1 of the IRC is added to read as follows:

R312.1.1 Retaining wall guards. Retaining walls with a difference in grade level on either side of the wall exceeding 4 feet and within 2 feet of a walk, path, parking lot or driveway on the high side shall have guardrails not less than thirty-six (36) inches in height.

~~**R313.2 Other locations required.** Complete fire suppression systems shall be installed and maintained in full operating condition, in compliance with the applicable NFPA Fire Code in the entire dwelling when an addition is added to the existing structure that is greater than 125% of the gross square footage of the existing home, excluding garages and crawlspaces.~~

R313.3.2 Insulation Value for Sprinkler Piping Protection. Insulation installed on sprinkler piping, for the protection of freezing, shall have a minimum R-value of 30. Insulation shall not be blown-in or loose fill and shall be installed to prevent the compaction of the insulation.

Page 70 (To match current IECC, Per comment by Randy Melvin)

Section 301.1 of the IECC is amended to read as follows:

301.1 General. Climate zone 4A shall be used for the City of Rockville in determining the applicable requirements from Chapters 4 and 5.

**TABLE 402.1.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT ^a**

CLIMATE ZONE ^e	FENESTRATION U-FACTOR	SKY-LIGHT U-FACTOR ^b	GLAZED FENESTRATION SHGC	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ^c	FLOOR R-VALUE	BASEMENT ^c WALL R-VALUE	SLAB ^d R-VALUE & DEPTH	CRAWL SPACE ^c WALL R-VALUE
4A	0.35	0.60	0.45 <u>NR</u>	49 <u>38</u>	2013 or 13+5^e	10/135/10	19	10 / 13	10, 2ft	10 / 13

For SI: 1 foot = 304.8 mm.

~~a. R values are minimums. U factors and SHGC are maximums. R 19 shall be permitted to be compressed into a 2 x 6 cavity.~~

~~b. The fenestration U factor column excludes skylights. The SHGC column applies to all glazed fenestration.~~

~~c. The first R value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.~~

~~d. R 5 shall be added to the required slab edge R values for heated slabs.~~

~~e. Any combination of insulation shall be permitted to meet the requirements by summing the R-value of the cavity insulation and the R-value of the insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of the exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.~~

Page 71 (To match current IECC, Per comment by Randy Melvin)

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**TABLE 402.1.3
EQUIVALENT U-FACTORS ^a**

CLIMATE ZONE	FENESTRATION U-FACTOR	SKY-LIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
4	0.35	0.60	0. 029030	0. 056082	0.141	0.047	0.059	0.065

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.

Page 78(Per comment by Randy Melvin)

Glazing ^a	<p>Total area_b =</p> <p>(a) The proposed glazing area; where the proposed glazing area is less than 1815% of the conditioned floor area</p> <p>(b) 1815% of the conditioned floor area; where the proposed glazing area is 1815% or more of the conditioned floor area</p> <p>Orientation: equally distributed to four cardinal compass orientations (N, E, S, & W)</p> <p>U-factor: from Table 402.1-23</p> <p>SHGC: From Table 402.1 except that for climates with no requirement (NR) SHGC = 0.40 shall be used</p> <p>Interior shade fraction:</p> <p>Summer (all hours when cooling is required) = 0.70</p> <p>Winter (all hours when heating is required) = 0.85</p> <p>External shading: none</p>	<p>As proposed</p> <p>As proposed</p> <p>As proposed</p> <p>As proposed</p> <p>Same as standard reference design^c</p> <p>As proposed</p>
Skylights	None	As proposed
Thermally isolated sunrooms	None	As proposed
Air exchange rate	Specific Leakage Area (SLA) ^d = 0.00036 assuming no energy recovery	<p>For residences that are not tested, the same as the standard reference design</p> <p>For residences without mechanical ventilation that are tested in accordance with ASHRAE 119, Section 5.1, the measured air exchange rate^e but not less than 0.35 ACH</p> <p>For residences with mechanical ventilation that are tested in accordance with ASHRAE 119, Section 5.1, the measured air exchange rate^e combined with the mechanical ventilation rate,^f which shall not be less than $0.01 \times CFA + 7.5 \times (N_{br} + 1)$</p>

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		where: CFA = conditioned floor area N_{br} = number of bedrooms
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Page 118 & 119 (Administrative for clarity)

Sec. 5-303. Green Building Applicability.

~~For (a)~~ Except as provided in subsection (b) of this Section 5-303, for the purposes of this Article, these requirements shall ~~pertain~~ apply to construction of all new buildings, and the following additions and alterations to buildings:

~~(a)(1)~~ (1) Additions of 7,500 gsf or more to an existing non-residential or multi-unit residential building;

~~(b)(2)~~ (2) Alterations of more than 50% of the gsf of a non-residential or multi-unit residential building if the altered area is 7,500 gsf or larger;

~~(c)(3)~~ (3) ~~Additions and alterations to existing one and two family dwellings that meet the criteria for "new construction" as defined in Article VI~~ Alterations to existing one and two family dwellings and additions meeting the criteria for "new construction" as defined in Article VI.

(b) The requirements of this Article XIV shall not be applicable to the following:

(1) Special Exceptions and any subsequent amendments thereto, and related site plans and any subsequent amendments thereto, where a Pre-application or formal application for the Special Exception has been made prior to July 1, 2010, and any related permits for construction;

(2) Site Plans (Level 1,2,and 3), and any subsequent amendments thereto, and Project Plans and any subsequent amendments thereto, where a Pre-application, or formal application, has been made prior to July 1, 2010, and any related permits for construction.

Exception: Subsequent internal fit-out applications and related permits must comply with the provisions of this Article XIV;

(3) All permits applied for prior to July 1, 2010; and

(4) All trade permits associated with building permits or single-family dwelling permits, where application for the building permit or single-family dwelling permit has been made prior to July 1, 2010.

Sec. 5-304. Buildings and Structures Exempt.

NOTE: Underlining indicates language added after introduction
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The following construction is exempt from the requirements of this Article:

- (a) Accessory buildings and structures, as defined by 25.09.03 of the Rockville City Code;
- (b) Alterations of existing LEED®- ~~certified~~ or LEED®-equivalent certified, non-residential or multi-unit residential buildings.
- (c) Additions and alterations to existing LEED®- ~~certified~~ or LEED® equivalent-certified one and two family dwellings.

Sec. 5-311. Administration.

The Chief of Planning or his/her designee will review projects for compliance with this Article during the design phase of new construction. This includes:

- (a) Reviewing the submitted LEED® or LEED®-equivalent credit checklists and supporting documentation for completeness and accuracy, as it pertains to site development;
- (b) Ensuring that project teams contain individuals with appropriate credentials, such as a LEED® Accredited Professional;

Page 120 (Administrative for clarity)

The Chief of Inspection Services or his/her designee will review projects for compliance with this Article during the design phase of new construction. This includes:

Reviewing the submitted LEED® or LEED®-equivalent credit checklist and supporting documentation for completeness and accuracy, as it pertains to building construction;

Page 122 (Administrative for clarity)

Sec. 5-323. LEED® Credit Checklist Required.

All non-residential and multi-unit residential buildings must submit ~~the a LEED~~completed LEED® credit checklist with supporting documentation for the most appropriate LEED® rating system, or a LEED®-equivalent rating system-~~checklist~~, with every submittal to the City.

Page 124 (Administrative for clarity)

Sec. 5-333. ENERGY STAR Appliances Required.

To the extent that the building includes the following building components, appliances and fixtures, these appliances and fixtures must have earned the U.S. EPA's Energy Star label: windows, hot water heaters, ovens, microwave ovens, refrigerators, clothes washers, dryers (once certifications are available), dishwashers, ceiling fans, ductwork, ventilation fans (including kitchen and bathroom fans), light fixtures, furnaces and programmable thermostats.

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