

Design for life

*The world is going green,
one design at a time*

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One are the colourful stained glass windows; heat-saving thermal glass panes have taken their place. Natural daylight shines down inside, while solar heating warms the pews. There's a living wall, a heat recovery wheel and facilities to capture water from the heavens above. Here, car-pooling wins over piety, and those driving hybrid vehicles are graciously given priority parking. Welcome to St. Gabriel's Church in Toronto, Canada, where even God has gone green.

Using 40 percent less energy than conventional buildings, this environmental take on religion represents a trend being adopted by designers across the globe. Sustainable design is now a common catchphrase – its principles can be found in buildings, houses, products, services and even the smallest technical components. Furniture, fashion and accessories, automobiles and much more, are all being designed with the earth – now and in the future – in mind.

Martin Charter, director of the UK's Centre for Sustainable Design, says, "Sustainable design is concerned with balancing economic, environmental, ethical and social aspects in the creation of products and services. Sustainable design needs to minimise negative sustainability impacts and maximise sustainability value throughout its lifecycle." Attention needs to be focused on the lifecycle of a design. Charter believes in practicing what he calls a "cradle-to-cradle" methodology: "Designers need to develop products for either 'technical cycles', like computers that are designed for dismantling and / or 'biological cycles', like fabrics designed to be compostable."

While it's fair to say that a house probably won't be built for dismantling, or composting for that matter, similar principles can be applied to its construction. Any construction, whether it's a one-bedroom house or a 50-floor skyscraper, must be designed with three pillars of efficiency in mind: energy, materials and water. The best way to achieve energy efficiency is through "passive design" – design that doesn't need mechanical heating or cooling. North-facing windows, skylights, special tubes that let in light without adding to summer heat and winter cold, pale-coloured interior surfaces that reflect more light to reduce artificial lighting, insulation, shading, draught sealing, appropriate glazing; all these are elements of an efficient building.

Also, recyclability, reusability, durability, longevity and zero or low toxicity are all of great consequence when composing material efficiently. For example, with just a few simple design considerations, the use and management of water can be made resourceful. Recycled water can be used for toilets. A grey-water system that recovers rainwater can be used for irrigation. Ultra low-flush toilets and low-flow showerheads can reduce wastewater. Solar hot water systems heat water. ▶

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In Australia, the CH2 building, the City of Melbourne's Council House 2, is efficient to the extreme. It has been awarded a six star design rating, making it one of the cleanest and greenest buildings worldwide. CH2 will be a yardstick for future high rise buildings and puts Melbourne on the world stage alongside other examples such as London's 30 St Mary Axe (aka "the gherkin") and New York's Hearst Tower. CH2 uses recycled water, low energy cooling systems, natural lighting and roof mounted wind turbines. The building reduces electricity consumption by 82 percent, gas consumption by 87 percent, CO2 emissions by 87 percent and mains water supply by 72 percent.

After more than a decade of work, the electronics corporation Philips has developed an approach that embodies six focal areas of eco-design: materials reduction, energy reduction, increased recyclability, reduced packaging, substituting hazardous materials,

First page: The CH2 building in Melbourne, Australia
This page, from the top: the interior of the CH2 building; the A LA LATA lazy chair by Carlos Alberto Montana Hoyos

and longevity. This kind of ethical approach can apply to any field of design, even cars. Venturi, based in Monaco, is designing eco-friendly vehicles by tackling one of the world's greatest environmental issues – car CO2 emissions. Venturi has three different vehicular answers to this problem: the Venturi Fétish, which was the first electric sports car to be commercialised, the Venturi Eclectic, the first solar car on the market, and the Astrolab, a concept vehicle covered with photovoltaic cells. "These cars have great performance," says Venturi designer, Clément Dorance. "We can see our designs becoming the future of urban transport."

One of the more innovative examples of sustainable design is the Watercone. This portable solar-powered water desalinator can use salt water, brackish water and even water polluted with heavy metals to generate fresh water, holding great hope for countries with limited fresh water access. It has won awards for its simple design as a conical, self-supporting, stackable unit made from transparent thermo-formable polycarbonate. With the Watercone able to produce 1.6 litres of freshwater each day, the Watercone's designer, Stephan Augustin, hopes it will help those in need.

Another innovative eco-design directly involving recycling is the A LA LATA lazy chair. Its creator, renowned Colombian designer Carlos Alberto Montana Hoyos, made the chair by reusing 1,739 aluminum can tabs. Hoyo's idea of recycling aluminium tabs from beverage cans came from Latin America's



popular contemporary handcrafts. "The project involved not only picking up can tabs, but also experimenting with different materials to connect them in order to create a textile, and finally looking for diverse applications for it," Hoyos explains. "A LA LATA is a handcrafted product, that explores the concepts of cultural identity and sustainability through product design."

Sustainability is still a new principle in many ways. As design is paramount in the conception and creation of almost all things, sustainable design needs, for the sake of the earth, to express itself in every product possible. The buzz around global warming has been increasing, largely thanks to former US vice president and Nobel Prize winner, Al Gore, with his documentary *An Inconvenient Truth*. This should help push the sustainable design industry, and the designs themselves, to an unseen level of success and popularity. "We have an industry joke that says the Gregorian calendar will have to begin again, and it is now the year 1 AG, meaning 1 'after Gore'," jests Jeremy Davies, director of Neco, a one-stop-shop for unique products designed to reduce environmental impact; a sign of just how influential the environmental principles of design have become.

In step with increasing awareness and support for ethical consumerism across the globe, the sustainable design movement is gathering no moss. The need to accelerate the change of many global industries in the direction of sustainability has never been more necessary than now. ■