



Welcome to Vol. 9 No. 3 of Design Science News, the e-bulletin of the Buckminster Fuller Institute

Design Science News brings you news from around the world related to humanity's option for success and comprehensive design science. It also features updates from BFI and periodic special offers for our members.

FEATURED IN OUR ONLINE STORE: **Structure in Nature is a Strategy for Design** by Peter J. Pearce



The structural designs that occur in nature - in molecules, in crystals, in living cells - appear in this fully illustrated book as a source of inspiration and study of the design of man-made structures. In particular, the book reveals that when the geometrical modular systems developed by the author are applied to building design, the result is adaptive, structurally sound, and economical environments. Pearce's work follows in the tradition established by D'Arcy Wentworth Thompson and Konrad Wachsmann, and reflects his earlier close association with Charles Eames and Buckminster Fuller. [Order your copy today!](#)

TRENDS & PERSPECTIVES

Millions of jobs of a different collar



Everyone knows what blue-collar and white-collar jobs are, but now a job of another hue - green - has entered the lexicon.

Presidential candidates talk about the promise of “green collar” jobs - an economy with millions of workers installing solar panels, weatherizing homes, brewing biofuels, building hybrid cars and erecting giant wind turbines. Labor unions view these new jobs as replacements for positions lost to overseas manufacturing and outsourcing. Urban groups view training in green jobs as a route out of poverty. And environmentalists say they are crucial to combating climate change.

No doubt that the number of green-collar jobs is growing, as homeowners, business and industry shift toward conservation and renewable energy. And the numbers are expected to increase greatly in the next few decades, because state governments have mandated that even more energy come from alternative sources.

But some skeptics argue that the phrase “green jobs” is little more than a trendy term for politicians and others to bandy about. Some say they are not sure that these jobs will have the staying power to help solve the problems of the nation’s job market, and others note that green jobs often pay less than the old manufacturing jobs they are replacing.

Indeed, such is the novelty of the green-job concept that no one is certain how many such jobs there are, and even advocates don’t always agree on what makes a job green. (Source: [The New York Times](http://www.nytimes.com/2008/03/26/business/businessspecial2/26collar.html?_r=3&adxnnl=1&oref=slogin&adxnnlx=1206543622-BH0IAcPL/nqFgaHSNUSXOw&oref=slogin))

http://www.nytimes.com/2008/03/26/business/businessspecial2/26collar.html?_r=3&adxnnl=1&oref=slogin&adxnnlx=1206543622-BH0IAcPL/nqFgaHSNUSXOw&oref=slogin

The rise of British sea power



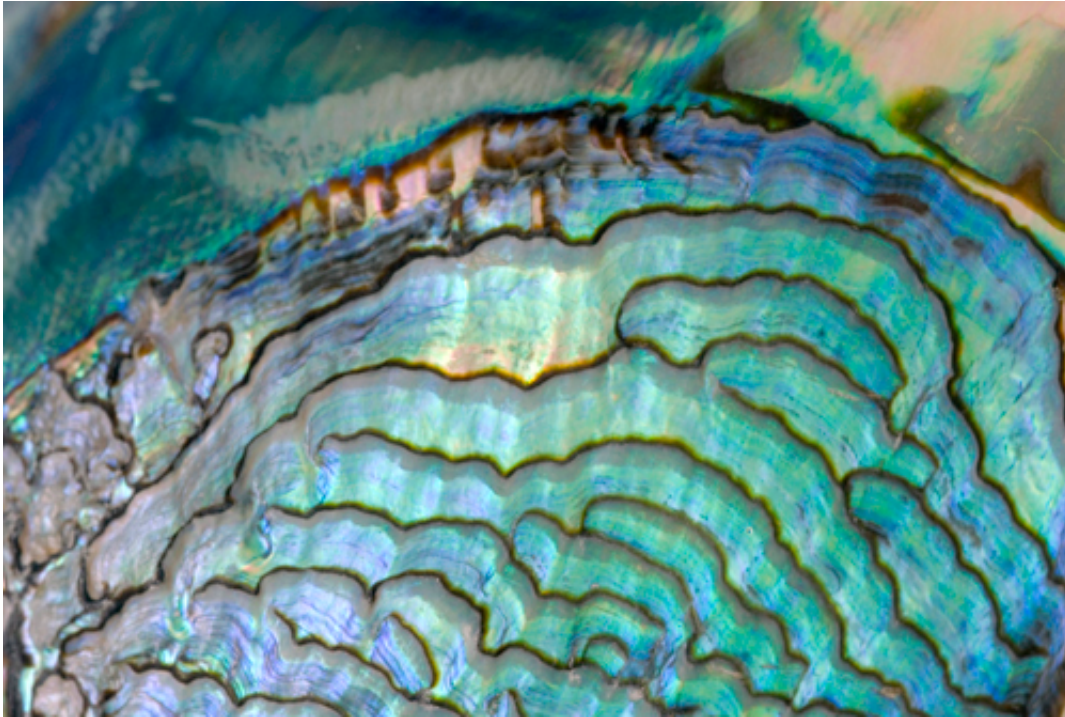
Britain is set this week to enter a new age, generating energy directly from the seas that surge around its shores. On Saturday a strange, 122ft- long contraption - looking like an upside-down windmill - will set off from the Belfast dock that built the Titanic to produce the first electricity ever brought ashore from British tides.

The device - the first of its kind anywhere in the world - is expected to start a revolution which could lead to our island nation getting a fifth of its power from its surrounding waters, and to the far north of Scotland becoming "the Saudi Arabia of marine energy".

Remarkably, the pioneering device, which will start producing power from predictable and clean tidal energy, is the fruit of the vision and persistence of a single campaigning engineer, and has been developed by a small West Country firm. Though it has recently had some Government support, ministers have traditionally preferred to pour resources into much bigger projects, such as nuclear power stations. Indeed, the installation of the new device - near the mouth of Northern Ireland's Strangford Lough - is scheduled to take place only days after the Prime Minister, Gordon Brown, and the French President, Nicolas Sarkozy, are expected to sign a deal to jointly construct a new generation of reactors and to sell the technology around the world.

Yet the inauguration of a tidal turbine, dubbed SeaGen - which will generate enough electricity to power 1,140 homes by being placed directly in the tide race that rushes in and out of the lough - may unexpectedly prove to be the more significant event. While the much-vaunted Severn Barrage has only just begun to undergo a two-year feasibility study, experts are hailing the new turbine as the start of a giant leap in exploiting marine energy, where Britain, for once, is now leading the world. (Source: [The Independent UK](#))

Shell shock



An MIT materials scientist's research on sea snails has helped transform battery technology and may end the era when cell phones die if they're dropped and PDAs must be replaced if they get dunked in the tub.

Thanks to those sea snails and a eureka moment, Angela Belcher, Germeshausen Professor of Materials Science and Engineering and Biological Engineering, is developing smart nano-materials - hybrids of organic and inorganic components - beginning with a rechargeable, biologically based battery that looks like plastic food wrap.

Belcher's eureka moment occurred 10 years ago; it arose from her long, delighted fascination with abalone, the sea snail, and from her willingness to ask a wide-open question, "What if?"

Holding up an abalone shell before a visitor, Belcher describes the moment when the two threads - persistent interest and sudden insight - came together, forming the basis of her current research, which spans inorganic chemistry, materials chemistry, biochemistry, molecular biology and electrical engineering.

A seventh-generation Texan, Belcher began studying abalone when she entered the University of California, Santa Barbara, as a graduate student. (Abalone cling to California's coastal rocks.) Intrigued since childhood by pearls and pearl-making mollusks, she was impressed by the abalone's shell: it's 98 percent calcium carbonate - what we call chalk, only 3,000 times stronger.

"The abalone makes this amazing material out of a common mineral," she says. (Source: [MIT News](#))

RESOURCES

Nourish - Food + Community



Launching in Summer 2008, Nourish explores the abundant possibilities to create a sustainable food system. A multi-year, national initiative, Nourish includes the following program elements:

Nourish PBS Special

A high-definition television program for national broadcast. The special traces our relationship to food from a global perspective to personal action steps.

Nourish DVD

A companion DVD with additional stories, interviews, and resources for action. A valuable tool for schools, community groups, libraries, museums, non-profit organizations, and families.

Nourish Curriculum

A standards-based curriculum for middle and high schools. Challenges students to understand how their personal food choices affect the environment, society, and economy.

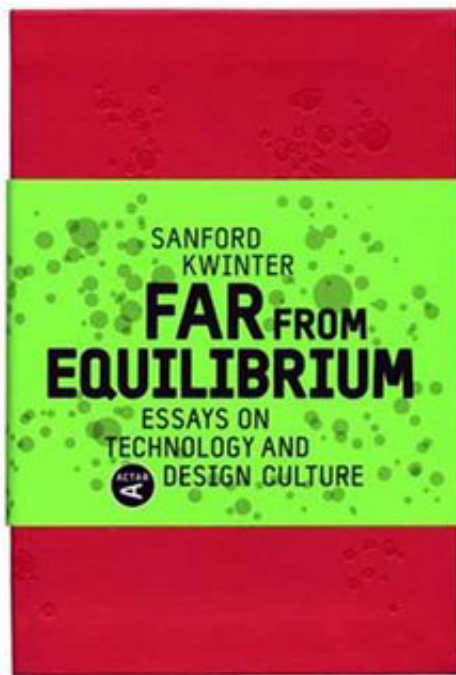
Nourish Website

An online hub for information and action. Featuring video clips, photo essays, interactive tools, and teaching resources that extend the learning experience.

[Watch the Nourish trailer](#)

[Worldlink](#)

Manifesto for a 21st century design revolution



From (former BFI Board member) Greg Watson's fantastic blog *12 Degrees of Freedom*:

What did Albert Einstein mean when he said that "We cannot solve our problems with the same thinking we used when we created them?" One eloquent and urgent response to this question can be found in Sanford Kwinter's remarkable book "Far From Equilibrium: Essays On Technology and Design Culture." On the surface this is a critique of the shortcomings of American architecture, but it is actually much more. It is a argument for the absolute necessity for the architecture profession to realize that the survival of humanity depends on comprehensive infrastructure design and to accept the challenge of expanding beyond designing isolated buildings.

In one of the book's many dazzling essays, infrastructure is defined as big, ubiquitous and foundational: "It is the systemic expression of capital, deregulated currency, interest rates, credit instruments, trade treaties, and market forces; it is water, fuel and electrical reservoirs, routes and rates of supply; it is demographic mutations and migrations, satellites and lotteries, logistics and supply coefficients, traffic computers, airports and distribution hubs, cadastral techniques, juridical routines, telephone systems, business district self-regulation mechanisms, evacuation and disaster mobilization protocols, prisons, subways and freeways and their articulated connections, libraries and weather monitoring apparatuses, trash removal and recycling networks, sports stadiums, garages, gas pipelines and meters, hotels, public toilets, postal and park utilities and management, school systems and ATMs, rail nodes and networks, television programming, interstate systems, ports of entry and the public goods and agencies associated with them, sewers and alarms, multi-tiered military-entertainment apparatus, decision engineering pools, wetlands and water basins, civil structure maintenance schedules, epidemiological algorithms and virology labs, cable delivery systems, law enforcement matrixes, licensing bylaws, green markets, medical-pharmaceutical complexes, Internet scaffolds, handgun regulations, granaries and water towers, military deployment procedures, street and highway illumination schemas; in a word grids of any and all kinds." (It's the grid, stupid).

Interestingly enough (but not surprising to me), one of the few individuals who really got this was Buckminster Fuller. “Fuller had a profoundly scientific intuition, which meant that he was primarily interested in values such as beauty, elegance and economy as they pertained to a solution, not to cloying ornamental or stylistic properties.”

This made him a real threat to the architectural community. An excerpt from one of the essays featured in “Far From Equilibrium” follows.

[Read on](#)

Where science meets art



An NPR *Morning Edition* series explores the unexpected intersections of two seemingly different disciplines - art and science. To browse the series, visit:

[NPR](#))

<http://www.npr.org/templates/story/story.php?storyId=4111499>

EVENTS

FEEDBACK

March 13 - April 19, 2008
Eyebeam
540 W. 21st St.

New York, NY

What does it mean to think “green”?

Eyebeam’s expansive new exhibition, FEEDBACK, surveys artists, designers, architects and engineers on the topic of sustainability, and presents their responses -19 projects varying from public art projects and industrial design to DIY energy solutions and software tools - to inspire discussion and action on this pervasive (and increasingly commodified) subject.

As the culmination of Eyebeam’s Beyond Light Bulbs programming series, the show highlights the concerns, interests and work of Eyebeam’s Sustainability Research Group, with work by individuals, collectives, students, local community groups and the Eco-Vis Challenge winners. Free, artist-run workshops are integral to the exhibition’s design and are scheduled Saturdays throughout the show’s duration.

For more details, visit the [exhibition website](#)

Have you come across interesting Design Science news articles, resources, or events?

We invite you to forward them so we can consider them for inclusion in future e-bulletins. Send them to: [designsciencenews \(at\) bfi.org](mailto:designsciencenews(at)bfi.org)

If we use your suggestion for future e-bulletins and you would like to be credited by name, please indicate it in your e-mail.

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