

Glen Luther

I am looking for another opinion on the following project:

It is in climate Zone 6 in Wisconsin.

It is a 30 ft. x 30 ft. addition with a cathedral ceiling constructed approx. 15 to 20 yrs. ago. It is one big room with no partitions used as a family room/den – full basement – 6” walls with drywall.

The roof/attic system is built as follows: 2x10 I joist – OSB roof deck – from the interior the insulation contractor installed poly vapor barrier and blew in fiberglass dense pack – there are 16 recessed lights in the room – the ceiling is tongue and groove wood – there is no drywall – there is no ventilation system – the roof pitch is 4/12.

If you look at the roof in the morning in the winter when there is frost on the roof, you can see where every recessed light is.

About 3 yrs. ago, they started to notice moisture in the summer from condensation and it has continued to get worse. Even though they only notice the condensation in the summer, I would assume they have condensation in the cold months- it's just not enough to be noticeable.

The homeowner states they can actually make it leak in the summer by increasing the air conditioning to make the room colder. Inspecting the project, I did notice a lot of shingles with a significant crack in them (vertical curved crack).

Here is one theory I have to correct the issue:

We would have to do one section at a time. Remove shingles and OSB roof deck - vacuum out existing insulation - remove existing poly vapor barrier then fit a preformed vapor barrier between each rafter and seal it to the sides of the rafters as best as possible – spray in _____ inches of spray foam to air seal and insulate – fill the remainder of the cavity with either rolled or loose fiberglass, blown-in, or dense pack – redeck the roof with plywood instead of OSB because plywood has at least some preformed – install 2x4s vertical and laid flat on top of the plywood deck to create air space (the 2x4s will have gaps to allow air to move both vertical and horizontal) – install OSB decking over the flat 2x4s – install vented drip edge at the eave for ventilation intake – cover the entire roof with ice and water barrier – install one box vent at the top of each of the 4 sections for ventilation exhaust – then reroof by standard methods with *Owens Corning* shingles.