**2019 Building Design Strategies for a Changing World**

As the world’s technology and infrastructure evolve at a rapid rate, our design strategies need to keep up.

There are various new design strategies being introduced to the building industry which are implemented to change the way we build for the future.

These design strategies are used to provide affordable housing and energy, to reduce and reuse waste and to lessen our impact on the environment. As the population grows, these strategies become more valuable.

Digital tools to improve the way we build

The house building sector is currently introducing digital tools to improve data collection and analysis. This will aim to improve accuracy and efficiency of the planning and completion of a project.

As stated by GenieBelt - a company focused on ‘building the future of construction’, [“*The advent of digital solutions could accelerate the development and completion of a project while creating at the same time a more flexible and consistent building process”.*](https://geniebelt.com/blog/top-housebuilder-trends)

The collection and analysis of data will allow companies to share their findings with other field experts. This establishes a flow of information that aims to minimise cost and maximise efficiency in the building industry.

Green building materials for housing

Building materials are constantly evolving to meet the demands of a growing population and an increased need for housing. As the population grows, the environment feels the effects, therefore developing and utilizing environmentally friendly building materials will help reduce the effects on the environment.

Recycled steel is one of the most popular green building materials. Producing and smelting steel requires a lot of energy, and using recycled steel for structural purposes in houses reduces 75% of the energy costs used in making steel.

*“The reclaimed steel from* [*six junked cars provides enough recycled steel to build a 2000-square-foot house*](https://home.howstuffworks.com/home-improvement/construction/green/10-cutting-edge-building-materials.htm)*”,* according tosustainable lifestyle magazine, Mother Earth News.

Bamboo is increasing in popularity for green building materials as it is very sustainable - it grows all over the world and is easily accessible. Bamboo is one of the fastest growing plants on Earth, with reported growth rates of up to 36 inches in 24 hours. Bamboo has great tensile strength, which means it is suitable for walls and flooring.

For insulating, straw barrels can be placed in walls, attics and ceilings, contributing to cooler temperatures in the summer, and warmer temperatures in winter. Straw can be re-planted and harvested with low environmental impact.

Hempcrete is a unique, concrete alternative, which – as the name suggests, is created with the hemp plant. Hemp aggregate, water and lime-based binders are mixed together to create this substance. Hempcrete is also fire and termite resistant, therefore ensuring the structure lasts. Hemp – like bamboo, is fast growing and renewable.

3D printed homes

3D printed homes are a promising new way to build houses as they are much more affordable, extremely efficient and environmentally friendly. Using 3D printers for housing can also remove barriers such as the design of a house, as the 3D printer can be programmed to print in any shape. 3D printers can use all kinds of ‘ink’ such as concrete, fibres and sand to build houses.

In March of 2018, New Story, a non-profit housing organisation based in San Francisco, worked together with ICON, a construction-technology company that designs 3D printers, to build a 32-square metre structure that took 48 hours to build and cost under $14,000.

New Story and ICON’s aim is to “[*create the world’s first 3D printed community*](https://www.iconbuild.com/updates/new-story-has-partnered-with-icon-to-create-the-worlds)*”* and eventually provide housing for people around the world who cannot afford safe and secure housing on their own. New Story and ICON state, *[“The community, in Latin America, will serve families without access to adequate housing. The community, when finished later this year, will house more than 400 individuals”.](https://www.iconbuild.com/updates/new-story-has-partnered-with-icon-to-create-the-worlds)*

Utilizing solar power in homes

In Australia [*“close to 2 million homes already have a solar PV system, and there is now more than one panel installed per human being in the country”,*](https://www.solarchoice.net.au/blog/solar-power-for-homes-australia-worth-it-2018)according to Solar Choice Australia. Solar power systems are the future of residential energy as there are many benefits - the main benefits being how affordable and accessible it is.

Using solar power can reduce electricity bills, requires little or no maintenance, is a renewable energy source and is environmentally friendly.

Once a solar power system is installed, it can last up to 20 to 30 years without major maintenance, hence cutting the cost of energy for homes further.

Smart homes

A ‘smart home’ is a house that has a communication network which connects electronic appliances and allows them to be controlled, monitored and accessed remotely, or even with voice control. With a smart home network, it is possible to check if any appliances have been left on once the house is unoccupied, such as air conditioning and lighting. It is also possible to turn these appliances on before you return home – for example a heater, which is a great advantage in winter.

[*“68% of Americans think that in 10 years time, the smart home concept will be as popular as smart phones are today, and 81% of home buyers say that they would rather buy a smart home with smart products already installed”,*](https://techaeris.com/2018/12/19/infographic-stats-and-facts-on-smart-homes/) according to technology news site, Techaeris.

Smart homes are the future of security in a home. Installing cameras and linking them to the smart home connection can allow access to view what is happening inside and outside your home while you’re away. Lighting can be integrated with the smart home system to generate random lighting scenes for the home to seem occupied whilst no one is there. Alarms can be accessed through the smart home connection and are able to be turned on or off remotely, putting your mind at ease.

Combining these strategies to build housing will create homes that are affordable, energy efficient, and environmentally friendly.

The way that design and building companies are changing how we build houses will highly benefit our future - not only for the future of housing, but for the future of our planet.