BCAC 2020 NEW TOPICS FOR CONSIDERATION

IBC 4-1 ICC Staff (JG)

2018 International Building Code (no technical changes from 2018)

406.3 Private garages and carports. Private garages and carports shall comply with Sections 406.2 and 406.3, or they shall comply with Sections 406.2 and 406.4.

406.3.1 Classification. Private garages and carports shall be classified as Group U occupancies. Each private garage shall be not greater than 1,000 square feet (93 m^2) in area. Multiple private garages are permitted in a building where each private garage is separated from the other private garages by 1-hour *fire barriers* in accordance with Section 707, or 1-hour *horizontal assemblies* in accordance with Section 711, or both.

406.3.2 Separation. For other than private garages adjacent to dwelling units, the separation of private garages from other occupancies shall comply with Section 508. Separation of private garages from *dwelling units* shall comply with Sections 406.3.2.1 and 406.3.2.2.

406.3.2.1 Dwelling unit separation. The private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than $^1/_2$ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a $^5/_8$-inch (15.9 mm) Type X gypsum board or equivalent and $^1/_2$-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than $1^3/_8$ inches (34.9 mm) in thickness, or doors in compliance with Section 716.2.2.1 with a fire protection rating of not less than 20 minutes. Doors shall be *self-closing* and self-latching.

406.3.2.2 Ducts. Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit* from the garage, including its *attic* area, shall be constructed of sheet steel of not less than 0.019 inch (0.48 mm) in thickness and shall not have openings into the garage.

406.3.3 Carports. Carports shall be open on not fewer than two sides. Carports open on fewer than two sides shall be considered to be a garage and shall comply with the requirements for private garages.

406.3.3.1 Carport separation. A separation is not required between a Group R-3 and U carport, provided that the carport is entirely open on two or more sides and there are not enclosed areas above.

Reason: Possible unintended consequence of G59-12. What got removed from the new modified provisions was the former Item 1 to Section 406.3.2 of the 2012 IBC (see G59-12 reproduced below). (the way I had interpreted this Item 1 was that where a mixed occupancy building (e.g. Group R-2 and U private garage) occurred, this Item 1 would allow the entire building to be looked at as a Group R-2 with respect to height and area.)

I have an architect who is designing a one story Group M building with a 441 sq. ft. private garage. The entire building is 6,389 sq. ft.; however based on the new 2015 language (Section 406.3.4) it appears that he may have to design his mixed occupancy building as separated in accordance with Section 508.4 because his proposed Group U is the more restrictive occupancy (Table 506.2: 5,500 sq. ft. for nonsprinklered Type VB construction).

Code Change No: G59-12

Original Proposal

Section(s): 202, 406.3, 406.3.1, 406.3.2, 406.3.3, 406.3.4

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Add new definition as follows:

PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit.

Revise as follows:

406.3 Private garages and carports. Private garages and carports shall comply with Sections 406.3.1 through ~~406.3.5~~ 406.3.4.

406.3.1 Classification. ~~Buildings or parts of buildings~~ Private garages and carports shall be classified as Group U occupancies. ~~because of the use or character of the occupancy~~ Each private garage shall be ~~not greater than~~ a 1,000 square feet (93 m^2) in area. ~~or one *story* in height except as provided in Section 406.3.2. Any building or portion thereof that exceeds the~~

limitations specified in this section shall be classified in the occupancy group other than Group U that it most nearly resembles. Multiple private garages are permitted in a building when each private garage is separated from the other private garages by 1-hour fire barriers in accordance with Section 707, or 1-hour horizontal assemblies in accordance with Section 711, or both.

406.3.2 Area increase. Group U occupancies used for the storage of private or pleasure-type motor vehicles where no repair work is completed or fuel is dispensed are permitted to be 3,000 square feet (279 m^2) where the following provisions are met:

1. For a mixed occupancy building, the *exterior wall* and opening protection for the Group U portion of the building shall be as required for the major occupancy of the building. For such a mixed occupancy building, the allowable floor area of the building shall be as permitted for the major occupancy contained therein.

2. For a building containing only a Group U occupancy, the *exterior wall* shall not be required to have a *fire-resistance rating* and the area of openings shall not be limited where the *fire separation distance* is 5 feet (1524 mm) or more.

More than one 3,000-square-foot (279 m_2) Group U occupancy shall be permitted to be in the same structure, provided each 3,000-square-foot (279 m^2) area is separated by *fire walls* complying with Section 706.

406.3.3 406.3.2 Garages and carports floor surfaces. Carports shall be open on no fewer than two sides. Carport Garage floor surfaces shall be of *approved* noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

Exception: Asphalt surfaces shall be permitted at ground level in carports.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

406.3.4 406.3.3 Separation. The separations of private garages from other occupancies shall comply with Section 508. Separation of private garages from dwelling units shall comply with the following: Sections 406.3.3.1 through 406.3.3.3.

1. **406.3.3.1 Dwelling unit separation.** The private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than ½ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a $^5/_8$-inch (15.9 mm) Type X gypsum board or equivalent and ½-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than $1^3/_8$ inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be *self-closing* and self-latching.

~~2.~~ **406.3.3.2 Ducts.** Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit,* including its *attic* area*,* from the garage shall be constructed of sheet steel of not less than 0.019 inches (0.48 mm), in thickness, and shall have no openings into the garage.

406.3.4 Carports. Carports shall be open on at least two sides. Carport floor surfaces shall be of approved noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the requirements for private garages.

Exception: Asphalt surfaces shall be permitted at ground level in carports.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

(~~406.3.4, item 3~~) 406.3.4.1 Carport separation. A separation is not required between a Group R-3 and U carport, provided the carport is entirely open on two or more sides and there are not enclosed areas above.

Reason: Consistency and coordination among the International Codes is one of the cornerstones of the ICC Code Development process. The ICC Board established the ICC Building Code Action Committee (BCAC) to act as a forum to deal with complex issues ahead of the Code Development Process, identify emerging issues and draft proposed code changes.

This proposed change is a result of the BCAC's work.

Part 1 of this code proposal adds a definition for private garage that is needed in the Code that clarifies the differences between a private garage, an open parking garage and an enclosed parking garage. This new definition for the IBC is modified from two of the legacy codes (1997 UBC Section 208 and 1999 BOCA Section 407.2. The SBC did not define a private garage.) and will serve well for the clarification of the Code that a private garage can be provided in other occupancies beside residential occupancies.

Part 2 of this code proposal is the revision of Section 406.3.1 and the deletion of Section 406.3.2 which were carry-overs from one of the legacy codes (1997 UBC Sections 312.2.1 & 312.2.2) that are really not applicable to the fire protection/life safety requirements in the IBC that address U occupancies in separated or mixed occupancies in a more defined manner than the previous legacy code from which these requirements were taken from. The retaining of a maximum size of 1000 square feet private garage (roughly a 20' x 50' floor area) is a reasonable limitation for a private garage before such a Group U occupancy would be required to be designed as a S-2 parking garage or a S-1 repair garage, as applicable. Such a maximum square footage for a private garage works out well when using IMC Section 402.2 requirement for natural ventilation in a private garage since the typical garage door is a minimum of 8' x 8' (64 sq. ft.), and the minimum natural ventilation required for ventilation is 4% of the floor area being ventilated (i.e. maximum 1000 sq. ft. x 0.04 = minimum 40 sq. ft. opening required < the minimum 64 sq. ft. overhead garage door). Such a garage door will provide an additional (24/40 =) 60% safety factor on the natural ventilation of the space under the Code.

Section 406.3.3 has been modified by breaking it into two sections and matching the language to the IRC language for clarity and correlation. (IRC Section R309 for reference).

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

Cost: This proposal will decrease the cost of construction by clarifying the requirements for private garage separation and increasing coordination of the language with the IRC.

Public Hearing Results

Committee Action: **Approved as Modified**

Modify the proposal as follows:

406.3.1 Classification. Private garages and carports shall be classified as Group U occupancies. Each private garage shall be not greater than ~~a~~ 1,000 square feet (93 m^2) in area. Multiple private garages are permitted in a building when each private garage is separated from the other private garages by 1-hour fire barriers in accordance with Section 707, or 1-hour horizontal assemblies in accordance with Section 711, or both.

(Portions of the proposal not shown remain the same)

Committee Reason: This proposal provided a good clean up of the private garage requirements. Some committee members still preferred the 3000 square feet allowed in the legacy codes. Concerns remain with the separation requirements. The modification clarifies that the 1000 square feet in Section 406.3.1 is meant as a maximum area. It should be noted that the BCAC would address concerns that Section 406.3.2(2) should be retained through reference in footnotes to Tables 602 and 705.8 during the public comment process.

Assembly Action: **None**

Public Comments

Public Comment 1:

Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC), requests Approval as Modified by this Public Comment.

Further modify the proposal as follows:

TABLE 602

FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE[a, e, h]

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H[f]	OCCUPANCY GROUP F-1, M, S-1[g]	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2[g], U[b]
X < 5[c]	All	3	2	1
5 ≤ X < 10	IA	3	2	1
	Others	2	1	1
10 ≤ X < 30	IA, IB	2	1	1[d]
	IIB, VB	1	0	0
	Others	1	1	1[d]

X ≥30	All	0	0	0

For SI: 1 foot = 304.8 mm.

a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.

b. ~~For special requirements for Group U occupancies, see Section 406.3.~~ For a building containing only a Group U occupancy private garage or carport, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1524 mm) or more.

c. See Section 706.1.1 for party walls.

d. Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.

e. The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.

f. For special requirements for Group H occupancies, see Section 415.5.

g. For special requirements for Group S aircraft hangars, see Section 412.4.1.

h. Where Table 705.8 permits nonbearing exterior walls with unlimited area of unprotected openings, the required fire-resistance rating for the exterior walls is 0 hours.

TABLE 705.8

MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION

FIRE SEPARATION DISTANCE (feet)	DEGREE OF OPENING PROTECTION	ALLOWABLE AREA[a]
0 to less than 3[b, c]	Unprotected, Nonsprinklered (UP, NS)	Not Permitted
	Unprotected, Sprinklered (UP, S)[i]	Not Permitted
	Protected (P)	Not Permitted
3 to less than 5[d, e]	Unprotected, Nonsprinklered (UP, NS)	Not Permitted
	Unprotected, Sprinklered (UP, S)[i]	15%
	Protected (P)	15%
5 to less than 10[e, f, j]	Unprotected, Nonsprinklered (UP, NS)	10%[h]
	Unprotected, Sprinklered (UP, S)[i]	25%
	Protected (P)	25%
10 to less than 15[e, f, g, j]	Unprotected, Nonsprinklered (UP, NS)	15%[h]
	Unprotected, Sprinklered (UP, S)[i]	45%

	Protected (P)	45%
15 to less than 20[f, g, j]	Unprotected, Nonsprinklered (UP, NS)	25%
	Unprotected, Sprinklered (UP, S)[i]	75%
	Protected (P)	75%
20 to less than 25[f, g, j]	Unprotected, Nonsprinklered (UP, NS)	45%
	Unprotected, Sprinklered (UP, S)[i]	No Limit
	Protected (P)	No Limit
25 to less than 30[f, g, j]	Unprotected, Nonsprinklered (UP, NS)	70%
	Unprotected, Sprinklered (UP, S)[i]	No Limit
	Protected (P)	No Limit
30 or greater	Unprotected, Nonsprinklered (UP, NS)	No Limit
	Unprotected, Sprinklered (UP, S)[i]	Not Required
	Protected (P)	Not Required

For SI: 1 foot = 304.8 mm.

UP, NS = Unprotected openings in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

UP, S = Unprotected openings in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

P = Openings protected with an opening protective assembly in accordance with Section 705.8.2.

a. Values indicated are the percentage of the area of the exterior wall, per story.

b. For the requirements for fire walls of buildings with differing heights, see Section 706.6.1.

c. For openings in a fire wall for buildings on the same lot, see Section 706.8.

d. The maximum percentage of unprotected and protected openings shall be 25 percent for Group R-3 occupancies.

e. Unprotected openings shall not be permitted for openings with a fire separation distance of less than 15 feet for Group H-2 and H-3 occupancies.

f. The area of unprotected and protected openings shall not be limited for Group R-3 occupancies, with a fire separation distance of 5 feet or greater.

g. The area of openings in an open parking structure with a fire separation distance of 10 feet or greater shall not be limited.

h. Includes buildings accessory to Group R-3.

i. Not applicable to Group H-1, H-2 and H-3 occupancies.

j. ~~For special requirements for Group U occupancies, see Section 406.3.2.~~ The area of openings in a building containing only a Group U occupancy private garage or carport with a fire separation distance of 5 feet or greater shall not be limited.

(Portions of the proposal not shown to remain unchanged)

Commenter's Reason: This public comment is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 5 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

This public comment resolves the concern noted in the Code Development Committee's reason statement. This code modification just places the requirements in the 2012 IBC Section 406.3.2(2) into the appropriate footnotes in Tables 602 & 705.8.

Cost Impact: The code change will not increase the cost of construction.

Final Hearing Results

G59-12	AMPC1

IBC 4-2 ICC Staff (KP/BT)

2018 International Building Code modified with subsequently approved code changes

G55-18 AS
G56-18 AS

420.8 Group I-1 cooking facilities. In Group I-1 occupancies, rooms or spaces that contain a cooking ~~facilities~~ facility with domestic cooking appliances shall be ~~in accordance with~~ permitted to be open to the corridor where all of the following criteria are met:

1. In Group I-1, Condition 1 occupancies, the number of care recipients served by one cooking facility shall not be greater than 30.

2. In Group I-1, Condition 2 occupancies, the number of care recipients served by one cooking facility and within the same smoke compartment shall not be greater than 30.

~~3. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.~~

3. ~~4.~~ The space containing the ~~domestic~~ cooking facilities shall be arranged so as not to obstruct access to the required exit.

4. The cooking appliances shall comply with Section 420.9.

~~5. Domestic cooking hoods installed and constructed in accordance with Section 505 of the *International Mechanical Code* shall be provided over cooktops or ranges.~~

~~6. Cooktops and ranges shall be protected in accordance with Section 904.13.~~

~~7. A shutoff for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff.~~

~~8. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.~~

~~9. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.~~

Exceptions:

1. Cooking facilities provided within care recipient's individual dwelling units are not required to comply with this section.
2. Cooktops and ranges used for care recipient training or nutritional counseling are not required to comply with Item 6 of this section.

Reason: Email between staff: Curious your thoughts on what Section 420.8 is requiring. I was thinking it was only for community shared kitchens. I know there has been confusion before as assisted living facilities often don't have corridors however the way this is written there was a question as to how it applies to assisted living facilities that have dwelling units essentially with a

rated corridor. As written it can be interpreted that not only are the community kitchens regulated but so to are the ones in the individual units. Was that the intent? It is further confused by the addition of Section 420.8.1 which seems to say it in addition to applying to ones personal dwelling unit kitchens it also applies to community cooking areas. There is an upper limit of 30 persons but not a minimum criteria.

The dormitory provisions are a similar concern. Although the commentary notes that it does not relate to dwelling unit type configurations as literally written it seems to apply to them as well. Do we need clarification that it is intended for dormitories that having sleeping rooms and community space only? How are suites addressed?

Literal code text would put this kitchen requirements on the individual kitchens. This was started by FCAC building on the Healthcare committee work for Group I-1 and I-2 – so I am assuming they were thinking only common kitchens. Do you think this needs to go in front of FCAC or BCAC to fix?

IBC 6-1 ICC Staff (JW)

2018 International Building Code modified with subsequent approved code changes.

602.4 Type IV. T~~ype IV construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, laminated wood, heavy timber (HT) or structural composite lumber (SCL) without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL), and cross-laminated timber and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Interior walls and partitions not less than 1-hour fire-resistance rating or heavy timber complying with Section 2304.11.2.2 shall be permitted.~~

Type IV construction is that type of construction in which the building elements are mass timber or noncombustible materials and have fire resistance ratings in accordance with Table 601. Mass timber elements shall meet the fire resistance rating requirements of this section based on either the fire resistance rating of the noncombustible protection, the mass timber, or a combination of both and shall be determined in accordance with Section 703.2 or 703.3. The minimum dimensions and permitted materials for building elements shall comply with the provisions of this section and Section 2304.11. Mass timber elements of Types IV A, IV B and IV C construction shall be protected with noncombustible protection applied directly to the mass timber in accordance with Sections 602.4.1 through 602.4.3. The time assigned to the noncombustible protection shall be determined in accordance with Section 703.8 and comply with 722.7.

Cross-laminated timber shall be labeled as conforming to PRG 320 - 18 as referenced in Section 2303.1.4.

Exterior load-bearing walls and nonload-bearing walls shall be mass timber construction, or shall be of noncombustible construction.

Exception: Exterior load-bearing walls and nonload-bearing walls of Type IV-HT Construction in accordance with Section 602.4.4.

The interior building elements, including nonload-bearing walls and partitions, shall be of mass timber construction or of noncombustible construction.

Exception: Interior building elements and nonload-bearing walls and partitions of Type IV-HT Construction in accordance with Section 602.4.4..

Combustible concealed spaces are not permitted except as otherwise indicated in Sections 602.4.1 through 602.4.4. Combustible stud spaces within light frame walls of

Type IV-HT construction shall not be considered concealed spaces, but shall comply with Section 718.

In buildings of Type IV-A, B, and C, construction with an occupied floor located more than 75 feet above the lowest level of fire department access, up to and including 12 stories or 180 feet above grade plane, mass timber interior exit and elevator hoistway enclosures shall be protected in accordance with Section 602.4.1.2. In buildings greater than 12 stories or 180 feet above grade plane, interior exit and elevator hoistway enclosures shall be constructed of non-combustible materials.

Proposal Number: G109-18

Reason: See highlighted text. Why did this not say “fire department vehicle access” like most of the rest of the code and like we use for the 75 feet with the high-rise provisions? Since it does not say “vehicle” it will lead to disagreement as to how this is to apply and whether it is really intended to be different or not.

IBC 6-2 ICC Staff (JW)

2018 International Building Code modified with subsequent approved code changes.

602.4.4 Type IV-HT. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, laminated heavy timber or structural composite lumber (SCL), without concealed spaces or with concealed spaces complying with Section 602.4.4.3. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, ~~structural composite lumber (~~SCL~~)~~ and cross laminated timber (CLT) and the details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.4.1 or 602.4.4.2 shall be permitted. Interior walls and partitions not less than one hour fire-resistance rated or heavy timber conforming with Section 2304.11.2.2 shall be permitted.

~~602.4.1~~**602.4.4.1 Fire-retardant-treated wood in exterior walls.** Fire-retardant-treated wood framing and sheathing complying with Section 2303.2 shall be permitted within exterior wall assemblies ~~not less than 6 inches (152 mm) in thickness~~ with a 2-hour rating or less.

~~602.4.2~~**602.4.4.2 Cross-laminated timber in exterior walls.** Cross-laminated timber (CLT) not less than 4 inches (102 mm) in thickness complying with Section 2303.1.4 shall be permitted within exterior wall assemblies ~~not less than 6 inches (152 mm) in thickness~~ with a 2-hour rating or less.~~, provided the~~ Heavy timber structural members appurtenant to the CLT exterior wall shall meet the requirements of Table 2304.11 and be fire-resistance rated as required for the exterior wall. The exterior surface of the cross-laminated timber ~~is~~ and heavy timber elements shall be protected by one the following.

1.Fire-retardant-treated wood sheathing complying with Section 2303.2 and not less than $^{15}/_{32}$ inch (12 mm) thick.

2.Gypsum board not less than $^{1}/_{2}$ inch (12.7 mm) thick.

3.A noncombustible material.

602.4.4.3 Concealed spaces. Concealed spaces shall not contain combustible materials other than building elements and electrical, mechanical, fire protection, or plumbing materials and equipment permitted in plenums in accordance with Section 602 of the International Mechanical Code. Concealed spaces shall comply with applicable

provisions of Section 718. Concealed spaces shall be protected in accordance with one or more of the following:

1.The building shall be sprinklered throughout in accordance with Section 903.3.1.1 and automatic sprinklers shall also be provided in the concealed space.

2.The concealed space shall be completely filled with noncombustible insulation.

3.Surfaces within the concealed space shall be fully sheathed with not less than $^{5}/_{8}$-inch Type X gypsum board.

Exception: Concealed spaces within interior walls and partitions with a 1-hour or greater fire-resistance rating complying Section 2304.11.2.2 shall not require additional protection.

~~**602.4.3**~~**602.4.4.4 Exterior structural members.** Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with Section 2304.11 shall be permitted to be used externally.

Reason: See highlighted text. The concern is primarily that 602.4.3 says you can have a HT wood column when you have “a horizontal separation” of 20 feet or more. I assume that is supposed to be a “fire separation distance” but because it does not use that term and definition, we are left to wonder if that is a separation from the building, a separation between the columns, or a fire separation distance.

IBC 11-1 Chuck Bajnai

2018 International Building Code modified with subsequently approved code changes

1108.7 General exceptions. Where specifically permitted by Section 1108.5 or 1108.6, the required number of *Type A units* and *Type B units* is permitted to be reduced in accordance with Sections 1108.7.1 through 1108.7.5.

~~1107.7.1~~ 1108.7.1 Structures without elevator service. Where elevator service is not provided in a structure, only the *dwelling units* and *sleeping units* that are located on stories indicated in Sections 1108.7.1.1 an 1108.7.1.2 are required to be *Type A units* and *Type B units*, respectively. The number of *Type A units* shall be determined in accordance with Section 1108.6.2.2.1.

1108.7.1.1 One story with Type B units required. At least one *story* containing *dwelling units* or *sleeping units intended to be occupied as a residence* shall be provided with an *accessible* entrance from the exterior of the structure and all units *intended to be occupied as a residence* on that *story* shall be *Type B units*.

1108.7.1.2 Additional stories with Type B units. Where stories have entrances not included in determining compliance with Section 1108.7.1.1, and such entrances are proximate to arrival points intended to serve units on that *story*, as indicated in Items 1 and 2, all *dwelling units* and *sleeping units intended to be occupied as a residence* served by that entrance on that *story* shall be *Type B units*.

Reason: I am having problems with IBC 1107.7 that the BCAC might want to look into (see next page for 2018 code text). I don't think the fix is all that difficult, albeit, I don't understand it well enough to make suggestions.

I get to this section in the IBC from Section R320 in the IRC and then instantly get lost with what the requirement is for a senior citizen, 4-unit, 1 story, ground level "quad" townhouse. Here is the problem:

1. 1107.7.1 is really poorly worded. I am having trouble with the word "respectively". The way I read the sentence is that 1107.7.1.1 is for Type A and 1107.7.1.2 is for Type B units (hence the word "respectively"). However the title of 1107.7.1.1 is Type B units.

IPMC 3-1 ICC Staff (JW)

2021 International Property Maintenance Code

304.18 Building security. Doors, windows or hatchways for *dwelling unit*s, room units or *housekeeping units* shall be provided with devices designed to provide security for the *occupant*s and property within.

304.18.1 Doors. Doors providing access to a *dwelling unit*, *rooming unit* or *housekeeping unit* that is rented, leased or let shall be equipped with a deadbolt lock designed to be readily openable from the side from which egress is to be made without the need for keys, special knowledge or effort and shall have a minimum lock throw of 1 inch (25 mm). Such deadbolt locks shall be installed according to the manufacturer's specifications and maintained in good working order. For the purpose of this section, a sliding bolt shall not be considered an acceptable deadbolt lock.

304.18.2 Windows. Operable windows located in whole or in part within 6 feet (1828 mm) above ground level or a walking surface below that provide access to a *dwelling unit*, *rooming unit* or *housekeeping unit* that is rented, leased or let shall be equipped with a window sash locking device.

304.18.3 Basement hatchways. *Basement* hatchways that provide access to a *dwelling unit*, *rooming unit* or *housekeeping unit* that is rented, leased or let shall be equipped with devices that secure the units from unauthorized entry.

Reason: Staff received a call from a jurisdiction that has adopted both the IBC (by the building department) and the IPMC (by the housing authority or some other agency). The city just finished building a bunch of apartments (using the IBC), before people were getting ready to

move in, the other city agency came in and cited IPMC Section 304.18.1 which requires a deadbolt on the door.

So now the building department is trying to figure out whether they can allow someone to go in and alter the 20 minute corridor doors to allow the installation of the deadbolt.

Have you ever run into this problem/requirement and if it is “required” by the IPMC, then why is it not mentioned/required by the IBC. Really seems like it is the tail wagging the dog in this example, but it clearly is required by the IPMC so I don’t see a way around it. But it also seems like a coordination/conflict that we probably should address.

I doubt that most building departments would get excited about this – especially since it is a brand new building, but since the two codes are being enforced by two separate agencies within the city it has made the city look bad and like they did not know what they were doing. I certainly did not know the IPMC had this requirement.

IBC and IRC General 01:

Pursuant to the hurricane Michael Mitigation Assessment Team (MAT) Report on "*Improving Resiliency and Mitigation in Florida*", FEMA P-2077, please find attached an excerpt from the report's Executive Summary (in word format) including all the of the report's recommendations. ICC staff has highlighted in yellow the recommendations worth considering following up with possible BCAC.

MAT Recommendations

The recommendations presented in this report were developed based on the MAT's field observations and informed by the MAT members' expertise. They are directed to design professionals, contractors, building officials, facility managers, floodplain administrators, regulators, emergency managers, building owners and operators, academia, select industries and associations, local officials, planners, FEMA, and other interested stakeholders. A summary of the recommendations follows.

General recommendations

(Section 6.2)

FL-1a. The Florida Division of Emergency Management (FDEM) should consider developing/ modifying training on the flood provisions in the Florida Building Code (FBC) and local floodplain management ordinances.

FL-1b. Building Officials Association of Florida (BOAF) and other stakeholders should consider developing additional training on roles and responsibilities for communities contracting building department services to a private company.

FL-2a. Local jurisdictions should make building envelope inspections a priority.

FL-2b. BOAF, Florida Home Builders Association, and other stakeholders should consider developing training and creating a culture of emphasis on building envelope systems.

Flood-related building code, standards, and regulations recommendations

(Section 6.3)

FL-3a. FEMA should update FEMA P-758, *Substantial Improvement/Substantial Damage Desk Reference* (2010h), and concurrently update FEMA 213, *Answers to Questions about Substantially Damaged Buildings* (2018a), to be consistent with the updated FEMA P-758.

FL-3b. FEMA should consider expanding/clarifying existing training materials related to Substantial Improvement / Substantial Damage.

FL-4. Communities should outline clear and consistent responsibilities when contracting with private-sector providers to administer all or part of the community's responsibilities under the FBC.

FL-5a. FEMA should provide guidance to state and local governments on seeking assistance related to building code and floodplain management ordinance administration and enforcement authorized under Section 1206 of the Disaster Recovery Reform Act of 2018.

FL-5b. FDEM should continue to encourage pre-event evaluation of post-disaster needs and inform appropriate parties about assessing resources through Statewide Mutual Aid Agreement and Emergency Management Assistance Compact.

Wind-related building code, standard, and regulations recommendations

(Section 6.4)

FL-6. FEMA should work with the American Architectural Manufacturers Association / Window and Door Manufacturers Association / Canadian Standards Association, Insurance Institute for Business & Home Safety, International Code Council (ICC), and other select industry partners to incorporate more comprehensive water intrusion testing requirements that improve overall performance into testing standards.

FL-7. The wind research engineering community should perform a revised analysis of the ASCE 7 basic wind speed maps for the Florida Panhandle region to include data from Hurricane Michael.

FL-8a. The FBC should treat all areas within 1 mile inland from the entire Florida coastline as a wind-borne debris region (WBDR).

FL-8b. The ASCE 7 Wind Load Subcommittee should revise ASCE 7 to lower the basic wind speed trigger in ASCE 7 for requiring glazing to be protected on Risk Category IV buildings in the hurricane-prone region.

FL-8c. Building owners outside the WBDR but within the hurricane-prone region should consider protecting the glazed openings on their buildings.

FL-8d. The International Building Code / International Residential Code / FBC should be updated where needed to ensure glazed window, skylight, door, and shutter assemblies have a permanent label that provides traceability to the manufacturer and product.

FL-8e. The ASCE 7 Wind Load Subcommittee should consider developing commentary on vestibule wind loads.

Flood-related recommendations

(Section 6.5)

FL-9. Communities should consider more stringent building requirements for development or reconstruction in the unshaded Zone X (area of minimal flood hazard) and shaded Zone X (area of moderate flood hazard).

FL-10a. Industry groups, interested stakeholders, and/or academia should further evaluate the performance of the concrete pile foundations that failed during Hurricane Michael to determine why they failed.

FL-10b. FEMA and FDEM should consider providing a code change proposal to the International Codes requiring contractors and/or manufacturers to add length labels or incremental depth markers on vertical piles.

FL-11a. FEMA and FDEM should consider submitting a code change proposal to the FBC, applying ASCE 24, *Flood Resistant Design and Construction,* Flood Design Class 4 requirements outside the Special Flood Hazard Area (SFHA) in moderate flood hazard areas (shaded Zone X) and to consider flood risk for minimal flood hazard areas (unshaded Zone X).

FEMA-11b. FEMA should consider developing a change proposal for ASCE 24 requiring consideration of flood risk for essential facilities outside the SFHA in minimal flood hazard areas (unshaded Zone X) and requiring Flood Design Class 4 to apply in moderate flood zones outside of the SFHA.

FL-12. Local floodplain administrators, design professionals, and building owners should incorporate more freeboard than the minimum required in ASCE 24 based on Flood Design Class whenever possible.

FL-13a. FEMA should review and update its Event-Based Erosion methodology.

FL-13b. For parcels that are seaward of Florida's Coastal Construction Control Line, communities should require—and key stakeholders should encourage—the placement of houses with the maximum distance from the flood source possible within each parcel.

FL-13c. The Florida Department of Environmental Protection should implement current best practices and consider revising its requirements for erosion vulnerability assessments for new construction in erosion control areas.

FL-13d. Permitting agencies should evaluate permitting criteria and performance requirements for new or replacement bulkheads with respect to design conditions, including the effects of saturated backfill, wave forces, overtopping, and erosion on both the water and land sides.
FL-13e. Communities and building owners should consider acquisition or relocation projects for existing buildings in areas highly vulnerable to erosion.

Wind-related recommendations

(Residential Wind Section 6.6.1)
FL-14a. Code enforcement authorities having jurisdiction across Florida should make roof covering and underlayment inspections a priority.

FL-14b. Industry groups should assess the causes for the widespread asphalt shingle roof covering loss that was observed by the MAT

FL-14c. Contractors and inspectors must ensure roof covering repairs and replacements conform with the FBC as required.

FL-14d. On buildings built prior to the FBC, before installing a new roof covering, contractors should remove the existing roof covering to evaluate the roof sheathing attachment, and add supplemental fasteners in accordance with the wind mitigation provisions of FBC if the sheathing attachment is found to be deficient.

FL-14e. FEMA and FDEM should consider supporting current code change proposals to the 7th Edition FBC that provide for improved underlayment systems.

FL-14f. The Asphalt Roofing Manufacturers Association and National Roofing Contractors Association should consider updating their guidance materials based on observations from the 2017 and 2018 hurricanes.

FL-15a. Designers, contractors, and inspectors should place more emphasis on proper soffit installation to limit wind-driven rain.

FL-15b. FEMA and FDEM should consider submitting a code change proposal to the FBC requiring soffit inspections, and jurisdictions should prioritize performing soffit inspections.

FL-15c. The Florida Building Code (FBCR), Residential should be revised to require soffit panels to be labeled to provide traceability to the manufacturer and product.

FL-15d. Owners should determine whether the soffits attached to their house are “floated,” and, if so, take appropriate mitigating actions.

FL-16. Industry groups and academia should perform research on commonly used ridge vent products to better determine the causes of ridge vent failure and develop solutions.

FL-17a. FEMA and FDEM should consider submitting a code change proposal to the FBC requiring exterior wall covering inspections.

FL-17b. Vinyl siding manufacturers, insurance organizations, and other stakeholders should continue research and investigations of the appropriate pressure equalization factor for vinyl siding.

FL-17c. The FBC and FBCR should be revised to require vinyl siding be labeled to provide traceability to the manufacturer and product.

(Non-Residential Wind Section 6.6.2)

FL-18a. Designers and building owners should conduct a comprehensive vulnerability assessment as described in Hurricane Michael in Florida Recovery Advisory 1, *Successfully Retrofitting Buildings for Wind Resistance* (in FEMA P-2077, 2019d) before beginning a wind retrofit project.

FL-18b. As appropriate, designers and building owners should consider damage to other buildings from high-wind events as vulnerabilities that should be addressed in their similar undamaged buildings.

FL-18c. Designers, building owners, and operators of critical facilities should refer to FEMA 543, *Design Guide for Improving Critical Facility Safety from Flooding and High Winds* (2007a); FEMA 577, *Design Guide for Improving Hospital Safety in Earthquakes, Floods, and High Winds* (2007b); and FEMA P-424, *Design Guide for Improving School Safety in Earthquakes, Floods, and High Winds* (2010c) for additional guidance and best practices for protecting critical facilities from flooding and high winds.

FL-19a. Critical facilities that do not meet the FBC requirements for a Risk Category IV building should not be designated as essential facilities to support continuity of operations nor be occupied during a hurricane.

FL-19b. Owners and authorities having jurisdiction with facilities that present a life-safety threat to occupants during a high-wind event or that need “near absolute protection” or life safety protection should consider designing and constructing a FEMA P-361–compliant safe room or ICC 500–compliant storm shelter for people to take shelter in during a storm.

FL-19c. FDEM should consider delivering training on FEMA P-361, *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms* (2015c), safe room design, construction, and operations and maintenance.

FL-20. The State of Florida should re-evaluate planning factors and considerations used to estimate hurricane evacuation shelter (HES) "demand in people," so counties have adequate and more appropriate HES capacity during future hurricanes.

FL-21a. The State of Florida and FDEM should consider re-evaluating their policies, procedures, and requirements for assessments of existing spaces for use as HES.

FL-21b. The State of Florida and FDEM should consider re-evaluating EHPA criteria and re-assess safety of existing EHPAs, particularly those designed prior to the 6th Edition FBC (2017).

FL-22. Critical facility owners and operators should perform a vulnerability assessment of their structures in comparison to the FBC Risk Category IV threshold to determine their risks and vulnerabilities, and a best path forward for mitigating them.

FL-23a. Designers should properly design rooftop equipment anchorage per the recommendations in Hurricanes Irma and Maria in the U.S. Virgin Islands Recovery Advisory 2, *Attachment of Rooftop Equipment in High-Wind Regions* (in FEMA P-2021, 2018c), and contractors should properly implement the anchorage design to prevent blow-off.

FL-23b. Copings and edge flashings should comply with ANSI/SPRI/FM 4435/ES-1, *Test Standard for Edge Systems Used with Low Slope Roofing Systems*, to prevent blow-off.

FL-23c. In high-wind regions, designers should provide an enhanced closure detail for hip and ridge closures on metal panel roofs, and contractors should take special care in properly installing them.

FL-23d. Designers, contractors, and inspectors should place more emphasis on proper soffit installation to limit wind-driven rain.

FL-23e. To help prevent entry of wind-driven rain into the building, designers should specify weatherstripping for, as well as consider designing vestibules at, exterior doors.

FL-23f. FEMA Building Science should incorporate best practices for minimizing water infiltration into buildings from wind-driven rain into its relevant publications.

FL-24a. The task committee for ASTM E1886, *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials*, should consider revising the standard to include the evaluation of the potential for the shutter assembly to unlatch during a storm.

FL-24b. Existing glazing assemblies that have inadequate wind pressure or wind-driven rain resistance should be replaced with new assemblies rather than being retrofitted with shutters.

FL-24c. The task committee for ASTM E1886 should add corrosion criteria to the standard to help enable shutters to perform as intended over their useful life.

FL-24d. The task committee for ASTM E1886 should evaluate the current perpendicular angle specifications for impacting a shutter during testing for its adequacy.

FL-25a. Designers should specify, and contractors should properly install, standing seam metal panel systems that have been tested in accordance with ASTM E1592, *Standard Test Method*

for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

FL-25b. Designers should specify, and contractors should install, a roof deck with a secondary roof membrane for critical facilities designed with structural standing seam metal roof panels.

FL-26. Designers should adequately design, and contractors should properly install, roof systems.

FL-27. Owners and operators of buildings with unreinforced masonry walls should include the toppling risk of these walls during high-wind events in vulnerability assessments and should mitigate the risk.

FL-28a. Building owners should have a vulnerability assessment performed for their existing building to ensure brick veneer is properly attached

FL-28b. Design professionals and contractors should improve installation of brick veneer in high-wind regions for new construction by ensuring it is properly attached.

FL-29. Designers should consider specifying a more robust wall assembly than Exterior Insulation and Finish System for new critical facilities.

FL-30. The FBC should provide more specific criteria with restrictions on how, when, and where roof aggregate can be used.