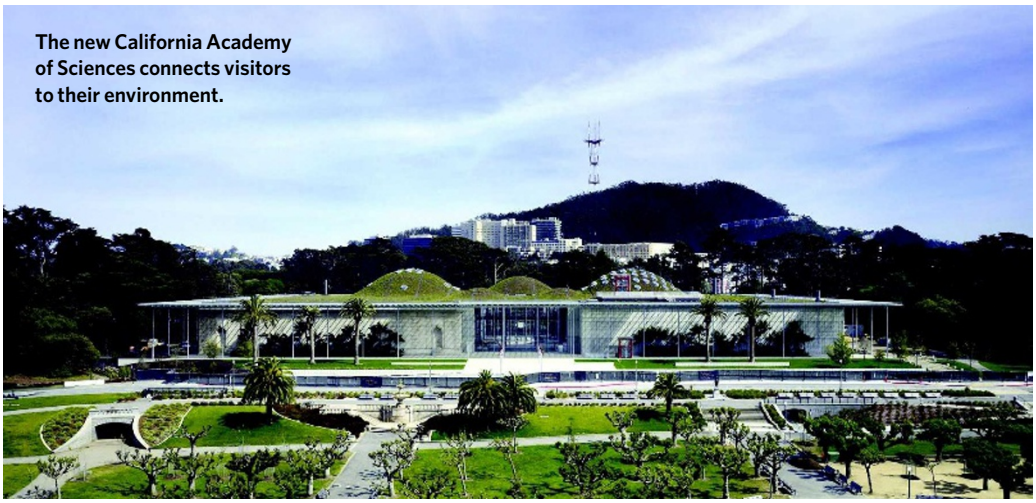


The new California Academy of Sciences connects visitors to their environment.

T. GRIFFITH

A sustainable home for science

The California Academy of Sciences reopens this week after a US$488-million redesign. Inspired by its setting in San Francisco's Golden Gate Park, the landmark museum harnesses sustainable building technology to kindle a sense of scientific wonder.

The original academy was founded in 1916. Severe structural damage caused by the 1989 Loma Prieta earthquake prompted executives to embark on the largest museum-rebuilding project in the world for a century. Architect Renzo Piano, 1998 winner of the Pritzker Architecture Prize, drew up plans for a new sustainable home for the academy, declaring that "in the twenty-first century, the most inspiring element for architecture is the fragility of Earth".

The academy will house 400 employees — including 100 working scientists — and tens of thousands of living organisms, from mangrove trees to African penguins, South American ants and tropical corals of the Philippines. Piano's design showcases this biodiversity while incorporating features to save energy, water and materials. For instance, the building uses reclaimed steel, and 68% of the insulation is made from recycled blue denim jeans.

The museum's signature feature is its living roof. Boasting seven undulating hills and a meadow of colourful native Californian wildflowers, the roof combines aesthetic and engineering functions. The seven hills reference the peaks encompassed by San Francisco's original city limits, and the wildflowers that have been chosen will bloom all year round. This hectare of plants will stop 7 million litres of rainwater run-off from flowing to the ocean each year, and the 20-centimetre-thick mat of greenery helps to insulate the building. The landscaped slopes funnel cool air into the interior courtyard, and automated skylights open and shut to reduce the need for electric lighting, heating and cooling systems. A canopy surrounding the roof's edge offers shade and supports solar panels to further cut energy costs.

Natural light and air pour through the exotic exhibits: a 30-metre-tall living rainforest with live insects, birds and bats, a remodelled planetarium, and the deepest living coral reef display constructed anywhere in the world. Piano fulfils his goal of connecting the museum's visitors with the environment outside. "The chance to be in the centre of Golden Gate Park is immense, so you have to be transparent," he explains.

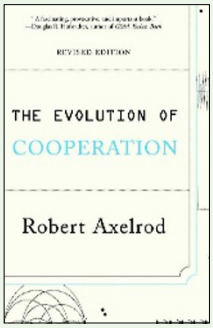
The bold new academy declares that we should rethink science's position in society. No longer secreting their wisdom in an ivory tower, scientists must today interact openly with the world. Piano shows that this move to transparency can be inspiring rather than frightening, and that science itself stands to benefit. ■

Erika Check Hayden is a correspondent for *Nature* based in San Francisco.

California Academy of Sciences
San Francisco, California
Opens 27 September 2008

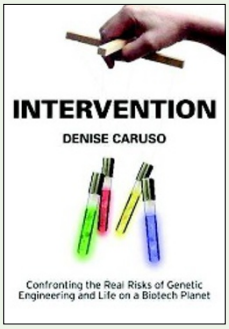
The Evolution of Cooperation by Robert Axelrod
(Basic Books, 1984)

The next US leader should be concerned by the instability of intelligent life, so Al Gore's *An Inconvenient Truth* (Rodale, 2006) is a good choice. Dinosaurs hung on for some 160 million years, but how long will humans survive? We are causing such irreversible ecosystem destruction that we will eliminate our own habitat. Technological advances alone cannot fix the problem. To reach a solution, humans must cooperate on a global scale, requiring us to show wisdom, generosity and respect. A classic from which we may all learn is Robert Axelrod's book. Martin Nowak, professor of biology and mathematics at Harvard University.



Intervention by Denise Caruso
(Hybrid Vigor Press, 2006)

In these uncertain times, the presidential incumbent might be less well served by all the good news about science. As a cure for complacency, recall that the mathematics of finance has been corrupted by being put at the service of fantasy and greed in the economic crisis that is now gripping the United States. Mathematics has enabled assets to be given fictitious valuations that even now threaten catastrophe. Scientific research in the service of industry and the state is not immune to such pressures. A cautionary tale is told by Denise Caruso in *Intervention: Confronting the Real Risks of*



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