



September 10, 2012

Red Carpet Inn
3955 W. Colonial Drive
Orlando Florida 32808

Re: Red Carpet Inn
Fire Damage Structural Assessment

Gentlemen:

In accordance with your request, on September 03, 2012 and on September 11, 2012, Hasan S. Arouri, P.E. from this office of TLC Engineering for Architecture, Inc. (TLC) conducted limited visual observations of a fire damaged room on the second floor of the Red Carpet Inn located on 3955 W. Colonial Drive, in Orlando Florida (See Pictures-1&2).

The purpose of this inspection was to observe existing structural conditions and gather information that would enable TLC to assess structural damage to the above referenced building resulted from the fire incidence. Neither the field visit nor this report is intended to cover original hidden defects, hazardous materials, mechanical, electrical or architectural features.

GENERAL INFORMATION

The existing structure is a two levels hotel building. Construction documents are not available at this time and date of construction is not determined.

The structural system as observed is composed as follows:

The roof framing system is composed of pre-engineered wood trusses, spaced approximately at 24" o.c., and a ply-wood sheathing roof diaphragm. The roof trusses are spanning across the width of the building supported by exterior load bearing Masonry Block walls at each end and two rows of interior load bearing wood stud walls separated by a service corridor along the middle of the building. The wood trusses are cantilevered over the masonry block wall to over hang over second floor balcony around the perimeter of the building (See Pictures - 1 & 2).

The second floor framing is composed of concrete structural deck supported on load bearing masonry wall.

OBSERVATIONS

The following is a list of general items found:

1. Apparently the fire incident took place on one of the hotel rooms located on the second floor without evidence for it spreading into adjacent rooms. (See Pictures – 3, 4 & 5).
2. Room Ceiling and walls observed completely charred (See Pictures – 3 & 4).
3. Room window metal framing observed damaged and bent out of shape (See Picture – 5).
4. There is evidence observed of charred structural CMU lintel spanning over the window opening and evidence of charred bottom chord of the 6 wood trusses cantilevering of the structural CMU window opening lintel (See Pictures – 5 & 6).
5. There is evidence of charred and twisting wood truss observed with damaged joint at truss end (See Pictures – 7 & 8).
6. Evidence of charred wood plate observed over window opening structural CMU lintel (See Picture – 9).
7. Evidence of pulling out nails observed at hurricane strap anchor (See Picture – 10).
8. For all 6 wood trusses over the fire damaged room, truss joints closest to the window and door openings observed separating and truss joint metal plates observed curling and pulling out (See Pictures – 11, 12, 13 & 14).
9. Evidence of water damaged roof plywood sheathing was observed within roof area located above fire damaged room (See Pictures – 15 & 16).

CONCLUSION

Based on our observation, in our professional opinion we conclude the following:

1. The temperature during the fire incidence in the damaged room could have very possibly reached 300 to 500 degrees Fahrenheit for a possible duration between 30 to 60 minutes. Hence and in accordance with the ASTM International (previously American society for Testing and Materials) Standard ASTM E 119 (1988), the 6 wood truss



members above the fire damaged room have experienced a great loss in its tensile strength.

2. The 6 wood trusses above fire damaged room exhibiting joint separation and joint plates curling and pulling out are structurally not stable.
3. Portions of the roof plywood sheathing above the fire damaged room are not able to support roof gravity loads due to water damage. Further, roof sheathing damage within this area causes partial loss of the roof shear diaphragm structural integrity in distributing lateral loads in the CMU side shear walls.
4. Pulling out nails along charred portion of the wood plate at trusses bearing on top of the load bearing exterior CMU wall above the door and window openings of the fire damaged room significantly reduces the ability of the roof framing within this area to resist wind up-lift pressures.
5. Extreme temperatures during the fire incidence may have caused CMU lintel reinforcing bars to expand resulting in breaking the bond between reinforcing bars and the concrete grout infilling the CMU cores. Hence, ability of the CMU lintel extending over the wall openings within this area is significantly reduced.

RECOMMENDATIONS

In our professional opinion we recommend the following:

1. Remove and replace the 6 wood trusses, roof sheathing and roofing above the fire damaged room and replace with new per design and detailing of a professional structural engineer.
2. Repair CMU lintel and jambs above and around door and window openings of the fire damaged room per design and detailing of a professional structural engineer.

Our review was walk-through in nature and we did not use any special tools or instruments, nor did we perform any testing or analysis. In addition, we did not remove any finishes. A review of that type would require considerably more time and cost and would be destructive in nature. Hence, our opinions are based upon engineering judgment to an extent normal for a field review of this type.

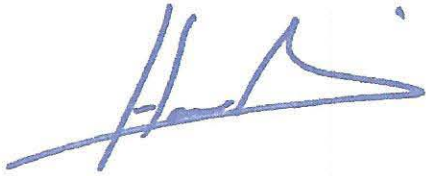
Due to the limited scope of this investigation, we cannot attest to the structure's compliance with building codes or accepted construction techniques. This report is prepared for the sole benefit of the Red Carpet Inn. Unauthorized use of the information contained in this report without our permission shall result in no liability or legal exposure to TLC.

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We appreciate this opportunity to be of service to you and if we can be of further assistance, please let us know.

Very truly yours,

TLC ENGINEERING FOR ARCHITECTURE, INC.



Hasan S. Arouri, P.E.
Principal/Senior Structural Engineer

C:\Users\hasan.arouri\Documents\My Briefcase\RedCarpet\Red Carpet Inn Fire Damage Structural Assessment Report.docx



Pictute-3 (Fire Damaged Room Interior)



Pictute-4 (Fire Damaged room window framing)



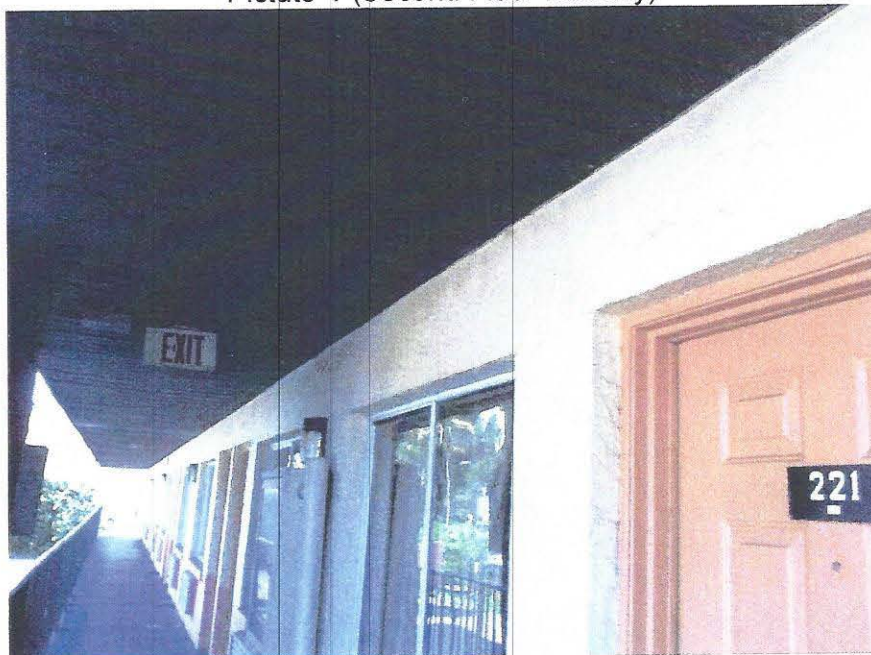
Pictute-5 (Fire Damaged CMU Lintel Over Room Window Opening)



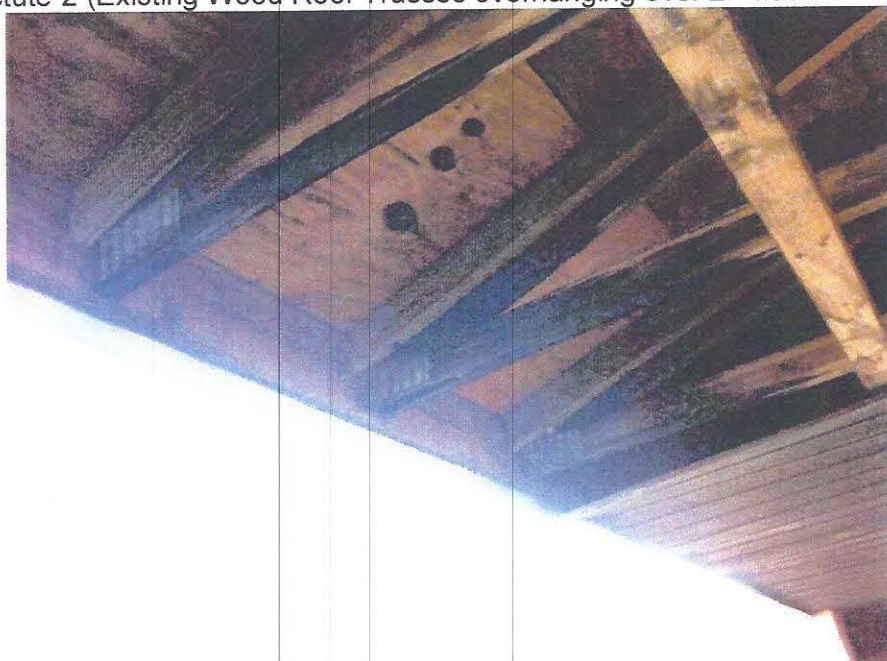
Pictute-6 (Fire Damaged and Charred Roof Trusses cantilevering over CMU Window Lintel)



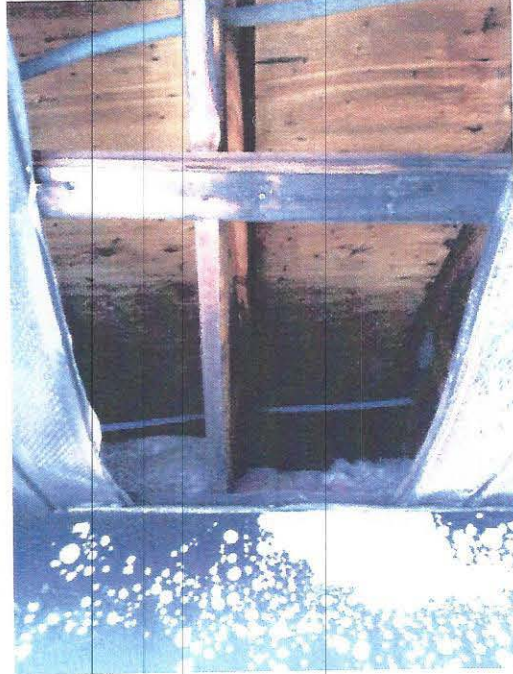
Pictute-1 (Second Floor Balcony)



Pictute-2 (Existing Wood Roof Trusses overhanging over 2nd floor balcony)



Picture-7 (Charred & Twisting wood truss)



Picture-8 (Charred & Twisting truss damaged end joint)



Pictute-9 (Charred wood plate at top of window opening CMU lintel)



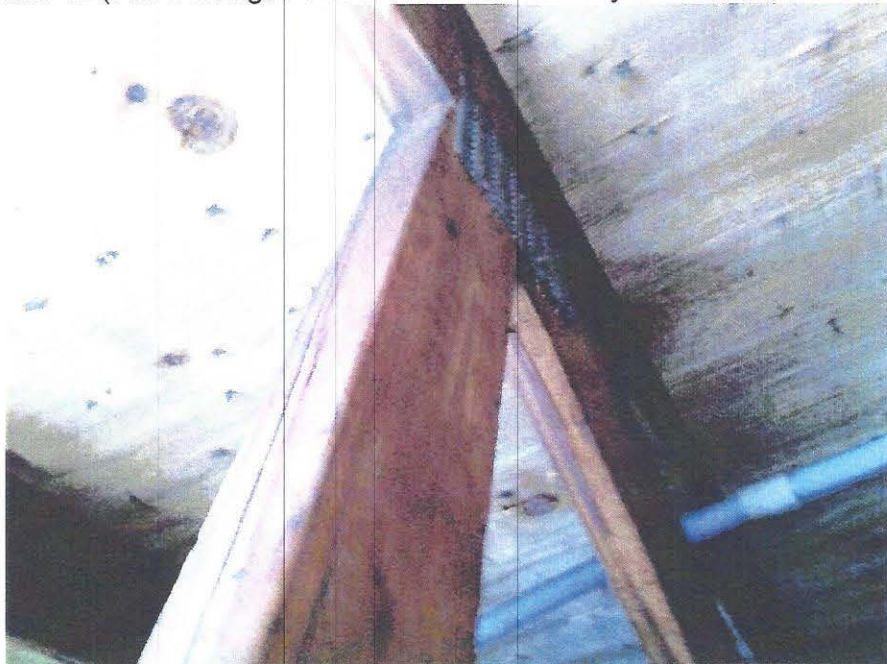
Pictute-10 (Pulling out nails at hurricane strap anchor)



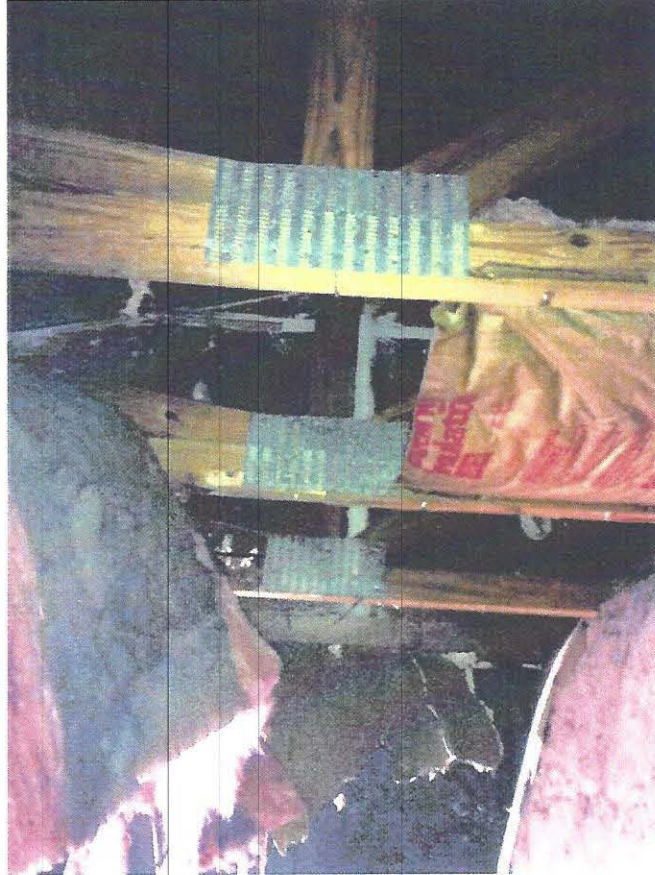
Pictute-11 (Curling & pulling out Truss Joint Plate)



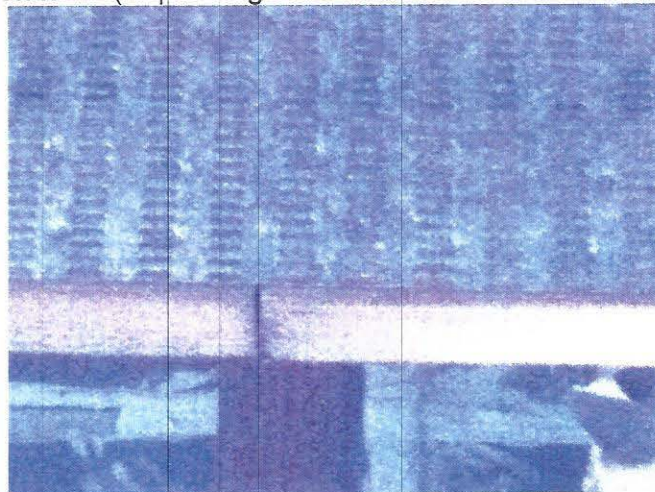
Pictute-12 (Fire Damaged above second floor entry stud walls & sheathing)



Pictute-13 (Separating Truss Joints at Metal Truss Plates)



Pictute-14 (Separating Truss Joint at Truss Metal Plate)



Pictute-15 (Water damage at roof plywood sheathing)



Pictute-16 (Water damage at roof plywood sheathing)

