



August 11, 2014

Re: Summary Findings and Observations of Existing Roof Investigation Conducted on July 30 and 31, 2014.

A. Existing roofing material.

Original Building = Carlisle 60 mil

Clinical Addition = Firestone Walkway pads (assume Firestone roof membrane)

Comment: Maintenance requested Duralast roofing, either white or grey color.

B. Existing roofing was reported to be fully adhered on all roofs. Reportedly, insulation is delaminating in select areas.

Maintenance Requested mechanically attached for all new roofing.

Comments:

1. Mechanically attached insulation with fully adhered membrane is a good roof however mechanically attaching insulation to concrete roof deck of occupied hospital may be a problem due to the patient population below.
2. A fully adhered system is recommended due to the patient occupied spaces below. Roof insulation should be polyisocyanurate foam (Polyiso), not expanded or extruded polystyrene. Polyiso is less inclined to delaminate.

C. Flashing on original roof consisted of mostly termination bars and top applied sealant. Flashing on the Clinical Addition was a combination of flashing receiver and counter flashing, with termination bars and top sealant used where there was insufficient wall height for the flashing/counter-flashing metal.

Maintenance requested raked mortar joints and set-in flashing receiver and counter flashing for all flashing terminations.

Comments:

1. On the original building, flashing at the penthouse walls is only 7" above the existing roof surface in many areas. Typical flashing receiver and counter-flashing details range from 5" to 7" in height. Since the need for additional roof insulation is warranted in order to better slope to the roof drain, plus several locations where piping extends through the penthouse wall at the top of the existing termination bar, adding a flashing receiver and counter-flashing detail may not be possible. A receiver and counter-flashing detail can be accomplished in many areas of the Clinical Addition, since this is the current detail used thereon.

D. Need to detail a sump at each roof drain to help promote water flow toward the drain. Several drains on the original building appeared to be clogged, as water was standing on the roof at the drain.



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- E. Several locations on the original building roofs were observed to have a through-parapet scupper added to serve as an overflow drain. Not all roof surfaces had this drain. Do not know logic as to why some roof surfaces had this overflow drain, and others did not. Not all roof edges were high enough to allow for this overflow drain, although other drain profiles could be considered.
- F. On the original building, roof drains were typically located along the west side of the roof. The roof sloped from east down to west. There was only approximately 2" from the roof surface on the east side to the lower edge of the coping cover on the east side. In some locations, the distance from roof surface to bottom of coping cover was 0".

Comments:

- 1. Generally, water was ponding on the west side of the original building main roof apparently due to a lack of proper cricket design, clogged drains, and a lack of drain sumps. Ponding on the smaller roofs levels of the Original Building appeared to be due to insufficient slope to drain and/or clogged drains.
 - 2. In order to build up insulation along the eastern edge of the original building, consideration should be given to re-profiling the parapet edge to allow for edge metal only along the top and front, exposed face with no vertical metal on the roof side (similar to a gravel stop detail).
- G. New cricket layouts will need to plan for existing roof structures, such as fixed access stairs to mechanical equipment.
- H. Aaron Garrison with VA has agreed to have his maintenance person identify those roof levels which are problematic from a continued maintenance point of view. Once roof plans have been further developed, he agreed to have his person mark up those plans so that we can prioritize roof levels that need addressed initially, versus those that can be held off until a later time.

Prepared by

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