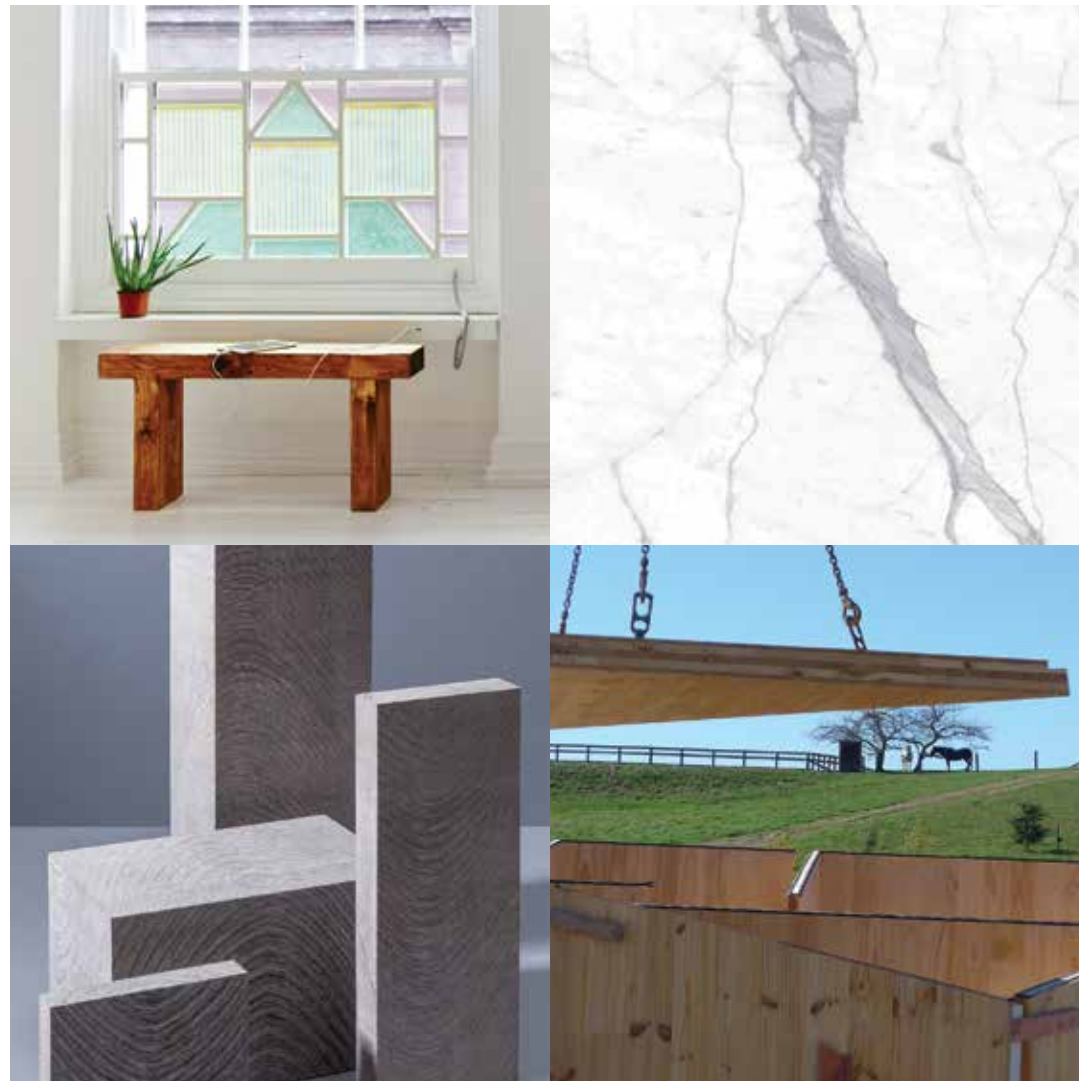




text: Eleanor Scott

Mind Over Matter

Naturally sourced, recycled and energy producing materials are the new and groundbreaking heroes of the design world. We take a look at five innovative offerings.



Porcelain Panels

Most people will already be aware that porcelain is a substance that has been used to create objects for thousands of years, and in the last few centuries it has become a popular building material in the form of small tiles – not to be confused with the more porous ceramic tiles – and bathroom fittings. More recently porcelain has emerged as an innovative alternative for kitchen countertops, splashbacks, bathroom vanities, floors and walls in the form of large format porcelain panels (LFPPs). Undoubtedly one of the biggest benefits of this exceptional porcelain stoneware is that it is a true green alternative. LFPPs are made from completely natural materials and do not contain any sealants, waxes, epoxies, man-made binders, or artificial colouring agents that could contribute to the emission of volatile organic compound off-gassing after installation.

Some panels even come with a photocatalytic self-cleaning technology that works to kill 99 per cent of harmful bacteria, and breaks down interior dirt and nicotine residue as well as odours caused by dirt, food and cooking residue and cigarette smoke. Maximum, developed by Fiandre, is one such panel. This innovative 3000 x 1500 x 6 mm format is made from high quality pressed porcelain providing designers with a unique, lightweight architectural appearance that delivers a beautiful, resilient finish. From beautiful textures inspired by nature, to the cool contemporary look of concrete, Maximum is an environmentally friendly, 100 per cent natural, partially recycled product distributed in Australia by Maximum Australia and is available in every state and territory.
maximaustralia.com
artedomus.com



Newspaper Wood

What came first, the paper or the wood? When we think of wood and paper we usually see the process as well-established: wood is the source and paper is the result. But what if someone decided to turn that model on its head? Well that's exactly what Dutch designer Mieke Meijer did while studying at the Design Academy Eindhoven. Developing the initial process in 2003, it wasn't until Meijer met Arjan van Raadshooven and Anieke Branderhorst of design label Vij5 that manufacturing a NewspaperWood collection even became a legitimate possibility. That collection came to fruition during Milan Design Week 2011, where they invited a team of young Dutch designers to experiment with the material for the first time.

NewspaperWood reverses a traditional production process: not from wood to paper, but from paper to wood. When a NewspaperWood log is cut, the layers of paper appear as wood grain or growth rings of a tree and therefore resemble the aesthetics of real wood. This up-cycling process gives new life to what some consider as just recyclable waste, extending the life of paper and using less energy to change its state for new use. NewspaperWood is not a replacement for wood as a material; it is a new way to use paper to create new textures, forms, furniture and other products.
newspaperwood.com
paperock.com.au



3D Printing

3D printing has been around for quite a while but is quickly developing due to innovative techniques, new and durable printable materials, tech-savvy designers and less expensive printers. An excellent example of all of the above is Designer Dirk van der Kooij, who won the 2011 Dutch Design Award for his furniture collection, Endless. He produced this by converting a robot arm, scrapped by a Chinese car plant, into an enormous 3D printing machine.

That robot arm can now create a chair by adding layers of long strands of transparent, 100 per cent recycled material, which was formerly used in the manufacturing of CD sleeves. Each strand, or line, is printed hollow in order to minimise resources; the dimensions are designed to not only carry weight, but to save weight as well. In 2014 the "Not only hollow chair" was the first prototype produced using the hollow 3D print and a limited edition version is currently available for commercial purchase.
dirkvanderkooij.com



Solar Windows

"The Current Window" by Dutch designer Marjan van Aubel is made up from coloured solar cells that harvest energy from the sun and convert it into electricity to charge small computer devices. This electricity can be used to power a whole range of electrical appliances. The glass pieces are made of dye-sensitised solar cells, which use the properties of colour to create an electrical current – just like photosynthesis in plants. Similarly to the various shades of green chlorophyll absorbing light, the coloured windowpanes harness energy. USB ports are integrated into the window ledge and a set of

diagonal stripes by the charging point illuminate to indicate how much power is stored within the battery. Each window can harvest up to 25 watts per day, depending on the quality of light and season, and a back-up battery hidden in the windowsill stores left over energy to provide power on overcast days. Looking towards the future van Aubel has founded her company Caventou, and sees the best application of the product within offices, schools and churches – where the windows could be used to power electric lights, or developed as wi-fi hubs. caventou.com



Cross Laminated Timber

Cross Laminated Timber (CLT) is the name given to large structural building panels made from solid wood boards that are stacked crosswise and glued together in layers. This cross lamination creates the strength and stability that, in certain applications, makes CLT a viable alternative to masonry, concrete and steel. Although XLam is the first manufacturer to bring CLT to Australia, the product itself has been around for nearly 25 years and has been widely successful in Europe, as well as now also gaining ground in North America – and it's easy to see why. The benefits of CLT are clear; it offers design versatility, rapid installation, lighter weight, cost effectiveness and, best of all, energy efficiency. CLT is the only "carbon positive" method for long-span structures, wherein more carbon dioxide is absorbed through the lifetime of

the trees used than is expended through manufacture, delivery and installation. In fact, RMIT University research on Lend Lease's CLT Forte Apartment building in Melbourne, once the world's tallest timber building, showed the global warming potential of the building materials (cradle to gate) to be 30 per cent less than for an equivalent conventional building. Last but not least, the aesthetic aspects certainly don't hurt. A perfect case study, Torea Studio, Designed by Tennent Brown Architects, is clad entirely in XLam panels wrapped in a tight skin of zinc, the construction of which was only possible due to XLAM NZ's sophisticated new CNC bridge machine that enabled the precise cutting of each CLT panel direct from a computer model. xlam.co.nz