Memorandum
Block 8L Life Safety Meeting Minutes based on Fire Rated Details – Memorandum dated 30 December, 2014

Date: 9 January 2015
Project: Block 8L Mixed-Use
AM Project #: 141380
To: Jennifer Pitner, City of Portland
cc: Jennifer Jenkins, AMAA
Eric Bressman, AMAA
From: Karty Halldorson

Early Assistance Life Safety Meeting – January 9, 2015
Attendees: Jennifer Pitner, Nauman Quraishi, Terry Whitehill and Jason Birch,
The following Meeting minutes takes the original Fire Rated Details – Memorandum dated 30 December, 2014 and added the City Responses based on the meeting that occurred on 9 January, 2015.
Nauman, per our conversation last week I am sending you a few details with a series of questions so we can finalize our permit documents prior to submission.
I have attached several drawings and I will refer to them throughout the questions

1. The first question is in regards to the columns at the building perimeter. Drawing F.001P attached shows 3 possible column locations with respect to the exterior wall. These walls are mostly non-rated, however there are a few locations that do require them to be rated from exposure on the interior side only per Section 705.5. The insulation shown continuous on the exterior side of the sheathing is mineral fiber, not foam insulation. We are also including a 3D drawing and a few sheets from the structural set to show typical column to beam conditions at the exterior and interior locations

   a. Detail 1 shows the column outside of the wall structure (wood framing), but not the full enclosure (the GWB), however, the solid wood blocking should afford the same level of protection as 1 layer of GWB. In this condition, would the column still be considered inside the exterior wall per Section 704.10 and require 2-hour protection and FRT wood?

      i. City Response: The column as shown (updated) is not considered to be located in the exterior wall. This allows the column to be non-FRTW and no required rating based on Section 601 (foot note f or g) or Section 602. An extra 2x blocking is required to the exterior. Attached F.001P updated to show blocking. Side note: All wood in the exterior wall to be FRTW (includes blocking).

   b. Detail 2 shows the column completely outside of the exterior wall. Therefore, we are assuming that there is no code requirement for fire rating or FRT wood in this
condition. Can you please confirm this? This, unfortunately, presents the most challenges from a constructability standpoint

i. **City Response:** The column as shown is not considered to be located in the exterior wall. This allows the column to be non-FRTW and no required rating based on Section 601 (foot note f or g) or Section 602.

2. The second question has to do with the beams at the perimeter of the building. These beams must be in the plane of the wall so that they can carry all the gravity loading, thus rendering the walls non-load-bearing. These beams are wider than the walls and will be exposed in the interior of the space. Detail 4/F.001P shows the typical condition. As with the column in detail 3, the beam is mostly within the wall and we are trying to determine if the area we are assuming needs to be used for the char rate calculations is correct. We are assuming that only the exterior and top of the beam are protected in a similar manner as GA WP 8410 and the bottom and interior face will be exposed to the fire. Can you confirm if this is an acceptable assumption before we have the calculations performed? Also, there is a small area where we need to use FRT plywood so the masonry anchor can be attached to the beam and we want to confirm that this is acceptable in this location in lieu of trying to attach thru a layer of Gypsum Sheathing.

   a. **City Response:** Terry and Nauman felt the detail will need an appeal. A fire protection engineer stamp is required stating that the resultant assembly affords a 2-hr rated column. Side note: All wood in the exterior wall to be FRTW (includes blocking).

   ii. Is the 2nd layer of GWB required at the exterior side? The GA assembly does not include it, however, we felt this would remove any doubt that this met the level of protection. It presents some constructability issues for us, but it can be done.

      1. **City Response:** See response above to 1.c.i.
3. The last series of questions has to do with fire protection of structural members and connections on the interior of the building: We have included a diagrammatic section (5/F.001P) to help you understand these.

   a. The horizontal assembly between the 5th and 6th floor (colored red in the section) is required to have a 30 minute rating per Sections 420.3 and 711.3, exception. The supporting construction for this assembly is not required to be protected per Section 711.4, exception 2. Can you please confirm that this is correct?

      i. **City Response:** Nauman agreed

   b. The horizontal assembly separating the 4th floor from the 5th floor (colored yellow in the section) is required to have a 60 minute rating per Table 508.4 since we are using the ‘separated occupancies’ path of compliance (Section 508.4). We have already submitted and received approval for the horizontal assembly we intend to use. The question is in regards to the support of the horizontal assembly.

      i. The beams and columns holding up this horizontal assembly (colored blue in the section) are glue-laminated timbers and can be shown to meet the 1-hour rating by the char rate calculations per Section 722.6.3. The columns will be calculated based on fire exposure from 4 sides while the beams will be assumed to be exposed on 3 sides, except at the exterior walls as noted above. We plan to have our structural engineer provide these calculations, is this acceptable? They are very simple and straightforward and we find no code requirement that states who is required to perform these.

         1. **City Response:** Terry and Nauman felt the detail will need an appeal. This detail can be stamped by a structural engineer based on the above mentioned code sections and char rate.

      ii. The columns supporting this level continue down to the second floor where they are supported by the 3-hour rated concrete horizontal separation. At each floor level, there is a connection from column to column and these will be protected by intumescent paint. At locations where other members frame into the columns, we are assuming that no protection is required since these do not affect the columns ability to remain in place in the event of a fire and are not required to be protected by other Sections in the code. We have attached details 5 & 6/A2.00f indicating typical details at each floor level indicating which part of the connection requires fireproofing. Can you please confirm that this is correct?

         1. **City Response:** Terry and Nauman felt the detail will need an appeal. This detail can be stamped by a structural engineer based on the above mentioned code sections and char rate. Nauman and Terry agreed with the logic stated but still requested this be submitted with an appeal.

Finally, I will be out of the office after this Friday for two weeks. However both Jennifer Jenkins and Karty Halldorson are copied on this memo and are familiar with the issues in question. If you reply to this email, please be sure and copy them so that the project can move forward in my absence.

Thank you.

The following items were reviewed at the meeting, not included in the original Memorandum. The referenced images were provided at the meeting.
4. The following questions has to do with the fire protection of structural members at interior 2 hour rated shafts. The referenced conditions differ from other current typical interior heavy timbers, relying solely on char rate. The details are utilizing applied type ‘x’ gypsum board to offset part of the required char rate for the structural members. The end result will be to afford continued structural integrity of the members after the degradation due to the resultant char rate.

a. The beams holding up the interior shafts are based off of attached details: 13/19/20/A2.00f. The Shafts are required to be 2 hour rated due to the fact they connect more than two stories. As noted the gypsum board in each of the details are shown to offset part of the char rate. We want to confirm this train of thought is acceptable.

i. **City Response:** Terry and Nauman felt the detail(s) will need an appeal. A fire protection engineer stamp is required stating that the resultant assembly affords a 2-hr rated support. They conveyed the logic makes sense. **Detail 13/A2.00f - additional 2X ledger requested at landing support – will be provided. Updated A2.00f provided.**
Column sits on top of Beam A

Beam A bears on Column

Glu-Lam. Beam A

Glu-Lam. Beam A - cantilevered

Glu-Lam. Beam B - attached to side of Beam A - typ.

Exterior non-loading bearing wall

Beam - Sketch 12/30/2014
The column as shown is not considered to be located in the exterior wall. This allows the column to be non-FRTW and no required rating based on Section 601 (foot note f or g) or Section 602.

Fire protection engineer to provide stamp for rated column.

As indicated.
ONE HOUR RATED CONNECTION - INTUMESCENT MASTIC FIREPROOFING AT EXPOSED STEEL FRAMING CONNECTORS AS INDICATED.

NOTE:
1. 2 HOUR RATED COLUMN PER GA FILE NUMBER 2454

FIRE CAULK 1" TYPE 'X' GYPSUM

SHAFT LEVEL 3 TOC 57' - 6" FIRE CAULKING BEAM/HEADER PER STRUCTURAL CALCULATED CHAR RATE 1 1/2" PER INCH PER HOUR: 3" REQUIRED TO EXTERIOR 1 1/2" TO INTERIOR OF SHAFT

(2) LAYERS 5/8" TYPE 'X' GYPSUM 3"

NOTE:
1. BEAM 2-HOUR RATED ASSEMBLY PROVIDED WITH COMBINATION GYPSUM AND CHAR RATE
2. SHOWN AT 3RD, 4TH, 5TH.

FLUID BARRIER 3"

FIRE PROTECTION ENGINEER TO PROVIDE STAMP FOR RATED COLUMN

CHAR RATE FOR INTERIOR BEAMS AND COLUMNS RELYING ON CHAR RATE CAN BE STAMPED BY A STRUCTURAL ENGINEER.
GENERAL NOTES - VERTICAL CIRCULATION

1. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. CONFLICTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO START OF WORK, INCLUDING COLUMNS, SHEAR WALLS, THICKENED SLABS, ETC.

2. SEE STRUCTURAL DRAWINGS FOR PRIMARY STRUCTURAL CONCRETE CONSTRUCTION.

3. INSIDE FINISHED DOOR JAMB 4" FROM WALL AT HINGE SIDE, UNO.

4. NO PENETRATION ALLOWED INTO AND/OR THRU STAIR ENCLOSURE PLUMBING FIXTURES, ETC. PRIOR TO FRAMING.

5. THE ROOF. SIGNAGE TO BE APPROVED PRIOR TO OCCUPANCY.

LEVELS WITH A SIGN INDICATING THAT THE STAIRWAY CONTINUES TO BE PROTECTED WITH FIRE STOPPING OTHER THAN THOSE REQUIRED FOR STAIRS. SUCH PENETRATIONS TO MIN. REQ'D.

6. TREADS = 8' - 3" (9) TREADS = 9' - 2" (10) TREADS = 9' - 2"

7. MIN. REQ'D MIN. REQ'D MIN. REQ'D

8. DN UP DN UP DN UP

9. 1' - 0" 1' - 0" 1' - 0"

10. F.O.W. 11" 11" 11"

11. MIN. MIN. MIN.

12. 40 6011 9221 6222 6

13. 4' - 5 1/2" 4' - 5 1/2" 4' - 5 1/2"

14. 14 14 14

15. STAIR01 STAIR01 STAIR01

16. 3200 3200 3200

17. 18 18 18

18. 3' - 6" 3' - 6" 3' - 6"


20. 6222 6222 6222

21. 6 6 6

22. 6222 6222 6222

23. 6 6 6