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To: Becklee Real Estate, LLC
From: Matthew G. Frazier, P.E.
Date: December 11, 2009
Reference: Champion Court Buildings

On Wednesday, December 9th, 2009, I visited the Champion Court Apartment buildings and inspected the lighting on the second level of two typical building units; Unit 2336 and 2367.

In unit 2336 there were two types of recessed lights installed through the ceiling into the attic space above where loose fill insulation was present. The hallway light used an 'A' type lamp with a 100 watt maximum rating and was labeled "WARNING RISK OF FIRE DO NOT INSTALL INSULATION WITHIN 3 INCHES OF FIXTURE SIDES OR WIRING COMPARTMENT NOR ABOVE FIXTURE IN SUCH A MANNER TO ENTRAP HEAT". The fixture did indicate that it was thermally protected and that an improper lamp size or insulation too close to the fixture would result in light blinking. The bedroom lights were labeled as TYPE IC which would permit insulation to be installed in direct contact with the fixture. It is my understanding from the maintenance staff that this unit was typical for all the units in this building.

In unit 2367, there only appeared to be one type of recessed light installed through the ceiling into the attic space above (used both in the hall and bedrooms) where loose fill insulation was present. I was unable to find a label that clearly indicated its status as either IC or NON-IC, but given it's age and the presence of what appeared to be charred insulation around the fixture, I could not safely say it appeared to be IC rated. It is my understanding from the maintenance staff that this unit is typical of all other buildings in the complex.

Underwriters Laboratories Inc. (UL) defines a Non-IC rated fixture as the following:

> "TYPE NON-IC LUMINAIRE — A Recessed Luminaire that is intended to be installed in an uninsulated or insulated ceiling (or wall), with all insulation kept a minimum distance of 3 inches from the sides of the luminaire and not placed over the luminaire such that it would entrap the heat produced by the luminaire. Other combustible materials are spaced, except at the points of support, at least 1/2 inch from the luminaire."

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Installation of a fixture not specifically rated “IC” by UL in a manner inconsistent with the above would present some level of fire or electrical hazard. I discussed the fixture without a label with UL and they said it was common for NON-IC fixtures to not have a label either way. According to UL, even fixtures that pre-date the IC rating should function properly with the 3” spacing noted above, however there is no listed standard or assurance I could find to that end. The difference in rating pertains to the fixture’s ability to remain at a safe operating temperature under the conditions that it is installed. A NON-IC Rated fixture or fixture without an IC Rating relies on the free movement of air around and over the fixture to remain at a safe operating temperature. Contact with insulation, or any other barrier of free air movement with a fixture that is not IC Rated therefore creates some hazard.

Because there is some level of fire or electrical hazard present, I recommend this be remedied immediately. My recommendation would be to install new IC Rated fixtures to replace all NON-IC rated lights extending into the attic space or otherwise contained preventing the free movement of air. While simply pulling the insulation away from the NON-IC Rated fixtures at least 3” is another option that may initially remedy the hazard, given the nature of the blown insulation, at a minimum I would recommend some barrier be placed around the perimeter of the fixture (but not over) to prevent the insulation from falling back down around or over the fixture.

When the service is performed, the electrician or other qualified personnel should inspect each fixture that extends into the attic space (or may otherwise be installed as mentioned above) to be sure it is either IC Rated or that insulation has been completely removed from around (or in) the fixture as noted above, and that no other barrier to air movement is present (boxes, attic flooring, plastic covers etc.).

Please let me know if you have any questions or concerns with my findings.

Thank you,

Matthew G. Frazier, P.E.