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June 1, 2023

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Re: Wilton Palm Coast Fire Wall Clarification

Houston,

This letter is on behalf of the Wilton Palm Coast project design team to clarify the code compliance pathway and interpretation of using fire walls to create height and area separations within the project. This project is a low-rise residential wrap deal that utilizes compliant structurally independent fire walls to separate building areas per Florida Building Code Section 706.

A question has been raised during the plan review process as to whether the fire protection systems need to be independent for the four (4) buildings on site created by fire walls. The exact comments provided to the design team are as follows:

*"9. Please provide Sprinkler Riser Room Locations for each of the 4 separate buildings
10. You will need separate supply for each of the separate 4 building sprinkler systems along with separate FDC for each."*

This letter intends to serve as an interpretation clarification to highlight the compliance path to the Authority Having Jurisdiction (AHJ) by demonstrating that the code permits the use of fire walls to break buildings up for height and area purposes but does not require the division of other systems (i.e. fire protection, utilities, egress, etc.). This will in-turn qualify that separate riser rooms as requested by the plans reviewer are not required for this application.

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APPLICABLE CODES

The Wilton project is located in Palm Coast, FL and falls under the jurisdiction of the Palm Coast Building Department. The following codes will be utilized for this project in accordance with the local planning department regulations and amendments:

- Florida Building Code (FBC) 7th Edition.
- Florida Fire Prevention Code (FFPC) 7th Edition.

CODE ANALYSIS – FIRE WALL SEPARATION

Buildings may be separated for height and area purposes per FBC Section 503.1 if provided with fire walls per FBC Section 706.1. Fire walls are governed by Section 706 which determines their vertical and horizontal continuity as well as fire resistance rating and structural stability. Typically, fire walls are separations that create separate buildings (for height and area purposes only) in the eyes of the code on the same lot and are connected. The fire walls on the Wilton project are designed to be structurally independent, meet vertical and horizontal continuity requirements, and are provided with the proper prescriptive fire resistance rating.

Fire walls are used as a constructability method to keep units in one continuous structure while creating passive compartmentation for fire spread purposes to protect occupants. These are allowed to be used for all building types, but usage is significantly higher in wood framed construction where interior fire spread is a significantly higher risk and thus permits smaller area limitations for buildings. The intent of the code is to provide a separate building for height and area purposes only.

The FBC 7th edition followed the way Florida's code adoption process has typically been initiated. The FBC 5th edition used the 2012 International Building Code (IBC) as a base code and then made its amendments for the state off of this code. During the revision cycle for the 6th and 7th edition the decision was made to update the code using the 5th edition as the base code rather than using the newer IBC editions.

The 2012 version of the IBC states the following:

2012 IBC Section 503.1 General. *The building height and area shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602*

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and occupancies as determined by Section 302 except as modified herein. Each portion of a building separated by one or more fire walls complying with Section 706 shall be considered a separate building.

The 2012 edition is consistent with the language in the FBC 7th edition other than section number updates.

The 2015 edition of the IBC modified this section to read as follows:

2015 IBC Section 503.1 General. *Unless otherwise specifically modified in Chapter 4 and this chapter, building height, number of stories and building area shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and building area provisions shall be applied independently. Each portion of a building separated by one or more fire wall complying with Section 706 shall be considered to be a separate building.*

One will notice that the 2015 edition adds specifically that building height, area, and number of stories shall be evaluated independently. This change was made to clarify that those items were what were addressed in separate “buildings” per the ICC code change clarification memo.

The 2018 version of the IBC further clarified this section by adding even more clarifying language:

2018 IBC Section 503.1 General. *Unless otherwise specifically modified in Chapter 4 and this chapter, building height, number of stories and building area shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and building area provisions shall be applied independently. For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more fire wall complying with Section 706 shall be considered to be a separate building.*

One will notice that this clarifying update changes the section to read specifically that fire walls will be utilized only for the purposes of areas, heights and types of construction. The 2018 cycle code change document states that this edit was made to clarify the intent of the section due to

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repeated reports of misinterpretation. The code change document even advertises that "Use of fire walls to create separate buildings is now limited to only the determination of permissible types of construction based on allowable building area and height." This clearly identifies the intent clarification made by the International Code Council (ICC) in an effort to streamline the use of fire walls as intended by the ICC.

Furthermore, the ICC in 2016 issued a formal interpretation related to fire walls in a means of egress based on the 2012 IBC. The question posed to the ICC was as follows:

"Q: A horizontal exit is a path of egress travel from one building to another on approximately the same level. A building is subdivided by fire walls. The purpose of the fire wall is for each portion to be considered a separate building for building area limitations. The path of egress travel to an exit is through a fire door opening in the fire wall. The overall exit access travel distance from the most remote point in the building to an exit (exterior door on the level of exit discharge or rated exit stairway door) is met within the travel distance limitations permitted by Table 1016.2 [now 1017.1]. Is the fire door opening in the fire wall considered to be a horizontal exit because the path of travel is through a fire wall?"

Although the question posed does not deal with the interpretation outlined in this letter, the response from the ICC clearly indicates the intention of fire wall use from the 2012 IBC (the code the FBC Section 503.1 is derived from):

"A: No. When fire walls are used to subdivide a building for allowable area purposes, fire door openings are not required to be regulated as an opening in a horizontal exit, unless the design of the egress system intends to take advantage of the exit access travel distance that would otherwise be permitted. A horizontal exit is allowed as an exit in the means of egress system. Where the required exit access travel distance to reach an exit (exterior door on the level of exit discharge or a rated exit stairway door) can be satisfied after traveling through a fire wall, the fire door openings in the fire wall would not be required to comply with the provisions for horizontal exits. From an egress standpoint, such fire door openings in the fire wall are regulated as exit access doorways."

The ICC response re-iterates the intention of fire walls being used for building area, height, or types of construction only. It also gives technical justification to the fact that when fire walls are present in a means of egress the code does not require that each "building" created have separate stair enclosures for egress. This is a situation present in the Wilton project currently.

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By the logic of this interpretation and the clarification of intent changes made to the IBC, the fire walls serve only the purpose of breaking up building heights and areas, otherwise the systems (such as the means of egress) are evaluated as if the buildings created one structure served simultaneously. Furthermore, the code and commentary to the 2018 International Building Code (IBC) states the following under Section 503.1:

"Fire Walls are useful where a single building exceeds the allowable area limitations Tables 504.3, 504.4 and 506.2. Where fire walls (See Section 706) are used in a structure, multiple buildings are created. Each building created by the fire walls would be permitted to have its own occupancy classification or classifications and type of construction. Since multiple buildings would be created, each building would be evaluated separately in accordance with the height, story and area limitations of this chapter (See commentary Section 706 and the definitions for 'Area, building' and 'Height, building' in Section 202.)"

Additionally, the 2018 IBC commentary (code which includes intent clarifying updates) states the following under IBC Section 706.1:

"Fire walls serve to create separate buildings for purposes of allowable area, allowable height, and type of construction requirements (see definition of 'Area, building' in Section 202). Using these provisions to control other building features or elements such as means of egress, building systems, or building utilities is not intended or implied by the provisions."

Although commentary is not enforceable code language, it provides the user with clarifying explanation directly from the International Code Council. Previous iterations of the IBC had contained vague language which prompted many requests for information from the ICC. Therefore, in the 2018 version clarifying language was added to make sure intent was clear to all users. This clarifying language, although not provided in the FBC, is still applicable to the Florida provisions as the language in the FBC is based on the older IBC language which has since been clarified both prescriptively and in the commentary of subsequent editions.

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CONCLUSION

It is the professional opinion of SLS Consulting, LLC that the firewalls provided and the system approach provided are prescriptively compliant with the FBC as described in this letter. It is our professional opinion that this approach satisfies the intent and prescriptive requirements of the code and provides technical basis for the use of one riser room as currently designed in lieu of the four separate rooms and feeds requested by the reviewer.

Please do not hesitate to reach out for a discussion on this matter.

Thank you,

SLS Consulting, LLC.

A handwritten signature in black ink, appearing to read 'Makayla D'Amore'.

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