

# MATTER

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the  
simplicity issue

**The Year in Material Innovation**

**Donald Norman**  
A MATTER Interview

**Eyes on the Prize**  
The Mies van der Rohe Award



Electronic paper is a major material innovation that made the Kindle's readable screen possible. Photo Courtesy Amazon



The first 3-D printers were really crude. Today they come with multiple colors and wonderful finishes. I've seen people print working parts that they can put right into a mechanism and it functions right away. The material revolution is really wonderful and exciting. We're going to be able to do things we could have never dreamed of. The real excitement comes from a coupling of new materials, embedded microprocessors, powerful sensors, and actuators—things that move. You couple them all together, because they require one another. Good sensors and actuators require some processing, but they need to be embedded within new materials that have the strength, flexibility, transparency, electrical conductivity, and display qualities to make this possible.

**JM:** Is this the result of design being a much more cross-disciplinary activity than it used to be?

**DN:** There are two parts to this: It's possible because the technologists in industrial research labs and universities have invented all these wonderful things, and because practical inventors, engineers, have figured out how to put them together. Designers are actually last in the chain. They figure out how to make it into something that's useful for society. A lot of the major inventions come about from creative people, not designers. It could come from anybody, creative people who want to do it because they can do it. And the result they have is often very promising but would never make it as a real product. The designer's job is to figure out what's promising and what's real and what fits people's needs and transform it into a viable product. The original idea seldom comes from the designer.

**JM:** Was there backlash for saying just this in a paper last year?

**DN:** Yes! My *Core 77* papers are deliberately meant to be provocative. Well, I've been making similar claims but it wasn't until I published it in *Core 77*—that's the audience that's been most responsive. It's really interesting the number of people who agreed with me. I don't consider this a negative by the way. I consider it realism. I don't think I'm trying to criticize designers, I'm saying let's step back a bit and think about how these things really happen. If you actually look at a large number of magical innovations, it's by accident—but it's by someone who recognized that the accident was informative. There's an old saying, "Chance favors the prepared mind." That's something I believe in. I'm curious about everything.



Mies van der Rohe's architecture is known the world over for its simple, elegant forms. One of the earliest, and finest, examples of his Minimal compositions is the pavilion he designed for the 1929 International Exhibition in Barcelona. The revolutionary placement of its immense planes of glass and marble created a continuous flow of space throughout the single-story structure, punctuated only by eight free-standing cruciform columns that supported a hovering, flat roof. The pavilion had no real function, and was demolished soon after the Exhibition ended. But the simple structure became an architectural icon, lingering in the memories of architects throughout Europe for decades until it was rebuilt on its original site in 1986.

The pavilion's reconstruction, spearheaded by the Barcelona-based Fundació Mies van der Rohe, also sparked the idea for an award to recognize excellence in the field of architecture, and to draw attention to the important contribution of

European professionals in the development of new concepts and technologies. The Fundació conferred the first Mies van der Rohe Award to Álvaro Siza in 1988 for his Banco Borges e Irmão building. In 2001, the biennial award became the official architecture prize of the European Union, with the most recent honor going to Snøhetta's Norwegian National Opera & Ballet in Oslo in 2009.

But a large, institutional building isn't necessarily a shoo-in. In fact, in keeping with the spirit of Mies' simple pavilion which inspired the award, buildings of all sizes and types are considered, with special emphasis on emerging architectural talent. The recently revealed nominations for the 2011 prize, which include over 300 buildings completed throughout Europe within the last two years, range in scale from quirky structures of only several square meters to massive transportation hubs.



▲ The street view of the Passive Textile House in Asse, Belgium. Photo © Stijn Bollaert

At the extreme small end of the spectrum is Manthey Kula's design for a roadside toilet facility along one of 18 National Tourist Routes in Norway. According to architect Per Tamsen, the restroom, located north of the Arctic Circle in Lofoten, "was conceived to offer a pause from the impressions of the spectacular coastal landscape that surrounds it." The small structure is similar to the structure of a ship, composed of welded, rusted steel plates locally reinforced with steel flanges—every part specially designed for its specific use.

Blaf Architects also made the cut with a small house in Belgium. By turning the private front yard into a semi-public playground, and by using the front facade as a drawing board, the house appeals to both its inhabitants and to the neighborhood, located in the Flemish town of Asse. The social aspect of the project includes a respect for the environment. Designed as a passive house with a textile skin, glass fiber textile sun screens over windows control heat gain and privacy, and were the starting point to invent the façade system. "The use of glass fiber textile for the solid planes also seemed like a good choice to reduce the thickness of the highly insulated walls, and to reduce the material costs," says architect Lieven Nijs.

The innovative use of materials can be seen in larger projects as well. In the Museum aan de Stroom, also in Belgium, Dutch architects Neutelings Riedijk employ one of the largest applications of corrugated glass to date on the building's façade. A series of stacked concrete boxes seems to float above vast spans of "1/2" thick curved, glass panels—a feat that would have been impossible to achieve with flat panels that thin. For the Moderna Museet Malmö (featured on our cover), Tham & Videgård Arkitekter add a bright orange, perforated metal façade to the existing brick shell of a former electricity plant.

Regardless of scale or program, the winner of the Mies Prize—the announcement of which is planned for early summer—will be distinguished by a combination of qualities such as excellence and authenticity of design; a genuine and innovative character; and well-executed and sustainable construction. Those same qualities will also determine the recipient of the Special Mention for Emerging Architect. Following the announcement, the Jury will make a selection of exemplary works to be published and shown in a traveling exhibition. - *Josephine Minutillo*



◀ Located along Antwerp's waterfront, the Museum aan de Stroom's facade features spans of up to 18 feet of corrugated glass. Photo © Sara Blee

The durable construction of the 37sm bathroom facility in Akkarvikodden, Lofoten in Northern Norway replaces an earlier restroom that was swept up by the Arctic winds. Photo © Paul Warchol



◀ Previous Page Elemental Architecture's Teacher House in Oslo, Norway—nicknamed Smykkeskrinet, or Jewelry Box—features a 207sm glass facade. Between the two layers of glass is a design by artist Jorunn Sannes that was printed on the inner layer of glass using a silk screen process. Photo © Vidar Knutsen/Element Arkitekter AS