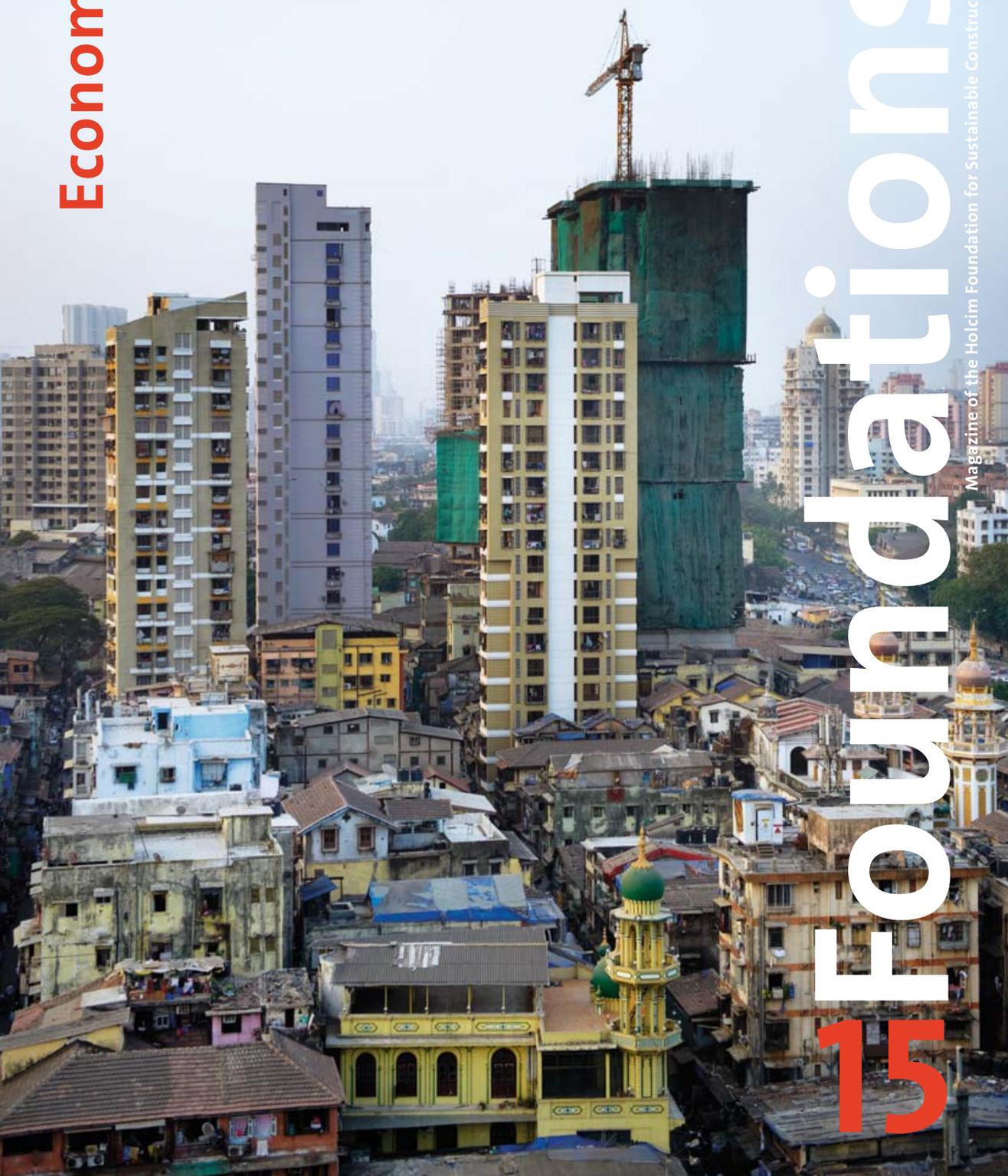


Economy of Sustainable Construction

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Foundations

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Why is common sense
so uncommon?

The principles of sustainable construction are actually quite simple, says Chilean architect Alejandro Aravena, because they are part of common sense. It's just too bad that common sense is not commonplace!

“Sustainability is nothing but the rigorous use of common sense,” assures Alejandro Aravena. And if sustainability is merely an application of common sense, then it follows that sustainable construction must be the simplest thing in the world. But that’s not the case, as experience shows. “Why is common sense so uncommon?” asks the architect rhetorically – and investigates the reasons himself: “Because the forces that shape our environment – money and power – follow the commonplace, not common sense.” Architects adapt to this concept too often because they and their projects ultimately depend on people with money and power. “The typical question in the building sector in politics is: Has this been done before? If the answer is no, people say: Maybe we can try it next time, but for now...” In this case it doesn’t matter whether a solution makes common sense or not; the commonplace usually prevails.

Aravena and his colleagues at the architecture office Elemental have seen how great the pressure of the commonplace is. And they have bent to it. The architect presented the Siamese Towers project, designed for the campus of the Universidad Católica in Santiago, Chile in 2005: “The clients wanted a glass tower because everybody is building glass towers at the moment,” – nonsense in terms of sustainability, as the architects with a bit of common sense soon confirmed. Nevertheless, they bowed to the power of the client in order not

“There is no doubt that there is a value in sustainable construction, but the way things are today requires us to pay a higher cost to achieve that value. How do we make the people in power give one to acquire the other?”



Elemental's concept for the reconstruction of Constitución has many advantages – including much more public green space.

to lose the commission. That was a mistake, admits Aravena openly: “We did our best, but in terms of sustainability it wasn’t good enough.” This project taught us a lesson that must not be repeated in the future.

This lesson critically influenced a subsequent commission for Elemental. On February 27, 2010 the Chilean coastal city of Constitución was destroyed by an earthquake measuring 8.8 on the Richter scale followed by a tsunami. Elemental was asked to develop a master plan for the reconstruction of the city. This was an extraordinary challenge particularly because the planning had to be completed within 100

“Time is one of the major issues if we want to produce shifts and change in the current situation.”



days. It was quickly determined that there are basically three ways to protect Constitución against future catastrophes. First, terminate habitation of the endangered coastal area. This plan would be predestined to fail, Aravena says with certainty, “because sooner or later settlements would be rebuilt at ground zero.” Also the second way – the “commonplace” approach – seemed practicable at first glance: to build a colossal protection wall along the entire coast. “Building a wall to protect the city from future destruction would have been useless because nature’s energy is so big that it is hard to resist,” tells Aravena. The third option remains: not trying to stop a tsunami, but rather breaking its power – with a forest belt. The example of a forest island off the coast of Constitución showed that the trees can dissipate the tremendous energy of a seismic wave. Adopting this approach would be a matter of pure common sense.



Money can be saved by proceeding in steps: Elemental designed buildings that the residents can expand over time – and will be ultimately cheaper than buildings completed at once.

But this solution, the most sustainable in every way, was also the most expensive – which brought Aravena to the core topic of the Forum. He and his team found arguments to make the forest an attractive solution for the authorities. Before the earthquake, various government agencies in Constitución had individually conducted construction projects totaling USD 52 million. “Coordinating rebuilding projects turned out to be cheaper than the uncoordinated projects going on before the earthquake,” told the architect – only USD 48 million.

The architects also found uncommon solutions for the new buildings to be erected. “The usual discussion in Chile, Latin America, and maybe the world is: If we have more money we can deliver bigger units, better built. In order to tackle this issue we had to redefine quality by the capacity of a housing unit to gain value over time.” The architects ultimately developed a system in which half the buildings would be constructed in a first phase – and in a later second phase the residents would build the rest themselves when they have the money – at low cost and with layman’s skills.

The Constitución project allowed Alejandro Aravena and his team to draw significant conclusions regarding sustainability and the economy of sustainable construction: “Sustainable construction has to be

“Economy of Sustainable Construction”

1. Highest cost is **coordination** (not money)
2. Scarcest resource is **synthesis**
3. Welcome **constraints** (time, money, coverage)
4. Scarcity is a great **filter** against the superfluous
5. Be prepared to **loose** a job
6. Do not innovate if **old** approach still makes sense
7. Global agreement / **local** performance

Alejandro Aravena believes that the economy of sustainable construction follows a few simple principles.

cheaper than unsustainable construction. Otherwise, we can make as many projects as we want, but decisions will be made against them.” It is common to choose the option that is cheapest at first glance. Limitations such as budget, time, and material do, however, have a positive aspect: They prevent excesses and they foster innovation.

“Houses should be the opposite of cars: They should gain value over time.”

But here Aravena advises caution: “Don’t innovate for the sake of innovation!” If common sense tells you that the conventional way works, then there’s no reason to reinvent the wheel. The architect says that his ideas are nothing spectacular: “All my conclusions are guided by common sense. They are not that brilliant – they are just common sense!”



Alejandro Aravena is Executive Director of Elemental, a socially-motivated architectural practice based in Santiago, Chile. His works have been exhibited at X-hibition, Harvard GSD (2004), X in Centro de Extensión UC, São Paulo Biennale (2007), Milan Triennale (2008), and the Venice Biennale. He received the Silver Lion at the XI Venice Biennale (2008), 1st prize at the XII (2002) and the XV (2006) Santiago Biennale, and the Erich Schelling Architecture Medal 2006 (Germany). He was a Mies van der Rohe Award (2000) and Iakhov Chernikhov Prize (2008) finalist. In 2009, he was one of ten non-British architects recognized as International Fellow of the Royal Institute of British Architects, and was also appointed to the Pritzker Prize for Architecture jury. He lectured at Pontificia Universidad Católica de Chile (UC) since 1994, and was visiting professor at Harvard GSD (2000–05) and the University of Wisconsin (2010). He won the Holcim Awards Silver 2011 for Latin America. He studied architecture at UC, Istituto Universitario di Architettura di Venezia (Italy) and the Architectural Association (UK).