

## Bumps in the Night

The natives refer to this time of the year as the popping trees moon. This time of year, when activity stays inside away from the cold, the few outdoor sounds of passing cars or planes overhead are muffled by snow blanketing the ground. There is a quiet in the air you don't find other times of the year. Especially early mornings before sunrise, the time of day I find myself shoveling our cul-de-sac drive, to clear a path through overnight snowfall.

My own home is nestled in the woods, tall slender trees, so the slightest of breeze gives them a gentle sway - and then a crack, pop. The sound ripples through the air. Branches and trunks frozen stiff, their movements creak like cracking knuckles.

Freezing temperatures impact the house too. Cold outside, warm inside, there can be as much as seventy or eighty degrees difference on a typical February day in Pittsburgh. And, this difference in temperature transitions in the walls, creating crackling bones of its own. Lying in the dark at bedtime, there are many sounds of things going bump in the night. My boys' active imaginations run wild, thinking up things loose in the house, which could be making such sounds from the deep shadows in the corners or under their bed.

A soft rush of air fires up from the furnace, followed by clicks and knocks from ducts buried in the walls. A steady rhythm taps off as the forced air rushing through warms them. Soon the framing has a turn - louder pops, one from the walls, another the floors. With our house, even the roof joins in. On a cold winter night as the temperature drops, composite tiles make the loudest crack of all. Infrequent, the sudden sound startles, breaking the silence.

But, the sounds of a house are not quite the same as the popping trees. Trees creak from reluctant movement, frozen trunks and branches blown in the wind. The materials of a house, move on their own, expanding as they warm, contracting as they cool. Dissimilar materials adjacent each other, expand at different rates. Metal ducts extend further than the wood studs they are tied to. These ties and fasteners holding ducts and pipes, the mechanical workings of a house, are made to have expansion joints and shifting fittings, to relieve the pressures of materials that must move with changing temperatures.

Without such relief measures built in, the consequences would be far worse than startling noises. Pipes and ducts would crack, leaking damaging water and wasted heat. The entire house is designed to move, from the framing and drywall holding it up, to the flooring and cabinetry materials we interact with daily. Decorative trim hides away the slotted joints and shifting materials. Out of sight, we forget a house is not a static thing. But, knocks on a silent winter night reminds us a house is alive with hundreds of materials, all moving about at differing rates.

In one of the bathrooms of my own house, there is a hairline crack running down the wall of a tiled shower. In the summer time, when temperatures are warmer and the air moist, the wall framing and substrates swell to close the crack nearly invisible. But, in the winter months, a colder, drier wall, the materials shrink and open the crack. I use it like a built-in barometer, conveying to me the current state of temperature and humidity inside the wall, based on the crack's width.

For me, a house changes daily, cyclical with the seasons and on a continuum as materials age. Certain signals or symptoms, like bumps in the night or cracks on a wall, are instruments to measure the changes, keep me in tune with its current state. As these things become familiar from living with them over time, a house becomes a home.

Over the coming months, this series of articles will help you to understand the signals a house gives off. So, you can become more aware of the inner workings and changes that are taking place. Ultimately, I hope to educate you how to better care for your home, so it will provide you with years of happiness and comfort, sheltering you from the elements, such as a cold winter night.

However, if one of those cold winter nights, you nestle in with the kids to watch a movie on television next to a warm crackling fire, it might be best to keep to a comedy or drama. I can't be responsible for a scary movie and subsequent fears at bedtime, when bumps in the walls, creaking and popping, come alive in the dark.

***Matthew Schlueb is a registered architect and owner of SCHLUEBarchitecture. For questions or comments, contact Matthew at [nhm@finalmove.com](mailto:nhm@finalmove.com). This article is part of an ongoing series addressing architectural issues for homeowners.***