Relevant Observation:
Insulation method of building is a 2-layer system (Pictures and drawing attached). The top layer is a faced fiberglass insulation that rests on top of purlins, between the purlins and roof deck. Estimated to be 4” (R-10)
Lower layer is faced fiberglass insulation that rests in the purlin cavity utilizing the long tab method. This faced system has the tabs attached to the top-level insulation. Estimated to be 6” (R-19).
Installed initial insulation level estimated to be close to an R-30.
Lower layer insulation appears to have a Polypropylene facing with fiberglass reinforced thread. Facings of these type are a vapor barrier with installed .02 perm rating.

Insulation facing was severely compromised with ball holes over entire space.
It is approximately 23,000 square feet of interior roofing.
The insulation facing was dried out and delaminating. This was most likely a result of the old HID lighting system and the high level of UV light that this lighting system produces. Current vapor barrier properties appear to no longer exist as a result of this condition.
In small section of court one, both levels of insulation were removed.
There was a large number of water stains on the courts due to water dripping. These were most prevalent in the area under the north facing roof.

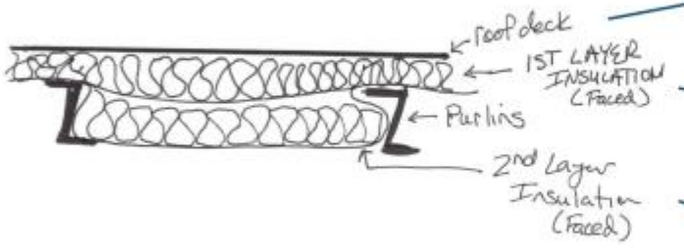
Noted information:
1. Water dripping occurs when there is a high differential between outside cold and inside warm temperature.
2. This water issues began several years after construction and did not happen in the beginning.

Suggested Problem(s)

With the compromised vapor barrier, warm moist air is now allowed to travel up into the purlin cavity. This moist air is condensing on the cold roof decking. This is accumulating and then dripping down and escaping at open areas to drip on the courts.
The north facing roof will naturally have a colder maintained surface in winter and therefore have a higher level of condensation.
It could be assumed that the condensation is also creating an increased cycle as the water drips on the insulation and then the insulation loses its R-value and then the condensation increases.

Suggested Remedy
1) Install SporTuff liner attached to bottom face of the purlins.
2) Install insulation back in the area where it was removed.

Expected Results
SporTuff liner is a true vapor barrier (.02 perm rating). Re-establishing a true vapor barrier will no longer allow moist air to pass through into and thru the purling cavity. This resistance to moist air will deter condensation and return building performance (or exceed) to initial building performance.
The durability and UV protection of SporTuff liner will ensure maximum performance into the foreseeable future.
SporTuff liner is extremely durable and will resist future punctures.
SporTuff is mechanically affixed and will dramatically improve the appearance of the space.



Area where insulation was removed