

## **Steve's Background/history**

Steve has been involved in local construction for more than 25 years, specializing in disaster restoration including fire damage, water damage, mold, and structural concerns.

He is also an associate member of C.A.H.P.I (Canadian Association of Home and Property Inspectors) as well as the I.I.C.R.C (Institute of Inspection Cleaning and Restoration)

## **Condensation and the Living space**

At this time of year I find my self doing many indoor air quality inspections and evaluations as a result of condensation issues. Many older clients point out that when they were young and growing up at home condensation, mold and other similar indoor conditions were not an issue.

This is because as time has passed, building techniques and codes have changed.

In the earlier part of the 20<sup>th</sup> century homes were drafty, hard to heat, and would have been quite uncomfortable by today's standards.

As energy conservation became an issue to home owners in the 1970's, insulation and the use of vapor seals were added to keep the heat in the home.

Unfortunately this kept moisture in the home for a longer period, and reduced the ability of the home to take in fresh air due to reduced natural air leakage.

The installation of air tight stoves and other energy saving improvements regarding wood burning appliances and chimneys further reduced the ability of the home to exhaust damp air.

When more insulation was added, wall cavities and attic spaces became colder. This created the perfect recipe for condensation. This is because early vapor seals were not very successful and proved to be leaky which allowed warm humid air into cavities where additional insulation had been added.

If you have ever poured a glass of cold liquid on a hot day, or live in an older home with single pane windows you will have seen condensation in action.

As the cold layer of air surrounding the glass of cold liquid meets the warm air, a dew point is formed causing moisture to collect on the warm side or exterior of the glass. In an older home the same thing happens but the moisture gathers on the inside which is the warm side in the wintertime. Because the moisture rises and dwells longer in wall cavities and attics, the same reaction can occur in these areas.

If you add other conditions such as crawl spaces with soil floors and no vapor/ground seal, it can mean the addition of several gallons of water per day to the living environment from the crawl space alone!

Roof/attic space ventilation also plays an integral part in the equation as well as the presence or lack of mechanical ventilation to the living space.

As is common, making changes can result in a domino effect. Sometimes when we change one system or component it is also necessary to change other systems or components to suit the new environment or situation. Failure to do so can result in additional unforeseen problems.

For example if you replace a wood shake/shingle roof on strapping with plywood and asphalt shingles then you are changing the drying potential of the attic. The wood roof and strapping has the ability to flush moisture and the drying potential is much better.

When you cover the strapping with sheet goods and install asphalt shingles the environment becomes more air tight and other changes should be considered to avoid unwanted conditions.

As the 90's arrived we had made homes so air tight that indoor air quality became a problem and some codes were changed to require the installation of air recovery ventilation equipment (HRV's) to help correct the problem.

Today, homes built in areas where code and building inspections are enforced have been made quite leakage proof and they are less prone to condensation issues. However there is more potential for rapid rot and mold should moisture find its way in because it's more difficult for the moisture to escape.

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Each home has different characteristics and the occupants of those homes all lead different lifestyles which all can have an effect on the amount of moisture present and the homes ability to breathe or flush moisture properly. For that reason alone it is prudent when condensation is an issue to consult a professional for an evaluation of the homes condition in regards to this concern.

Making some adjustments to the living space regarding its ventilation efficiency can improve the quality of life for the occupants or home owners, and will help avoid secondary damage such as mold, rot and other ongoing water damage as a result of condensation or other moisture sources.

For further information regarding condensation and moisture issues, indoor air quality, or general home inspection questions please contact Steve at All In One Home Inspections Inc (250-248-3654) or visit our website ([www.allinonehomeinspections.ca](http://www.allinonehomeinspections.ca)) for other interesting information.

All The Best

Steve