

**LafargeHolcim** **Foundation**  
for Sustainable Construction

Promoting  
sustainable construction  
since 2003





## **Sustainable construction – an obligation**

Sustainable construction aims to meet present day needs for housing, working environments, and infrastructure without compromising the ability of future generations to meet their own needs in times to come. It incorporates elements of economic efficiency, environmental performance, and social responsibility. It has the greatest impact when architectural quality, technical innovation, and transferability are included.

## **LafargeHolcim Foundation – a commitment**

Founded in 2003, the LafargeHolcim Foundation for Sustainable Construction raises awareness of the important role that architecture, engineering, urban planning, and the building industry have in achieving a more sustainable future. The Foundation expresses the commitment of its sponsor LafargeHolcim to drive sustainability in building and construction.

Cover image: “Metropol Parasol – Redevelopment of Plaza de la Encarnación”, Spain, by Jürgen Mayer H., J. Mayer H. Architekten, Germany; José le Peña and Carlos Merino, Arup, Spain. The landmark and unique urban space is set within the dense fabric of the medieval inner city of Seville (Awards Bronze 2005 Europe).

This page: “Post-War Collective – Community library and social recuperation” aims to re-integrate former soldiers into post-civil war Sri Lankan society. Young men are trained in building techniques through their involvement in the construction of public structures, such as this community library by Robust Architecture Workshop, Colombo, Sri Lanka (Global Awards Silver 2015).



### **Creating awareness, promoting excellence**

The LafargeHolcim Foundation seeks to globally interlink knowledge and to encourage sustainable responses to the built environment. It promotes outstanding approaches to sustainable construction via print and online publications, maintains a comprehensive Internet presence, and engages on social media.

### **LafargeHolcim Awards**

The world's most significant competition for sustainable design (page 13). Projects and visions from architecture, engineering, urban planning, materials science, construction technology, and related fields are eligible for entry.

### **LafargeHolcim Next Generation Awards Lab**

The Foundation's workshop laboratories on sustainable construction (page 19) offer Awards winners in the Next Generation category a platform to exchange ideas on a global level.

### **LafargeHolcim Forum**

The tri-annual series of conferences on sustainable construction (page 17), conducted in collaboration with the Foundation's associated universities, advance the international and interdisciplinary dialog.

"Sanitation system in informal communities", Brazil, by Eva Pfannes and Sylvain Hartenberg, Ooze Architects, Netherlands (Awards Bronze 2017 Latin America). The design focuses on water as a resource (streams, rainwater and waste water) and uses constructed wetlands to clean waste water, closing the loop at a local scale.



## Network of experts and universities

Through its activities, the LafargeHolcim Foundation has developed a close-knit global network of academic and professional experts and acts as information hub connecting professions, geographies, and generations. To pursue its goals, the Foundation collaborates closely with some of the most renowned technical universities worldwide:

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**American University of Beirut (AUB)**, Lebanon

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**American University in Cairo (AUC)**, Egypt

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**École Supérieure d'Architecture de Casablanca (EAC)**, Morocco

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**Illinois Institute of Technology (IIT)**, USA

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**Massachusetts Institute of Technology (MIT)**, USA

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**National University of Singapore (NUS)**, Singapore

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**Swiss Federal Institute of Technology (ETH Zurich and EPFL Lausanne)**, Switzerland

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**Tongji University (TJU)**, China

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**Tsinghua University (THU)**, China

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**Universidad Iberoamericana (IBERO)**, Mexico

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**Universidade de São Paulo (USP)**, Brazil

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**University of British Columbia (UBC)**, Canada

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**University of Melbourne**, Australia

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**University of the Witwatersrand (Wits)**, South Africa

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“The Dryline – Urban flood protection infrastructure” addresses the vulnerability of New York City to coastal flooding and proposes a protective ribbon around southern Manhattan. The infrastructural barrier offers multiple design opportunities, fostering commercial, recreational, and cultural activities. Designed by a consortium led by BIG – Bjarke Ingels Group, Copenhagen, Denmark, and New York, USA (Global Awards Bronze 2015).





**LafargeHolcim**

### **An initiative of LafargeHolcim**

The Foundation is an initiative of LafargeHolcim, the global leader in building materials and solutions. LafargeHolcim is active in the business segments cement, aggregates, ready-mix concrete, and solutions & products. With leading positions in all regions and a balanced portfolio between developing and mature markets, LafargeHolcim experts solve the challenges that customers face around the world. Some 75,000 people work for the company in around 80 countries.

### **Integrated sustainability framework**

Population growth, greater urbanization and rising living standards offer significant business and growth opportunities. At the same time, these trends bring major challenges for the planet. Sustainability needs to bridge the gap and create value for business and society. The sustainability framework of LafargeHolcim focuses on four fields of action: climate, circular economy, environment, and communities. LafargeHolcim supplements this with operating principles, stipulating the standards on key environmental, social, and corporate governance topics.

Initiated by Lord Norman Foster (center image) and his Foundation, the prototype of a Droneport shell was built at the Architecture Biennale 2016 in Venice, Italy. The LafargeHolcim Foundation enabled the self-supporting structure to be made of customized Durabloc compressed earth tiles, produced by the LafargeHolcim Research and Development Center in Lyon, France. With record visitor numbers of more than 260,000 in 2016 and keen interest again in 2018, the Droneport prototype continues to inspire architects and building professionals to pursue innovation in sustainable design.



## **Drivers for sustainability**

The LafargeHolcim Foundation and its associated universities have identified five “target issues” that aim to clarify principles for sustaining the human habitat for future generations. These “target issues” serve as criteria for projects submitted in the LafargeHolcim Awards, and as a road map for other related activities of the Foundation.

## **Progress**

### **Innovation and transferability**

Projects must demonstrate innovative approaches to sustainable development, pushing the envelope of practice and exploring new disciplinary frontiers. Breakthroughs and trend-setting discoveries must be transferable to a range of other applications. Materials should be recyclable and integrated within circular economies.

## **People**

### **Ethical standards and social inclusion**

Projects must adhere to the highest ethical standards and promote social inclusion at all stages of construction, from planning and building to use and servicing, to ensure an enduring positive impact on communities. Proposals must demonstrate how they enhance the collective realm and contribute to an affordable and socially inclusive habitat.

Top: “Publicly-accessible water retention and treatment complex”, Mexico City, by Loreta Castro and Manuel Perló, Mexico (Global Awards Gold 2018). Center: “Floating University”, Dhaka, Bangladesh, by Mun Summ Wong, WOHA, Singapore (Awards Bronze 2017 Asia Pacific). Bottom: “Religious and secular complex”, Dandaji, Niger, by Mariam Kamara, Atelier Masomi, Niger, and Yasaman Esmaili, Studio Chahar, Iran (Global Awards Silver 2018).



## Planet

### Resource and environmental performance

Projects must exhibit a sensible use and management of natural resources throughout their entire life cycle. Long-term environmental concerns, especially pertaining to stocks and flows of material, water, and energy, should be an integral part of the design philosophy.

## Prosperity

### Economic viability and compatibility

Projects must be economically feasible and able to secure financing – whether from public, commercial, or concessional sources – while having a positive impact on society and the environment. Avoiding the wasteful consumption of material resources and limiting CO<sub>2</sub> emissions, an economy of means in construction is to be promoted. Construction must adhere to the logic of circular economy.

## Place

### Contextual and aesthetic impact

Projects must convey a high standard of architectural quality as a prevalent form of cultural expression. With space, form, and aesthetic impact of utmost significance, the material manifestation of the design must make a positive and lasting contribution to the physical, human, and cultural environment.

Top: "Sanitation system in informal communities", Brazil, by Eva Pfannes and Sylvain Hartenberg, Ooze Architects, Netherlands (Awards Bronze 2017 Latin America). Center: "Zero Energy Development units on parking lots", United Kingdom, by Bill Dunster, ZEDfactory, United Kingdom (Awards Bronze 2017 Europe). Bottom: "Net-zero greenhouse for Wellesley College", USA, by Kennedy & Violic Architecture, USA (Awards Bronze 2017 North America).



# LafargeHolcim Awards

## Recognition of forward-looking projects

Flagship activity of the Foundation is the Lafarge-Holcim Awards for Sustainable Construction. It rewards projects and visionary concepts that go beyond balancing environmental performance, social responsibility, and economic growth, thereby exemplifying architectural excellence and a high degree of transferability. Each competition cycle spans three years, and a total of USD 2 million in prize money is awarded.

## Engaging the next generation

The LafargeHolcim Awards competition for projects and visions from architecture, engineering, urban planning, materials science, construction technology, and related fields has two categories: The main category is open for exemplary projects in sustainable construction at an advanced stage of design with high probability of realization. The Next Generation category for visionary design concepts and bold ideas is restricted to authors up to 30 years of age.

Top: The winners of the Global LafargeHolcim Awards 2018 in Mexico City. Center: Global Awards 2018 finalists exhibition in Zurich, Switzerland. Bottom: Members of the Global LafargeHolcim Awards jury 2018 (from left to right): **Marc Angélil** (Switzerland), **Xuemei Bai** (Australia), **Rolf Soiron** (Switzerland), **Jens Diebold** (Switzerland), **Francis Kéré** (Germany/Burkina Faso), **Werner Sobek** (Germany), **Brinda Somaya** (India), **Alejandro Aravena** (Chile), and **Stuart Smith** (United Kingdom). Not pictured: **Hashim Sarkis**.



## **Two-stage international competition**

The competition is handled in two stages. In the regional phase, independent juries hosted by the associated universities of the Foundation evaluate submissions in each of the geographic regions: Europe, North America, Latin America, Middle East Africa, and Asia Pacific. In the global phase, an independent panel of internationally renowned experts allocates Global Awards Gold, Silver, and Bronze among the 15 projects that received Awards in the regional phase.

## **Entries from across all regions**

The 5<sup>th</sup> International LafargeHolcim Awards competition attracted a total of 5,085 entries by authors in 121 countries. 3,606 entries were deemed valid, and 1,836 passed the formal and quality checks. The validated submissions were assessed by one of five regional juries, and global finalists further assessed by the global jury.

The 6<sup>th</sup> International LafargeHolcim Awards competition is open for entries until February 25, 2020.

Top: "Water reservoirs as public park", Colombia, by Mario Camargo and Luis Tombé, Colectivo 720, Colombia (Global Awards Gold 2015). Center: "Primary healthcare center", India, by flying elephant studio, India (Acknowledgement prize 2011 Asia Pacific). Bottom: "Tidal energy landscape", Argentina, by Stefano Romagnoli, Juan Cruz Serafini, and Tomás Pont Apóstolo, Argentina (Next Generation 1<sup>st</sup> prize 2017 Latin America).



# LafargeHolcimForum

## **Fostering interdisciplinary dialog**

To advance the international and interdisciplinary dialog, the LafargeHolcim Foundation conducts symposiums at different scopes.

## **LafargeHolcim Roundtable**

To prime the respective LafargeHolcim Forum, the Foundation organizes Roundtable workshops. They bring together experts who devise a clear agenda in preparation of the Forum.

## **LafargeHolcim Forum**

The LafargeHolcim Forum for Sustainable Construction is a tri-annual series of conferences, conducted in collaboration with the Foundation's associated universities. The multi-day event is an academic platform for architects, engineers, urban planners, materials scientists, and construction specialists of all generations and geographic locations.

The 6<sup>th</sup> International LafargeHolcim Forum was hosted by the American University in Cairo, Egypt. It was dedicated to the topic of "Re-materializing Construction". Keynote speeches, workshops and site visits focussed on strategies to reduce consumption throughout the material cycle from extraction to processing, transport, installation, maintenance, and removal.

Top: The 6<sup>th</sup> International LafargeHolcim Forum brought together more than 350 leading thinkers from 55 countries. Center: Full-day excursions relevant to "Re-materializing Construction" visited sites in the proximity of Cairo and provided a local contextualization of the global discussions. Bottom: Expert exchange at the LafargeHolcim Roundtable 2018 dedicated to "Re-materializing Construction" in Stuttgart, Germany.



## **Encouraging young talents**

Recognizing the critical importance of encouraging the future generation of industry professionals, the LafargeHolcim Foundation supports promising talents on various levels.

### **LafargeHolcim Awards**

The competition features a Next Generation category, enabling young professionals up to 30 years to participate with visionary design concepts and bold ideas in sustainable construction.

### **Next Generation Awards Lab**

The workshops offer Next Generation prize winners from the Awards competition a platform to exchange ideas on a global level.

### **Student Poster Competition**

While the Awards competition enables young talents to challenge their approaches against their peers, the Foundation's invitation to exhibit posters and participate at the Forum makes the experts of tomorrow a part of today's debate.

### **Research in Practice Grants**

To support the development of knowledge required to meet the challenges in the construction industry, the Foundation offers three Research in Practice Grants for a two-year period. The program mentors and financially supports young practitioners in conducting ground-breaking, practice-related research.

Top: Next Generation prize winners of the LafargeHolcim Awards 2017 Middle East Africa. Center: Participants of the LafargeHolcim Next Generation Awards Lab 2018 in Mexico City. Bottom: Exchanging ideas between generations at the student poster competition as part of the LafargeHolcim Forum 2019.



The Board of the LafargeHolcim Foundation ensures that the activities of the Foundation are aligned with current interpretations of sustainable construction.

The members are:

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- 1 Roland Köhler, Chairman**  
Chairman of the Board, Noser Group, Switzerland.

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  - 2 Marilyne Andersen**  
Professor of Sustainable Construction Technologies, Head of the Laboratory of Integrated Performance in Design, Swiss Federal Institute of Technology (EPFL Lausanne), Switzerland.

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  - 3 Marc Angéilil**  
Professor of Architecture & Design, Swiss Federal Institute of Technology (ETH Zurich), Switzerland.

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  - 4 Alejandro Aravena**  
Partner Architect & Executive Director, Elemental, Chile.

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  - 5 Maria Atkinson AM**  
Founding CEO, Green Building Council of Australia, Australia.

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  - 6 Jens Diebold**  
Head of Sustainable Development, LafargeHolcim, Switzerland.

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  - 7 Harry Gugger**  
Professor of Architecture, Chair of Laboratory Basel, Swiss Federal Institute of Technology (EPFL Lausanne), Switzerland.

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  - 8 Jan Jenisch**  
Chief Executive Officer, LafargeHolcim, Switzerland.

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  - 9 Enrique Norten**  
Principal and Founder, TEN Arquitectos, Mexico/USA.

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  - 10 Stuart Smith**  
Director, Arup, United Kingdom.

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  - 11 Brinda Somaya**  
Principal Architect and Managing Director, Somaya & Kalappa Consultants, India.

LafargeHolcim Foundation  
for Sustainable Construction  
Hagenholzstrasse 83  
8050 Zurich, Switzerland  
Phone +41 58 858 82 92

[info@lafargeholcim-foundation.org](mailto:info@lafargeholcim-foundation.org)  
[www.lafargeholcim-foundation.org](http://www.lafargeholcim-foundation.org)  
[#lafargeholcimawards](https://twitter.com/lafargeholcimawards)

