Quick Notes | Attic & Internal Structure

Attic Access Points:

- Attics with 30 sq ft of floor space and vertical height of 30 sq ft must have access
- Ceiling access no longer allowed in small closets
- 22x30 opening and 30 inches vertical space above
- Garage – comply with fire separation requirements – ½ inch drywall (not wood), pull down stairs is a breach
- 20x30 inches or larger enough for largest appliance
- Solid wood floor and access passage 22 inches wide, 30 inches vertical, not more than 20 ft from opening
- 30x30 level service area in front of appliance
- Light 120 Volt receptacle for service.

Roof Structure Description:

Often referred to as **"stick built**" this terminology refers to an attic frame that has been constructed piece by piece on site, as opposed to prefabricated framing pieces constructed off site and then brought to the site and added in chunks.

Attic truss systems are easily identified by the metal hangers, although not all truss systems use hangers, which tie the wood together and are very common with more modern homes. Top and bottom members are called chords and center pieces are called webs.

Roof Sheathing:

Types of Wood Used:

- OSB - Oriented strand board also known as flakeboard, and aspenite in British English, is a type of engineered lumber similar to particle board formed by adding adhesives and then compressing layers of wood strands (flakes) in specific orientations.
- Plywood
- 1 x Boards - These boards are fastening panels with a minimum of 8d Common (0.131-inch by 2-1/2-inch) nails spaced a maximum of 6 inches on center at supported panel ends and edges. At intermediate supports, fasten panels 12 inches on center. In high-wind areas, more fasteners may be required. Fasteners should be 3/8 inch from panel ends and 3/8 inch from panel edges. Staggered installation. Grain direction perpendicular to rafters.

Purlins:

- Used to support rafter span to great horizontally.
- At least as deep as rafter 2x6 – 2x6.
- Brace should be 2x4 & doubled if greater than 8 feet.
- Installed at 45 % angle.
- Brace should bear on load bearing wall and not more than 4 feet apart.

Insulation in Attic:

R-Value = Resistance value, or ability to resist air flow/heat transfer. If it gets smashed there is not enough air and heat transfers more easily. If it is too "fluffed" or has too much air, a condition we see frequently in blown in insulation, there is not enough insulation material to stop the heat/air transfer and this reduces effectiveness.
Also note worthy is if **insulation gets wet** it transfers heat better because heat travels better through water. Wet insulation also has the disadvantage of being able to grow fungus which is arguably an even greater problem.
Batt must always be installed with the paper facing the warm part of the house. It is usually only installed on the floor of the attic.
The default attic ventilation area requirement is 1 square foot of net free area for every 150 square feet of attic floor area or other ventilated space. This default ventilation area requirement is almost always reduced to 1 square

foot of net free area for every 300 square feet of ventilated space by installing the prescribed ratio of openings near the ridge and at the eves. While this is somewhat limited by insect screens, the screens are a requirement and cannot have above a ¼ inch opening in any place.
Calculating the attic ventilation area is outside the scope for most home inspectors, but inspectors should be able to make an educated estimate of attic ventilation. A reasonable assumption is screens reduce ventilation by 25% and screens combined with louvers or grilles reduce opening area by 50%.
At least 40% of vent openings but no more than 50% must be at the ridge with the rest in the eves.

Whole house fans are large 24 to 36 inch fans that are installed in the top floor ceiling, usually in the central hallway and when activated louvers open to allow the fan to pull air through the windows of the home through the house and out of the ceiling through openings in the roof vents or gabling. These fans use a fraction of the electricity an AC would use and while ineffective in hot humid or desert climates, it is effective in more arid mild climates like Colorado.

Roofing	Years
Aluminum Coating	3 to 7
Asphalt Shingles (3-tab)	20
Asphalt (architectural)	30
BUR (built-up roofing)	30
Clay/Concrete	100+
Coal and Tar	30
Copper	70+
EPDM Rubber	15-25
Fiber Cement	25
Green(vegetation-covered)	5 to 40
Metal	40 to 80
Modified Bitumen	20
Simulated Slate	10 to 35
Slate	60-150
TPO	7 to 20