

INTERNATIONAL DESIGN MAGAZINE — *Emerging Talent: 7 Early Risers* ... Established & Sons: Made in the U.K.
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Sunny-side Up Rachel Wingfield's textiles let the light out.

By William Underhill
Portraits by David Cowlard

IMAGINE AN OUTSIZE PARASOL planted in an African village. By day, it offers shelter from the sun; by night, it sheds light for the local community using the energy collected in solar cells embedded in its canopy. It's clever, it explores a new role for textiles, and it shows concern for the planet. In short: an eco-friendly solution to a pernicious modern problem.

The idea, still at the concept stage, comes from Rachel Wingfield. "Some 80 percent of Africa is without electricity," she says. "One of the most important things you could do is bring light to these villages during the hours of darkness."

Over the past four years, the young British designer has picked up a clutch of awards for work like this that fuses science, art, and social purpose. "She's tenacious, tough, and very clear about where she's going," says Professor Clare Johnston, head of textiles at the Royal College of Art in London, where Wingfield earned a postgraduate degree. "But what's really good about her work is that neither the technological nor the aesthetic side is compromised. They really work in harmony."

Her achievements match those plaudits. Now 27, Wingfield has won a research fellowship at the city's Central St. Martins College of Art and Design, established a design business, loop.pH, with her husband, the Austrian artist Mathias Gmachl, and entertained mainstream television audiences as a guest inventor on the Discovery Channel. Consultancy jobs are flowing in, and she has work at two of London's leading art schools. For good measure, her Light Sleeper bedding, which glows to simulate the dawn, will be featured in an upcoming sci-fi movie, *Sunshine*, from director Danny Boyle. Fittingly, it tells of a space mission to save humanity by reviving the failing sun.

Not that Wingfield cares too much for the trappings of success. By her own admission, she's taken little trouble to translate her ideas into commercial projects. Her studio is still in her modest basement apartment on the fringes of

London's East End. What fascinates her today is how to tap nature for inspiration, using things like biological structures and light to combat contemporary problems. "From now on we really want to work with plants," she says. "The reason we find them so interesting is that they use energy so efficiently. They're pretty much self-sufficient. Only think what could be inspired by how nature uses light to stimulate growth."

Her experiments with light and its potential uses date back to her undergraduate days at Loughborough University, and a design brief to create a lamp shade. Her answer: a shade that can store the energy given off by a bulb. Wingfield's enthusiasm for linking natural and artificial light led to electroluminescent printing, integrating superfine electronic circuits coated with phosphor—originally developed for the military and NASA—into textiles. Trigger the circuits and the material gives off an eerie glow. It's electroluminescence that also powers the Light Sleeper, which is in effect a silent, programmable alarm clock that gradually lights up a duvet and pillow over a period of 10 to 15 minutes.

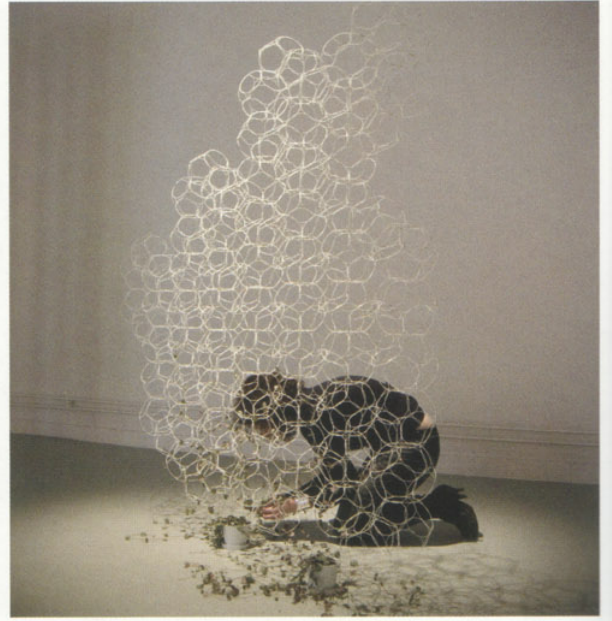
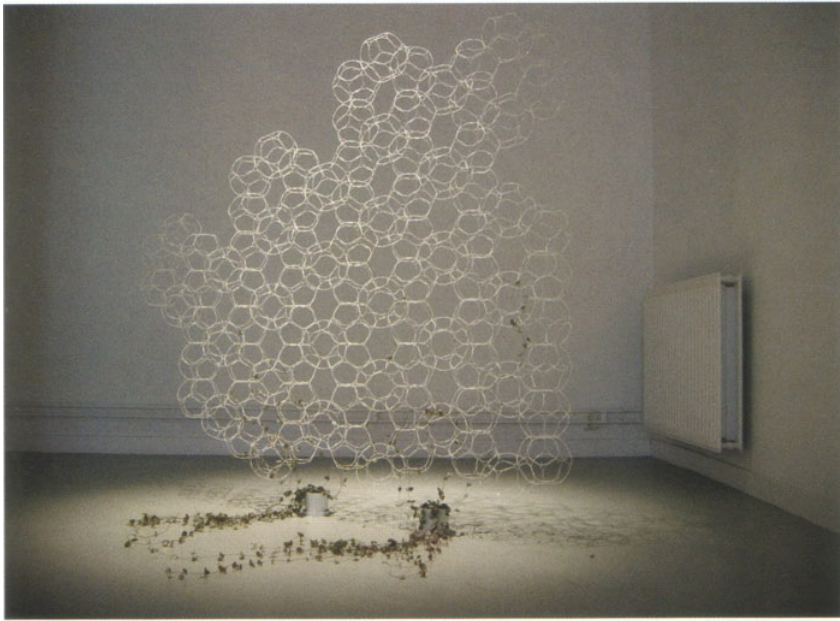
Wingfield's use of sophisticated technology is balanced by her fondness for applying her imagination to everyday objects. Past creations include *The Walls Have Ears*, a floral-patterned wallpaper that reacts to ambient sound, the print glowing brighter as the noise intensifies, and the *History Tablecloth*, which illuminates in response to the pressure of objects, signaling how long they've been there.

More recently, she's been borrowing from nature to create and separate household space. *Biowall* is a confection of springy dodecahedrons—the basic structure of the water molecule—which can be laced together to form a trellis of any size or shape. Wingfield reckons the structure, made from thin rods of fiberglass with plants creeping across the face, could morph into a living indoor hedge. (Ever obedient to her principles, she's hoping to find a biodegradable alternative to fiberglass).

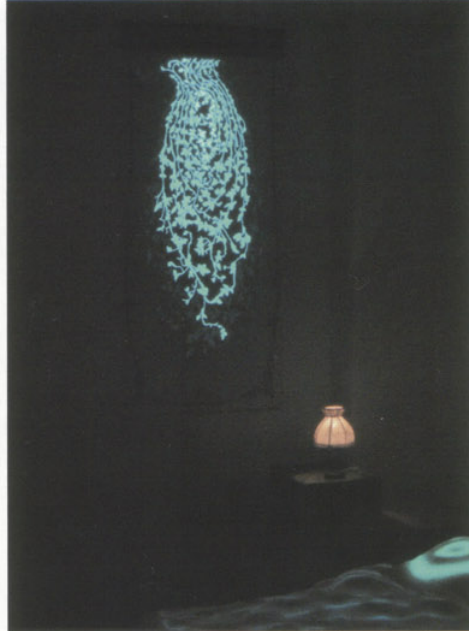
Such work takes technical savvy. The daughter of a physics teacher, Wingfield grew up with a fundamental curiosity about how things work. "I have met scientists who ask whether I'm a designer or a scientist," she says. "That kind of question actually makes me quite angry. The fewer distinctions that you draw between disciplines the better."

Certainly, she's not afraid to stir in an extra discipline when inspiration demands. She's currently looking for a botanist to help with one more eco-project: a biodegradable picnic set with seeds implanted in the materials. Throw your plate away and wait for a tomato vine to sprout. Wingfield supplies the technology; nature does the rest. ✨

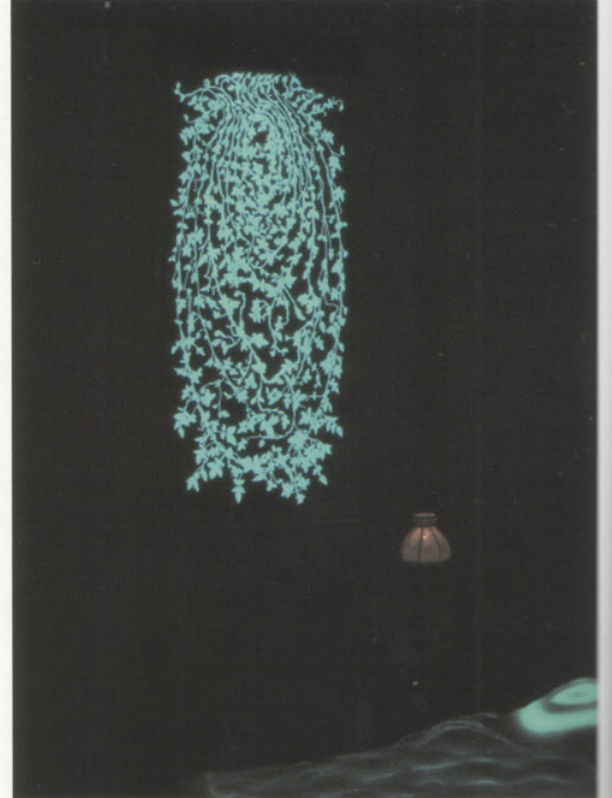
William Underhill is a special correspondent for Newsweek.



The modular elements of Wingfield's Biowall can be stacked to form an indoor trellis for creeping vines.



Her Digital Dawn wall hanging glows brighter as ambient light levels fall.





Walltherapy, a collaboration between loop.pH and Flour, was an installation that provided a gray landscape for anyone to fill in. Participants took a test to gauge their mood and were then assigned a color and a hexagon to paint.