CASE STUDY

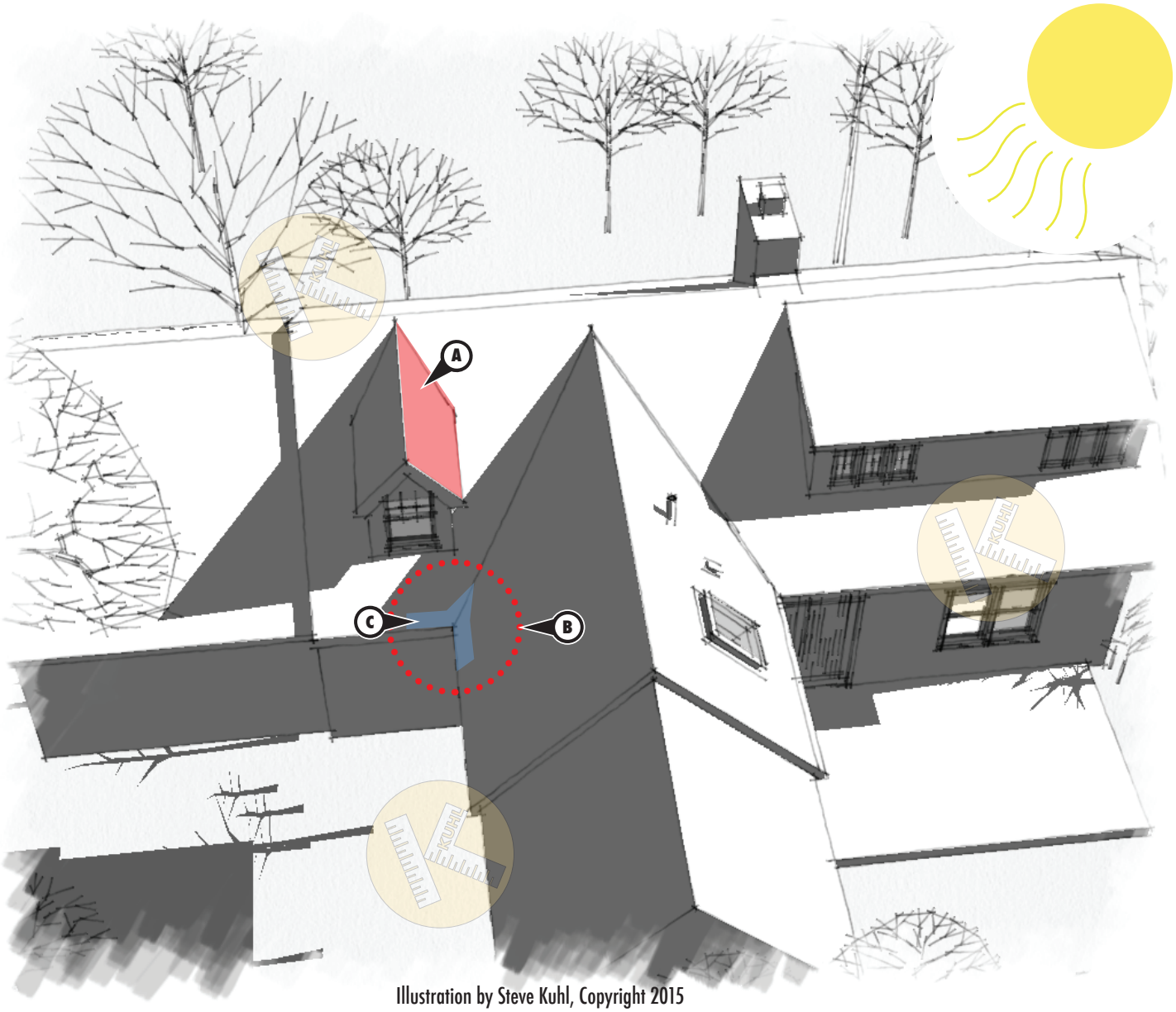
KUHL SOLUTIONS TO CLIENT PROBLEMS

KUHL CASE #50

Does Sun Cause Ice Dams?

Observations from the experts on the relationship between sun and ice dams

Experience tells us that all ice dams are created when there is an area of the roof that is above 32 degrees that creates snowmelt which then runs down to an area of the roof that is below 32 degrees. Seems logical enough. We also know that the cause of this temperature differential is more often than not the result of interior heat loss, specifically via air leaks and insulation issues relating to quality or quantity. There are, however, situations where perfectly constructed, well ventilated, air-sealed and insulated structures develop ice dams. This illustration describes such a situation.



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In northern areas of the country the declination of the winter sun, mixed with the particular posture of a home on the land can result in certain areas of the roof never seeing direct solar radiation. Study the shadows above to see such an example. In this case, the sun heats up the roof pitch on the dormer (A), the resulting melt water runs down to an area of the roof (B) that never sees direct sun light and it refreezes as a result into an ice dam (C). These are particularly challenging ice dams to prevent. Often times heat cables are the only affordable option.