

Balconies, Decks & Patios

...a property manager's
(and building owner's) responsibility

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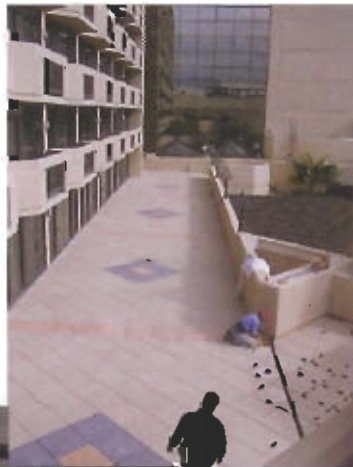


Today more and more commercial properties such as apartments, hotels, condominiums, office buildings and the like have custom features such as balconies, walking (plaza) decks and patios. Often these features are constructed over useable space and thus must also be considered rooftops. Typically these details are often not regarded as the same as a rooftop. Yet both require the waterproofing necessary to prevent the infiltration of water and/or moisture into the building.

On rooftops we encourage maintenance personnel to restrict access to the roofs to reduce unnecessary foot traffic and to control the amount of personnel on the roofs. We also seek to design roofing assemblies, which shed water and seek to have no or very limited ponding water. Yet with balconies, walking decks and patios we

entertain on them and establish, at times, elaborate decorative planters and the like complete with sprinkler systems. These actions in and of themselves seem harmless but actually are those very items that we avoid when trying to control rooftop access.

These design features often have the waterproofing submerged or at least below the walking surface. Often the walking surface consists of tile with a mud set bed, wood,



pavers or some other barrier from the surface of the waterproofing. At times these types of designs have some form of drainage such

as internal drains and/or through wall scuppers or simply allow the water to flow off the edge of the balconies per se. It seems that designers often fail to remember that these details are rooftops and thus forget the fundamental elements of roofing such as drainage and long term waterproofing. Aesthetics often overrule functionality and typically the critical function, long term waterproofing, is overlooked. In many cases drainage is completely overlooked and leads to premature deck/balcony failure.

Another challenge related to the balconies, walking decks, patios and the like is that they are most often accessed by way of doors with thresholds and will typically have wall systems above them. The transition between the vertical wall systems and the horizontal waterproofing system must be designed in manner so as to prevent the entrance of water/moisture into the structure. Thus every construction detail above the roofline (horizontal plane which is waterproofed below the wall) must be likewise designed and consider to be watertight.

Thus control joints, window/door mullions, thresholds and the like all must be integrated into the waterproofing assembly to provide flow away from this transition. One of



the most overlooked details is the door and/or window pan, which is typically custom, fabricated to fit beneath the door and/or window system.

The damage related to the lack of these critical details can be quite costly. In the absence of a pan the water accumulates within the deck and begins to damage the substrate below until complete structural failure occurs. The pan resists the backflow and blown in rain while also providing a catch for any water accumulated above this detail which gravity forces toward the vertical to horizontal transition. At times door pans have been properly provided and installed and then the base of the door and/or window system is mechanically anchored through the pan, thus setting up this well thought out detail for failure. This is rather common and we see this type of failure quite often.

Though one should not consider this type of detail we are describing as complicated; it is very often overlooked and not addressed properly during the new construction phase. We often will discover these and similar failed details when asked to source out the cause of the waterproofing and deck failure.

We find that when having to address these failed assemblies that it is best to convert the walking surface to be removable such as roof top pavers. This protects the waterproofing from the elements while at this same time making the waterproofing accessible by the ability to remove the pavers. This type of a design likewise allows the water to channel beneath the pavers thus eliminating any slippage issues related to standing water. Not only does this address the functionality it likewise

provides a more appealing and upgraded rooftop appearance.

Property managers bear the burden of maintaining these types of details but first should be made aware of their existence. Trapped water and/or moisture will cause extensive damage to those areas not normally considered a roof; these areas should not only be considered a rooftop but a much more challenging one at that.

Paul Beavers is the president and manager of Systems Building Envelope Consultants, Ltd. which provides roof and wall evaluations, draft and issue specifications and provide installation monitoring on a nationwide basis. His expertise is frequently called upon as an expert witness in litigation as well as for destructive testing and evaluating failed roof and wall assemblies.

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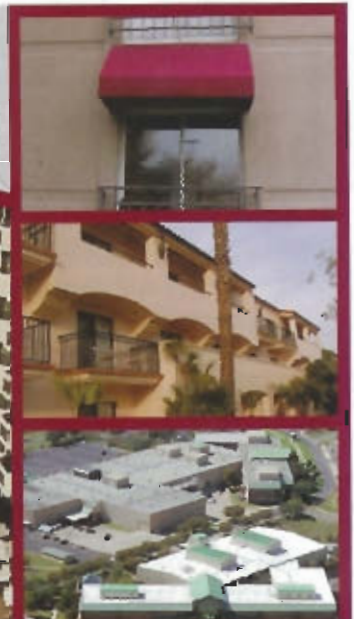
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