



## Ask our experts



Dick



Fergal

**Q—**Are you able to recommend any environmentally sustainable products to use when renovating bathrooms, including for waterproofing? – *Leeanne & Greg*

**A—** It's difficult to come up with a definitively 'sustainable' list of products for bathrooms. A lot depends upon the criteria you set, and them being fit for purpose – waterproofing springs (pardon the pun) to the top of that list. Water efficiency is an over arching concern, and is now easy to tick off with WELS ratings on all taps and fixtures. 3, 4 and 5 star fittings are now common.

A lifecycle analysis will pick up all the other important stuff, but may be difficult to get a handle on, so I suggest you break it down into some manageable bits: indoor environmental quality (IEQ) and longevity are the two most useful, a third could be embodied energy in materials or product manufacture, followed by end of life considerations. Easy!

IEQ means selecting products based on minimal or zero off-gassing, such as paints and substrates. Zero-VOC paints are common, but make sure it can handle high levels of moisture without hosting mould growth. Waterproof membranes should also be zero-VOC once installed, even though they are concealed, off-gassing will always find a way out.

Longevity is mostly common sense, but does involve you running a critical eye over finishes and fittings. Robustness and serviceability is needed in things like taps, toilet cisterns, and even towel rails – they shouldn't leak, break or break down! Waterproof membranes are a key choice here: failures are still the single greatest cause of building disputes and insurance claims, so choose wisely, not cheaply!

Your design, product and specification questions answered by our expert columnists.

Dick Clarke is principal of Envirotecture, a sustainable building design firm in Sydney and Redland Bay, Queensland.

Fergal White is joint director of Pidcock – Architecture and Sustainability and an architect with 15 years work experience, both in Australia and Ireland. He also holds a masters degree in the Environmental Design of Buildings.

The best membranes are either two-pack polyurethanes, or heat-welded sheets. Check the VOCs, but both groups have good options. And having done your homework, resist so-called experts who "have always used acrylics - they're fine!" It's true, right up until they fail.

Embodied energy can be harder to quantify and compare, and with most tiles now being imported, the transport emissions are another cost that is hard to avoid.

End of life options generally require deconstruction, and while there's no guarantee that would ever happen, if it isn't planned for, it can't. This may mean using slightly weaker adhesives, and choosing recyclable materials. – *Dick*

**Q—** *We are renovating our tiny terrace in Sydney's inner-west to accommodate our growing family. We plan to use low-e double glazing generally, with some standard double-glazed north-facing clerestory windows to allow for more winter solar gain. We are also considering clerestory louvres in the west-facing kitchen/living – would this undo the benefits of the adjacent double glazed bifold doors?* – *Paul*

**A—** If council regulations allow for a choice between louvers and double glazing (based on acoustic restrictions for houses underneath flight paths), keep in mind that double-glazed awning windows have both thermal and natural ventilation benefits, while louvres, though beautiful, only facilitate natural ventilation. Of course acoustics is also a subjective matter – my two and four year olds love the sound of planes passing over our house!

From an insulation point of view though, there is no logic to locating single

glazed louvers beside double glazed bifolds. The insulating value of a window is quantified by its U-Value (the lower the better), and the U-Value of a single glazed louvre window can be up to three times that of an equivalent sized double-glazed unit. You would be creating a weak point in your wall and heat will leak out here during winter. You must remember also that the inverse is the case in summer as, regardless of shading, there will also be a flow of heat through the single-glazed window by conduction.

You will need a low U-Value with high SHGC (solar heat gain coefficient) for your north-facing glazing (making sure it has summer shading), and a low U-Value with low SHGC for east and west glazing. You should also keep your eye on the light transmittance value so that you can maximise the benefit of natural lighting.

Ideally you would have as deep a horizontal shade as is possible over west facing glazed doors, and operable external louvres instead of a pergola, would allow you to use this outside area as an extra room. You could use an external blind, but for the main doors this is not a practical solution as they are the main access to the garden. A good row of tall deciduous screening plants or trees is often as good an approach as any.

A good website to consult is the WERS website [www.wers.net/werscontent/certified-products-residential](http://www.wers.net/werscontent/certified-products-residential) which lists all the windows available from suppliers and all their characteristics. – *Fergal*

Got a question for our experts? Email [sanctuary@ata.org.au](mailto:sanctuary@ata.org.au) with the subject 'Ask our experts'.