Connecticut Property Engineering

630 GOVERNOR'S HIGHWAY
SOUTH WINDSOR, CONNECTICUT 06074

▲ TEL: (860) 289-8121 ▲ FAX: (860) 289-2296
▲ E-MAIL: ConnPropEng@cox.net

October 31, 2017

Mr. Paul Gregorio, CMCA
Community Association Manager
Westbury Condominium Association
Imagineers LLC
635 Farmington Avenue
Hartford, CT 06105

RE: Westbury Roof Review

Dear Mr. Gregorio:

As you requested we have reviewed the roof at Westbury Condominium Association at 30 Hartford Avenue in West Hartford. This roof is constructed of an EPDM rubber membrane .060 thick. The roof system has numerous patches throughout the roofing plane and has significant issues with puddles. Your Maintenance Super Louie Colon tells us that he pumps the roof on a regular basis as the puddling is of concern. There are two regular internal drains in this roof system and three overflow scuppers. The amount of insulation under this roof deck or whether it's under the decking is unknown. In our walking around we did notice numerous areas where either the recovery board or insulation that is under the membrane rocks which is indicative of perhaps a less then well secured underlying insulation system.

The two largest concerns on this roof system is the amount of patching that has been undertaken which indicates that the aging of the roof is certainly well begun, and especially as we were told that this roof is somewhere between 10 and 15 years old, a 060 mil roofing system generally is expected to have a useful life of about 20 years. The second significant concern is of the puddling. We observed potential water depths of well over 2 inches in many areas and when compared to the drain locations and the potential water depth it could be significantly higher before water would be expected to drain through the roof draining system. This raises two significant concerns. First and foremost, when this amount of water sits on a roof and especially then with an overload of snow, the design load capacity of a roof can be easily exceeded. Note that as the load goes up in these areas that the deflection in the roofing system likely increases further, adding more and more water to the weight of the roof which can in some circumstances cause a failure of the roof structure. As greater and greater weight settles in these areas, the roof "bends" further, further increasing the trapped amount of water causing an exponential affect on the roof loading system.

Although the loading scenario discussed in the last paragraph is of significant concern, another concern is when you have large puddle areas which then freeze in certain

weather conditions, this adds additional stress on the roofing membrane, in particular the seams. Then when a small leak occurs, the volume of water that would run through this leak can be tremendous causing significant damage to the internal structure of the building. As inevitably, instead of a few gallons of water which may leak from a roofing system with a positive pitch, a tremendous volume would then run through a leak that happened to be in a low spot of a roofing system such as this.

Another concern is the amount of patching that has been done on this roofing system as this typically tells us that the roof membrane is aging significantly, and is reaching the end of its useful service life. Although this often may look like the roofing system is fine as it slowly embrittles over time and ages, more defects start to occur and everything is compounded by the cost of internal repairs when a small roof defect occurs.

The building code that would be applicable to this roofing system would be the existing building code (IEBC), unlike the new construction code (IBC) which requires a pitch of ¼" per foot, the existing building code uses the verbiage of positive drainage must be supplied. This is generally interpreted to mean that enough pitch is required so that no puddles result. For a roofing system such as this, I believe an ⅛" pitch insulation which is readily available would be the appropriate methodology to insure that the system drains properly and as discussed previously when the system drains properly, the results of a future leak are minimized as well.

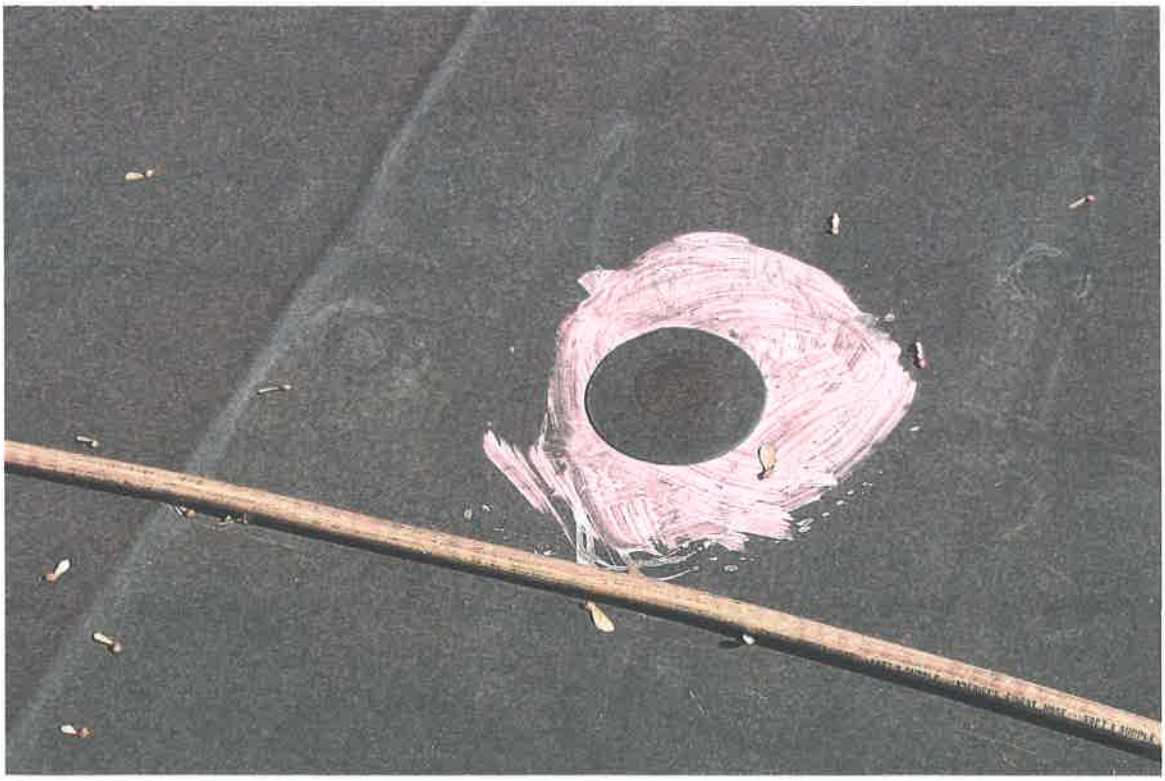
In general, because of the puddling on this roof system in concert with the amount of patching, I would recommend that the process for replacing this roof be initiated. The potential cost of continuing to make repairs and their associated damage would appear to far outweigh any savings associated with trying to put off this roof for any extended period. Therefore, I would suggest making arrangements to create the specifications required for this roof system with a likely construction of the summer of 2018.

If you have any questions on this report, please advise.

Sincerely,

Timothy H. Wentzell, P.E.
Connecticut Property Engineering

THW/dr
Enc.




08402FR JDB
060EPFR