



STORY DANIEL SCHEFFLER

ART OF ENGINEERING

THE POSSIBILITIES ARE LIMITLESS WITH THE COMBINATION OF CREATIVITY

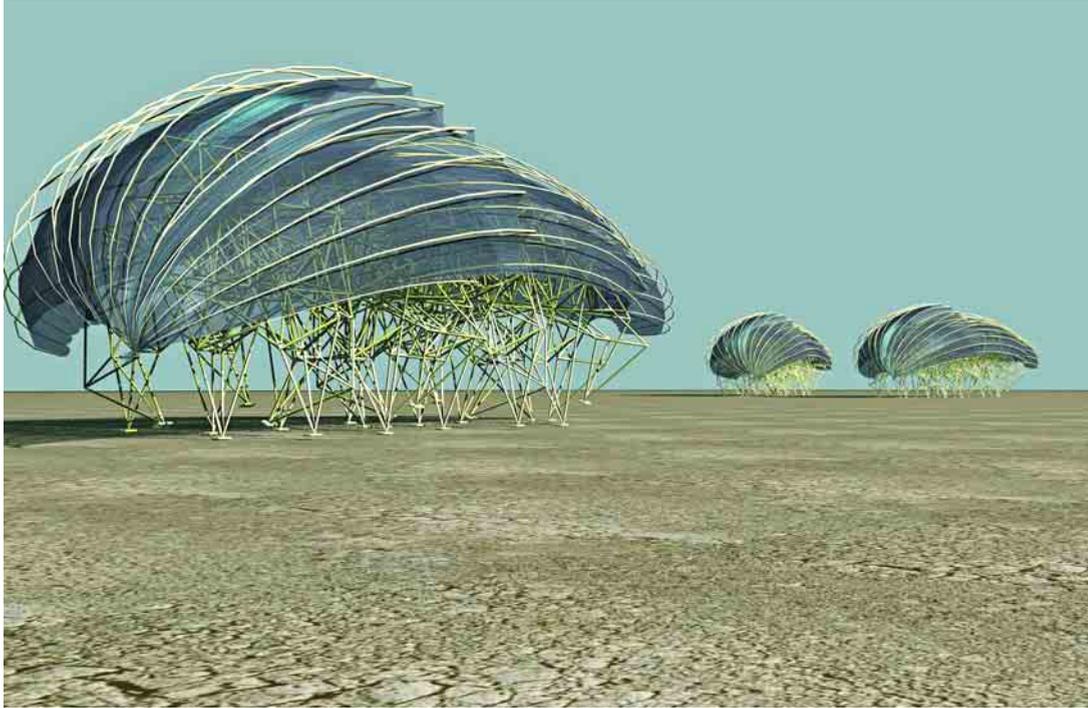


Art has changed. It is no longer just the way we have expected it to be – provocative, beautiful or both. Over the past century, art has been bestowed with hi-tech engineering and suddenly this technology has changed fundamentally what art could be – and the way we see it.

The fused concept of art and engineering is not only appearing in galleries or collectors' homes, but is now roaming the streets, filling up department stores and creeping around beaches. From Alessi kitchen gadgets to the latest Aston Martin, the idea of art and beauty is married to hi-tech performance. Art, with engineering as its companion, allows for innovation to retain its sense of beauty. It was the German school of thought, the Bauhaus, that combined art and technology in the 1920s, which set this course for modernist ways of creating – and a century later the movement shows no signs of slowing down.

In 1967, engineers Billy Klüver and Fred Waldhauer, and artists Robert Rauschenberg and Robert Whitman, launched

PHOTOS: JOE KRAMM FOR R & COMPANY, R & COMPANY



FAR LEFT
A sculpted vase by the Haas Brothers, in which art/design and engineering meet

LEFT
Theo Jansen's Strandbeests— large mechanisms made of PVC that can move on their own

BELOW
Accretion vases by the Haas Brothers





ABOVE
Japanese artist Fujiko Nakaya's
Fog, which consists of a water
vapour cloud

“Experiments in Art and Technology” (E.A.T.) in New York. Established as a non-profit and tax-exempt organisation, E.A.T.’s ambition was to advance the colluding of artists and engineers.

One of their most applauded activities was the Pepsi Pavilion of 1970 in Osaka, where E.A.T. artists and engineers came together to design and programme an immersive dome that featured a fog sculpture by Japanese artist Fujiko Nakaya. Her structure consisted of a “Buckminster Fuller-style geodesic dome covered by a water vapour cloud sculpture” and architect John Pearce fitted a Mylar mirror inside it for a hologram effect. Because of the spherical mirror, viewers were able to walk around the structure and see it from all angles – a perfect

marriage of beauty through art and technical know-how through engineering.

On another terrace near the Pavilion, American experimental filmmaker and artist Robert Breer created 1.8-metre-high kinetic sculptures moving around and emitting noises. When one of these “floats” hit an obstacle it would reverse direction – art and engineering in practice. The Pavilion is still to this day considered “one of the most monumental immersive art and technology projects of the 20th century”, according to Christiane Paul’s *Digital Art (World of Art series)*. According to Paul, E.A.T. experimentations led to “media-art explorations” in the 1990s and eventually the “ArtScience movement” of the 2000s that expands across the “ontological impact” science has on society today.

Debra Hockemeyer, engineer and owner of Western Ridge Consulting in Los Angeles, explains that art and engineering can come together to “engage both sides of the brain”, creating a result that ➔

THE FOG SCULPTURE WAS A PERFECT MARRIAGE OF
BEAUTY THROUGH ART AND THROUGH ENGINEERING

RIGHT
A unique, hand thrown Dark
Father Accretion vase by the
Haas Brothers

BELOW
The Hex stools, also by the
Haas Brothers, are crafted
using tiles made from
engineered rods that are
then manipulated by hand
to create something
intriguing



“enlightens and entertains”. This combination has been seen in the architectural world for centuries – “from the Roman aqueducts to the Beijing Bird’s Nest stadium, with architects like Frank Gehry and Zaha Hadid”. Hockemeyer also describes the new generation of art and engineering intersecting in the digital realm of “engineering design and graphical user interfaces”, as we’ve observed from the film *Avatar* or the popular Apple series of products.

These works are usually pieces with a concept or aesthetic that somehow go beyond their function. This idea is one of the founding principles of a United States-based design business, R & Company. In a recent interview, co-founding partner Zesty

Meyers talked about the artists they work with that transcend art and engineering.

In addition to collaborations with Swedish-born designer and architect Greta Magnusson Grossman, known for her minimal aesthetic and bullet-shaped lamps, R & Company also works with contemporary designers “whose works teeter between the aesthetic and functional realms”, as with Jeff Zimmerman’s illuminated sculpture. Meyers calls the “Hex” stool by the American artists, the Haas Brothers, a good example of where art/design and engineering meet, and says: “The artists’ vision is driven by form and function. The work is crafted using tiles made from engineered rods that are then manipulated by hand to create something that is intriguing, sensual and luxurious.”

The Haas Brothers, using nimble craftsmanship and a clever use of materials, have become studio art innovators. In their present works, ➔

THE “HEX” STOOL IS A GOOD EXAMPLE OF WHERE ART/
DESIGN AND ENGINEERING MEET ZESTY MEYERS, R & COMPANY

WITH ENGINEERING, PURPOSE IS FIRST AND METHOD SECOND BUT ART SWITCHES THESE AROUND **KOTARO WATANABE**



ARTISTIC DESIGN

“Generally speaking, I feel that good design has to follow function and that art should not follow the restraints or parameters of function ... that it should be free and emotional and subjective. However, I do believe that there are artists that are good designers, and that there are designers who are also good artists. I believe in the decorative arts and ‘functional art’ and there is a wave of designers and artists right now that don’t see themselves restricted by formal definitions of art ... some might argue it’s also happening with food”
– Roman Alonso, creative director and owner at LA design collection, Commune

“Design, engineering and art all originally come from the same root as Leonardo da Vinci – only modernity obliges us to separate them. Today it’s more difficult than ever to separate these three – perhaps motivation to make the world a better place is where it is most interesting”
– Reiko Tsubaki, associate curator at Mori Art Museum in Japan

ABOVE
 Another striking sculpture from Theo Jansen

RIGHT
 An intriguing piece by the Haas Brothers features a creative way of combining materials.



the Texas duo explore “aesthetic and formal themes related to nature, science fiction, sexuality, psychedelia and colour theory”; the mastery is in the hi-tech engineering involved with manipulating the materials – brass, bronze, porcelain and fur to highly technical resins and polyurethane.

Kotaro Watanabe, director of Takram Design Engineering in Tokyo, says that “art is a way of posing questions, design on the other hand is there to offer a solution”. Watanabe, who recently published a book on design engineering, believes that with engineering there is always a specific purpose but with art things are

different. “Art, usually, is just meant to evoke feeling. When you throw art in combination with design and engineering it starts to open up the very idea of thought”, he says. “We now accentuate the abstract meaning of a specific function or the purpose that it’s meant for. With engineering, purpose is first and method second but art switches these around and now the method becomes the ultimate purpose – seen in the way it is ultimately presented.”

Artist Abigail Harper believes that as the world becomes increasingly mechanised and more technologically advanced, it is only natural the effect on art will be democratisation. “True creativity is a rare gift and therefore the blurred lines between design, engineering and art will not alter that unique quality; it continues to be recognised and valued across disciplines,” she says.

Harper cites the Dutch artist Theo Jansen as an example of kinetic sculpture and engineering – “occupying a realm somewhere between the two genres and successfully bridging the gap between technical skills and raw beauty”.

Jansen, known for his *Strandbeest* work that was used in a BMW advertisement and widely viewed TED talk, has pursued engineering so much and pushed it so far that it can be seen or viewed as art. The PVC mechanisms that react to their environment (in particular wind) and look as if they are walking on their own as “creatures” project exactly what Jansen sees as “the walls between art and engineering existing only in our minds”.

If Jansen is correct, the evolution, or call it revolution if you will, is only the beginning. Once the walls in our minds are broken down, the possibilities are seemingly fathomless and infinite. †

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