



How to green up your home

Part 3: Staying healthy – indoor air quality, moisture, ventilation and building materials

SAM FOSTER
ARCHITECTS

Cold isn't it?! Just as well we looked in the last article at how to keep your house dry, reduce heat loss and minimise draughts. At this time of year we naturally spend a bit more time indoors than we perhaps would otherwise. In fact, on average, we now spend 90% of our time inside buildings, whether working, at home, at school or for leisure activities.

As well as making sure that buildings are energy efficient it's equally important that their internal environment is as healthy as possible: you wouldn't expect your building to be bad for you, after all.

This month we'll explore what makes a healthy indoor environments, the things you should watch out for, and how you can improve things yourself.

What do we mean by 'healthy indoor environment'? Well, there are three important components to this: the right moisture level, the right temperature and an absence of synthetic chemicals.

Moisture

We call the amount of moisture in the air 'relative humidity' (RH) and this can be between 0% (bone dry) to 100% (raining!). Human physiology has adapted to be most comfortable with a RH of between around 35-55%. Just like the story of Goldilocks and

her porridge, it should be neither too dry, nor too damp. If the air is too humid then dust mites (whose faeces cause asthma) become active and there's a risk of damp and mould occurring: if it's too dry then our respiratory system dries out and we can more easily pick up viruses and infections.

New buildings tend to be better insulated and better sealed than older buildings, with the result that there's a risk of higher humidity levels occurring as moisture cannot



*We spend over 90%
of our time inside
buildings, so it's
important that they're
not bad for our health*

dissipate as easily as it does in older, more draughty buildings. However, older buildings need to be looked after to make sure that the potential sources and risk of dampness we talked about in the last issue don't increase internal RH levels.

Assuming your building is in a good state of repair, there are two things that will help to keep RH at a 'good' level. The first is to make sure that your building is well-ventilated, which generally means opening

windows on a daily basis (especially if cooking or washing) and using the extract fans in the bathroom and kitchen if you have them; the second is to use the building to buffer any excess moisture. In older buildings, as long as it's not covered with vinyl or acrylic paint, the original lime plaster on walls and ceilings will absorb moisture and let it out again slowly.

Temperature

No matter whether you live in well-insulated or poorly-insulated building you'll probably have some form of heating, like a coal fire, wood stove or oil-fired boiler. Don't forget that any south-facing windows you have are effectively solar collectors, so let them help heat the building if you can. Heating serves two important functions: it helps keep you warm, but it also keeps the building fabric warm, which, in turn, drives internal moisture through your walls to the outside. Having a warm building, somewhere around 20°C, usually means having a dry building.

Most buildings are fitted with radiators, though underfloor heating is also becoming increasingly popular, and some buildings have mechanical ventilation systems that distribute warm air through ducts. Contrary to their name, radiators only radiate about 20% of their heat: the rest rises to create convection currents and stratified air, which is why you often find dust on the walls

