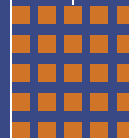




SUSTAINABLE

concrete

the sustainable medium of tomorrow's environment



LEHIGH
HEIDELBERGCEMENT Group



BUILDING ON SUSTAINABILITY

Lehigh Cement Company, guided by the *Sustainability Report* of our parent company HeidelbergCement, upholds a common vision, goals and actions towards sustainable development. Around the globe, our corporate mission makes a commitment to ecological, social and economic goals. Our goal of sustainable development is shared by all regions and business units. We are building on the three pillars of sustainable development: environment, social responsibility, and economy. This means we create added value for our customers, employees, suppliers and shareholders. We preserve natural resources and act responsibly towards the environment – the basis of our economic activity. We recognize our social responsibility at our locations and towards our employees.

www.heidelbergcement.com
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ECONOMIC
SOCIAL
ENVIRONMENTAL

Sustainable design means incorporating a responsible balance of elements into community and building design. It means choosing products that work to achieve design goals. Concrete can help solve many design issues with one product, in unique and interesting ways.

Concrete is more than a structural product. Concrete has incredible design versatility and flexibility. When you need strength and durability, aesthetic appeal, demonstrated product history, energy performance, recyclable attributes, and regional proximity—concrete will get you there.

Create something wonderful... for today, and for the children of our great-grandchildren.

Consider concrete for your next sustainable design.

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1 REDEVELOP LAND AND BUILD INFRASTRUCTURE



Solution
Design communities with concrete pavements in high traffic corridors, sidewalks and paths. Turn brownfields into developed land by remediating contaminated soil with cement-based solidification/stabilization treatment technology.

Benefit
Reduce GHG from the transportation sector and contribute to significant financial savings through reduced maintenance and increased life cycles of concrete pavements. Decrease pressure on undeveloped land by rehabilitating contaminated land.

2 REDUCE SITE DISTURBANCE



Solution
Concrete parking garages on lower floors of a building can limit site disturbance, including earthwork and clearing vegetation.

Benefit
Parking garages within buildings help maintain existing natural areas that would be consumed by paved parking. They reduce the building footprint by reducing paved parking areas.

3 MANAGE STORMWATER



Solution
Concrete grid pavers reduce the rate and quantity of stormwater runoff because they increase infiltration of stormwater. Pervious concrete has a high permeability that allows water to flow through easily, reducing the rate and quantity of stormwater runoff.

Benefit
Limit disruption and pollution of natural water flows by managing stormwater runoff. Preserve natural rainwater absorption characteristics by optimizing the use of soil, plants, trees and surface treatments to capture rain where it falls.

4 REDUCE HEAT ISLAND EFFECT



Solution
Light colored concrete surfaces, pavers and/or open grid pavement used in non-roof areas, have high albedo (solar reflectance) and can reduce heat island effect. Design entrance plazas, walkways and parking lots with light decorative concrete pavement, and surface parking with open grid pavers.

Benefit
Reduce heat islands by using light colored concrete surfaces for higher albedo (reflectivity)—consequently saving energy by reducing the demand for air conditioning and improving air quality. Energy savings also result from decreased night lighting requirements.

5 INCREASE ENERGY PERFORMANCE



Solution
Utilize energy saving thermal mass characteristics with concrete building construction. Add to occupant quality of life with decreased sound transmission and resistance to fire and severe wind conditions.

Benefit
The benefits of thermal mass (heat and cool storage capacity) can help moderate indoor temperature extremes and reduce peak heating and cooling loads. Energy savings result from fewer spikes in heating and cooling requirements.

6 IMPROVE INDOOR AIR QUALITY



Solution
Concrete buildings offer design options that include solid insulated walls, in-floor radiant heating, air filtration and fresh air exchange. A concrete design doesn't require additional interior floor and wall finishing.

Benefit
There are no off-gassing toxicity or volatile organic compounds (VOCs) from concrete. Many finishes for concrete floors and walls do not require carpet, paint or sealants. Air quality can be improved with in-floor radiant heating. The potential for airborne dust, pollens, molds and mildew to be circulated with furnace systems is reduced.

7 DESIGN FOR LONGEVITY AND DURABILITY



Solution
Concrete building design results in a building with a long service life. Building shells can be left in place when renovating, and interior components reused. In new structures, spans can be longer, and the added strength of concrete allows for design flexibility—further increasing the opportunity for reuse over time.

Benefit
Longevity and durability of concrete allows for reuse. Extend the life cycle of existing buildings, conserve resources and the environmental impacts of new building. A concrete building will use less material and create less waste over its life.

8 MANAGE CONSTRUCTION WASTE



Solution
Concrete demolition waste can be reused as aggregate road base or construction fill. In some cases concrete can be reused in new mixes—with technical monitoring.

Benefit
Crushing and reusing concrete on site eliminates transportation and landfill disposal, and redirects waste into the new project. Recycling concrete for reuse on or off site reduces waste, and redirects reusable materials.

9 INCREASE RECYCLED CONTENT



Solution
Supplementary cementitious materials (SCMs) such as fly ash and slag are recycled industrial by-products. They are widely used as replacements for cement in a concrete mix.

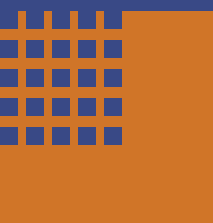
Benefit
Professionally engineered concrete mix designs can effectively utilize SCMs. As recycled content, SCMs are post-industry materials that, when utilized, reduce the consumption of new materials.

10 USE REGIONAL MATERIALS



Solution
The components of concrete—cement, water and aggregate—are extracted and manufactured in most regions of Canada and the US. In many cases, transportation includes ship, barge and rail in addition to trucking.

Benefit
The use of indigenous materials reduces transport distances and the environmental impacts of transportation. Transportation methods such as barging further reduce environmental impacts.



PHOTOGRAPH CREDITS

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| 1 | PROJECT: DocksideGreen, Victoria, BC; Busby Perkins+Will, Windmill Development Group and Vancity Enterprises Ltd. | 3 | Ferndale Ready Mix and Gravel, Inc.: K. Korthis | 7 | PROJECT: Trinity Episcopal Church, Davenport, IA; Edwards Cast Stone Company |
| 2 | PROJECT: The Meriwether, Portland, OR; GBD Architects, Incorporated / Busby Perkins+Will, Gerding/Edlen Development / Williams and Dame Development. Image: Northwest Cement Producers Group, J. Arroyo | 4 | National Ready Mixed Concrete Association | 8 | Portland Cement Association |
| | | 5 | Portland Cement Association | 9 | Portland Cement Association |
| | | 6 | PROJECT: Fisher Pavillion, Seattle, WA; Miller/Hull Partnership, Seattle Center. Image: Northwest Concrete Alliance: D. Frentress | 10 | Ocean Construction Supplies Limited, Marine Division: D. Smith |

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