

Home Ventilation and Heat Transfer

Home ventilation - as discussed elsewhere on this website is about refreshing your home with fresh dry healthy air and removing stale damp unhealthy air in a controlled manner using free energy that you already have.

Heat Transfer on the other hand is moving excess heat you already have, say in your lounge, produced by a good heat source like a wood fire or an over sized heat pump and moving it to your chosen rooms say a study or bedrooms.

There are various products around to move this air from 1 room to 1 room or from 1 room to say 3 rooms. What you need to be aware of here is that your wood fire is big enough to produce the quantity of heat you need for the various rooms and allow for the heat loss you will get through the ducting even though the ducting is usually well insulated. Various tests have been done using various roof temperatures and configurations of ducting, these show that you can lose anywhere from $1/3^{\circ}\text{C}$ to over 1°C per meter, so if you are using a total of 15m of ducting you may end up losing 15°C over that distance. In this case you would need 32°C at your lounge ceiling to get 17°C in your bedrooms, do you want your lounge this hot?

What I've said above is a bit negative, but we do need to be aware of how either our home or heat source will limit how effective a heat transfer system is for our specific home. I've also been in many homes where the heat transfer systems work very, very well.

The best way to ensure that a heat transfer system works best for you is to keep your home as warm and dry as possible prior to the heat transfer even being turned on. If your bedrooms are just a little damp, the moisture needs to be removed before the heat from the heat transfer will even warm up your bedroom.

One house I was called to had very bad mould in the 3 bedrooms. The owners have a large wood fire and installed a heat transfer system to use the excess heat to warm up and 'dry out' the bedrooms as they were damp and two children had allergies and asthma and were told that heating the bedrooms would be good for the children. In theory this was a great idea but they were very surprised to find that the mould actually grew quicker and the children were still unwell. They wanted some answers.

What seemed to be happening was that all the heat did was add warmth to the rooms, which seemed great, the rooms got up to 21°C but stayed damp and this is what fuelled the mould growth. This warmth was not there long enough, each day to actually dry out the rooms, so each day the wood fire was lit actually pushed more warm damp air into the bedrooms and assisted the mould to grow.

What was needed was to dry out the rooms using a cost effective process so the heat transfer was more effective, yes to do this we installed a home ventilation system designed for the home, this dried out the home on a continuing basis removing moisture that the family was producing. Within one week the house felt fresher and the children seemed to be sleeping better but time will tell.

Well over the next month more changes were noticed, the family told me that the beds felt warmer and were more comfortable, the bedrooms seemed to get warmer quicker, the mould after cleaning had not returned, the children had less itch bites and did not use the inhalers as often. They had no condensation, that seemed to surprise them as they

originally thought about a ventilation system but discounted the use of one having been told by a friend that 'cold air from the roof' was not what they wanted. Nobody thought that it is the dry air they needed, as their home, in their mind, was not damp, but they did have condensation, they just hoped the heat transfer would get rid of it, it didn't.

Now the home is dry warm and cost effective to heat, all they have done is remove moisture by using Mother Nature and the free energy already in the home to the home and the families' advantage.

To discuss the possibilities about your home fill in your contact details here and we'll arrange a time to discuss your home and family with you.

www.EasierVentilation.co.nz