

Opens Sunday

The Museum  
of Modern Art

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New York, NY

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[www.moma.org](http://www.moma.org)

Translating scientific and  
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that change people's lives

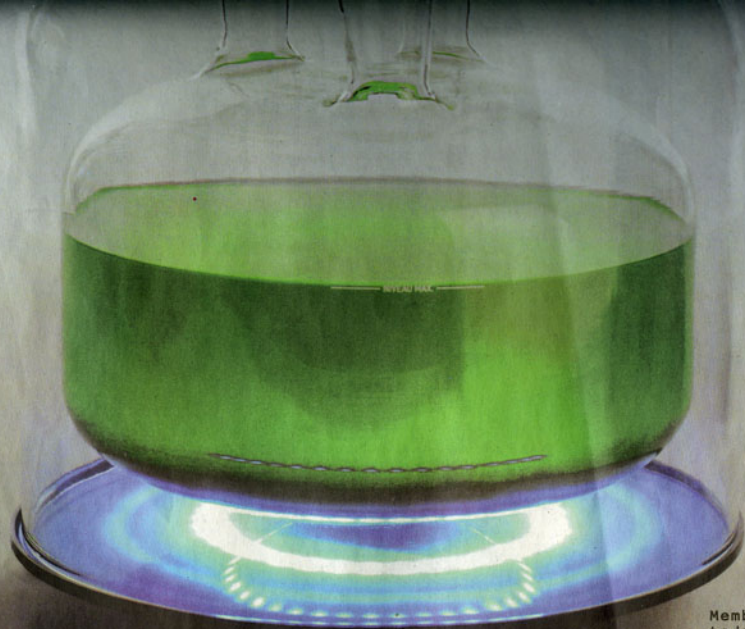
Design and  
the Elastic Mind

Feb. 24–May 12

MOMA

The **O<sub>2</sub> Oxygen Generator** cleanses polluted air in the home using light and motion to activate photosynthesis in blue-green algae.





**Members Previews  
today and tomorrow:  
Join in MoMA's lobby &  
see it first.**

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is supported by NTT DoCoMo,  
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funding is provided by The  
Contemporary Arts Council of  
The Museum of Modern Art.

Mathieu Lehanneur, *Oxygen generator*,  
2006. Glass, aluminum, *Spirulina Platensis*,  
magnetic stirrer, white LEDs, oxymetric  
probe. Photo © Véronique Huyghe

**WEEKEND Arts** FINE ARTS  
LEISURE

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FRIDAY, FEBRUARY 22, 2008

*The New York Times*



# The Soul in the New Machines

Bioengineered crossbreeds. Temperamental robots. Spermatozoa imprinted with secret texts. Although the fascination with organic form has been around since the Renaissance, we have now entered an age in which designers and architects are drawing their inspiration from hidden patterns in nature rather than from pretty leaves or snowflakes. The results can be scary, but they may also hold the key to paradise.

**NICOLAI  
OUROUSSOFF**

**DESIGN  
REVIEW**

"Design and the Elastic Mind," an exhilarating new show opening on Sunday at the Museum of Modern Art, makes the case that through the mechanism of design, scientific advances of the last decade have at least opened the way to unexpected visual pleasures.

As revolutionary in its own way as MoMA's "Machine Art" exhibition of 1934, which introduced Modern design to a generation of Americans, the exhibition is packed with individual works of sublime beauty. Like that earlier show, it is shaped by an unwavering faith in the transformative powers of technology.

Yet the exhibition's overarching theme, the ability to switch fluidly from the scale of the atom to the scale of entire cities, may sound a death knell for the tired ideological divides of the last century, between modernity and history, technology and man, individual and collective. It should

be required viewing for anyone who believes that our civilization is heading back toward the Dark Ages.

Organized by Paola Antonelli, the show opens with an act of high-tech graffiti. A can of spray paint is suspended from a system of cables and pulleys in front of a wall. A small motor guided by computer software winds and unwinds the cables, moving the spray can methodically across the white surface to spell out the show's title.

It is a nice, mischievous touch. And the precision of the script, in contrast to the paint's fuzzy edges or the occasional drip, reinforces the show's point that the old Manichaean duality between the artist and artificial intelligence, nature and machine, no longer holds.

To create "The Honeycomb Vase," for instance, Tomas Gabzdil Libertiny designed a temporary frame in the shape of a squat vase with a slender neck. A colony of nearly 40,000 bees then went to work for a week constructing a hive over it in what the designer calls "slow prototyping" — a pointed reference to the methodical repetition of the old assembly line.

The resulting voluptuous, translucent form reflects a close collaboration between man and nature in which the artist serves as a gentle guide before allowing the bees to take over.

Similarly, Joris Laarman's "Bone Chair" was

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**Design and the Elastic Mind**  
Top, "New City" by Peter Frankfurt, Greg Lynn and Alex McDowell, and, above, "The Honeycomb Vase" by Tomas Gabzdil Libertiny in a show opening Sunday at MoMA.

# The Soul in the New Machines

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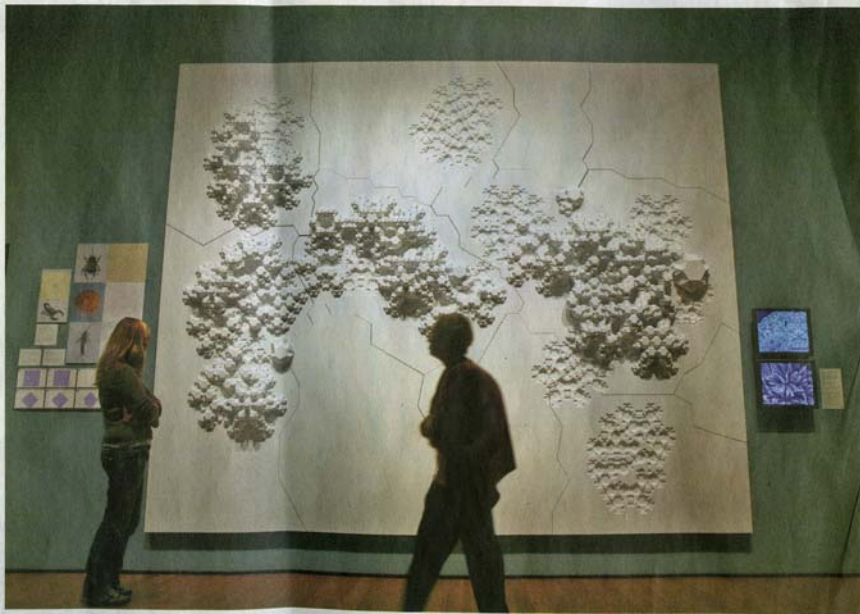
created with computer software that mimics the creation of human bones. The weight and stresses on a typical chair are programmed into the computer, which then works out an appropriate "bone" structure, churning out a series of increasingly refined prototypes. (The final computer version has a raw, undigested quality, but Mr. Laarman couldn't resist adding a final dash of aesthetic refinement by smoothing over the rough edges, a nice little example of how reluctant some designers are to yield control.)

Other designers are more concerned with developing strategies that allow the machine to adapt to individual tastes rather than with creating the perfect prototype. Using rapid manufacturing systems, the Swedish team known as Front Design have developed a process in which a person sketches a piece

**Design shock in a world of bees, atoms, robots and global cities.**

of furniture in the air, which is then recorded with motion-capture video technology and transformed into a digital file. The file can then be used to generate a laser-cut piece of real furniture. Individual desire takes precedence over mass consumer tastes.

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## Design shock in a world of bees, atoms, robots and global cities.

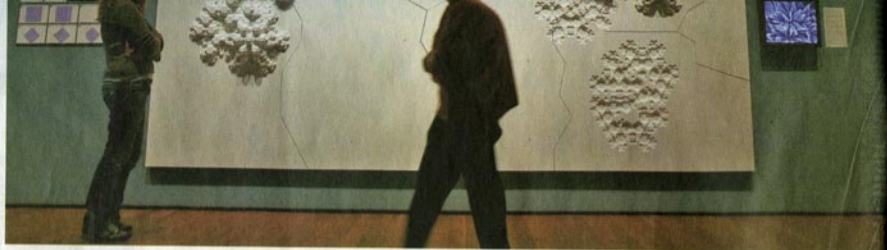
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But the show is about more than gorgeous, environmentally sensitive design. The human body is repositioned as part of a fluid, elastic chain that extends from minuscule atomic particles to global communication networks.

The best example of this approach is Benjamin Aranda and Chris Lasch's "Rules of Six," which uses algorithms to fashion an organically based architecture. Mimicking the growth patterns of microscopic nanostructures, they envisioned an unpredictable, self-generating landscape that can multiply indefinitely without sacrificing stability. Their design is indifferent to scale: the sprawling matrix of three-dimensional interlocking hexagons could represent rooms, buildings or entire urban neighborhoods.

"Design and the Elastic Mind" opens on Sunday and continues through May 12 at the Museum of Modern Art; (212) 708-9400, [moma.org](http://moma.org).



"Rules of Six" by Benjamin Aranda and Chris Lasch, from the exhibition "Design and the Elastic Mind," opening on Sunday at the Museum of Modern Art.

RICHARD PERRY/THE NEW YORK TIMES

In another fascinating if fanciful application of nanotechnology, the typeface designer Oded Ezer proposes using it to imprint incantatory typed messages on spermatozoa, the high-tech equivalent of a primitive fertility ritual.

The ease with which human designers can shift from the atomic to the global is driven home by the show's layout, designed by Lana Hum. Visitors pass between two walls that converge slightly, to create a forced perspective — an architectural trick that extends all the way back to Palladio in the 16th century but here makes you feel like Alice tumbling through the looking glass.

Suddenly you are in a space packed with unfamiliar objects, like a trade fair. The scales shift once again; dystopian visions seep into the picture. "New City," a projected three-dimensional display of a virtual world by Peter

Frankfurt, Greg Lynn and Alex McDowell, is a model of an idealized society where buildings, cities and entire geographic regions all flow seamlessly together. It suggests how the Internet could be used as a testing ground for an emerging utopia.

Perhaps the most unnerving project here is "Architecture and Justice" from the Million Dollar Blocks Project, a graphic study by Columbia University's Spatial Information Design Lab. Using the computer to filter through masses of data on prison populations, the group studied several American cities and identified the blocks where the highest concentration of prison inmates lived when they were arrested. That more than \$1 million a year is spent on incarcerating people from each one of these blocks is shocking misuse of resources.

The graphic display on a blood-red

grid is a bold expression of how the computer can be a powerful analytical tool for dislodging received wisdom and enabling us to examine entrenched social problems through a new lens.

If the show has a weakness, it's when it introduces artsy expressions of futuristic societies that tend to be technologically crude: images of heavy plastic tubes that potential sexual mates can use to sniff each other, for example, or robots that refuse to respond until they are lavished with affection.

The almost unwieldy scope of the exhibition, however, is a virtue: it sends

### ONLINE: DESIGN AND TECHNOLOGY

Additional images from the show at the Museum of Modern Art:

[nytimes.com/design](http://nytimes.com/design)

our imaginations spinning in endless directions. The technological optimism and trade-show ambience, for example, may conjure Charles and Ray Eames's gigantic slide displays from the 1959 Moscow Trade Fair, which flaunted the peacetime technology of cold-war America. I left MoMA already dreaming of a followup show that would map out the link between today's new design technologies and the wartime military research that generated them.

Or how about a show that looks at the relationships between technology, modernity and fundamentalism?

But I don't want to detract from the mood. "Design and the Elastic Mind" is the most uplifting show MoMA's architecture and design department has presented since the museum reopened in 2004. Thanks to its imaginative breadth, we can begin to dream again.