



The CHRONICLES Newsletter

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THIS WEEKS FEATURES

Sponsored by Rae-Tech Investigations Ltd.

- ❖ THE MAKING OF A TORNADO OVER INNESFAIL ALBERTA
Monica Dascavich, of AXA Pacific Insurance Company
- ❖ ENTER THIS CONTEST TO WIN

BLAST FROM THE PAST

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- ❖ FRIDAY, SEPTEMBER 3, 2004

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THE MAKING OF A TORNADO OVER INNESFAIL, ALBERTA

The following photos that were taken in mid June of 2005 were sent to the Chronicles by Monica Dascavich, of AXA Pacific Insurance Company for our readers to view.





ENTER THIS CONTEST TO WIN!!!

MIKE HOLMES or REAL RENOS have nothing on us!

Who is this guy?

Some say it is the Pacific Coast's version of Neal.

Others saywell let's leave it at that.



Email your name and email address to thechronicles@shaw.ca with your answer. Deadline is October 31st, 2005.



Rae-Tech Investigations Ltd.
International Fire & Forensic Consultants

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BLASTS FROM THE PAST

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ATTIC SPACES EXPLAINED

Attic spaces perform several functions. It's part of a home's building envelope that protects you and your house from the elements through the use of insulation, ventilation and vapour barriers. It also forms part of the roof's structure. Here's are some common methods of creating this space:

TRADITIONAL STICK FRAMING

In constructing a roof this way, the most straightforward is a gable roof. Here, all roof rafters are cut to the same length. At the ridge, the proper angle is determined according to the pitch/slope of the roof. At the eaves/soffit area, the rafters are notched (called bird mouths) to sit on the exterior wall or rafter plate. Dormers and skylights can be added. Aside from the simple gable style are others such as a hip roof.

Ceiling joists are used to support the ceiling finish and act as ties between exterior walls. In some cases they may also be used as a tie for opposing rafters. In a pitched roof, the ceiling joists are nailed to the side of the rafter to prevent them from moving outward. The ceiling joists overlap over the centre load-bearing wall and are nailed together providing a continuous tie across between opposing rafters.

In a rafter-framed attic, where the pitch/slope of the roof is less than 4/12, (considered a low slope roof), the loads of the roof are carried by a beam(s) as opposed to a truss. Here, the roof rafters and the ceiling joists are designed to

carry loads from the weight of the roof with snow etc. These loads are then carried to interior partitions by supports angled greater than 45°, knee walls, and ceiling joists. In doing so, the outward force is reduced on the roof and continuous ties between the lower ends of opposing rafters are not necessary.

Advantages -- provides for more insulation at the edge of the ceiling.

Disadvantages -- generally, they are more costly to construct than trusses.

ROOF TRUSSES

Today, builders often use prefabricated roof trusses. Although convenient and less time consuming than traditional framing, its main drawback over conventional roof trusses is that insulation space is minimized at the soffit areas.

a) **Raised Heel Trusses** -- generally, this type of truss will resolve this problem. Although costs associated with a raised heel truss (manufacturing cost, extra siding, extra insulation,) may be greater, energy savings and the prevention of surface condensation (reducing the likelihood of ice damming) can justify the investment.

Advantages -- provides for full insulation depth in all areas above the ceiling, a clear span, and, a continuous air-vapour barrier.

Disadvantages -- more costly than conventional truss (e.g. more soffit siding will be required).

b) **Dropped Chord Truss** -- this truss consists of a conventional truss with a second lower chord below it.

Advantages -- may reduce truss uplift; provides full depth insulation up to the perimeter walls; allows for a clear ceiling span and continuous air-vapour barrier.

Disadvantages -- requires taller studs; more siding is required; blocking required at the ceiling and wall junction for air-vapour barrier attachment.

c) **Scissor Truss** -- the lower chords of the truss are sloped, rather than horizontal, allowing for the construction of a house with cathedral ceilings. In doing so, there is not the need for a bearing beam or wall. These trusses can also be modified to accept more insulation when used in conjunction with a raised heel.

Advantages -- often easier to get more insulation in than with other types of cathedral ceilings.

Disadvantages -- may be more costly than other methods of construction; may be more difficult to insulate between chords if not using blown insulation.

d) **Parallel Chord Trusses** -- These trusses consist of parallel chords of wood

that are joined by an open web of wood, or steel braces, or a solid web of plywood. This type of truss permits high levels of insulation in cathedral ceilings.

Advantages -- allows for large amounts of insulation in cathedral ceilings and also can provide ventilation without purlins. Can provide large, clear spans and allow for application of a continuous air-vapour barrier.

Disadvantages -- higher cost than dimensional lumber. With a web of steel braces, heat losses due to thermal bridging can be high. Difficult to insulate between chords, but blown insulation may help with this problem.

CATHEDRAL CEILING FRAMING

One method of framing a cathedral ceiling is ceiling joists of 2x12 are used as rafters but if the two layers of R-11 Batt insulation are desired, the entire rafter space will be filled with insulation. To allow for the proper ventilation space above the insulation, 2x2s are first nailed to the top of each rafter and parallel to them, to give at least 1 1/2 inches of air space above the insulation. Then a second layer of 2x2 (2x3s or 1x4s can also be used) are nailed to the rafters and perpendicular to them to allow for attachment of sheathing and roofing. This alternative assures a cold, ventilated roof with adequate ventilation parallel to each rafter space when tied to appropriate eaves and ridge ventilation, and still allows a cathedral ceiling design.

Advantages -- In some areas, lower cost than parallel chord trusses.

Disadvantages -- Limited to a maximum of R-40. Reduced insulation values at the ceiling joists.

TRUSS UPLIFT

In some houses with trusses, an upward movement of the ceiling occurs resulting in damage to interior finishes, particularly to interior ceiling and walls. This can result from: different moisture contents in the lower and upper wood chords of the truss; lumber expanding at different rates than others e.g. varying upper and lower chords; and, insulation covers lower cords resulting in differing expansion and moisture than that of non-insulated cords.

Proper grading and drying of lumber can minimize truss uplift. In addition, the builder assist by providing: adequate attic ventilation; don't block the soffit vents with insulation; use drywall clips to connect the ceiling drywall to the partition-wall top plates; fasten the ceiling drywall far enough away from the partition wall such that the ceiling drywall can absorb some deflection; and, buy and keep trusses dry.

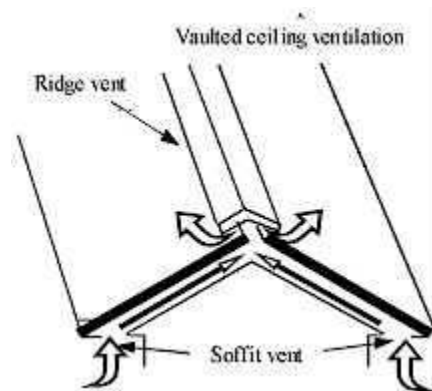
ATTIC VENTING

If your house could talk, would it be saying "*let me breath*"? That just might be what it would say if there were an inadequate amount of ventilation in your attic.

Proper ventilation in your attic is needed to reduce the effects of heat and humidity. These two elements can be costly to the structure and energy efficiency of your home.

Heat: In the summer an improperly vented attic can reach temperatures of up to 150 F. These kinds of temperatures can reduce the life expectancy of your roofing materials. It will also make the interior temperatures of the home less comfortable and increase the cost of home cooling.

Humidity: Most of the humidity comes from within the home. Every time you shower, dry clothes, cook, run water or even breathe you are releasing moisture into the air that can find its way up into your attic. During the colder months this moisture will condensate and seep into the rafters and roof sheathing. Once in the wood it can create mildew and decay in the wood. Delaminating can occur in plywood sheathing. Roof shingles are affected as well.

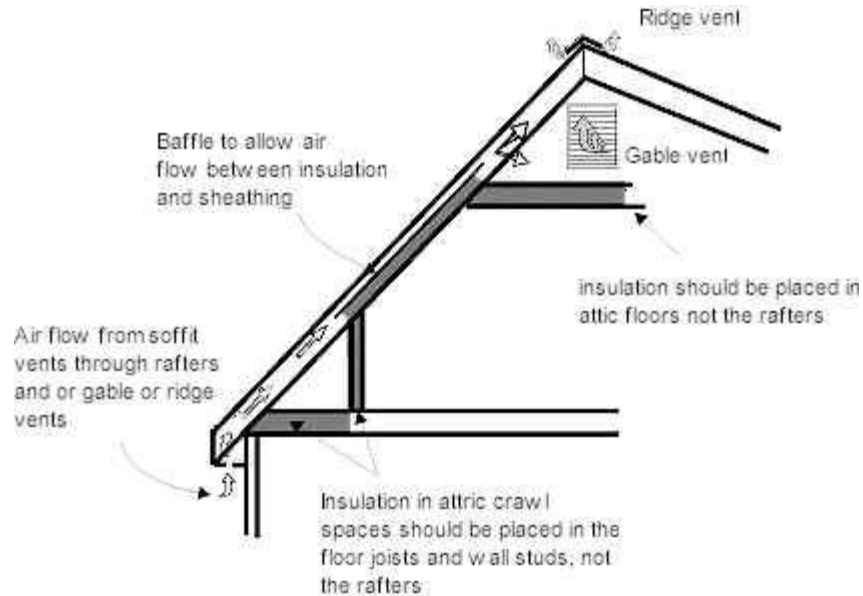


With the proper amount of attic ventilation you will prevent damage to your home, allow your roofing materials to last to their design life, reduce energy use and make your home a more comfortable place to live.

Before you decide you need added ventilation, make sure you are getting the most from the ventilation you have. Don't cover any of your vents in the winter time thinking you are saving on your heating bill. If the floor of your attic is insulated with six to nine inches of insulation this is considered adequate by Toady's standards. Covering these vents will only hold in moisture that will create the problems mentioned above, and the resulting dampness in your insulation will also lessen its effectiveness. If you have soffit vents (vents in your overhangs) make sure that your insulation has not blocked them. Often when insulation is added to older homes by a non-professional or homeowner, these vents tend to be overlooked during installation. Other common areas that lessen the value of the ventilation you may already have are found in older cape style houses. In most capes there is a small overhead attic space and a side crawl space behind the knee walls in the second floor bed rooms. Air flow is needed from the crawl space area to the upper attic area and out through vents. All too often a well intentioned home owner will insulate between the rafters from the crawl space into the attic blocking the air flow. The proper way to insulate this area is to insulate the crawl space floor and the back of the knee walls. The only part of the rafters that should be insulated is behind the vaulted part of the interior ceiling that follows the roof line. This is the crucial area. you may need a spacer installed between the insulation and the sheathing to maintain the air flow into the upper attic. This holds true for all vaulted ceilings. Air flow from soffit vents through a spacer behind the insulation and out a ridge vent is the typical method for ventilating vaulted ceilings. A combination of soffit and ridge vents work like a natural chimney and can be used for open attic spaces as well.

Once you know how much ventilation you may need for your attic, then you will be able to make a more informed decision as to what type of venting to use. If you are unsure, seek the advice of a professional. If you are handy, you may be able to install some of these systems yourself. Otherwise a professional installation may be less expensive in the long run.

TYPICAL CROSS SECTION FOR VENTING OF CAPE ATTICS



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And there you have it for this edition.....exit stage left!



Walking Dog