Polished concrete for sustainability and versatility

By Courteney Brant, Marketing Co-ordinator, Transitions Polishing and Grinding

Environmentally friendly design and construction is an ever-increasing trend as being 'green' plays on the consciousness of today's society. Every aspect of a building including the floor needs sound eco-friendly solutions.

With the option to manufacture out of recycled materials, long life cycles, intrinsic energy efficiencies, improvement of indoor environmental quality and endless design options, concrete flooring not only poses as a functional product but an aesthetically beautiful one too.

Sustainable building designs aim is to reduce the impact of buildings on the environment. These impacts are varied and motives for such include environmental, economic and social benefits. Sustainable building practices take advantage of renewable resources and bring together a vast array of practices, techniques and skills to reduce and ultimately eliminate the impacts of buildings on the environment. This is achieved without sacrificing aesthetic appeal, instead using the philosophy that building design should, in fact, be in harmony with its natural surrounds.

Material efficiency

Taking this into account, how does concrete fit the mould as a sustainable and environmentally friendly material to use in building design as a flooring solution?

Firstly, the concrete mix installed into a floor can be made up of waste byproducts. The predominant raw material for cement in concrete is limestone, the most abundant mineral on earth. Furthermore, concrete can also be made up of fly ash and slag cement, both waste byproducts from power plants, steel mills and other manufacturing facilities.

Concrete floors can also incorporate recycled products in the design. These include crushed glass, recycled plastics, marble chips and metal shavings. To top it off, the concrete itself is 100% recyclable.

Lifecycle efficiency

Concrete is one of the most durable materials and few flooring materials have the longevity of concrete. It is only a natural progression then to use this material as an internal and external flooring solution. From an environmental aspect, the long lifespan of a concrete floor reduces the future need for replacement and therefore an overall reduction in the amount of waste products produced. The high level of durability and low maintenance requirements of a concrete floor also mean that reoccurring maintenance and replacement costs are reduced.

Energy efficiency

A key element in environmentally friendly buildings is that of reduced operating energy consumption. Basically the goal of energy efficiency is to provide energy for the functions of the building to run on a day-to-day basis, whilst having the least impact on the environment by utilising the earth's natural energy source providers - ie the sun.

The floor is one of the major components of every building. Therefore, it is beneficial that the flooring material chosen has the capability to maximise energy efficiency.

Concrete floors fall quite intuitively into this element of sustainability due to their thermal mass properties. Thermal mass means that concrete floors will absorb heat from direct sunlight and released that stored heat at a rate that is required, as dictated by the air temperature. So rooms will be kept warm in winter and conversely, cool in summer.

This natural form of controlling room temperature has fantastic results for the environment as it keeps the use of air conditioners and heaters at a minimum. In addition, polished concrete floors are a highly reflective surface, which aids in light distribution and can reduce the use of electrical lighting by up to 15%. This also in turn creates large savings in the overall operating costs of a property.

Indoor environmental quality

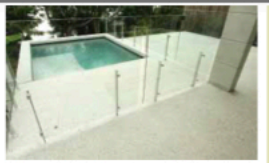
An environmental factor that is less commonly thought of when it comes to sustainable building design is the quality of the indoor environment. The choice of construction materials and interior finish products are important and those with low volatile organic compound (VOC) emissions will improve air quality in a property. Furthermore, it is important that an indoor environment provides a comfortable atmosphere that is centrally focused on the well-being of its occupants. Therefore hypoallergenic and easy to clean surfaces are important.

Concrete floors are the ultimate flooring solution in terms of indoor environmental quality. They do not emit VOCs and can be finished with low VOC sealers. Concrete floors are also an allergen free option. They help to maintain clean air through the lack of dust and dirt being harboured and circulated through the air. Furthermore, concrete floors do not support the growth of toxic moulds and bacteria and are very easy to clean and maintain.

Design versatility

Above all this, concrete floors enable you to attain the benefits of sustainable design and construction without having to sacrifice aesthetics.

Decorative concrete is definitely an ideal example of the synergy between beauty, sustainability and economy. Your concrete floor can be customised to your exact preferences and needs – choose from ranges of colours, aggregates, finishes and levels of exposure as well as decorative toppings and stains. The only limit is your imagination. ■



Another eco win for Armstrong

Armstrong Flooring Australia's Eco-Terrazz VCT came out as a big winner in the recent 2012 national Endeavour Awards sponsored by Manufacturers' Monthly.

"We were a finalist in three categories," explained Michael Keam, Marketing & Product Manager – Commercial Flooring, Armstrong World Industries (Australia).

These were:

1. Environmental Solution of the Year
2. Exporter of the Year
3. Australian Consumer/Trade Product of the Year

"We were not only proud to be a finalist but were thrilled that we won an award. There was tough competition when you read what other manufacturers who made the finals had achieved.

Mike Jenkins, VP Southern Asia, who accepted the award on the night, said "This is an outstanding achievement and recognition of all those who have worked on Eco-Terrazz and the EOL process we are building at Thomastown, Victoria. We not only passionately believe that leaving an ever reducing environmental footprint is the right thing to do, we also know it is a powerful competitive advantage to reuse end-of-life floors.

"As this product is made at Thomastown, Mike Chetcutti and his team, lead by Rob Murphy, deserve our appreciation for the hard yards, often under very difficult circumstances, to deliver a product that is 60% recycled. Thomastown has built excellent capability in the last few years and can now take back VCT at its end-of-life, make a brand new tile with 60% of that recyclate and have it back on the same site in week." ■

Johannes Fourie, General Manager of Atlas Copco with Michael Chetcuti, Armstrong Plant Supervisor Thomastown and Mike Jenkins, Armstrong VP Southern Asia.