

Black mags or better insulation?

Customers expect options with different prices and benefits when buying anything from cars to fridges. Why don't we offer clients options to achieve a better-performing home? They can get many benefits for little extra cost.

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WHEN OUT SPLURGING on that new ute or the latest Audi, we are generally offered options ranging from the base model through to the one with all the bells and whistles plus bull bar and black mags.

Go for better performance

When it comes to buildings, we are much less likely to discuss with our clients an upspec, above Building Code version of the dwelling we are designing or about to build. Yet we can get much better performance out of buildings for very little, if any, extra cost with good insulation and by utilising thermal mass.

As an architect, I consider myself lucky because I have designed and had built two family homes where the basic principles of upspecing and universal design are incorporated. In my latest project, a low-risk design philosophy was also adopted, minimising any damage from a severe earthquake.

A basic upspec can be easy

The easiest upspec elements are those we are familiar with and adopt as a matter of course. They include:

- maximising the R-value of the insulation installed - for 90 mm framed walls, this is currently R2.8
- ensuring we optimise the design to give maximum north-facing exposure and winter solar gain to living areas
- utilising the thermal mass present in most new dwellings by exposing or tiling an area of preferably insulated concrete slab near a window that captures sunlight in winter and reradiates that heat at night
- specifying low water-use appliances and fittings
- rain water storage for non-potable uses - toilet flushing, garden watering
- mechanical ventilation of kitchens and bathrooms

- a drained and vented cavity as standard
- installing energy-efficient lighting such as LEDs and not over lighting the dwelling
- specifying energy-efficient appliances when the designer or builder is responsible for supply.

Go for the best windows you can

Higher levels of glazing performance should be high on the priority list as most of the heat from houses insulated to the basic level of the schedule method is lost from windows. Less heat loss equals lower heating cost. Options include:

- specifying window frames that have better thermal performance than standard aluminium
- upspecing window frames with drainage channels, anti-blowback flaps, offset drains and outlets
- specifying the highest-performing insulated glazing unit available for the budget.



Include universal design features

Another easy way to upspec a design is to incorporate universal design principles so the dwelling is safe and easy to use for everyone at all times. This can also save on future costs that might be incurred if the dwelling needs significant alterations as the occupants age or their needs change.

Ways to incorporate universal design elements include:

- installing wider doors - 860 mm as a minimum - and corridors as people and wheelchairs are wider today than 10 years ago
- having at least one bathroom that is level entry into the shower
- level access to the front door
- a lower bench in the kitchen
- taller kick spaces
- a kitchen design with underbench drawers

rather than cupboards. This makes it much easier to reach the back, particularly when the occupant's mobility is restricted.

Further considerations

There are many other opportunities to upspec a housing design, including the choice of cladding. While a prefinished lightweight cladding or brick veneer may cost more, it is likely to have lower maintenance costs over the life of the building than a site-painted dwelling.

Other things to consider when upspecing include:

- specifying deeper framing if practical so more insulation can be installed or using structural insulated panels
- reducing the framing percentage in a given wall area - omitting dwangs that are often installed because it has always been done

can reduce the framing percentage and by default the amount of thermal bridging

- incorporating low-level passive ventilation into windows and roof glazing
- providing a charging station in the garage for cars and mobility scooters
- incorporating greywater recycling
- installing a continuous flow heat pump system for dwellings with high hot water usage - a continuous flow system is preferable where demand is sporadic
- insulating hot water pipes
- considering an underbench water heater unit when the kitchen is more than 10 m from the hot water cylinder
- installing tanks for rainwater collection and storage. ◀

For more ▶ For more information, visit the BRANZ websites Level at www.level.org.nz and Up-Spec at www.branz.co.nz.