

# CRADLE TO CRADLE

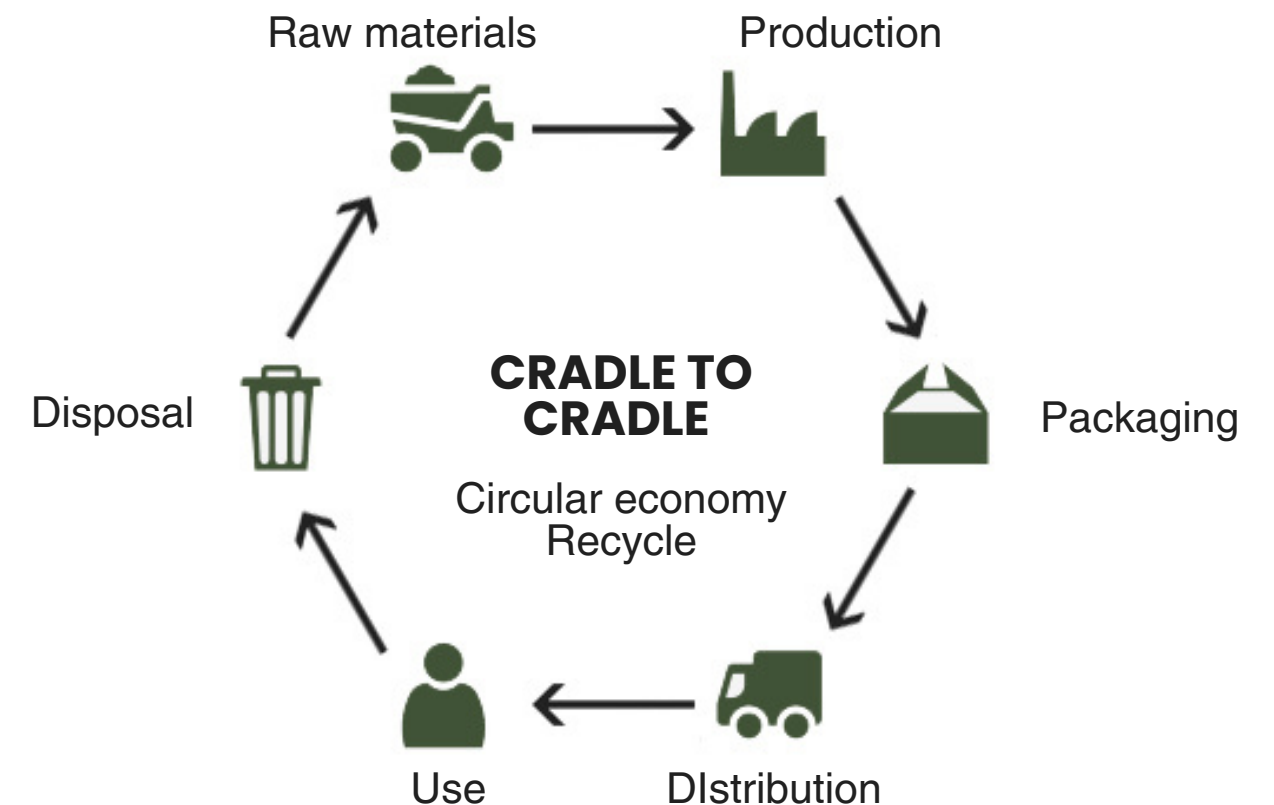
An ecologically intelligent approach to architecture and industry that involves materials, buildings and patterns of settlement that are wholly healthful and restorative. As "doing more with less" is no longer enough, as sustainability, is, after all, only a minimum condition for survival. In addition, none of the materials used to make contemporary buildings are specifically designed to be healthful for people.

Since 1990, there has been a growing interest in sustainability and nature based solutions. In 2002, William McDonough and Michael Braungart published the book *Cradle to Cradle: Remaking the Way We Make Things*. They proposed an integration of design and science that put forward a design framework characterized by three principles derived from nature which inform our designs at all scales:

- Everything is a resource for something else
- Use clean and renewable energy
- Celebrate diversity

## CRADLE TO GRAVE

Linear economy  
Downcycle



It is about no longer seeing materials as needing of a waste management system, but rather, as in the need of creating a cycle where there is no waste, in the search of generating more positive effects through ecological intelligence.

In 2006, the International Living Future Institute created an international building certification based on the Cradle to Cradle approach, The Living Building Challenge.

# CRADLE TO CRADLE

The cradle-to-cradle book asks the question, **¿what would happen if a building was designed mimicking a cherry tree?** The Cherry tree's growth is positive in its entirety, being as it brings positive effects with it, through its links to the systems that surround it.



Even though some might see the tree's falling leaves as wasteful, in fact, these leaves feed the rest of the ecosystem through its fecundity, as they become food for the rest of the ecosystem and provide nutrients for continued growth of other plants, that, in turn, help the ecosystem thrive, having long-term positive effects with this feedback cycle.

From this starting point, it is all about the re-definition of the concept of growth, with growth in nature being perceived as positive, while industrial growth is generally perceived as negative.

If we design buildings like trees, our buildings will be photosynthetic and biologically active, accrue solar energy, cycle nutrients, release oxygen, fix nitrogen, purify water, sequester carbon, provide diverse habitats, create food, build soil and change with the seasons.

# CRADLE TO CRADLE

Winner of an inaugural “Good Design Is Good Business” Award from Business Week/Architectural Record, the **Herman Miller “GreenHouse” office and manufacturing facility** is a case study in how an eco-effective design approach can enhance occupant health as well as corporate productivity and profits.



Herman Miller "Green House" By William McDonough + Partners, Design Architect. 1995. Michigan, United States,

This factory was designed to foster a spirit of community among employees while enhancing the local environment. Not only the building's site plan included extensive constructed wetlands that rebuild soil fabric, provide habitat and purify storm water, but its design, which maximizes fresh air and sunlight, generated increased worker satisfaction and productivity gains of 24%. Corporations locating in developing countries might take note: designing for human and environmental health supports economic productivity.

## CASE STUDY

**Casa Rosenda** is one of 10 houses that were built as part of the Diez Casas para Diez Familias (10x10) project. Each year, student teams from TEC de Monterrey University worked with 10 families to create 10 designs for a new home. Students work with the community in the design of their homes and the best project is selected for construction. In 2009, Casa Rosenda was constructed for Rosenda Flores, a maintenance worker at the University and her family.



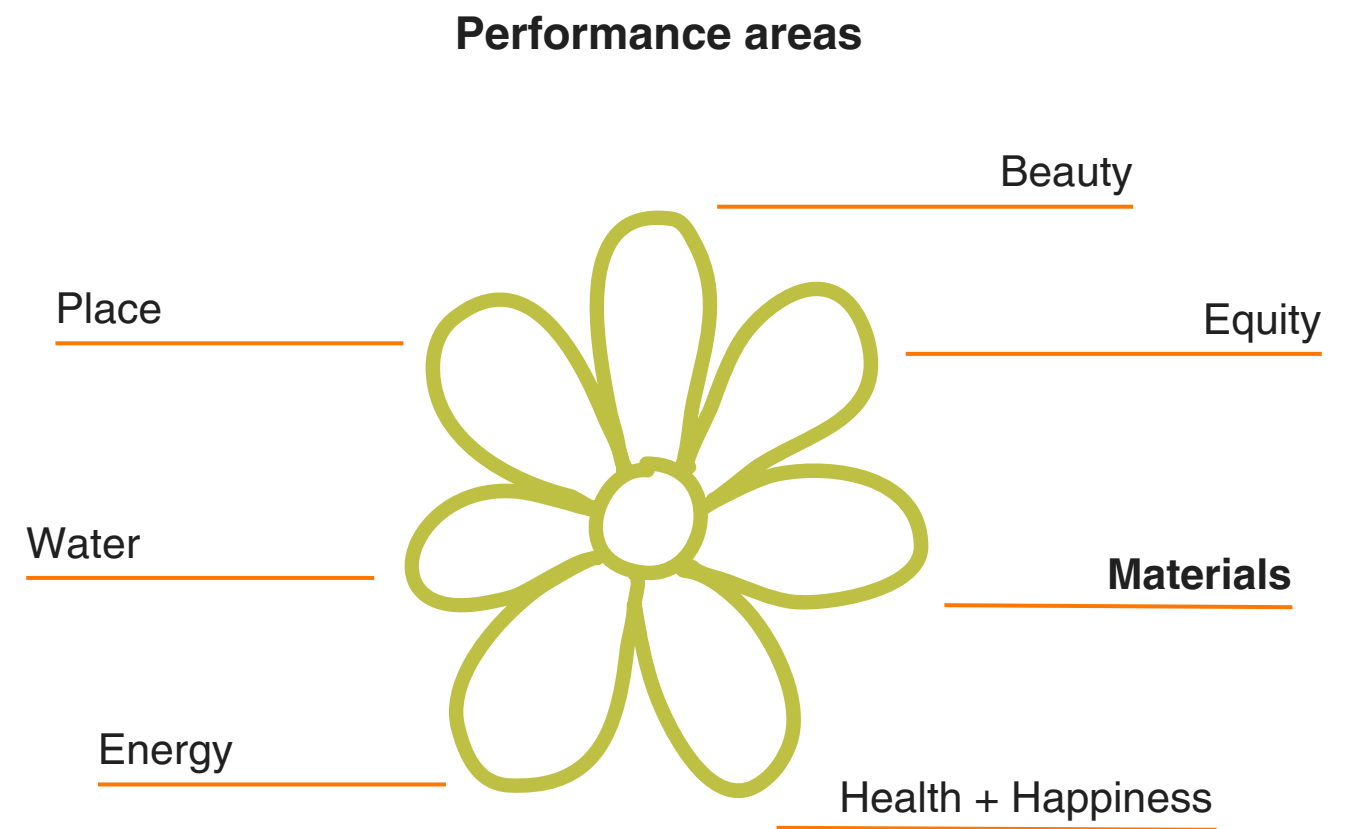
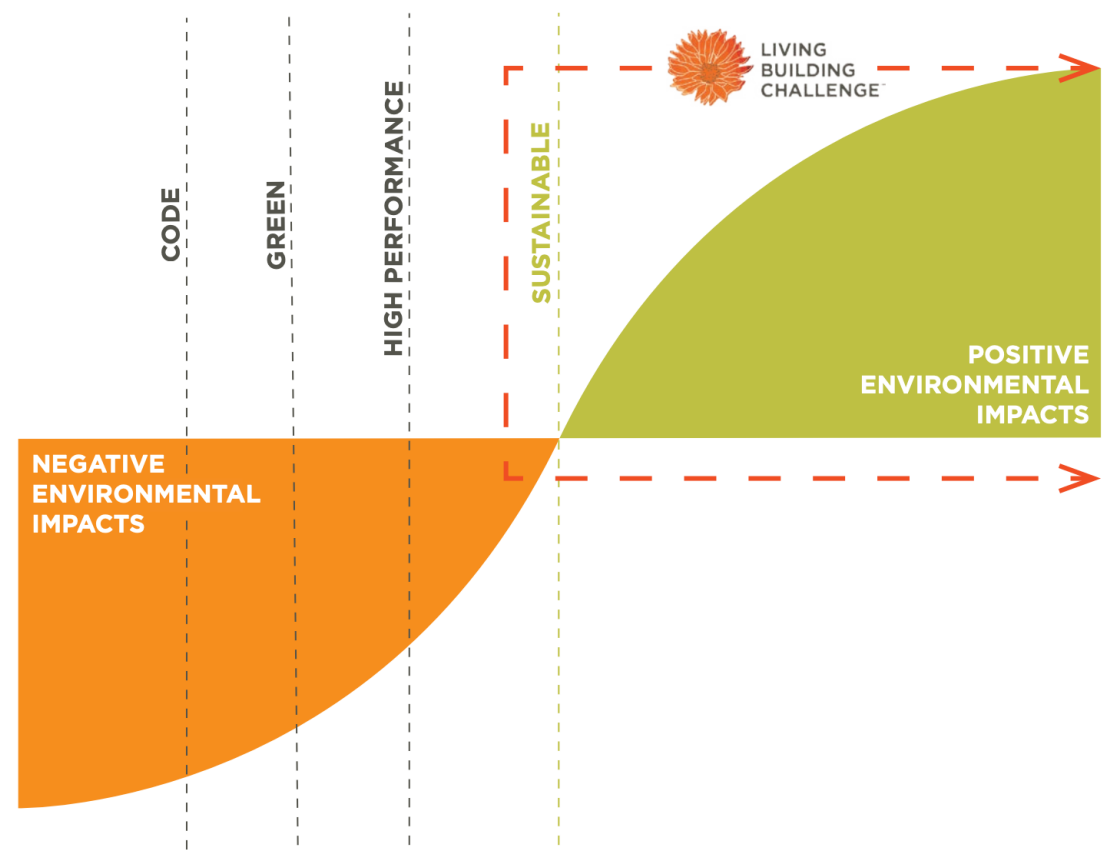
The home, located in Guadalupe, Nuevo León, México, was built with a modular design that can be assembled and disassembled as necessary. The dwelling was built with 40% recovered reused materials: recycled concrete (the main structural column is made of planters), recycled glass panes from vending machines (triple-pane, which is really good for insulation), and recycled wood. Other materials included natural rocks for the foundation and new steel beams to ensure structural integrity. In addition, the home collects rainwater, reuses greywater and has a passive cooling system.

# LIVING BUILDING CHALLENGE

What if every single act of design and construction made the world a better place?

## What is a living building?

- Regenerative buildings that connect occupants to light, air, food, nature, and community.
- Self-sufficient and remain within the resource limits of their site.
- Create a positive impact on the human and natural systems that interact with them.



The Living Building Challenge is an international building certification that envisions a future where all materials in the built environment are regenerative and have no negative impact on human and ecosystem health. The intent is to integrate waste reduction into all phases of projects and to encourage imaginative reuse of salvaged “waste” materials. All projects must strive to reduce or eliminate the production of waste during design, construction, operation, and end of life in order to conserve natural resources and to find ways to integrate waste back into either an industrial loop or a natural nutrient loop.

## REFERENCES

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